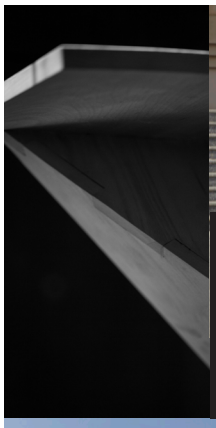
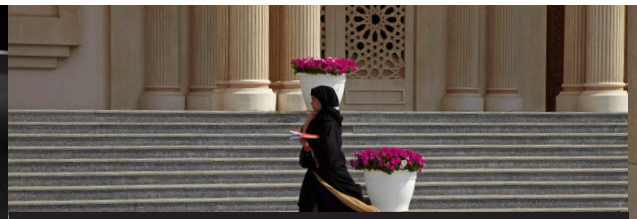
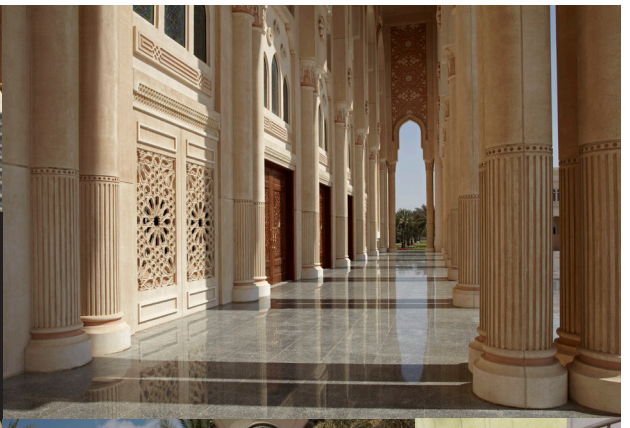
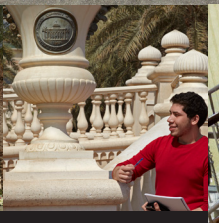




Graduate

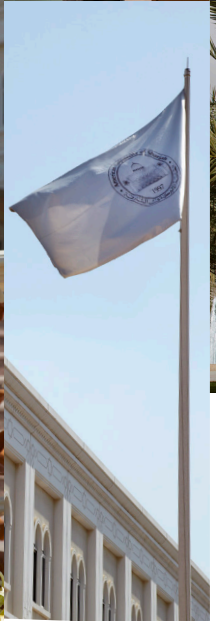



Catalog




2018–2019


AUS | الجامعة الأميركية في الشارقة
American University of Sharjah

AUS | الجامعة الأميركية في الشارقة
American University of Sharjah

Graduate Catalog

2018–2019

His Highness Sheikh Dr. Sultan bin Muhammad Al Qasimi

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

Chancellor's Message

American University of Sharjah (AUS) is an independent not-for-profit American style institution of higher education in the Middle East. It offers undergraduate degrees, MS and PhD degrees, and a distinctive blend of liberal arts and professional education. The quality of AUS and its programs have been recognized by both local and international accreditation.

This catalog will inform you of the university's programs, policies, people and ethos, and will act as your guide to explore the academic and extracurricular activities that comprise campus life.

Following the vision of the Founder of AUS, His Highness Sheikh Dr. Sultan bin Muhammad Al Qasimi, Member of the Supreme Council of the United Arab Emirates and Ruler of Sharjah, the university has grown from strength to strength. We are proud of the international acclaim for our rigorous academic programs and multicultural campus environment. Our highly qualified and experienced faculty members are committed to providing the best education and mentoring of our students. Hailing from 47 nations across the globe and with terminal degrees earned at some of the best universities in the world, they are experts in their respective disciplines, are committed to teach and mentor students, and are at the same time actively engage in research and scholarship. This, coupled with our commitment to enhancing research output and construction of a Research Technology and Innovation Park just west of campus, are key factors for our renown throughout the GCC countries and the Arab world.

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

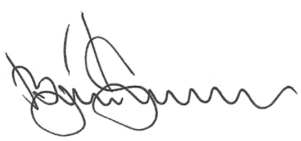
The AUS campus community is a multinational environment in which to study, learn, live and grow. We are very proud of our campus and student body comprising some 5,500 students from 95 countries. AUS continues to add to its program offerings, reflecting the needs and requirements of students and the regional marketplace.

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

Embarking on this journey, you will witness first-hand the dynamics and excellence for which AUS has become renowned. You will experience a colorful, energetic and multifaceted campus life, and will forge your own relationships as a student at AUS.

It gives me great pleasure to welcome you to AUS, and I wish you every success in your discipline of choice.

Björn Kjerfve



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  - Ms. Rania Morsi, Director, Administrative Services, Advancement and Alumni Affairs
- Dr. Ilias Visvikis, Director, Executive and Professional Education
- Mr. Ahmed Aboubaker, Director, Institutional Research and Analysis
- Mr. Kevin Fairbotham, Director, Internal Audit
- Mr. Saeed Al-Shamsi, Chief of Protocol, Protocol and Security
- Ms. Sue Mainey, Director, Strategic Communications and Marketing

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- Mr. Kevin Mitchell, Vice Provost, Undergraduate Affairs and Instruction
  - Dr. Mehvash Ali, Director, Academic Support Center
  - Dr. Cindy Gunn, Director, Faculty Development Center
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  - Dr. Zinka Bejtic, Associate Dean, College of Architecture, Art and Design
- Dr. Mahmoud Anabtawi, Dean, College of Arts and Sciences
  - Dr. Ahmad Al-Issa, Associate Dean, College of Arts and Sciences
  - Dr. James Griffin, Associate Dean, College of Arts and Sciences
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  - Dr. Mohsen Saad, Associate Dean, School of Business Administration
- Dr. Moza Al Shehhi, Dean of Students
  - Ms. Juliet Coutinho, Director, Judicial Affairs
  - Mr. Munketh Taha, Director, Student Development and Organizations
  - Ms. Haifa Ismail, Director, Student Leadership Programs
  - Mr. Mohammad Atif Ehsan, Director, Student Residential Life
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- Mr. Jayant Menon, Director, Supply Chain

Dr. Wei Zhao, Chief Research Officer

- Ms. Kathleen Furr, Director, Research and Sponsored Projects
- Dr. Hasan Al-Nashash, Interim Director, Biosciences and Bioengineering Research Institute
- Dr. Tarig Ali, Interim Director, Geospatial Analysis Center
- Dr. James Gannon. Interim Director, Gulf Environments Research Institute
- Dr. Fadi Aloul, Interim Director, High-Performance Computing Center
- Dr. Ali Alnaser, Interim Director, Materials Science and Engineering Research Institute
- Dr. Assim Sagahyroon, Interim Director, Smart Cities Research Institute

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

Graduate Academic Calendar 2018–2019

Fall Semester			2018
June	3	Sunday	Assistantship applications deadline for Fall Semester 2018 for new students
July	1	Sunday	Regular admissions applications deadline for Fall Semester 2018 for applicants from outside UAE
August	5	Sunday	Admission applications deadline for Fall Semester 2018 for applicants from inside UAE
	23	Thursday	Residential halls open
	25	Saturday	Welcome session for new students Registration for new students begins
September	2	Sunday	First day of classes Late registration and add/drop period begin
	9	Sunday	Late registration and add/drop period end, 5:00 p.m. Deadline to pay Fall Semester 2018 tuition fees without late payment penalty, 5:00 p.m.
	11	Tuesday	No Classes: Al Hijra holiday*
	27	Thursday	Applications for Fall Semester 2018 graduation due
November	8	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
	11	Sunday	Assistantship applications deadline for Spring Semester 2019 for new students
	20	Tuesday	No Classes: Al Mawlid Al Nabawi holiday*
	25	Sunday	Advising and early registration for Spring Semester 2019 begins
	30	Friday	No classes: Martyr's Day holiday
December	2–3	Sunday–Monday	No Classes: UAE National Day holiday
	9	Sunday	Regular admissions applications deadline for Spring Semester 2019 for applicants from outside UAE
	15	Saturday	Last day of classes
	16–22	Sunday–Saturday	Study and examination period
	22	Saturday	Fall Semester 2018 Commencement**
Spring Semester			**2019**
December	30	Sunday	Regular admissions applications deadline for Spring Semester 2019 for applicants from inside UAE
January	17	Thursday	Residential halls open
	19	Saturday	Welcome session for new students Registration for new students begins
	27	Sunday	First day of classes Late registration and add/drop period begin
February	3	Sunday	Late registration and add and drop period end, 5:00 p.m. Deadline to pay Spring Semester 2019 tuition fees without late payment penalty, 5:00 p.m.
	21	Thursday	Applications for Spring Semester 2019 graduation due
March	24–30	Sunday–Saturday	No Classes: Spring Break
	28	Thursday	Application for Summer Term 2019 graduation due
April	3	Wednesday	No Classes: Al Israa Wal Miraj holiday*
	11	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
	22	Monday	Advising and early registration for Summer Term 2019 and Fall Semester 2019 begins
May	1	Wednesday	Deadline to submit Summer Permission to Take Courses Outside AUS forms
	12	Sunday	Regular admission applications deadline for Summer Term 2019 for all applicants
	18	Saturday	Last day of classes
	19–25	Sunday–Saturday	Study and examination period
June	8	Saturday	Spring Semester 2019 Commencement**
Summer Term			**2019**
May	9–10	Sunday–Monday	Registration for Summer Term 2019
June	11	Tuesday	First day of classes Late registration and add/drop period begin
	13	Thursday	Late registration and add/drop period end, 3:00 p.m. Deadline to pay Summer Term 2019 tuition fees without late payment penalty, 3:00 p.m.
July	9	Tuesday	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
	22	Monday	Last day of classes
	23–25	Tuesday–Thursday	Examination period

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

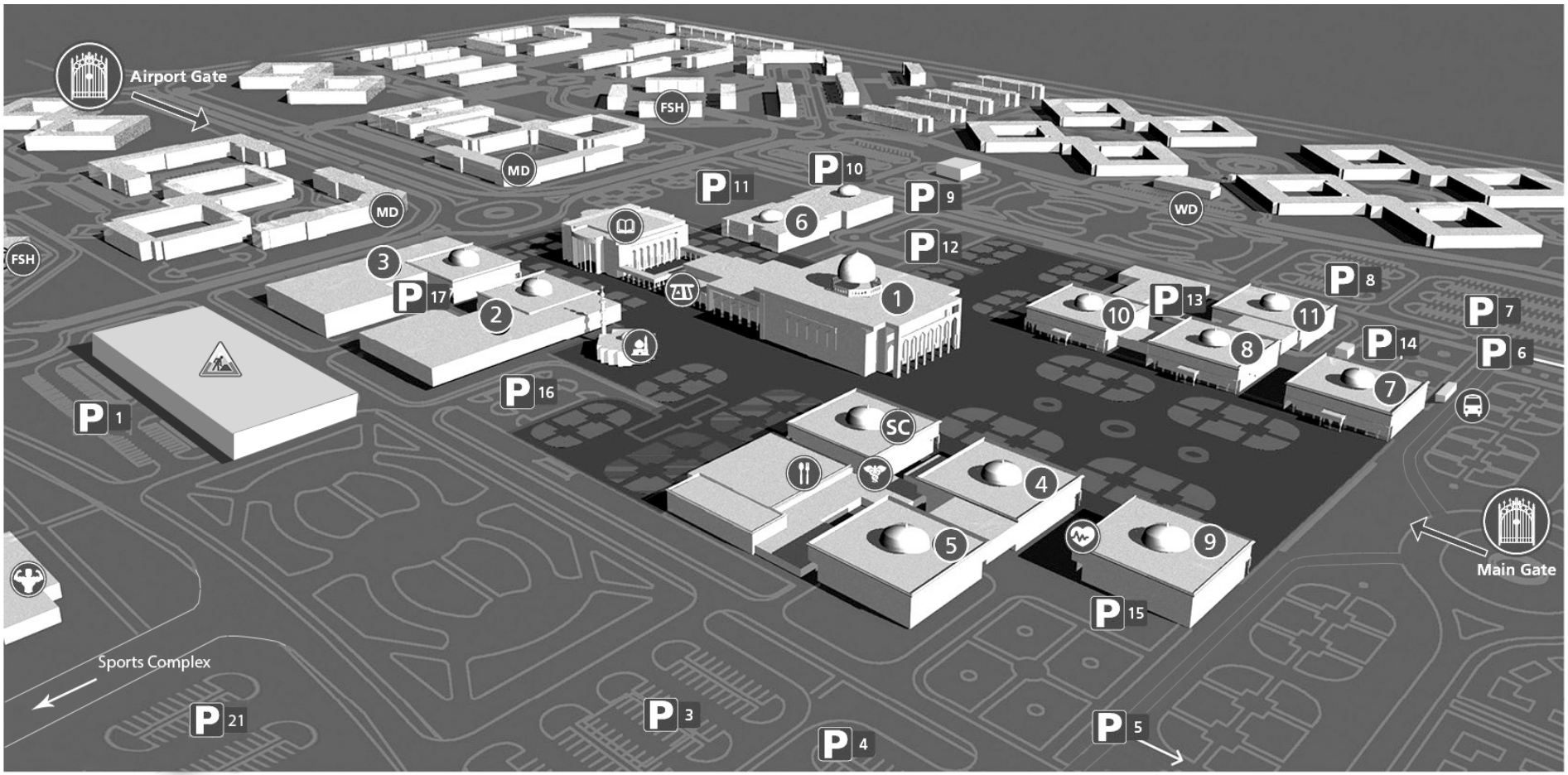
** Commencement dates are tentative and are subject to change.

Note: Classes missed on Sundays, Mondays and Tuesdays in the Fall Semester 2018 and on Wednesdays in the Spring 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

Department	Telephone	Fax	Email
Academic Support Center	515 2096	515 2097	asc@aus.edu
Achievement Academy/Bridge Program	515 2653/54	515 2638	academy@aus.edu
Admissions/Enrollment Management 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
Center for Professional and Executive Education	515 4405/4721	--	execed@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
Finance	515 2185	515 2190	finance@aus.edu
General Information	558 5555	558 5858	info@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
Human Resources	515 2228	515 2139	hr@aus.edu
Information Technology	515 2119	515 2120	itservicedesk@aus.edu
Institutional Research and Analysis	515 2206	558 5858	oira@aus.edu
International Exchange Office	515 4018/27/29	515 4010	ixo@aus.edu
Library	515 2252	558 4068	auslibrary@aus.edu
Office of the Chief Operating Officer	515 2192	515 2130	coooffice@aus.edu
Operations	515 2126	515 2029	operations@aus.edu
Protocol and Security	515 2296	515 2200	aus_security@aus.edu
Provost	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	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

Table of Contents

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) will be the region's leader in higher education, known for excellence and innovation in teaching, learning, research and service.

Mission Statement

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

Overview

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

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

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

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

Through the College of Architecture, Art and Design, the College of Arts and Sciences, the College of Engineering, and the School of Business Administration, the university offers 27 majors and 48 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.

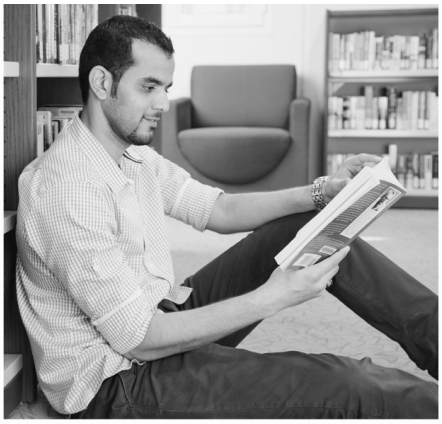
AUS has been accredited in the United States of America by the Middle States Commission on Higher Education (3624 Market Street, Philadelphia, PA 19104, USA, Tel +1 215 662 5606) since June 2004.

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.

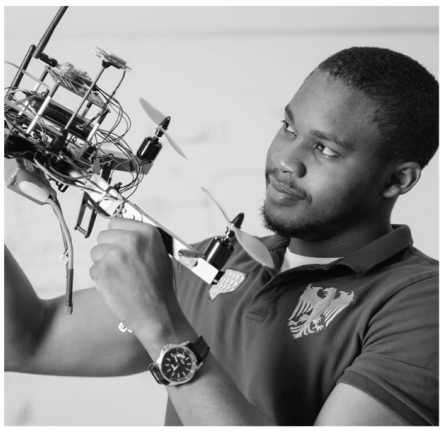
The Bachelor of Architecture program of the College of Architecture, Art and Design is accredited by the National Architectural Accrediting Board (NAAB) of the United States, www.naab.org.







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

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

The City of Sharjah

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

Today, as in ancient times, Sharjah is a global trade center. Modern Sharjah is a city of learning and the arts. Due to its distinctive contributions to Islamic and human culture, Sharjah was selected as the Islamic Culture Capital of the Arab Region for 2014 by the Islamic Organization for Education, Science and Culture. This context facilitates the university's intention to be an academic center at the intersection of ancient cultural traditions and contemporary intellectual currents. The city of Sharjah boasts 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 on the west Mezzanine Floor of the Main Building (offices MM 29/30/31/32/33) and can be reached on 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 On Campus 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. For CAAD students and faculty, there is a Digital Fabrication Lab that includes CNC routing, robots, thermoforming, laser cutting, rapid prototyping/small laser cutter and rapid prototyping/3D printing. The Digital Fabrication Lab is among the most advanced facilities

found in universities internationally. Other facilities include a wet lab for casting; workshops for clay, wood and metal, sound design, color correction, media production, photography and printmaking; and a photographic darkroom. Facilities cover a wide spectrum of making, both analog and digital, including conventional material fabrication as well as advanced digital technology.

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.

Center for Executive and Professional Education

Through the Center for Executive and Professional Education (CEPE), AUS offers individuals and organizations access to the knowledge and expertise of its faculty. Drawing on the resources and facilities of university, CEPE offers a wide range of non-credit open enrollment courses, professional certificates and mini-MBAs for executives in addition to custom programs. The mission of CEPE 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. Visit www.aus.edu/CEPE or email execed@aus.edu for more information.

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, water, materials, 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 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. Chemistry laboratories are equipped with standard chemical instrumentation, including balances, centrifuges, pH-meters, spectrophotometers, a rapid kinetic apparatus, glove box, physisorption apparatus, and electrochemical and chromatographic equipment. The environmental sciences and analytic chemistry laboratories are equipped with the latest sampling and analytical devices, including AA, GC-MS, ICP, FTIR, TOC, HPLC equipment and a 400 MHz Bruker Biospin NMR machine. The physics laboratories are supplied with up-to-date standard equipment, including computer interfaces, motion sensors, current sensors, voltage sensors, magnetic field sensors, linear air tracks, photogates, smart timers, projectile launchers, ballistic pendulums, rotational systems, digitometer, electric field mappers, current balance apparatus, signal/function generators, oscilloscopes, a Hall effect apparatus, lasers, spectral lamps, photoelectric effect apparatus, Geiger-Muller tubes, radiation counters, h/e apparatus, Frank Hertz apparatus, e/m apparatus, spectrometers, interferometers, X-ray machines, a Millikan oil drop apparatus, heat engines/gas law apparatus, a thermal expansion apparatus and an adiabatic gas law apparatus. The biology laboratories are equipped with the latest stereo inverted and compound microscopes, a microtome, an autoclave, a laminar flow sterile hood, PAGE and agarose electrophoresis equipment, cryostat and microtome units, a workstation with a computer connected to digital microscope cameras, a growth chamber, IDEXX Colilert and a manifold filtration unit for microbiological analysis, a gel documentation system, a UV trans-illuminator, refrigerated microcentrifuges, a trans-blot semi-dry transfer apparatus, a gel dryer, CO2 cell incubator, -80 °C freezer, a tissue homogenizer, and a thermocycler for DNA amplification.

Library

The AUS Library, an 11,000-square-meter state-of-the-art facility, provides collections, services and programs to support the curricular and research needs of the university community. The AUS Library provides a wide range of resources and services to meet the specialized needs of graduate students. The library has a growing collection of 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 55 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 the research and consulting activities of its faculty members. In addition, AUS offers its students opportunities to work on faculty research projects, to present papers with faculty at international conferences and to assist faculty in developing research grants.

AUS upholds its ethical responsibility to administratively review all proposed research projects involving humans 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 record and 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 also 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.

Geospatial Analysis Center

The Geospatial Analysis Center (GAC) is a state-of-the-art resource-integrating advanced technology and in-house

experts that researchers and policy-makers use to understand and respond to the geospatial dynamics of human and natural systems. GAC facilitates transdisciplinary, sustainable responses to pressing science, public policy, business and design challenges with an emphasis on GCC countries. Through physical and cyber infrastructure, GAC goals are to:

- host and curate up-to-date repositories of geospatial data
- offer a platform that integrates geospatial data and analytical capabilities and supports basic and applied research
- use geospatial intelligence to monitor changes and interactions among human and natural systems
- deliver technical support, data, models, and geospatial software tools to researchers and decision makers
- promote interdisciplinary inter-institutional problem solving via industry and academic collaborations in spatial intelligence

For further details, please email gac@aus.edu.

High-Performance Computing Center

High-Performance Computing (HPC) is a key component of university's smart infrastructure to enhance its research capabilities. The AUS HPC center helps enable and accelerate computational research across disciplines including biotechnology, Gulf environment, material and structures, smart cities, and Internet of Things. The center provides leading-edge, high-performance computing services for computationally intensive tasks. In addition, the center provides training and consultation to faculty, staff and students who wish to use the HPC to enhance their research.

For further details, please email hpc@aus.edu.

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.

Research Institutes

In line with its research agenda, AUS has established four interdisciplinary research institutes.

Biosciences and Bioengineering Research Institute

The Biosciences and Bioengineering Research Institute's (BBRI) vision stems from the university's vison of being the leader in the Arab world and a globally recognized center of excellence in biosciences and bioengineering graduate education, research and technology transfer. To achieve this vision, BBRI has three mission objectives:

- prepare professionals with PhD- and MS-level education for advanced careers in biosciences and bioengineering, and to infuse them with business skills to become job creators and entrepreneurs
- generate and disseminate scientific knowledge that has global impact but responds to regional demands for culturally rooted discoveries and innovations that aim to improve the quality of life in the GCC region
- transfer that scientific knowledge to successful commercialization and/or clinical implementation

The BBRI will develop core expertise and facilities to conduct innovative advanced research to address regional challenges with focus on:

- premature cardiovascular disease (CVD) and type 2 diabetes
- cancer
- nervous system
- biotechnology
- technology transfer and management

For further details, please email bbri@aus.edu.

Gulf Environments Research Institute

The Gulf Environments Research Institute (GERI) aims to become the regional leader for collecting, analyzing and simulating marine, coastal and environmental processes in the Arabian Gulf region.

Initiated in January 2018, the institute is developing research activities in synchrony with goal 14 of the UN's Sustainable Development 2030 agenda, in particular the conservation and sustainable use of the oceans, seas and marine resources of the UAE. Early initiatives include developing community-based models to analyze ocean circulation on a variety of spatial and temporal scales and apply related models to simulate the effects of climate change on physical and biological processes in the Gulf and the Middle East region. GERI's long-term goals are to become a recognized leader in marine science education and contribute to the conservation of economically and ecologically important marine species and habitats for the benefit of the UAE society.

For further details, please email geri@aus.edu.

Materials Science and Engineering Research Institute

The Materials Science and Engineering Research Institute (MSERI) aims to advance the science and engineering of renewable power technologies and provide essential knowledge for the integration and optimization of sustainable energy systems to change how our society thinks about the use of natural resources and supports environmental protection. The research areas will promote the development of:

- advanced materials such as novel construction materials, smart materials, composite materials, and materials that support a sustainable environment thus advancing the UAE National Agenda
- materials for energy and environment aimed at renewable power technologies, water re-use and purification technologies, along with other environmentally friendly materials development
- analytical and computational modeling facilities such that newer computational and analytical techniques can be used to simulate material response to a wide range of use parameters, thereby guiding and

accelerating the development of new materials

- structures used in buildings; for transportation; for oil and gas exploration, recovery and conservation; and for power generation and distribution

For further details, please email msei@aus.edu.

Smart Cities Research Institute

The goal of the Smart Cities Research Institute (SCRI) is to foster interdisciplinary research activities that support the realization of smart cities towards a seamless, efficient, secure, happy and sustainable living environment. The center brings together a diverse array of faculty with proven expertise in fields such as telecommunication, Internet of Things, sensor technology, transportation, energy, tourism, health informatics, urban planning and environment in order to develop ideas and implementation strategies for smart cities in the UAE and GCC countries. In pursuing its goals, the institute will collaborate with local government and industry to foster cross-disciplinary research, training and outreach.

For further details, please email scri@aus.edu.

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 center is an authorized Prometric Test Center, a Pearson VUE® authorized Test Center (PVTC Select) and is part of the ETS Strategic Testing Network. In addition, the College Board, AMIDEAST and the British Council are AUS testing partners.

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

For more information, visit http://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, substance abuse and mental health.

Health Insurance Plans for Students

Health insurance is available for graduate students. AUS-sponsored graduate students who choose to have an insurance coverage through AUS will be assigned to Plan I.

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.

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 legally established principles, rules and regulations of the university constitute the basic standards and guidelines for conduct on and off campus. The Office of Student Affairs (OSA) establishes and enforces those rules and regulations. The full text of the Student Code of Conduct is provided in the *Student Handbook* and at www.aus.edu/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 Affairs 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, contact atassa@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, 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. You can also visit the Office of the Dean of Students (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 Students 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. A variety of individual and team sports, fitness and leisure activities, as well as broad-based competitive and recreational programs are offered for both genders and can be viewed on www.aus.edu/osa/athletics.

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 Dean of Students and Chancellor.

The AUS Student Council is an elected body that articulates student views and interests in the university. The Student Council is a vehicle for ensuring that students can have a voice in formulating university priorities and policies. It also provides a structure for greater student involvement on campus. The Dean of Students advises the Student Council. For information, please see the *Student Handbook* or visit 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*.

Student Leadership Programs

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

Student Leadership Programs is located in the Student Center, First Floor, A249, A250 and A239. For more information visit www.aus.edu/leadership-program, email osaslp@aus.edu or call 515 4772.

Student Multicultural Learning Program

The Student Multicultural Learning Program (SMLP) is for students to gain firsthand knowledge of cultural diversity and expand their understanding of the cultural, historical and sociological backgrounds of the UAE and of other countries around the world. Besides cultural diversity, students also learn about diversity in business, government, politics and lifestyle that exist in other societies around the globe. For more details visit www.aus.edu/student-multicultural-learning-program, email osasmlp@aus.edu or visit office A234 in the Student Center.

Student Publications

AUS students can publish their original piece of 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

University Counseling Services provides assistance to AUS students who are physically challenged. Students who need further information should visit the University Counseling Services at the rear of the University Health Center or email ucs@aus.edu.

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

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

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

For more information, visit www.aus.edu/ixo.

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 on 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 post-traumatic stress disorders and trauma therapy, adjusting to university life, study skills, personal development and time management, positive psychology, motivational exercises and memory improvement. Workshop topics and dates are advertised around campus, or students can 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 (apply.aus.edu for applicants to a master's degree program; https://www.aus.edu/apply-now for applicants to a PhD degree program)
- 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 following conditions 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 TOEFL (ITP) score of 500 (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.

Application Deadlines

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

Fall Semester 2018
August 5, 2018

Spring Semester 2019
December 30, 2018

Summer Term 2019
May 12, 2019

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 by the following dates:

Fall Semester 2018
July 1, 2018

Spring Semester 2019
December 9, 2018

Summer Term 2019
May 12, 2019

Applicants in this category 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 on the attestation and equivalency processes, contact the Office of Enrollment Management/Graduate Admissions. Details are also available at www.aus.edu/graduate-admission-requirements.

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.

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 Internet-Based TOEFL 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 Internet-Based TOEFL 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 Internet-Based TOEFL 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 Internet-Based TOEFL 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.

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 (Internet-Based TOEFL 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 credits). 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 credits 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.

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

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

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 significant 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 Internet-Based TOEFL 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 credits). 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 credits 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. Credits 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 students' admission category are not eligible to register for more than two graduate-level (Master's courses) courses (a maximum of six credits) per semester.

Non-degree Admission

Non-degree status is assigned to students who enroll in courses at AUS without pursuing a degree.

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 assigned dates (see the section on Application Deadlines).

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 credits 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 credits) 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.

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 or conditional admission).

Transfer applicants may be granted full admission or 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 credits, see Transfer Credit Policy 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 assigned dates (see the section on Application Deadlines).

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 credit. 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 details on transfer of credits, see Transfer Credit Policy 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 credits to their programs.

To be admitted as an exchange graduate student, a student must be enrolled in a graduate program at an accredited institution and be in good academic standing in his/her current institution. In addition, students must have attained a minimum Internet-Based TOEFL score of 80 or a minimum IELTS (Academic Version) score of 6.5, 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 credits 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. Standard graduate tuition and fees apply.

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 degree status or from exchange/visiting to 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 credits at degree program admission time. The university rules and regulations governing transfer courses and credits 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 Credit Policy

A graduate student may transfer up to nine graduate credits from recognized graduate schools at independently accredited universities recognized by the UAE Ministry of Education's Higher Education Affairs Division.

Applicants for transfer of credits 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 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 credit.

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 credit 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 credits 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. Credits of transferred courses count in the cumulative earned hours and may apply towards meeting graduation requirements.

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

Tuition and Fees

Graduate Tuition and Fees

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

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

Tuition payment for exchange students attending AUS is governed by the specific terms of the exchange agreement.

The tuition payment of AUS students studying abroad at universities with which AUS has a semester exchange program is governed by the exchange agreement. For details on payment procedures, please check with the International Exchange Office.

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

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

Graduate Tuition (in AED)	
College of Architecture, Art and Design	4,660/per credit
College of Arts and Sciences	3,720/per credit
College of Engineering (Master's and PhD degree programs)	4,660/per credit
School of Business Administration	4,660/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	1,310
Lab/Technology Fee B	Applies for each registered course that has Lab/Tech Fee Rate B noted in its course description	1,450

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 optional for graduate students. AUS-sponsored graduate students who choose to have an 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

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	
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

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 is added if a check is returned for insufficient funds or if a credit card authorization payment is declined.

All student financial transactions with the university are processed through the Student Accounts office located on the mezzanine floor of the Main Building. Questions concerning student accounts should be directed to 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 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

The Sponsorship Liaison Office is the main link between external organizations and the AUS students they sponsor. Sponsorship Liaison provides various support services to both the sponsoring organizations and their sponsored students, including coordinating admission, orientation, academic follow-up, progress reports, guidance, financial-related matters and meetings between sponsors and students.

For more information, please contact the Sponsorship Liaison Office at 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. 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.

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. The report 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 charge 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 allegation 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 athletic scholarships. 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 head of the department in which the offense occurred
- The dean of the college/school and the head of the department responsible for the major in which the student is enrolled (if applicable)
- The Dean of Students
- 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 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. The request form is available at www.aus.edu/registration/forms. A nominal fee applies.
- request changes or updates to their personal data. Registered students are given access to update their emergency telephone/mobile contact numbers and their personal email address via the secured online student information system. For mailing address updates, an official request signed by the student concerned must be submitted to the Office of the Registrar/Student Records section. The form is available at www.aus.edu/registration/forms.
- 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.

At the end of any given semester/term, the Office of the Registrar mails the students who are not in good academic standing an unofficial copy of their updated transcript. These transcripts are mailed to the address maintained in the student's record at the Office of the Registrar. For details on academic standing policy, refer to Academic Standing in this section of the catalog.

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. Upon graduation, all records pertaining to the violation of the Student Academic Integrity Code that were maintained by the college/school will be transferred to the Office of the Registrar for retention. If the student does not graduate from AUS, all records pertaining to violations of the academic integrity code will be retained by the college/school for five years after the student's last registration at AUS and then transferred to the Office of the Registrar for retention.

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

Enrollment Verifications and Certifications

Students may need different types of official certificates pertaining to their academic record at AUS. These certificates must be requested from the Office of the Registrar using the request forms available at www.aus.edu/registration/forms. 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 credits before the end of their first semester at AUS.

Exchange, non-degree, study abroad, transient and visiting students register through the Office of the Registrar. Registration in courses as an exchange, non-degree or a visiting 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.

All registered students may be required to complete course evaluations for courses they are enrolled in prior to the beginning of the early registration period of the following semester/term. If required, students who do not complete all surveys during the course evaluation period will not be eligible for early registration.

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. 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 credits 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; credits 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 credits 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 credits per semester. The program director/coordinator may approve a student in good standing to register for up to 12 credits per semester.

Academic Probation

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

Summer Term Registration

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

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

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

Conditional Admission

The maximum course load of a conditionally admitted graduate student is six credits 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 credits) 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, which is available at www.aus.edu/registration.

Courses dropped during the add and drop period are not recorded in a student's transcript. The semester/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 or receive credit 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. Credits of an audited course are included in the calculation of the student's course load for the semester/term.

The audited course will appear on a student's transcript as audited. Tuition and fees for audit students are the same as those for students registering for credit. Changes to or from audit status must be made before the last day of the add and drop period.

Registration in Independent Study Courses

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

Master's degree students are allowed to take one independent study course. A second independent study, for a maximum total of eight credits 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 credits in independent study work.

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

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

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 credits)

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 credits)

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.

AUS Students Studying Abroad

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

- The host 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 credits of graduate courses in residence 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.

Courses related to areas taught within the School of Business Administration will be evaluated for transfer of credits 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 the International Exchange Office (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 application process. Students should be aware that further admission requirements might exist at the host institution.

The approved Course Permission Form–Outgoing Students must be deposited at the Office of the Registrar 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 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 Credits

Credits 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). Credits of transferred courses count in the cumulative earned hours and may apply towards meeting graduation requirements.

For further information on studying abroad, please contact the International Exchange Office at ixo@aus.edu.

Summer Courses outside AUS

Requirements

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

- The student must be in good academic standing at AUS at the time that the application is reviewed.
- The summer courses at the host institution must not be taken as attempts to repeat AUS courses.
- The host institution must be located outside the UAE.
- The host institution must be recognized by the UAE Ministry of Education's Higher Education Affairs Division.
- The host institution must provide learning experiences similar to those offered by 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.
- The summer term at the host institution must not begin prior to the end of the spring semester examination 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 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.
- 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.
- Courses related to areas taught within the School of Business Administration will be evaluated for transfer of credits 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 Credits

- Students may transfer no more than six credits for a six-week summer session conducted at a host institution.
- For summer sessions of a different duration, AUS allows no more than the equivalent credits 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 credits. Students must consult with the relevant graduate program director/coordinator when planning for summer courses outside AUS.

Application Process

Prior to registering for courses at the host institution, students must complete the Summer Permission to Take 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. Credits will not be awarded if the completed form is not submitted to the Office of the Registrar by the specified deadline.

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

For information on visas and other related issues, please contact the International Exchange Office at ixo@aus.edu.

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 Credits

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

- Upon completion of the course(s), and before the end of the following fall semester, 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 courses are 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 courses completed outside AUS do not count in the student's cumulative GPA (CGPA). Credits of transferred courses count in the cumulative earned hours and may apply towards meeting graduation requirements.

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

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 drop or withdraw from courses may be administratively withdrawn, which will render them ineligible for a 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 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 Credits

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

Course Information

Course Code

Every course in each discipline or field of study offered by the university is represented by a three-letter prefix 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
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 Credits

All courses are valued in credits. 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 information. The first digit in parentheses refers to the number of class contact hours per week the course requires, the second digit denotes the number of laboratory or practice hours required weekly, and the third digit refers to the number of credits the student will earn upon successfully completing the course.

Course Descriptions and Syllabi

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

Course syllabi are available from the department or 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.

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. 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 submitted by the deadline will be effective as of the following semester/term.

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 scheduled by the faculty members teaching these courses.

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
Meets Expectation	
A-	equals 3.70 grade points
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; credits counted
TR	Transfer; credits counted
W	Withdrawal
WV	Waive; no credit

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 exam day for that course. 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. 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.

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 when students are granted approval for discontinuing a thesis in order to pursue a final project (or vice versa).

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 credits.

PhD degree seeking students may not repeat a qualifying examination. For details, refer to Qualifying Examination in the Graduation section later in this part of the catalog.

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

Grade Point Average

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

Quality Points

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

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 credits of the courses taken in that same semester/term.

SGPA = sum (quality points of courses taken in semester/term X) / sum (credits 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 credits 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 (credits 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 credits in a semester. The program director/coordinator may restrict the summer course load of a graduate student on academic probation to three credits.
- 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. Students who have been academically dismissed, reinstated and subsequently dismissed may not be reinstated

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 Office of 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 theses available to other students and scholars. The AUS Library is responsible for the archiving and binding of the master's thesis 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

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

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

Thesis/Final Project First Registration

In the first semester/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 credits 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 credits 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 credits must remain enrolled until submission of the approved thesis/final project final report.

A thesis/final project extension fee is charged for the first extension and every subsequent summer term extension. Further extensions in a regular semester will be charged the tuition rate of one graduate credit.

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 credits (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 credits 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 be considered as a candidate for a PhD degree, a doctoral student must pass a qualifying examination. The qualifying exam 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 credits 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

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

Dissertation First Registration

Prior to registering for dissertation credits, 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 credits 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 (XXX 799), along with their dissertation titles, the names of their advisors and the number of dissertation credits.

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 credits.

Changes to the dissertation registration details (dissertation title, name of advisor, registration credits 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 credits and billing hours.

Dissertation Time Extensions

PhD candidates who have registered for the dissertation minimum credits but have not yet defended their dissertation must maintain continuous enrollment by registering and paying for three incremental credits 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 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 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 credits 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 credits, then the number of credits 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 credits 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 credits 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 credits from a recognized graduate school at an accredited university. For details, please refer to the Transfer Credit Policy under the Admission to Graduate Studies section earlier in this catalog.

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 semester 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 during the registration period of the last expected term of study. Only after an Application for Graduation form has been filed can the Office of the Registrar begin processing the necessary information for final certification for graduation.

Students who fail to complete all degree requirements by the end of the 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 library, by the end of the term for which they have applied to graduate are certified for conferral of a degree.

Degrees are conferred at the end of the semester/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 see 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)

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

Graduation Requirements

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

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

Core Courses Requirement (18 credits)

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 credits)

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 credits)

Students must successfully complete three elective courses for a minimum of 9 credits. 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 635 Urban Transportation Systems Analysis
- UPL 638 Urban Transportation Systems Planning Techniques
- UPL 639 Urban Planning and Housing Policy
- UPL 641 Urban Economics and Analysis
- UPL 643 Spatial Planning
- UPL 649 Environmental Planning
- UPL 651 Negotiation Strategies
- UPL 653 Planning Theory and Methods
- UPL 676 Transportation Systems Operations and Control
- UPL 686 Space, Society and the Public Realm
- 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

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 director in their first semester of study, and must attain a GPA of 3.00 (B) or above for that semester to achieve full admission and to be allowed to proceed. Conditional admission applicants must also meet the general university conditional admission requirements as outlined in the Admission to Graduate Studies section earlier in this catalog.

Degree Requirements

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 credits 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.

Required Courses (18/24 credits)

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

- TRA 500 Principles and Strategies of Translation
- TRA 503 Theoretical Models of Translation
- TRA 505 Interpreting and the Profession I
- TRA 509 Interpreting and the Profession II: Simultaneous Interpreting
- TRA 510 Research Methods and Academic Writing
- TRA 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 credits)

Students in the thesis option must successfully complete a minimum of two elective courses (for a minimum of

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

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

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

In addition to fulfilling the general university requirements for graduate admission, the applicant must have a minimum score of 5.0 on the TWE (Test of Written English) or the EWET (Emirates Writing Test). Applicants may register for the TWE exam with the AUS Testing Center. Applicants should take the TWE exam at least one week prior to the beginning of the registration period of the semester they are applying for.

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

Degree Requirements

Students seeking an MA TESOL degree must successfully complete a minimum of 36 credits in core courses, elective courses and a master's thesis or professional project. 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.

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

Thesis Option

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

- 18 credits of core courses
- a minimum of 12 credits of elective courses
- six credits of Master's Thesis

Project Option

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

- 18 credits of core courses
- a minimum of 15 credits of elective courses
- three credits of Professional Project

Required Courses (24/21 credits)

Core Courses (18 credits)

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

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

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

Elective Courses (minimum of 12/15 credits)

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

successfully complete five elective courses for a minimum of 15 credits.

Students can select elective courses from the following list:

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

Master's Thesis/Professional Project

A student must complete his/her thesis or professional project under close supervision of a faculty supervisor on a topic related to some aspect of TESOL.

The thesis/professional project must be defended to the satisfaction of the thesis or project committee, which is composed of TESOL program faculty. One committee member may be selected from outside the TESOL program faculty upon approval of the program coordinator. A complete guide for 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 thesis/professional project 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

Amjad Tufaha, Coordinator

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

Program Goals

The program seeks to accomplish the following:

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

Program Outcomes

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

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

Degree Requirements

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

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

Thesis Option

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

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

Non-Thesis Option

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

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

Pure Mathematics Track

Required Courses (18/12 credits)

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

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

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

Elective Courses (12/18 credits)

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

In consultation with their academic advisor, students can select electives from the following:

- MTH 500 Mathematical Statistics with Applications
- MTH 505 Ordinary Differential Equations
- MTH 506 Partial Differential Equations
- MTH 512 Advanced Linear Algebra
- MTH 513 Advanced Probability
- MTH 514 Combinatorics
- MTH 520 Complex Analysis
- MTH 525 Functional Analysis
- MTH 540 Algebraic Coding Theory
- MTH 560 Topology
- MTH 565 Numerical Analysis
- MTH 570 Optimal Control Theory
- MTH 594 special topic courses in mathematics
- MTH 596 Independent Study
- a maximum of two courses from the following:
  - MTH 507 Financial Mathematics I
  - MTH 508 Mathematical Biology
  - MTH 516 Financial Mathematics II
  - MTH 517 Numerical Methods for Derivative Pricing
  - MTH 551 Methods of Applied Mathematics
  - MTH 555 Loss and Risk Models

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

Applied Mathematics Track

Required Courses (18/12 credits)

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

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

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

Elective Courses (12/18 credits)

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

In consultation with their academic advisor, students can select electives from the following:

- 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 530 Abstract Algebra I
- MTH 555 Loss and Risk Models
- MTH 565 Numerical Analysis
- MTH 570 Optimal Control Theory
- MTH 594 special topic courses in mathematics
- MTH 596 Independent Study
- a maximum of two courses from the following:
  - MTH 512 Advanced Linear Algebra
  - MTH 525 Functional Analysis
  - MTH 531 Abstract Algebra II
  - MTH 540 Algebraic Coding Theory
  - MTH 560 Topology

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

Dean

Richard Schoephoerster

Associate Dean

Salwa Beheiry

Associate Dean for Graduate Affairs and Research

Ghaleb Husseini

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 credits 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.

Thesis Option

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

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

Project Option

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

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

Course Option

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

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

Required Courses (18/12/9 credits)

College Core Courses (6 credits).

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 credits)

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 credits).

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

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

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

Elective Courses (minimum of 12/18/21 credits)

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

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

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

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)

Naif Darwish, Head

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

Mission Statement

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

Program Educational Objectives

Graduates of the MSChE program will be prepared to:

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

Student Outcomes

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

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

Admission Requirements

In addition to meeting the university's general graduate admission requirements, applicants must 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 credits consisting of college/program core courses, program elective courses, a seminar, and a master's thesis or a professional project, with a minimum cumulative grade point average of 3.00.

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.

Thesis Option

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

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

Project Option

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

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

Required Courses (24/18 credits)

College Core Courses (6 credits)

Students must successfully complete the following courses:

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

Program Core Courses (9 credits)

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 credits)

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

Elective Courses (minimum of 6/12 credits)

Students in the thesis option must successfully complete a minimum of six credits in elective courses. Students in the project option must successfully complete a minimum of 12 credits. 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

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 credits consisting of college/program core courses, program elective courses, a seminar, and a master's thesis or a professional project with a minimum cumulative grade point average of 3.00.

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.

Thesis Option

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

- three credits of required college core courses
- a minimum of 18 credits in elective courses

- a zero-credit seminar
- nine credits in Master's Thesis

Project Option

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

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

Required Courses (12/6 credits)

College Core Courses (3 credits)

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 credits)

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

Elective Courses (minimum of 18/24 credits)

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

- CVE 520 Advanced Construction Materials and Methods
- CVE 521 Finite Element Method
- CVE 522 Advanced Water Resources Engineering
- CVE 523 Advanced Transportation Systems
- CVE 524 Design of Strengthened Concrete Structures
- CVE 525 Structural Earthquake Engineering
- CVE 526 Advanced Structural Steel Design
- 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

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 credits consisting of college/program core courses, program elective courses, a seminar, and a master's thesis or a professional project with a minimum cumulative grade point average of 3.00.

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.

Thesis Option

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

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

Project Option

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

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

Required Courses (12/6 credits)

College Core Courses (3 credits)

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 credits)

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

Elective Courses (minimum of 18/24 credits)

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

- COE 530 Advanced Computer Networks
- COE 531 Advanced Software Engineering
- COE 532 Advanced Embedded Systems and Industrial Automation
- 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

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

To ensure that students in the 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.

Thesis Option

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

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

Project Option

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

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

Course Option

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

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

Required Courses (15/9 credits)

College Core Courses (6 credits)

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 credits)

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

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

Elective Courses (minimum of 15/21/24 credits)

Students in the thesis option must successfully complete a minimum of 15 credits in elective courses. Students in the project option must successfully complete a minimum of 21 credits. Students in the course option must successfully complete a minimum of 24 credits 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 594 special topic courses in electrical engineering
- ELE 640 Bioelectric Phenomena
- ELE 641 Advanced Microwave Engineering
- ELE 642 Digital and Wireless Communications
- ELE 643 Image and Video Processing
- ELE 644 Dynamics and Control of Electrical Drives
- ELE 645 High Voltage Engineering
- ELE 646 Radio Frequency Integrated Circuits
- ELE 647 Digital Protection of Power Systems
- ELE 648 Pattern Classification
- ELE 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 concentration courses in the theme areas of construction management (CM), engineering

management (EM) and information technology management (ITM).

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

Program Educational Objectives

Graduates of the MSESM program will be prepared to:

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

Student Outcomes

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

- apply the techniques, tools and skills of engineering systems management to address real-world problems
- conduct economic and financial analysis of projects and engineering operations
- function as effective members of multidisciplinary teams and communicate effectively in both written and verbal forms
- recognize professional and ethical responsibilities and act accordingly within a global and social context
- engage in theoretical and applied research projects

Admission Requirements

In addition to meeting the university's general graduate admission requirements, applicants must 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 Scientific Research 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 36 credits consisting of core courses, theme courses, and a thesis or a professional project (for students in the thesis/ professional project option only) with a minimum cumulative grade point average of 3.00.

Thesis/Professional Project Option

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

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

Course Option

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

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

Required Courses (18/24 credits)

Core Courses (15/18 credits)

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

- ESM 515 Fundamentals of Statistics and Engineering Economy
- ESM 520 Management for Engineers
- ESM 532 Introduction to Applied Operations Research
- ESM 555 Information Technology Management
- ESM 575 Advanced Engineering Economy
- ESM 600 Research Methodology (course option only)

Theme Courses (3/6 credits)

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

Construction Management Theme

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

Engineering Management Theme

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

IT Management Theme

- ESM 580 IT Project Management
- ESM 685 Capstone Course in Engineering Systems Management (course option only)

Master's Thesis/Professional Project (6 credits)

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

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

Elective Courses (minimum of 12 credits)

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

Construction Management Theme

- ESM 600 Research Methodology (thesis/professional project option only)

- ESM 615 Big Data and Business Analytics
- ESM 625 Enterprise Resource Planning Systems
- ESM 642 Business Process Management
- ESM 650 Construction Management
- ESM 652 Construction Planning and Scheduling
- ESM 660 Construction Contracts Law
- ESM 667 Construction Contracting and Cost Estimation
- ESM 668 Construction Safety Management
- ESM 694 special topic courses in ESM

Engineering Management Theme

- ESM 600 Research Methodology (thesis/professional project option only)
- 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
- ESM 638 Decision Analysis
- ESM 640 Supply Chain Management
- ESM 642 Business Process Management
- ESM 644 Financial Management for Engineers
- ESM 694 special topic courses in ESM

IT Management Theme

- ESM 600 Research Methodology (thesis/professional project option only)
- ESM 612 Advanced Information Systems Management
- ESM 614 Communication and Network Management
- ESM 615 Big Data and Business Analytics
- ESM 620 Security Management
- ESM 624 Knowledge Management
- ESM 625 Enterprise Resource Planning Systems
- ESM 642 Business Process 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 credits of course work are required to register in thesis and professional project, respectively.

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

A complete guide for 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

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 credits consisting of college core courses, program elective courses, a seminar, and a thesis or a professional project with a minimum cumulative grade point average of 3.00.

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.

Thesis Option

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

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

Project Option

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

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

Required Courses (12/6 credits)

College Core Courses (3 credits)

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 credits)

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

Elective Courses (minimum of 18/24 credits)

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

- MCE 550 Mechanical Systems Design
- MCE 552 Modeling and Simulation of Mechanical Systems or MTR 530 Modeling and Simulation of Dynamic 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)

Lotfi Romdhane, 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 credits with two options: the thesis option and the course option. Students must declare the option of their choice by submitting a formal study plan upon completion of 12 credits of approved MTR graduate courses.

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.

Thesis Option

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

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

Course Option

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

- 15 credits in core courses
- a minimum of 15 credits in elective courses

Prerequisite Discipline-Bridging Course

Students admitted to the MSMTR program, with the exception of students with a Bachelor of Science in Mechatronics Engineering, are required to complete the prerequisite discipline-bridging course MTR 501 Introduction to Mechatronics.

The prerequisite discipline-bridging course does not generate credits toward the completion of the degree.

The prerequisite-discipline course could be waived by the Mechatronics Engineering Admissions Committee, depending on the student's background.

Waiver Policy

The prerequisite discipline-bridging course may be waived if the student has completed comparable course work at the undergraduate level. Students may be required to submit course documentation.

A waiver is only granted after an official, sealed transcript is received by the AUS Office of Enrollment Management/Graduate Admissions. The waiver must be established at the time of admission.

The following rules apply:

- Students may waive the prerequisite discipline-bridging course if similar undergraduate courses have been successfully completed at an accredited university.
- Students with professional experience that indicates mastery of the discipline-bridging course content may be granted a waiver.

Core Courses (15 credits)

Students must 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 credits)

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

- 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 645 Image Processing and Computer Vision
- 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 credits with a minimum cumulative GPA of 3.00, as follows:

- a minimum of 24 credits (eight courses) of required and elective coursework:
  - a minimum of six credits (two courses) of required courses
  - a minimum of 18 credits (six courses) of elective courses
  - A zero-credit seminar
- A minimum of 24 credits 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.

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 credits)

Students must successfully complete a minimum of six elective courses (for a minimum of 18 credits) 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 18 credits 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

Dean

Jörg Bley

Associate Dean

Mohsen Saad

Director of Graduate Programs

Valerie Lindsay

Master of Business Administration (MBA)

Valerie Lindsay, Director

The Master of Business Administration (MBA) program prepares students for leadership positions in the private and public sectors.

The MBA is designed to help managers in the 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 credits for a general MBA and 36 credits 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 credits 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 appropriately apply principles of economics, financial analysis, information and operations management, and marketing to the diagnosis of complex business problems.
- Understanding of the interrelations between business organizations and other societal institutions

  Students will use principles of ethics and social responsibility to understand the management of relationships between a business enterprise and its key internal and external stakeholders.
- Teamwork, interpersonal, communication and leadership skills expected 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 either all or part of the pre-MBA program (comprising 1.5 credit courses in economics, quantitative methods and financial accounting) with a minimum cumulative GPA of 3.00 prior to matriculating in the MBA program.

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.

Pre-MBA Courses Requirement

Students admitted to the pre-MBA program may be required to complete a maximum of 4.5 credits in courses that serve as the foundation for the core MBA program. The number of pre-MBA courses required will normally depend on courses completed by the student as an undergraduate. Pre-MBA courses may be waived when the waiver policy requirements are met. Pre-MBA students who waive or complete the pre-MBA courses with a minimum cumulative GPA of 3.00 will be admitted to the MBA program.

Pre-MBA Courses (4.5 credits)

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

Please note that all pre-MBA courses are half-semester courses.

Waiver Policy

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

- Each of the pre-MBA courses may be waived for students who have taken equivalent coursework at the undergraduate level. Two equivalent courses are required to waive MBAP 501, while one equivalent course is required to waive each of MBAP 502 and MBAP 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 pre-MBA 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 credits per semester. Upon a student's request, the program director can approve three additional credits if the student has achieved a cumulative GPA of 3.50 or above.

Academic Standing Policy

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 credits in MBA core courses and electives as follows:

- 27 credits in MBA core courses
- a minimum of six credits in elective courses

Students enrolled in the program also have the option to choose an area of concentration in one of the following fields: finance or human resource management.

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

- 27 credits in MBA core courses
- a minimum of nine credits in concentration electives

Core Courses Requirement

Students must successfully complete 27 credits in core courses.

Core Courses (27 credits)

- 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 credits) 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 credits)

Students must successfully complete a minimum of nine credits 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 credits)

Students must successfully complete a minimum of nine credits 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 MBA program director and the MBA program coordinator provide academic and career advising to students. Additionally, the graduate committee provides assistance in advising as required. The graduate committee consists of faculty members who teach in the MBA program and are appointed on a yearly basis.

Master of Science in Accounting (MSA)

Taisier Zoubi, Head

The Master of Science in Accounting (MSA) program is designed to provide students with knowledge and preparation to pursue professional careers in public and private accounting; develop skills necessary to solve accounting problems that are of contemporary relevance and more challenging in the fields of accounting, finance and other business areas; and teach the required technical and nontechnical accounting competencies. Although pre-class readings and in-class lectures remain essential for presenting key accounting theories and concepts, the reinforcement and assessment methods are oriented toward experiential exercises that require the students to apply the material to real-life cases. Thus, the program makes extensive use of case studies, individual and team projects and other "real-world" opportunities to use the material covered.

The MSA program creates additional employment opportunities and promotes the career success of our graduates. Career options for graduates will include positions in public accounting such as auditors, controllers, financial analysts and management consultants.

This program will allow students to meet the current 150-semester-hour education requirement to take the Certified Public Accountant (CPA) Examination in most US states. The objective of the 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 details, 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 credits per semester. Upon a student's request, the Head of the Department of Accounting can approve three additional credits if the student has achieved a cumulative GPA of 3.50 or above.

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 credits in MSA core courses and electives as follows:

- 18 credits in core courses
- a minimum of six credits in ACC elective courses
- a minimum of six credits in MBA and MTH elective courses

Prerequisite Courses

Students admitted to the MSA program may be required to successfully complete a maximum of 24 credits in courses that serve as prerequisites to the MSA program degree requirements. All MSA students must meet this prerequisite requirement, whether by demonstrating completion of the required courses as an undergraduate at AUS, by demonstrating acceptable performance in equivalent courses at another accredited institution, or by completing the prerequisites before taking the corresponding graduate courses.

Students may qualify to waive any or all of the prerequisite courses. Waivers are evaluated by the Department of Accounting Graduate Committee at admission. Waivers are only granted after an official, sealed transcript is received by the AUS Office of Enrollment Management/Graduate Admissions.

Prerequisite Courses (24 credits)

- ACC 301 Intermediate Financial Accounting I
- ACC 302 Intermediate Financial Accounting II
- ACC 303 Cost Accounting
- ACC 305 Income Tax I
- ACC 360 Accounting Information Systems
- ACC 410 Auditing
- six credits in 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 credits in core courses:

- ACC 610 Topics in Financial Accounting
- ACC 611 Auditing and Attestation
- ACC 612 Advanced Topics in Managerial and Cost Accounting
- ACC 613 Advanced Topics in International Financial Reporting Standards
- ACC 614 Regulatory Environment in Accounting
- ACC 615 Enterprise Database Systems

Elective Courses (12 credits)

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

ACC Elective Courses (6 credits)

Students must select from the following list of courses:

- ACC 620 Forensic Accounting and Fraud Examination
- ACC 621 Ethical Environment and Corporate Governance
- ACC 622 Internal Auditing
- ACC 623 Financial Statement Reporting and Analysis
- ACC 624 Oil and Gas Accounting
- ACC 625 Tax Research
- ACC 626 Information Technology Auditing and Assurance
- ACC 627 Advanced International Taxation
- ACC 628 Fraudulent Financial Reporting
- 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 credits)

Students must successfully complete two courses for a minimum of six credits 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

Area of Specialization

Students interested in furthering their knowledge in the areas of auditing, taxation or forensic accounting may elect to complete their two ACC elective courses in that area of specialization, as follows:

Auditing

- ACC 622 Internal Auditing
- ACC 626 Information Technology Auditing and Assurance

Taxation

- ACC 625 Tax Research
- ACC 627 Advanced International Taxation

Forensic Accounting

- ACC 620 Forensic Accounting and Fraud Examination
- ACC 628 Fraudulent Financial Reporting

Academic Advising

The Department of Accounting provides academic and career advising to MSA students through the head of the department, advisor and graduate faculty in the department. Additionally, the Department of Accounting Graduate Committee (DAGC) provides assistance in advising as required. The graduate committee consists of all eligible graduate faculty members within the Department of Accounting.

The head of the department and the department assistant will be available in the evening on specified weekdays to address any academic concerns students may have. In practice, this advising often focuses on coaching students on academic discipline or assisting them with practical matters that are difficult to resolve when campus offices are closed. Program information will also be available on the AUS website at the following link: www.aus.edu/sba/msa.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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 635 Urban Transportation Systems Analysis (3-0-3). Explores the use of quantitative techniques for modeling urban transportation systems' performance. Covers the application of graph theory and network analysis to transportation problems, and analytical approaches to formulate network equilibrium assignment problems and solution algorithms. Introduces dynamic traffic assignment. Prerequisite: UPL 600.

UPL 638 Urban Transportation Systems Planning Techniques (3-0-3). Covers data collection, trip generation, trip distribution, factors underlying the choice of mode, traffic assignment, modeling and evaluation techniques, use of planning software packages, development and evaluation of alternatives. Prerequisite: UPL 600.

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 643 Spatial Planning (3-0-3). Traces the history of spatial planning in Europe, Australia and the US. Previews the principles and strategies of spatial planning. Examines the environmental, political, economic, social dimensions and dynamics of spatial planning. Reviews "best" practices in spatial planning. Analyzes spatial planning as a tool for sustainable development in the United Arab Emirates and the developing world. Prerequisite: UPL 600.

UPL 649 Environmental Planning (3-0-3). Provides a comprehensive overview of the field of environmental planning and how it relates to efforts intended to manage, organize and protect environmental resources. Reviews the political and administrative context of environmental planning. Addresses principles of sustainability, ethics and the law in relation to climate changes, land, air, water and other natural resources. 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 653 Planning Theory and Methods (3-0-3). Explores the theoretical foundations of planning and

its associated methods. Examines the basic theoretical framework that fosters good planning practice. Reviews the classical theoretical paradigms of planning within the new context of globalization. Examines the major roles played by practicing planners, and looks at the application of theory in dealing with such issues as community development, environmental protection, economic policies, political and administrative structure, and social equity. Prerequisite: UPL 600.

UPL 676 Transportation Systems Operations and Control (3-0-3). Studies the operation and control of transportation systems with emphasis on traffic characteristics, capacity analysis, traffic improvements, signalization, signs and marking, channelization, intersection capacity, and principles and techniques used to improve the efficiency and safety of transportation systems. Prerequisite: UPL 638.

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.

UPL 686 Space, Society and the Public Realm (3-0-3). Explores the nature of urban space and its role in the social being. Focuses on the potentials of space as a tool in shaping the public realm and nurturing citizenship. Examines critical issues of globalization and the transforming role of space in the post-industrial, informational city. Prerequisite: UPL 623.

Independent Study

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

Independent Course (1 to 4 credits). 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 credits). 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 credits). Presents a theoretical or practical topic proposed by the faculty beyond what is offered in existing courses. Can be repeated for credit. Prerequisites: topic specific. Lab/tech fee may apply.

Special topic courses are numbered as 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 503 Contrastive Linguistics (3-0-3). Compares and contrasts English and Arabic phonology, morphology, syntax and semantics. Promotes a functional approach to language to demonstrate the applications of contrastive linguistics to ESL teaching.

ELT 505 Culture and the Language Teacher (3-0-3). Investigates how identities, values, assumptions, behaviors and communication styles affect teaching and learning a second language. Analyzes methods and approaches for cross-cultural research.

ELT 511 Linguistics for ESL Teachers (3-0-3). (Formerly ENG 511). Focuses on areas in linguistics relevant to ESL teachers. Explores ways of utilizing research and generalizations derived from linguistics to inform ESL teaching practice.

ELT 513 Language Acquisition and Development (3-0-3). Focuses on processes involved in acquiring first and second languages. Examines different theoretical perspectives explaining acquisition and analyzes the factors that affect language development and learning. Explores the implications of SLA research in ELT classroom contexts.

ELT 515 Methods and Materials Development (3-0-3). Examines traditional and contemporary approaches to English language teaching. Various aspects of classroom practice are analyzed, including teacher and learner roles, classroom management, and integrated versus separate teaching of the language skills.

ELT 517 Curriculum Design (3-0-3). Introduces the principles of ESL course design. Examines the stages of developing and evaluating learning centered curricula and materials. Prerequisite/concurrent: ELT 515.

ELT 521 Reading and Writing in ESL (3-0-3). Discusses various theoretical models dealing with teaching literacy skills in a second language to children and adults. Explores ways to adapt and apply these models for effective ESL instruction.

ELT 523 Bilingual Education (3-0-3). Reviews different models of bilingual education and issues in bilingualism. Discusses how to achieve a balanced bilingual education system by examining the challenges posed by cultural and linguistic diversity in a bilingual education setting.

ELT 525 Pragmatics for ESL Teachers (3-0-3). Focuses on social implications of language use in social contexts (world English, international English, regional English or intranational English). Provides training for ESL/EFL teachers in practical and theoretical areas of pragmatics and teaches them how to prepare, present and evaluate lessons in pragmatics utilizing authentic materials. Prerequisite: ELT 511.

ELT 531 Sociolinguistics (3-0-3). Studies the relationship between language, society and culture. Investigates the implications of sociolinguistic research for ESL teachers.

ELT 551 Language Testing and Evaluation (3-0-3). Covers the fundamental goals, principles, standards and uses of language assessment and language assessment research. Reviews the factors involved in assessing proficiency in second language skills and in selecting appropriate testing instruments and evaluation tools. Prerequisite/concurrent: ELT 515.

ELT 553 Technology in the ESL Classroom (3-0-3). Introduces a wide range of current applications of technology in the ESL classroom. Focuses on creating innovative and effective ESL learning and teaching environments using computers and other educational technologies. Prerequisite/concurrent: ELT 515.

ELT 567 ELT Leadership and Management (3-0-3). Introduces basic concepts in ELT leadership and management. Explores the areas of educational organizations, human resources in ELT, language program development and marketing as well as establishing stakeholder relations.

ELT 611 Classroom Research (3-0-3). Reviews ESL classroom-based research as a means of understanding how ESL instruction and learning take place. Discusses research topics such as teacher talk, wait time, conversational repair, error correction, learning strategies and feedback.

ELT 615 Quantitative and Qualitative Research in ELT (3-0-3). Surveys both quantitative and qualitative theoretical and epistemological approaches in TESOL research. Emphasizes how choices in research designs and analytical procedures impact data collection and results. The course is applications-oriented using the results of established theory. Graduate students can use this course to develop their research project proposals.

ELT 619 Practicum in TESOL (1 to 3 credits). Provides the opportunity to observe, explore and implement effective ESL teaching strategies. Involves weekly seminars in which the students discuss their classroom experiences and reflect on their personal growth as ESL teachers. Prerequisite: ELT 551.

ELT 698 Professional Project (3-0-3). Requires students to further develop their teaching skills by directing them to conceptualize, plan, adapt and apply innovative approaches to different components of English language teaching and learning. At the end of the course, students must write a project report to be defended in front of an examining committee. Graded as Pass/No Pass. Prerequisite: good academic standing.

ELT 699 Master's Thesis (6 credits). 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 510 Real Analysis I (3-0-3). Covers Least upper bound axiom, the real numbers, compactness, sequences, infinite series, continuity, uniform continuity, sequences and series of functions, uniform convergence, differentiation, the Riemann integral and fundamental theorem of calculus, sequences and series of functions, and the Weierstrass approximation theorem. Prerequisite: admission to the MSMTH program.

MTH 511 Real Analysis II (3-0-3). Covers Lebesgue measure on the real line, measurable functions and integration on R, abstract measure spaces, bounded convergence theorem, Fatou's lemma, monotone convergence theorem, convergence in measure, Radon-Nikodym theorem, Lp spaces, Holder and Minkowski inequalities, and Fourier transforms. Prerequisite: MTH 510.

MTH 512 Advanced Linear Algebra (3-0-3). Covers the proof-based theory of matrices, determinants, vector spaces, linear spaces, linear transformations and their matrix representations, linear systems, linear operators, eigenvalues and eigenvectors, invariant subspaces of operators, spectral decompositions, functions of operators, and applications to science, industry and business. Prerequisite: admission to the MSMTH program.

MTH 513 Advanced Probability (3-0-3). Covers probability spaces, random variables, independence, integration and expectation, convergence concepts, strong and weak laws of large numbers, convergence in distribution, characteristic functions and central limit theorem, conditional probability, and martingales. Prerequisite: MTH 511.

MTH 514 Combinatorics (3-0-3). Covers enumeration, combinatorial optimization, random methods in combinatorics (random graphs, random matrices, randomized algorithms), combinatorial designs, matroids, formal languages and combinatorics on words, combinatorial number theory, and combinatorial and symbolic methods in dynamical systems. Prerequisite: admission to the MSMTH program.

MTH 516 Financial Mathematics II (3-0-3). Introduces fundamental concepts of discrete-time binomial model and continuous-time. Covers probability measure theory and conditional expectation, Brownian motion and quadratic variation, martingales, 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 530 Abstract Algebra I (3-0-3). Covers basic concepts in group theory with examples and theorems, Krull-Schmidt theorem, groups acting on sets, cosets, stabilizers, Sylow's theorems, free groups, and classification of finitely generated abelian groups, nilpotent and solvable groups. Introduces rings and fields. Prerequisite: admission to the MSMTH program.

MTH 531 Abstract Algebra II (3-0-3). Covers rings, ideals, integral domains, unique factorization domains, rings with zero-divisors, modules over a principal ideal domain (PID), and rational and Jordan canonical form. Introduces Fields extension and Galois Theory. Prerequisite: MTH 530.

MTH 540 Algebraic Coding Theory (3-0-3). Employs the theory of rings and finite fields. Covers linear codes, cyclic codes, BCH codes, Reed-Solomon codes, convolutional codes, codes over rings, and encoding/decoding. Prerequisite: admission to the MSMTH program.

MTH 551 Methods of Applied Mathematics (3-0-3). Covers integral equations, Volterra and Fredholm type equations, relation to differential equations, solutions by Neumann series, Green's functions, asymptotic analysis of solutions, and perturbation techniques with eigenvalue problems. Prerequisite: admission to the MSMTH program.

MTH 555 Loss and Risk Models (3-0-3). Covers severity models, frequency models, aggregate models, the impacts of coverage modifications, and risk measures. Prerequisite: admission to the MSMTH program.

MTH 560 Topology (3-0-3). Introduces topological spaces, continuous functions and homeomorphisms. Covers connectedness, compactness, separation axioms, product and quotient topologies, and metric spaces. Introduces algebraic topology: homotopy, fundamental groups, covering spaces and applications such as the Brouwer fixed point theorem and the Borsuk-Ulam theorem. Prerequisite: admission to the MSMTH program.

MTH 565 Numerical Analysis (3-0-3). Covers interpolation, numerical evaluation of definite integrals and solution of ordinary differential equations, stability and convergence methods, and error estimates. Prerequisite: admission to the MSMTH program.

MTH 570 Optimal Control Theory (3-0-3). Introduces deterministic

optimal control. Covers examples involving calculus of variations, optimal trajectories, and engineering control problems. Prerequisite: admission to the MSMTH program.

MTH 599 Master's Thesis (6 credits). Requires 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 credits). 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 credits). 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 credits). 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 credits). Presents a theoretical or practical topic proposed by the faculty beyond what is offered in existing courses. Can be repeated for credit. Prerequisites: topic specific. Lab/tech fee may apply.

Special topic courses are numbered as 594 or 694 courses. The three-letter course prefix reflects the field of study of the course.

Descriptions of particular special topic courses are made available in the college 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: MBE 511.

BME 594/BME 694 Special Topic in Biomedical Engineering (1 to 4 credits). Presents a theoretical or practical topic proposed by the faculty beyond what is offered in existing courses. Can be repeated for credit. Prerequisites: topic specific. Lab/Tech fee may apply.

BME 596/BME 696 Independent Study in Biomedical Engineering (1 to 4 credits). Independent study is the umbrella term used to label two types of independent work: independent course and directed study. For further details, refer to Independent Study later in this section.

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 credits). 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 credits). 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 credits). Presents a theoretical or practical topic proposed by the faculty beyond what is offered in existing courses. Can be repeated for credit. Prerequisites: topic specific. Lab/Tech fee may apply.

CHE 596/CHE 696 Independent Study in Chemical Engineering (1 to 4 credits). Independent study is the umbrella term used to label two types of independent work: independent course and directed study. For further details, refer to Independent Study later in this section.

CHE 610 Catalysis and Reaction Engineering (3-0-3). Introduces the fundamental concepts underlying catalytic processes and their application in reactor design. Covers the following topics: molecular theories of adsorption and surface reactions on catalysts; catalyst characterization techniques; transport in catalysts and shape selective catalysts; and applications in fixed-bed catalytic reactors, fluidized bed reactors and multiphase reactors. Prerequisite: admission to the MSChE program.

CHE 611 Biomedical Engineering and Biotechnology (3-0-3). Explores chemical engineering concepts related to the human body. Covers the following topics: body material balances, blood properties and rheology, circulatory dynamics, neuroprosthetics, body heat exchange, body thermoregulation, heat transfer in tumors, pharmacokinetic models, non-invasive imaging, orthopedics, biomaterials, membrane transport, tissue engineering and drug delivery systems. Assumes a basic understanding of physiological functions. Prerequisite/concurrent: 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 credits). Requires an approved professional project on selected area of chemical engineering for completion of the MS degree. Includes development of the project concept, investigation of needs, initial data collection and assembly of written and field materials necessary to conduct a professional project, as well as exploration of alternative means to conduct the project. Requires a report and final presentation to the examining committee. Graded as Pass/No Pass. Prerequisites: good academic standing and approval of department head; prerequisite/concurrent: CHE 695.

CHE 699 Master's Thesis (9 credits). 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 532 Advanced Embedded Systems and Industrial Automation (3-0-3). Covers the following topics: embedded systems hardware, advanced embedded systems programming and interface, serial communicates and control area networks, real-time operations of embedded systems, supervisory control and data acquisition (SCADA) systems, distributed control systems (DCS) and embedded systems applications. Prerequisite: admission to the MSCoE program.

COE 533 Advanced Computer Architecture (3-0-3). Covers techniques of quantitative analysis and evaluation of modern computing systems. Emphasizes the major component subsystems of high-performance computers: pipelining, instruction level parallelism, memory hierarchies, input/output and network-oriented interconnections. Prerequisite: admission to the MSCoE program.

COE 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 credits). Presents a theoretical or practical topic proposed by the faculty beyond what is offered in existing courses. Can be repeated for credit. Prerequisites: topic specific. Lab/Tech fee may apply.

COE 596/COE 696 Independent Study in Computer Engineering (1 to 4 credits). Independent study is the umbrella term used to label two types of independent work: independent course and directed study. For further details, refer to Independent Study later in this section.

COE 630 Wireless Networks (3-0-3). Explores advanced concepts in wireless networking and mobile communications. Covers the following topics: antennas and multipath propagation, wireless propagation modeling, multiple access, spread spectrum, modulation, coding and error control, orthogonal frequency division multiplexing (OFDM), cellular wireless networks, wireless local area networks (LANs), mobile Internet Protocol (IP), ad hoc networks, Bluetooth, transmission control protocol (TCP) over wireless, Worldwide Interoperability for Microwave Access (WiMAX), satellite networks, security issues in wireless networks and sensor networks. Prerequisite: admission to the MSCoE program.

COE 632 Advanced Database Systems (3-0-3). Covers the following advanced topics in database systems: file structures, indexing techniques, query processing and optimization, concurrency control and backup and recovery Extensible Markup Language (XML) databases and languages, and mobile databases and data mining. Prerequisite: admission to the MSCoE program.

COE 633 Advanced Internet Computing (3-0-3). Covers advanced topics in Internet computing including search engines; client-side and web-server technologies; web-crawlers, information retrieval and filtering methods; Internet-specific database technologies; web-services architectures; and Internet of Things. Prerequisite: admission to the MSCoE program.

COE 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 credits). Requires an approved professional project on selected area of computer engineering for completion of the MS degree. Includes development of the project concept, investigation of needs, initial data collection and assembly of written and field materials necessary to conduct a professional project, as well as exploration of alternative means to conduct the project. Requires a report and final presentation to the examining committee. Graded as Pass/No Pass. Prerequisites: good academic standing and approval of department head; prerequisite/concurrent: COE 695.

COE 699 Master's Thesis (9 credits). 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 523 Advanced Transportation Systems (3-0-3). Focuses on transportation systems modeling, simulation, analysis and evaluation techniques. Covers transportation systems operations, traffic signal systems design and optimization. Includes intelligent transportation systems (ITS) concepts and applications. Uses available software packages to evaluate transportation systems performance and ITS applications. Prerequisite: admission to the MSCE program.

CVE 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 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 credits). Presents a theoretical or practical topic proposed by the faculty beyond what is offered in existing courses. Can be repeated for credit. Prerequisites: topic specific. Lab/Tech fee may apply.

CVE 596/CVE 696 Independent Study in Civil Engineering (1 to 4 credits). Independent study is the umbrella term used to label two types of independent work: independent course and directed study. For further details, refer to Independent Study later in this section.

CVE 620 Advanced Construction Planning and Control (3-0-3). Covers the following topics: application of advanced planning and control techniques critical to the success of construction projects, advanced resource allocation and leveling, time-cost optimization, project monitoring, updating and control, stochastic scheduling, contractual implications of construction schedules, analysis of time-related change orders and delays, schedule diagnostics, and advanced use of construction planning and scheduling software. Employs case studies from the construction industry. Prerequisite: admission to the MSCE program.

CVE 621 Analysis and Design of Tall Buildings (3-0-3). Introduces design strategies for tall buildings. Covers the following topics: selection of the structural systems for tall buildings; modeling of gravity, wind and earthquake loads using relevant codes; structural modeling and static and dynamic analysis of tall buildings; design of structural elements and effects of creep, shrinkage and temperature; and P-Delta effects and instability of tall buildings. Emphasizes the use of computers in analysis and design of tall buildings. Prerequisite: admission to the MSCE program.

CVE 622 Physical and Chemical Processes in Environmental Engineering (3-0-3). Explores advanced analysis and design methods for various environmental engineering problems in water treatment, wastewater treatment, air pollution control and water quality management. Covers the following topics: materials transport, reaction kinetics, reactor modeling, separation processes, disinfection and process optimization. Prerequisite: admission to the MSCE program.

CVE 623 Advanced Transportation Planning Techniques (3-0-3). Presents an overview of both theoretical and applied issues in planning transportation systems. Focuses on everyday planning-oriented problems associated with development and project evaluation issues and

techniques with emphasis on the development, calibration and validation of master transportation plans and traffic impact study analysis. Covers engineering economics and procedures for traffic impact studies. Prerequisite: admission to the MSCE program.

CVE 624 Advanced Geotechnical Engineering (3-0-3). Covers site investigation with an emphasis on advanced site testing, and shallow and deep foundations. Includes footing and rafting for difficult subsoil conditions, excavation support systems, groundwater control, slope stability, soil improvement and construction monitoring techniques. Explores offshore geotechnical engineering and elements of geotechnical earthquake engineering. Prerequisite: admission to the MSCE program.

CVE 625 Highway Bridge Design (3-0-3). Introduces highway bridge analysis, design and evaluation based on the American Association of State Highway and Transportation Officials (AASHTO) Load and Resistance Factor Design (LRFD) Bridge Design Specifications. Covers the following topics: types of bridges, highway bridge loading, bridge analysis, deck slabs, composite steel bridge design, pre-stressed concrete girders, substructure design and bridge rating. Prerequisite: admission to the MSCE program.

CVE 651 Wastewater Treatment Process Control (3-0-3). Presents bacterial growth kinetics in wastewater, biochemical oxygen demand (BOD) tests for wastewater treatment, design and control of activated sludge process, determination of wastewater treatment process performance criteria and monitoring methods, and aeration in water. Prerequisite: admission to the MSCE program.

CVE 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 credits). Requires an approved professional project on selected area of civil engineering for completion of the MS degree. Includes development of the project concept, investigation of needs, initial data collection and assembly of written and field materials necessary to conduct a professional project, as well as exploration of alternative means to conduct the project. Requires a report and final presentation to the examining committee. Graded as Pass/No Pass. Prerequisites: good academic standing and approval of department head; prerequisite/concurrent: CVE 695.

CVE 699 Master's Thesis (9 credits). 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). Covers the following topics: Maxwell's equations; electromagnetic boundary conditions; potentials and the representation of electromagnetic fields; theorems of field calculations (uniqueness, duality, equivalence, reciprocity and Babinet's principles); plane, cylindrical and spherical waves; polarization properties of waves; and waveguides and elementary antennas. Prerequisite: admission to the MSEE program.

ELE 543 Analog Microelectronics (3-0-3). Covers analysis and design of advanced electronic circuits. Explores topics such as electronic device modeling, processing and layout, current mirrors, noise analysis, voltage reference and regulators, Opamp design, OTAs and filter circuits. Prerequisite: admission to the MSEE program.

ELE 544 Advanced Signal Processing (3-0-3). Explores topics such as signal representation and system response, signal sampling and reconstruction, convolution, transfer function and system characteristics, digital filter design and realization, adaptive filters, spectral analysis, multirate signal processing, 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 594/ELE 694 Special Topic in Electrical Engineering (1 to 4 credits). Presents a theoretical or practical topic proposed by the faculty beyond what is offered in existing courses. Can be repeated for credit. Prerequisites: topic specific. Lab/Tech fee may apply.

ELE 596/ELE 696 Independent Study in Electrical Engineering (1 to 4 credits). Independent study is the umbrella term used to label two types of independent work: independent course and directed study. For further details, refer to Independent Study later in this section.

ELE 640 Bioelectric Phenomena (3-0-3). Provides an overview of the following topics: electrical sources and electric fields, membrane biophysics, action potentials, volume conductor fields, electrophysiology of the heart, electric and magnetic lead fields, electroencephalography (EEG) and magnetoencephalography (MEG). Prerequisite/concurrent: NGN 500.

ELE 641 Advanced Microwave Engineering (3-0-3). Covers transmission-line theory; microstrip and coplanar lines; S-parameters; signal-flow graphs; matching networks; microwave devices; design, fabrication and measurements of microwave-

integrated circuits using CAD tools; radar equation; resolution techniques; calibration; scatterometers; and scattering models. Prerequisite/concurrent: NGN 500.

ELE 642 Digital and Wireless Communications (3-0-3). Covers the following topics: signal design for communications over band-limited channels, optimum and suboptimal receiver structures for band-limited channels, adaptive equalization, communications over mobile radio channels with fading and mitigation techniques against channel fading. Prerequisite: ELE 540.

ELE 643 Image and Video Processing (3-0-3). Provides an overview of the principles and techniques of digital image processing in applications related to digital imaging system design and analysis. Covers the following topics: analysis and implementation of image and video processing algorithms and standards, methods and filters for image enhancement and restorations, source and transform coding techniques for lossless and lossy compression, and basic elements of object recognition systems. Prerequisite/concurrent: NGN 500.

ELE 644 Dynamics and Control of Electrical Drives (3-0-3). Covers dynamic models of DC and AC machines, torque and speed control of DC motors, PWM inverters, scalar control, field oriented control, and direct flux/torque control of induction motors. Prerequisite: admission to the MSEE program.

ELE 645 High Voltage Engineering (3-0-3). Covers the following topics: destructive and non-destructive testing of power system components; breakdown mechanism of gas, liquid and solid insulating materials; generation and measurement of high-voltage AC; and DC and impulse voltages and non-destructive testing such as surface and internal discharges, capacitance and loss factor. Prerequisite: admission to the MSEE program.

ELE 646 Radio Frequency Integrated Circuits (3-0-3). Covers design of advanced radio frequency integrated circuits as it applies to contemporary electronic systems. Includes RFIC systems and architectures, low-voltage MOS, transceiver complex circuits, RF signal processing, RF power amplifiers and linearization, PLL topologies, frequency synthesizers, phase noise analysis, layout considerations, packaging of RF circuits and design case studies. Use of software tools and analytical techniques for circuit design and simulations. Prerequisite: admission to the MSEE program.

ELE 647 Digital Protection of Power Systems (3-0-3). Covers digital relay hardware, phasor computations, frequency estimation techniques, digital protection algorithms, fault location techniques, signal processing and artificial intelligence for relays, relay testing, relay modeling and simulation. Prerequisite: admission to the MSEE program.

ELE 648 Pattern Classification (3-0-3). Covers description of the elements of pattern recognition systems, Bayesian decision theory and parameter estimation, maximum likelihood estimation, linear discriminant analysis, dimensionality reduction techniques, neural networks, clustering techniques, and Gaussian Mixture Models. Provides a description of decision 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 credits). Requires an approved professional project on selected area of electrical engineering for completion of the MS degree. Includes development of the project concept, investigation of needs, initial data collection and assembly of written and field materials necessary to conduct a professional project, as well as exploration of alternative means to conduct the project. Requires a report and final presentation to the examining committee. Graded as Pass/No Pass. Prerequisites: good academic standing and approval of department head; prerequisite/concurrent: ELE 695.

ELE 699 Master's Thesis (9 credits). 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 515 Fundamentals of Statistics and Engineering Economy (3-0-3). Covers concepts of statistics and probability including descriptive statistics, statistical inference, estimation theory, elementary probability theory, simple regression, and experimental design. Introduces economic decision making with discounted cash flows. Includes time value of money and alternative economic evaluation methods. Use of statistical software to solve assigned problems. Prerequisite: admission to the MSESM program.

ESM 520 Management for Engineers (3-0-3). Explores a full range of integrated topics for individuals in both public and private sector organizations who coordinate and manage engineering projects, personnel, resources and systems. Covers human resources, communication skills, leadership styles, team building, the basics of marketing management and financial management, and the management needs in multicultural and multinational environments. Integrates the core management principles with engineering experiences using case studies and applications. Prerequisite: admission to the MSESM program.

ESM 532 Introduction to Applied Operations Research (3-0-3). Covers formulation and applications of optimization problems, including linear, network, integer and nonlinear problems. Emphasizes solution methods for linear and integer optimization programs as well as search techniques for unconstrained and constrained nonlinear problems. Addresses also optimization problems with multiple objectives. Uses optimization software such as LINGO and Excel Solver to solve such problems. Prerequisite/concurrent: ESM 515.

ESM 555 Information Technology Management (3-0-3). Provides an overview of the important managerial and strategic issues associated with using IT in today's networked organization. Covers IS/IT strategy, IT/business strategy alignment, IT-enabled business models, IT governance, managing integration with partners, planning and implementing new systems in organizations, and managing IT outsourcing. Previous knowledge of statistics is required. Includes case studies and team projects. Prerequisite: admission to the 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, risk management, and project monitoring and control. Integrates and clarifies the principles and tools through case studies from a variety of disciplines. Prerequisite/concurrent: ESM 515 or approval of program director.

ESM 575 Advanced Engineering Economy (3-0-3). Covers the theory and application of advanced engineering economy principles and methods. Studies the effects of inflation, depreciation and taxes, cost estimation, sensitivity analysis, risk and uncertainty, capital budgeting, multi-attribute decision making, advanced asset replacement analysis and real option analysis. Includes case studies and a term project related to the topic. Prerequisite: ESM 515.

ESM 580 IT Project Management (3-0-3). Provides an overview and explores concepts of IT project management. Includes the following topics: IT project planning and its relationship to CMMI levels, IT project risk management and configuration management techniques for IT projects. Discusses prevailing alternative life-cycle models such as RUP/Agile/SCRUM and their relationship to PMBOK and CPM. Covers IT project estimation techniques such as COCOMO. Includes case studies in IT project management. Prerequisite: admission to the MSESM program.

ESM 594/ESM 694/ESM 794 Special Topic in Engineering Systems Management (1 to 4 credits). Presents a theoretical or practical topic proposed by the faculty beyond what is offered in existing courses. Can be repeated for credit. Prerequisites: topic specific. Lab/Tech fee may apply.

ESM 596/ESM 696/ESM 796 Independent Study in Engineering Systems Management (1 to 4 credits). Independent study is the umbrella term used to label two types of independent work: independent course and directed study. For further details, refer to Independent Study later in this section.

ESM 600 Research Methodology (3-0-3). Introduces the methodology of scientific research. Covers topics such as internal and external construct validity and reliability issues in research; normative, prescriptive and descriptive theories; process and variance approaches to theory formulation; introduction to quasi-experimental design and case study methodologies; practical strategies for literature review; APA and IEEE style guidelines; and presenting research results and conclusions. Includes invited speakers from industry and business. Prerequisites: ESM 515 and ESM 520.

ESM 612 Advanced Information Systems Management (3-0-3). Introduces topics in IT services management, resource planning and governance. Covers IT value-chain and related processes. Discusses IT portfolio management and maturity models. Discusses enterprise architectures and outsourcing strategies. Includes an overview of CMMI, CoBIT and ITIL. Prerequisite: ESM 555.

ESM 614 Communication and Network Management (3-0-3). Addresses the key technological and managerial issues related to the design, operation and maintenance of computer networks and the enterprise telecommunication system. Provides an overview of telecom technologies, including telecom architectures and protocols, voice technologies, LANs, WANs, cellular and mobile networks, satellite systems and Internet/intranet architectures. Covers feasibility analysis, service level agreements, service quality monitoring, network planning, network management, survivability, telecom equipment procurement, contracting, outsourcing, technology forecasting and replacement, telecom investment decisions, legal and regulatory issues in telecommunications, and performance modeling and monitoring tools. Includes case studies related to the topic. Prerequisite: ESM 555.

ESM 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. Prerequisites: ESM 515 and ESM 555.

ESM 620 Security Management (3-0-3). Provides a solid background in the administration and management of security for computer-based systems. Introduces the management of security, including managing identity, IT threats, vulnerabilities and trust. Covers planning for security and contingencies, the development of security programs and policies, security models, practices and standards, security risk management, personnel and security, and legal and ethical issues in security. Prerequisite: ESM 555.

ESM 624 Knowledge Management (3-0-3). Introduces the roots of knowledge and knowledge management (KM); theories/definitions of knowledge; theories, applications, tools, and practices of KM; the Knowledge Management Life-Cycle Framework and Models; significant issues in KM (e.g., best practices, culture, economics, strategy, intellectual capital and sustainable innovation). Includes case studies related to the topic. Prerequisite: ESM 555.

ESM 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, fulfillment of orders, production, inventory management and material planning. Includes real examples on ERP implementation and hands-on experience using SAP ERP system as part of AUS-SAP University Alliances. Prerequisite: ESM 555.

ESM 630 Quality Engineering and Management (3-0-3). Covers the techniques and applications of quality control and management. Includes total quality management, quality award models, service quality, statistical process control charts, process capability analysis and six sigma. Prerequisite: ESM 515.

ESM 634 Advanced Modeling and Simulation (3-0-3). 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 532.

ESM 636 Human Resources Management (3-0-3). Covers human resource planning processes, tools and techniques, job specification and methods of job analysis. Describes the requirements and ethical context of HRM methods of recruitment, evaluation, career training and development programs, salary systems and employee benefits, HR information systems and international HR issues. Integrates HR management practices and methodologies with engineering experiences. Prerequisite: ESM 520.

ESM 638 Decision Analysis (3-0-3). Covers the theory and practice of analyzing decisions in the public and private sectors. Covers multiple objectives, influence diagrams, decision

trees, sensitivity analysis, probability assessment, multi-attribute utility and human biases. Describes practical applications through real-world systems model building. Uses decision analysis software and spreadsheets to solve real-life problems through case studies. Prerequisite: ESM 515.

ESM 640 Supply Chain Management (3-0-3). Explores key issues related to the design, planning and operation of supply chains. 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 532.

ESM 642 Business Process Management (3-0-3). Introduces the important issues in alignment of business internal activities and resources with external requirements through process design and process improvements. Includes process types and hierarchies, workflow management systems, incremental process improvement, process re-engineering and benchmarking. Covers implementation and change management. Prerequisite: ESM 520.

ESM 644 Financial Management for Engineers (3-0-3). Provides engineers with financial management knowledge necessary for value-added decision making. Covers structure and analysis of financial statements, corporate valuation, working capital management, capital structure and budget, securities analysis and financial markets, and financial forecasting. Includes practical financial management case studies in technical organizations. Prerequisite: ESM 575.

ESM 650 Construction Management (3-0-3). Covers both the fundamental concepts and contemporary applications of construction management. Discusses elements of the construction project life cycle, project stakeholders, project administration and coordination, and construction delivery methods. Provides the opportunity to simulate real-life construction management problems and apply acquired skills in the solution through case studies and team projects. Prerequisites: ESM 570 and admission to the MSESM program.

ESM 652 Construction Planning and Scheduling (3-0-3). Covers the application of planning and scheduling techniques critical to the success of construction projects, critical path method, resource allocation and leveling, time-cost optimization, project monitoring, updating and control, linear scheduling, stochastic scheduling, contractual implications of construction schedules, analysis of time-related change orders and delays, schedule diagnostics, and use of construction planning and scheduling software. Includes case studies from the construction industry. Prerequisites: ESM 570 and admission to the MSESM program.

ESM 660 Construction Contracts Law (3-0-3). Introduces construction contracts and their administration with special emphasis for engineering. Covers construction claims, matters of time, delays and litigation. Includes the following professional topics: analysis of specific issues concerning contracts, subcontracting, tort claims, insurance and bonds. Covers strategies for avoiding or terminating litigation, methods of dispute resolution, key aspects of prosecuting and defending claims, the role of dispute review boards and their use, procedures of claims presentation, conducting cost evaluation of claims and methods of international construction contracts. Covers actual legal cases involving construction and law. Prerequisites: ESM 570 and admission to the MSESM program.

ESM 667 Construction Contracting and Cost Estimate (3-0-3). Examines the cost elements of construction contracting crucial to the success of construction business. Provides an overview of basic cost estimating and bidding procedures, including the role of the estimator, and various levels and details of an estimate and the bidding process. Includes the following topics: accounting and cost keeping systems, budgeting, quantity takeoff, pricing labor, material and equipment, bonding, private and public bidding formats, minority requirement, markups and bidding strategies. Prerequisite: ESM 570.

ESM 668 Construction Safety Management (3-0-3). Covers safety and health concerns in the construction worksite. Concentrates on safety process development and management in construction. Provides a comprehensive background in worksite hazard assessment, safety and health program development, and risk management in the construction industry. Prerequisites: ESM 570 and admission to the MSESM program.

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 credits). 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 credits). 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. Non-repeatable. Graded as Pass/Fail. Prerequisites: completion of 18 credits 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 credits). 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 credits). Presents a theoretical or practical topic proposed by the faculty beyond what is offered in existing courses. Can be repeated for credit. Prerequisites: topic specific. Lab/Tech fee may apply.

MCE 596/MCE 696 Independent Study in Mechanical Engineering (1 to 4 credits). Independent study is the umbrella term used to label two types of independent work: independent course and directed study. For further details, refer to Independent Study later in this section.

MCE 650 Advanced 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 credits). Requires an approved professional project on selected area of mechanical engineering for completion of the MS degree. Includes development of the project concept, investigation of needs, initial data collection and assembly of written and field materials necessary to conduct a professional project, as well as exploration of alternative means to conduct the project. Requires a report and final presentation to the examining committee. Graded as Pass/No Pass. Prerequisites: good academic standing and approval of department head; prerequisite/concurrent: MCE 695.

MCE 699 Master's Thesis (9 credits). 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 credits). Presents a theoretical or practical topic proposed by the faculty beyond what is offered in existing courses. Can be repeated for credit. Prerequisites: topic specific. Lab/Tech fee may apply.

MTR 596/MTR 696 Independent Study in Mechatronics Engineering (1 to 4 credits). Independent study is the umbrella term used to label two types of independent work: independent course and directed study. For further details, refer to Independent Study later in this section.

MTR 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 645 Image Processing and Computer Vision (3-0-3). Discusses fundamentals of digital images, image enhancement, restoration and segmentation. Covers color representation, morphological image processing, representation of images and object recognition. Prerequisite: NGN 500.

MTR 650 Applied Linear Estimation (3-0-3). 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 credits). 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 credits). 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 credits). 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 credits). Presents a theoretical or practical topic proposed by the faculty beyond what is offered in existing courses. Can be repeated for credit. Prerequisites: topic specific. Lab/tech fee may apply.

Special topic courses are numbered as 594 or 694 courses. The three-letter course prefix reflects the field of study of the course.

Descriptions of particular special topic courses are made available in the college 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 621 Ethical Environmental and Corporate Governance (3-0-3). Discusses the fundamentals of corporate governance from many different angles that include the board of directors, senior management, investors, the media, proxy advisors, regulators and other stakeholders. Focuses on assessing the effectiveness and execution of governance roles and responsibilities. Considers ethical issues and corporate governance in accounting and auditing, including ethical reasoning, integrity, objectivity, ethical failure, independence, core values and professional issues. Prerequisite: ACC 301.

ACC 622 Internal Auditing (3-0-3). Focuses on the theory and practice of internal auditing. Addresses the role of internal auditing in strengthening the corporate governance system in business and nonbusiness organizations. Provides a foundation for accounting and auditing students to be objective professionals in order to provide assurance and consulting services to top- and lower-level management. Emphasizes achieving the organization's objectives efficiently and effectively. 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 624 Oil and Gas Accounting (3-0-3). Focuses on accounting for exploration, acquisition, drilling, production and conveyances of oil and gas using full-cost and successful efforts methods. Considers financial accounting and reporting for oil and gas operations in the US and internationally. Examines international joint venture accounting and accounting for international concession and profit sharing agreements. Prerequisite: ACC 302.

ACC 625 Tax Research (3-0-3). Provides a basic understanding and knowledge of sources available in conducting tax research. Develops tax research skills. Teaches how to read and interpret federal tax laws and regulations. Applies research skills and uses tax sources authority in preparing written materials. Provides preparation for a career in the tax planning and research. Prerequisite: ACC 305.

ACC 626 Information Technology Auditing and Assurance (3-0-3). Focuses on the process of collecting and evaluating evidence of IT system practices and operations. Develops understanding of procedures to test whether the systems are able to safeguard assets, maintain data security and operate effectively and efficiently. Covers theories and practices of information systems auditing and the role of the information systems auditor in systems development and creation of computer-based system controls. Prerequisite: ACC 410.

ACC 627 Advanced International Taxation (3-0-3). Focuses on taxation of multinational enterprises. Covers topics such as international tax treaties, tax haven territories, and tax systems utilized by different nations and cross-border taxation of transfer pricing. Prerequisite: ACC 306.

ACC 628 Fraudulent Financial Reporting (3-0-3). Covers different financial reporting schemes that are

utilized by firms to mislead investors and influence their investment actions. Covers different accounting methods and schemes that are used to provide misleading information. Examines landmark fraudulent cases and their impact on society. Prerequisite: ACC 410.

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. Prerequisites: MBA 601, MBA 602, MBA 605, MBA 613 and MBA 614.

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.

MBAP Pre-MBA

MBAP 501 Introduction to Economics (1.5-0-1.5). Provides an introductory survey of microeconomics and macroeconomics, designed primarily for Pre-MBA 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. Prerequisite: admission to the Pre-MBA program.

MBAP 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. Prerequisite: admission to the Pre-MBA program.

MBAP 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. Prerequisite: admission to the Pre-MBA program.

Independent Study

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

Independent Course (1 to 4 credits). 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 credits). 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 credits). Presents a theoretical or practical topic proposed by the faculty beyond what is offered in existing courses. Can be repeated for credit. Prerequisites: topic specific. Lab/tech fee may apply.

Special topic courses are numbered as 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

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 and Chair, Middle States Re-Accreditation

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; Associate Professor in Economics

Abualrub, Taher, PhD, University of Iowa, 1998; Professor in Mathematics and Statistics

Abukhaled, Marwan, PhD, Texas Tech University, 1995; Professor in Mathematics and Statistics

Abu-Lebdeh, Ghassan, PhD, University of Illinois at Urbana-Champaign, 1999; Professor in Civil Engineering

Abu-Nabah, Bassam, PhD, University of Cincinnati, 2007; Assistant 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

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

Ahmed, Khawlah, PhD, State University of New York at Buffalo, 1998; Associate 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

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

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; Associate Professor in Civil Engineering

Ali, Ahmed, PhD, University of Durham, 1999; Associate Professor in Arabic and Translation Studies (on sabbatical Spring 2019)

Ali, Tarig, PhD, The Ohio State University, 2003; Associate Professor in Civil Engineering; Interim Director, GAC

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 (on sabbatical Fall 2018)

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

Al-Najjar, Abeer, PhD, University of Edinburgh, 2003; Associate Professor in Mass Communication (on sabbatical Academic Year 2018–2019)

Alnaser, Ali Sami, PhD, Western Michigan University, 2002; Professor in Physics; Head, Department of Physics; Interim Director, MSERI

Al-Nashash, Hasan, PhD, Kent University, 1988; Professor in Electrical Engineering; Interim Director, BBRI

Alobaidi, Ghada, PhD, University of Western Ontario, 2000; Associate Professor in Mathematics and Statistics

Al-Othman, Amani, PhD, University of Ottawa, 2012; Assistant Professor in Chemical Engineering

Aloul, Fadi, PhD, University of Michigan, 2003; Professor in Computer Science and Engineering; Head, Department of Computer Science and Engineering; HP Institute Director and Interim Director, HPC

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

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

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

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; Assistant Professor in International Studies

Awad, Mahmoud, PhD, Wayne State University, 2005; Professor in Industrial 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

Bae, Sun-Hee, PhD, Harvard University, 2015; Assistant Professor in English

Baghestani, Hamid, PhD, University of Colorado, 1982; Professor in Economics (on sabbatical Fall 2018)

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; Associate Professor in Marketing and Information Systems

Barlas, Gerassimos, PhD, National Technical University, Athens, 1996; Professor in Computer Science and Engineering

Bartholomew, Aaron, PhD, College of William and Mary, 2001; Professor in Biology, Chemistry and Environmental Sciences

Basco, Rodrigo, PhD**,** Universidad Complutense de Madrid, 2005; Associate Professor of Management and Sheikh Saoud bin Khalid bin Khalid Al-Qassimi Chair, 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 and Associate Dean, College of 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, Akessandro, 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

Bley, Jörg, PhD, Florida Atlantic University, 2000; Professor in Finance and Dean, School of Business Administration

Bodolica, Virginia, PhD, HEC Montreal Business School, 2006; Professor in Management

Boisvert, Jean, PhD, Macquarie Graduate School of Management, 2007; Associate Professor in Marketing and Information Systems (on Sabbatical Fall 2018)

Boubakri, Narjess, PhD, Laval University, 2000; Professor in Finance; Head, Department of Finance

Bou-Mehdi, Randa, MA, American University of Sharjah, 2010; 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; Visiting 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

Chappell, Henry, PhD, Yale University, 1979; Professor in Economics

Chathoth, Prakash, PhD, Virginia Polytechnic Institute and State University, 2002; Professor in Marketing and Information Systems

Chatterjee, Ujjal, PhD, University of Wisconsin-Milwaukee, 2013; Assistant Professor of Finance

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

Christodoulidis, Georgios, PhD, University of Birmingham, 2016; Professor in Marketing and Information Systems

Ciftci, Mustafa, PhD, The University of Texas at Dallas, 2006; Associate Professor in Accounting (on leave Academic Year 2018–2019)

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 (on sabbatical Spring 2019)

Cormier, Gilles, PhD, Technical University of Nova Scotia, 1994; Senior Lecturer in Industrial Engineering

Craven, Laurence, MA, Oxford Brookes University, 2009; Instructor in Writing Studies

Curabba, Brad, MAT, SIT Graduate Institute, 2006; 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 Head, Department of Chemical Engineering

Dhaouadi, Rached, PhD, University of Minnesota, 1990; Professor in Electrical Engineering

Dhou, Salam, PhD, Virginia Commonwealth University, 2013; Assistant Professor in Computer Engineering

Dougan, Brian, MArch, Texas A&M University, 1989; Professor in Architecture (on sabbatical Fall 2018)

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-Baz, Hazim, PhD, University of Missouri, Rolla, 1991; Associate Professor in Industrial Engineering

El Didi, Amer, PhD, République Française, 2015; Assistant Professor in Performing Arts

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; Associate Professor in Biology, Chemistry and Environmental Sciences

El-Khatib, Sami, PhD, New Mexico State University, 2007; Associate Professor in Physics (on sabbatical Academic year 2018–2019)

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; Associate Professor in Mechanical Engineering

Erice, Leopoldo, DMA, Stony Brook University, 2008; Associate Professor in Performing Arts

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

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

Fedtke, Jana, PhD, University of South Carolina, 2012; Assistant Professor in English

Filipović, Zlatan, MFA, Alfred University, 2001; Associate Professor in Art and Design and Interim Head, Department of 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 (on sabbatical Fall 2018)

G

Gadalla, Mohamed, PhD, University of Alabama, 1988; Professor in Mechanical Engineering

Gahramanov, Emin, PhD, Colorado State University, 2007; Associate Professor in Economics

Gaibulloev, Khusrav, PhD, University of Texas at Dallas, 2009; Associate Professor in Economics (on sabbatical Spring 2019)

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

Gannon, James, PhD, University of Houston, 1981; Professor in Biology, Chemistry and Environmental Sciences; Head, Department of Biology, Chemistry and Environmental Sciences; and Interim Director, GERI

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 and Head, Department of Economics

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

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 (on sabbatical Spring 2019)

Gouia Ep Zarrad, Rim, PhD, University of Texas at Arlington, 2011; Associate Professor in Mathematics and Statistics

Graham, Allan, PhD, Virginia Polytechnic Institute and State University, 2000; Associate Professor in Accounting

Gregersen, Tammy, PhD, Universidad Catolica de Valparaiso, 1998; Professor in English

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

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

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

Hashim, Asif, MBA, University of Nebraska in Kearney, 2003; Instructor in Management and Director, Academic Planning and Analysis

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

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

Houghtalen, Robert, PhD, Colorado State University, 1988; Professor in Civil Engineering

Hughes, Michael, MArch, Princeton University, 1993; Professor in Architecture

Husni, Ronak, PhD, University of St. Andrews, 1986; Professor in Arabic and Translation Studies (on sabbatical Fall 2018)

Husseini, Ghaleb, PhD, Brigham Young University, 2001; Professor in Chemical Engineering; Associate Dean for Research and Graduate Studies, College of 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

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; Associate Professor in Mechanical Engineering

Jarrah, Abdul Salam, PhD, New Mexico State University, 2002; Professor in Mathematics and Statistics

Jayyusi-Lehn, Ghada, PhD, University of Toronto, 2007; Assistant Professor in Arabic and Translation Studies

Jimenez Parro, Maria, MArch, Polytechnic University Madrid, 2011; Visiting Assistant Professor in Architecture

K

Kallel, Dorra, M BA, University of Quebec, 2006; Visiting Instructor in Marketing and Information Systems

Kallel, Sadok, PhD, Stanford University, 1995; Professor in Mathematics and Statistics

Kalo, Amar, MS, University of Michigan, 2014; Assistant Professor in Architecture and Director, CAAD Labs

Kamal, Sara, PhD, University of Texas at Austin, 2009; Assistant Professor in Mass Communication

Kanan, Sofian, PhD, University of Maine, 2000; Professor in Biology, Chemistry and Environmental Sciences

Kannan, Satish, PhD, University of New Brunswick, 2006; Assistant Professor in Mechanical Engineering

Kanoglu, Mehmet, PhD, University of Nevada Reno, 1999; Visiting Professor in Mechanical Engineering

Kassam, Hamada, PhD, University of Essex, 2010; Visiting Assistant Professor in English

Katodrytis, George, AADip, Architectural Association School of Architecture, 1985; Professor in Architecture and Head, Department of Architecture

Katsos, John, JD, George Washington University, 2011; Associate Professor in Management and Head, Sustainability

Katsos, Kristina, MS, Georgetown University, 2010; Lecturer in International Studies

Kaya, Ilker, PhD, University of Georgia, 2009; Associate Professor in Economics

Kaya, Ozgur, PhD, University of Georgia, 2009; Assistant Professor in Economics

Keegan, Daniel, PhD, University of California, 2013; Assistant Professor in English

Kemp, Linzi, PhD, Manchester Metropolitan University, 2003; Associate Professor in Management (on sabbatical Fall 2018)

Khaldi, Bouthaina, PhD, Indiana University, 2008; Associate Professor in Arabic and Translation Studies

Khalil, Reem, PhD, City University of New York, 2013; Assistant Professor in Biology, Chemistry and Environmental Sciences

Khallaf, Ashraf, PhD, Florida Atlantic University, 2004; Associate Professor in Accounting

Khamis, Mustafa, PhD, University of California, 1987; Professor in Biology, Chemistry and Environmental Sciences

Khan, M. Sajid, PhD, University of Manchester, 2001; Professor in Marketing and Information Systems; Head, Department of Marketing and Information Systems

Khan, Zahid, PhD, University of Western Ontario, 2007; Associate Professor in Civil Engineering

Kharkhurin, Anatoliy, PhD, City University of New York, 2005; Associate Professor in International Studies

Khatib, Line, PhD, McGill University, 2010; Associate Professor in International Studies

Khawaja, Ali, MBA, American University of Sharjah, 2004; Instructor in Marketing and Information Systems

Kherfi, Samer, PhD, Simon Fraser University, 2002; Associate Professor in Economics

Khoury, Suheil, PhD, Michigan State University, 1994; Professor in Mathematics and Statistics

Khouyibaba, Saadia, PhD, Laval University, 1997; Senior Instructor in Mathematics and Statistics

King, Jeffrey, PhD, University of Missouri, 2017; Assistant Professor in International Studies

King, John, PhD, University Tennessee at Knoxville, 1995; Professor in Mass Communication

Kjerfve, Björn, PhD, Louisiana State University; Professor in Biology, Chemistry and Environmental Sciences, and Chancellor

Klein, Andrew, PhD, University of Illinois at Chicago, 2003; Assistant Professor in Management

Knuteson, Sandra, PhD, Clemson University, 2004; Senior Lecturer in Biology, Chemistry and Environmental Sciences

Kolo, Jerry, PhD, University of Waterloo, 1986; Professor in Architecture

Kumra, Savita, PhD, Cranfield University, 2003; Associate Professor in Management

L

Landolsi, Taha, PhD, University of Texas at Dallas, 1999; Professor in Computer Science and Engineering and Director, CISCO Academy

Leduc, Guillaume, PhD, Carleton University, 1995; Associate Professor in Mathematics and Statistics

Lindsay, Valerie, PhD, University of Warwick, 1999; Professor in Management and Director, SBA Graduate Programs

Lopes, Adrian, PhD, Cornell University, 2014; Assistant Professor in Economics

Louhichi, Issam, PhD, University of Bordeaux 1, 2005; Assistant Professor in Mathematics and Statistics

Luchetti, Cristiano, MArch, Pennsylvania State University, 2004; Assistant Professor in Architecture

Lusk, Jeniece, PhD, Baylor University, 2010; Assistant Professor in International Studies

M

Maitner, Angela, PhD, University of California, 2007; Associate Professor in International Studies

Majdalawieh, Amin, PhD, Dalhousie University, 2006; Professor in Biology, Chemistry and Environmental Sciences

Majeed, Tariq, PhD, York University, 1991; Associate Professor in Physics

Makkawi, Yassir, PhD, Herriot-Watt University, 2004; Associate Professor in Chemical Engineering

Mansoor, Bilal, PhD, University of Michigan, 2010; Visiting Assistant Professor in Mechanical Engineering

Marchi Travares El Melo, Isabela, MFA, 2014; Virginia Commonwealth University, Assistant Professor in Performing Arts

Mariano, Stefania, PhD, University of Molise, 2006; Associate Professor in Management

McAllister, Brian, PhD, The Ohio State University, 2013; Assistant Professor in English

McCarthy, Philip, PhD, University of Memphis, 2005; Assistant Professor in English

McClelland, Patrick, PhD, University of Kansas, 2008; Associate Professor in Management; Head, Department of Management

Mertel, Kurt, PhD, North Western University, 2016; Assistant Professor in International Studies

Mesanovic, Mujo, MS, Syracuse University, 2006; Senior Instructor in Mathematics and Statistics

Milic, Nebojsa, PhD, Baylor University, 2017; Assistant Professor in Marketing and Information Systems

Mir, Hasan, PhD, University of Washington, 2005; Professor in Electrical Engineering (on sabbatical Fall 2018)

Mirzaei, Ali, PhD, Brunel University, 2013; Assistant Professor in Finance

Mitchell, Kevin, MArch, University of Washington, 1996; Professor in Architecture and Vice Provost for Undergraduate Affairs and Instruction

Mitra, Sreya, PhD, University of Wisconsin Madison, 2012; Assistant Professor in Mass Communication

Mokhtar, Ahmed, PhD, Concordia University, 1998; Professor in Architecture (on sabbatical Spring 2019)

Molchanov, Mikhail, PhD, University of Alberta, 1998; Visiting Professor in International Studies

Montague, John, PhD, Trinity University, 2009; Assistant Professor in Architecture

Mortula, MD Maruf, PhD, University of Dalhousie, 2006; Professor in Civil Engineering

Mukhopadhyay, Shayok, PhD, Georgia Institute of Technology, 2014; Assistant Professor in Electrical Engineering

Mullins, Melissa Anne, MA, Portland State University, 2003; Instructor in Writing Studies

Munday, Susan, MPhil, University of Glasgow, 2002; Senior Instructor in Writing Studies

N

Nam, Kichan, PhD, State University of New York at Buffalo, 1995; Professor in Marketing and Information Systems

Nancarrow, Paul Damian, PhD, Queen's University Belfast, 2005; Associate Professor in Chemical Engineering (on leave Academic Year 2018–2019)

Nashef, Hania, PhD, University of Kent, 2008; Associate Professor in Mass Communication

Nazzal, Mohammad, PhD, University of Kentucky, 2007; Associate Professor in Mechanical Engineering

Ndiaye, Malick, PhD, University of Burgundy, 1986; Associate Professor in Industrial Engineering

Newlands, George, MArch, University of New Mexico, 1994; Assistant Professor in Architecture

Noorzai, Roshan, PhD, Ohio University, 2012; Assistant Professor in Mass Communication

Nsiri, Imed, PhD, Indiana University, 2010; Assistant Professor in Arabic and Translation Studies

Numanoglu, Ahmet, MFA, University of Illinois at Chicago, 2009; Visiting Assistant Professor in Art and Design

Nunn, Roger, PhD, University of Reading, 1996; Professor in Writing Studies

O

Oliver, Maria, MArch, Columbia University, 1990; Visiting Assistant Professor in Architecture

Orhan, Mehmet, PhD, University of Ontario, 2011; Associate Professor in Mechanical Engineering

Orosi, Gergely, PhD, University of Calgary, 2009; Associate Professor in Mathematics and Statistics

Osman-Ahmed, Ahmed, PhD, University of Calgary, 2003; Associate Professor in Electrical Engineering

P

Pallathucheril, Varkki, PhD, The Ohio State University, 1992; Professor in Architecture and Dean, College of Architecture, Art and Design

Pappalardo, Lucia, PhD, Syracuse University, 1998; Associate Professor in Biology, Chemistry and Environmental Sciences

Parlak, Ozgur, MA, Northern Arizona University, 2010; Senior Instructor in Writing Studies

Parra Guinaldo, **Victor**, MA, Arizona State University, 2010; Instructor in English

Pasquier, Michel, PhD, National Polytechnic Institute of Grenoble, 1989; Associate Professor in Computer Science and Engineering

Pedersen, Vernon, PhD, Georgetown University, 1993; Professor in International Studies and Head, Department of International Studies

Pizarro, Rafael, PhD, University of Southern California, 2005; Associate Professor in Design

Q

Qadah, Ghassan, PhD, University of Michigan, 1983; Associate Professor in Computer Science and Engineering

Qaddoumi, Nasser, PhD, Colorado State University, 1998; Professor in Electrical Engineering and Head, Department of Electrical Engineering

Qureshi, Imran, PhD, University of Oxford, 2011; Assistant Professor in Mechanical Engineering

R

Rauch Christian, PhD, Goethe University in Frankfurt-on-Main, 2011; Assistant Professor in Finance

Rehman, Habib-ur, PhD, The Ohio State University, 2001; Associate Professor in Electrical Engineering

Reiff, Marija, PhD, University of Iowa, 2018; Assistant Professor in English

Rhodes, Patrick, MArch, Southern California Institute of Architecture, 1999; Assistant Professor in Architecture

Richard, Todd, PhD, University of Oxford, 2005; Visiting Assistant Professor in Arabic and Translation Studies

Roldán, Juan, MArch, ETSAM Madrid, 2003; Assistant Professor in Architecture

Romdhane, Lotfi, PhD, University of Florida, 1989; Professor in Mechanical Engineering and Director, Mechatronics Graduate Program

Ronesi, Lynne, PhD, University of Connecticut, 2000; Associate Professor in Writing Studies

Roy, Sanket, MA, Cornell University, 2015; Instructor in Economics

S

Saad, Mohsen, PhD, University of Delaware, 2003; Associate Professor in Finance and Associate Dean, School of Business Administration

Sabouni, Rana, PhD, University of Western Ontario, 2013; Assistant Professor in Chemical Engineering

Saeed Osman, Mojahid, PhD, North Carolina A&T University, 2010; Assistant Professor in Industrial Engineering

Sagahyroon, Assim, PhD, University of Arizona, 1989; Professor in Computer Science and Engineering; Interim Director, SCRI (on sabbatical Spring 2019)

Sakhi, Said, PhD, University of Montreal, 1994; Associate Professor in Physics

Salama, Mohamed Feras, PhD, University of Texas, 2008; Associate Professor in Accounting

Salamin, Yousef, PhD, University of Colorado, 1987; Professor in Physics

Saleem, Muhammad, PhD, Florida International University, 2011; Visiting Assistant Professor in Civil Engineering

Salvadore, Matteo, PhD, Temple University, 2010; Associate Professor in International Studies

Samara, Fatin, PhD, State University of New York, 2007; Associate Professor in Biology, Chemistry and Environmental Sciences

Samet, Anis, PhD, HEC Montreal, 2009; Associate Professor in Finance

Sayed, Sana, MA, California State University, 2004; Senior Instructor in Writing Studies

Sayidina, Aisha, PhD, University of Exeter, 1993; Assistant Professor in Writing Studies

Schoephoerster, Richard, PhD, University of Iowa, 1989; Professor in Mechanical Engineering and Dean, College of Engineering

Semaan, Rania, PhD, City University of New York, 2012; Assistant Professor in Marketing and Information Systems

Shaaban, Mostafa, PhD, University of Waterloo, 2014; Assistant Professor in Electrical Engineering

Shamayleh, Abdulrahim, PhD, Arizona State University, 2010; Assistant Professor in Industrial Engineering

Shanableh, Tamer, PhD, University of Essex, 2001 Professor in Computer Science and Engineering

Sharawi, Ziyad, PhD, Central Michigan University, 2006; Associate Professor in Mathematics and Statistics

Shareefdeen, Zarook, PhD, New Jersey Institute of Technology, 1994; Professor in Chemical Engineering

Sheil, Philip, MFA, University of Calgary, 1995; Senior Lecturer in Art &Design

Shih, Shou-Hsing, PhD, University of South Florida, 2008; Assistant Professor in Mathematics and Statistics

Shim, Ji Young, PhD, City University of New York, 2013; Assistant Professor in English

Simonet, Daniel, DBA, University of Paris IX Dauphine, 1998; Professor in Management

Singer, Jeffrey, MBA, Harvard University, 1995; Visiting Executive-in-Residence in Management

Singh, Kamail, PhD, Indian Institute of Technology, 2006; Lecturer in Chemical Engineering

Siry, Isra, MPhil, University of Keele, 1994; Instructor in Physics

Smith, Susan, MA, University of Southern California, 1994; Associate Professor in Mass Communication

Spaw, Gregory, MArch, Harvard University, 2009; Assistant Professor in Architecture

Sperrazza, Lelania, MA, The City College, 2006; Senior Instructor in Writing Studies

Squalli, Jay, PhD, University of Delaware, 2004; Professor in Economics

Srouji, Dima, March, Yale University, 2016; Visiting Assistant Professor in Architecture

Sulieman, Hana, PhD, Queen's University, 1998; Professor in Mathematics and Statistics and Head, Department of Mathematics and Statistics

Syed, Raza, PhD, Northeastern University, 2005; Assistant Professor in Physics

T

Tabbarah, Faysal, MArch, Architectural Association School of Architecture, 2011; Associate Professor in Architecture

Tabsh, Sami, PhD, University of Michigan, 1990; Professor in Civil Engineering

Taha, Mustafa, PhD, Ohio University, 2001; Associate Professor in Mass Communication

Tariq, Usman, PhD, University of Illinois at Urbana–Champaign, 2013; Assistant Professor in Electrical Engineering

Tasneem, Dina, PhD, McGill University, 2015; Assistant Professor in Economics

Tassa, Anthony, MFA, The University of Tennessee, Knoxville, 1995; Professor in Performing Arts and Coordinator, Performing Arts Program

Teng, Ming Foey, PhD, University of South Australia, 2012; Lecturer in Electrical Engineering

Thompson, Seth, MFA, Vermont College of Norwich University, 1997; Associate Professor in Art and Design

Toledo, Hugo, PhD, Auburn University, 1999; Professor in Economics

Tufaha, Amjad, PhD, University of Virginia, 2007; Associate Professor in Mathematics and Statistics

U

Uma, Velury, PhD, University of South Carolina, 1999; Visiting Professor in Accounting

Uygul, Faruk, PhD, University of Alberta, 2007; Associate Professor in Mathematics and Statistics

V

Vadlamudi, Sundara, PhD, University of Texas at Austin, 2016; Assistant Professor in International Studies

Vanderpyl, Gregory, MA TESOL, SIT Graduate Institute, 2012; Instructor in Writing Studies

Van Gorp, Johannes, PhD, Boston University, 2012; Assistant Professor in International Studies

Vincent, Clement, MArch, ENSAD University, 1997; Assistant Professor in Art and Design

Viriyavipart, Ajalavat, PhD, Texas A&M University, 2015; Assistant Professor in Economics

Visvikis, Ilias, PhD, City, University of London, 2002; Professor in Finance and Director, Executive and Professional Education

W

Walsh, Eileen, PhD, Temple University, 2001; Assistant Professor in International Studies

Wang, Yuting, PhD, University of Notre Dame, 2009; Associate Professor in International Studies

Watson, Gregory, MArch, Washington University, 1985; Professor in Architecture

Waxin, Marie-France, PhD, IAE Aix-en-Provence, 2000; Associate Professor in Management (on leave Fall 2018)

Weagle, Christopher, MA, University of New Brunswick, 2002; Senior Instructor in Writing Studies

Weiler, Sherri, PhD, Florida State University, 2004; Associate Professor in Performing Arts

Wilmsen, David, PhD, University of Michigan, 1995; Professor in Arabic and Translation Studies and Head, Department of Arabic and Translation Studies

Wunderli, Thomas, PhD, University of Florida, 2003; Associate Professor in Mathematics and Statistics

X

Xu, Xiaobo, PhD, University of Mississippi, 2005; Professor in Marketing and Information Systems

Y

Yeh, Nai-Shyong, PhD, University of Tulsa, 1986; Professor of Practice in Chemical Engineering

Yehia, Sherif, PhD, University of Nebraska-Lincoln, 1999; Professor in Civil Engineering

Yeniaras, Volkan, PhD, Swansea University, 2013; Assistant Professor in Marketing and Information Systems

Younas, Javed, PhD, West Virginia University, 2007; Professor in Economics

Z

Zaid, Bouziane, PhD, University of South Florida, 2009; Visiting Associate Professor in Mass Communication

Zakaria, Amer, PhD, University of Manitoba, 2012; Assistant Professor in Electrical Engineering

Zaki, May, PhD, Middlesex University, 2011; Assistant Professor in Arabic and Translation Studies

Zantout, Zaher, PhD, Drexel University, 1990; Professor in Finance

Zoubi, Taisier, PhD, University of North Texas, 1992; Professor in Accounting and Head, Department of Accounting

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