جامعة قطر
QATAR UNIVERSITY

# GRADUATE CATALOG
## 2014 - 2015

# 2014 - 2015 GRADUATE CATALOG

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## A MESSAGE FROM THE PRESIDENT

**Welcome to Qatar University !**

In over four decades, Qatar's national university has grown from a single college to a highly-regarded institution of higher education, with a continuously expanding array of undergraduate and graduate programs as well as exciting research opportunities that have garnered regional and international recognition.

Today, Qatar University offers a variety of academic programs delivered by a faculty body that is as committed as it is diverse. Programs are initiated and updated in line with national development strategies, as well as regional and international academic trends. In addition to academic offerings, student support services are also expanding to ensure a rewarding and comprehensive student experience.

In recent years, the graduate sector at Qatar University has witnessed remarkable growth, with the addition of carefully-planned, relevant, and exciting programs. Currently, graduate programs are offered by five of the seven colleges. Students enrolling in these programs have the opportunity to receive a high quality education and to gain experience and recognition for their scholarship from academic institutions and employers around t he world. As an integral part of graduate education, research opportunities are constantly expanding, with a rich portfolio of projects from the social sciences, engineering, environmental studies, health sciences, and many more.

This catalog is an informative guide to graduate programs and other useful information about university services and policies. Nevertheless, I encourage you to talk to our faculty and staff, who are committed to your academic and intellectual development.

We are delighted that you have chosen our graduate programs to further your education. Although the work is demanding, I can assure you that the academic and professional rewards are great. I wish you a remarkable journey.

Best regards,

**Professor Sheikha Bint Abdulla Al Misnad**
President, Qatar University

## UNIVERSITY LEADERSHIP

### Board of Regents

The Board of Regents is the highest level of authority at Qatar University, overseeing all its policies and operations. The Board is responsible for approving the university's annual budget and any major changes in university policy, degree programs and other administrative and logistic arrangements.

### Chair

Mr Hamad Rashed Al Muhannadi, General Manager, RasGas, provides leadership and guidance to both the Board membership and the organization as a whole.

### Vice Chair

H.E. Sheikh Dr Abdullah Bin Ali Al-Thani, President, Hamad Bin Khalifa University.
He is also the Vice President for Education,Qatar Foundation for Education, Science, and Community Development; and Chair, Executive Management Committee, QU Board of Regents.

### Board Members

**Mr. Hamad Rashed Al Muhannadi**
Chair

**H.E. Sheikh Dr. Abdullah Bin Ali Al-Thani**
Vice Chair

**H.E. Sheikh Ahmad Bin Jasem Bin Mohammad Al-Thani**
Minister of Economy and Commerce
Member

**H.E. Dr. Hessa Sultan Jaber**
Minister of Communication and Information Technology
Member

**H.E. Dr. Saleh Mohammad Al-Nabet**
Minister of Development Planning and Statistics
Member

**H.E. Dr. Mohammad Abdul Wahid Al-Hamadi**
Minister of Education and Higher Education and Secretary General, Supreme Education Council
Member

**H.E. Sheikh Faisal Bin Qasim Al-Thani**
Chairman, Qatari Businessmen Association
Member

**H.E. Sheikh Dr. Khalid Bin Thani Bin Abdullah Al-Thani**
Chairman and Managing Director, Qatar International Islamic Bank
Member

**H.E. Prof. Sheikha Abdulla Al-Misnad**
President, Qatar University
Ex-officio

### General Secretary

**Prof. Abdel Aziz El Said El-Bayoumi**
Secretary General, QU Board of Regents; professor and academic advisor to QU President

### President

**Prof. Sheikha Abdulla Al-Misnad**
As the Chief Executive Officer of QU, the President has overall authority of its administrative and academic processes, adhering to the principal goals of the organization's Strategic Plan. This includes overseeing QU's commitment to its vision and mission, and serving as its official spokesperson and representative at all public appearances in Qatar and abroad.

The President participates in all deliberations at the Board of Regents' meetings and executes ensuing recommendations made by the Board. The President submits an annual operating budget for Board approval, as well as nominations for the positions of Vice-President at the organization.

Prof Al-Misnad assumed her position as QU's 5th President in 2003, having served as its Vice President for Research and Community Development from 2000 to 2003. A QU alumna, she rejoined the university as a teaching assistant in 1977, and in 1986 became a member of the University Council and later, Head of the then-Department of Foundations of Education from 1992 to 1995.

Always a strong advocate of education and life-long learning, Prof Al-Misnad received her Doctor of Philosophy in Education in 1984 from the University of Durham UK with a thesis on "The Development of Modern Education in the Gulf States with Special Reference to Women's Education" which was subsequently published by

Ithaca Press in 1985. The university later awarded her an honorary doctorate in civil law in January 2008 in recognition of her “outstanding achievements in the field of education”.

In October 2013, she was awarded an honorary Doctor of Laws from Dalhousie University, Canada

Adding to her many achievements, Prof Al-Misnad was appointed a member of the Board of Trustees of the American University of Cairo in 2010, a member of the Asian University for Women International Council of Advisors in 2009; and has held membership in the United Nations University (UNU) Council since 2004. Among a number of distinguished awards, she received the 2011 Woman in Education Service Excellence Award in the 10th Middle East Women Leaders Awards.

Prof Al-Misnad’s accomplishments also included appointment as Minister by then-HH The Emir in 2010.

## Vice Presidents

**Dr Humaid Abdullah Al Midfaa**
Vice President and Chief Financial Officer
The VP and CFO is responsible for the general supervision of QU’s administrative and financial affairs. Dr Al-Midfaa has held this position since 2003. After completing his PhD in Non-Organic Chemistry from London University in 1988, he began his career at QU as Assistant Professor of Chemistry at the Department of Chemistry in the then-College of Science. Before assuming his current role in 2003, Dr Al-Midfaa held several administrative positions among which were Director Research and Applied Sciences Center, and Dean of Student Affairs.

**Dr Mazen O Hasna**
Vice President and Chief Academic Officer
The VP and CAO is responsible for the general supervision of all QU academic programs, research, continuing education and libraries. In February 2013, Dr Hasna was appointed to his current position following his successful tenure as Dean College of Engineering (CENG). He earlier held the positions at the College of Assistant Professor, and later, Head Electrical Engineering Department and Associate Dean for Academic Affairs

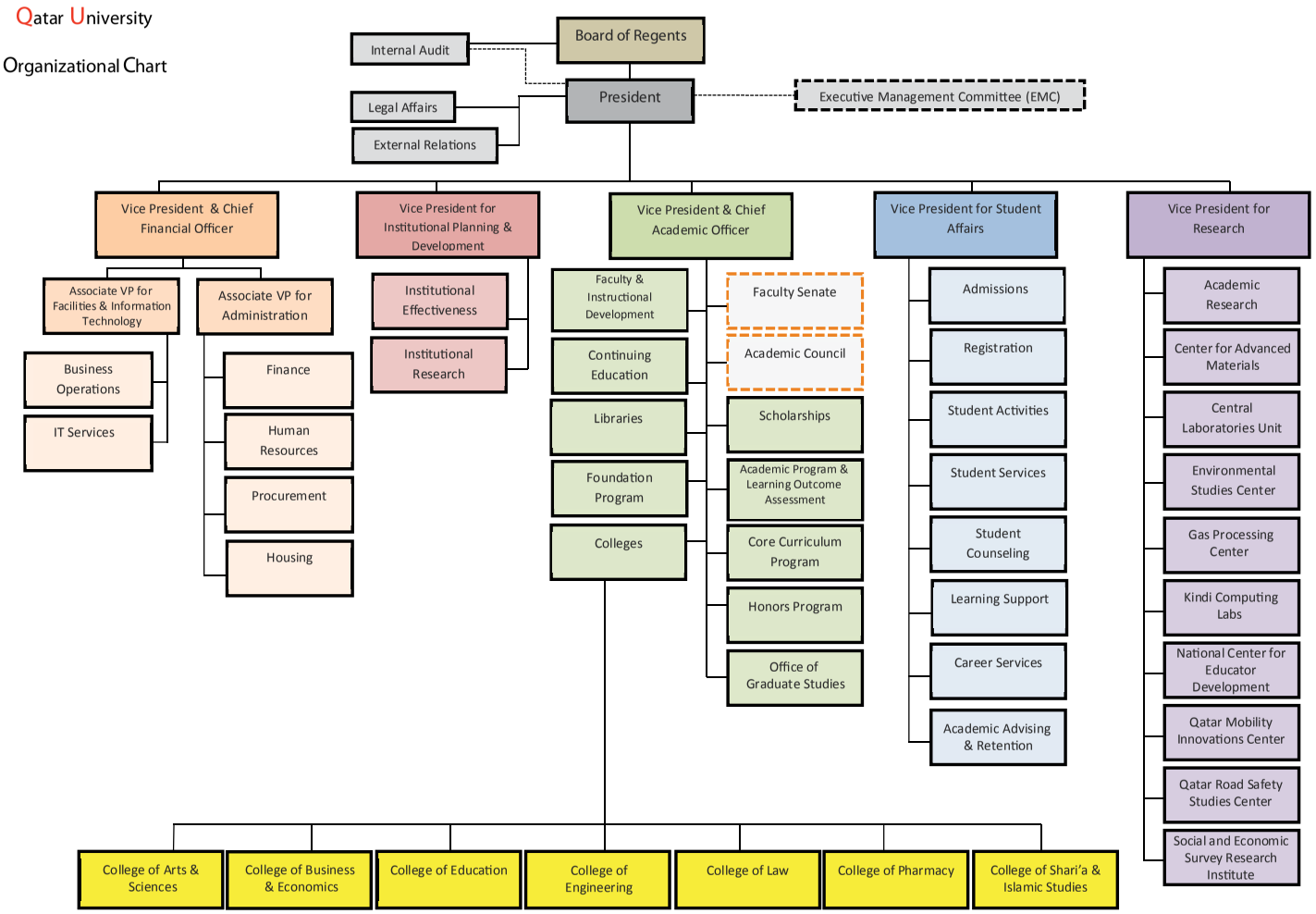
Dr Hasna received his BSc degree in 1994 from Qatar University, an MSc from the University of Southern California in 1998, and a PhD in 2003 from the University of Minnesota, all in Electrical Engineering, majoring in communications engineering. .

**Dr Omar Mohamed Al-Ansari**
Vice President for Student Affairs
The VP for Student Affairs is responsible for the general supervision of all student initiatives at Qatar University, including admission, registration and academic records, student life, campus activities, student academic support and related student services. Dr Al-Ansari was appointed Associate Vice President for Student Affairs in 2003 and assumed his current position in 2007. He holds a PhD in Civil Engineering from the University of Texas at Austin, USA.

**Dr Hassan Rashid Al-Derham**
Vice President for Research
The Office of the VP for Research is responsible for encouraging, promoting and facilitating research and collaboration activities among the QU community and with external organizations and institutions. A PhD in Civil Engineering from University of Glamorgan UK, Dr Al-Derham has held this position since 2007, following his earlier responsibilities as Associate Vice President for Research. In addition to overseeing the organization’s research centers and units, Dr Al-Derham holds the Chair on both the Quality Management and Quality Assurance Committees.

**Prof Saif Said Al Sowaidi**
Vice President for Institutional Planning and Development
The Office of the VP is responsible for facilitating the integration of accountability, assessment, planning, accreditation and institutional research, and providing essential support to QU administration and community. Prof Al Sowaidi has held this position since November 2008, prior to which he served as a consultant to QU President, Vice President for Administration, and Associate Dean at the College of Business and Economics (CBE). A PhD in Economics from University of Durham UK, Prof Al-Sowaidi has served as professor of economics at CBE since 2004.

# ORGANIZATIONAL STRUCTURE



## DIRECTORY

| Offices | Number | Email |
|---|---|---|
| Qatar University Main Line | 44033333 | info@qu.edu.qa |
| SESRI Call Centre | 44033030 | |
| Talabati Services | 44035555 | |
| Emergency Services | 44036666 | |
| BOD Helpdesk | 44033636 | |
| Student Call Center | 44034444 | studenthelp@qu.edu.qa |
| Academic Programs and Learning Outcome Assessment | 44034007 | aploa@qu.edu.qa |
| Admissions Department | 44033737 | admissiondir@qu.edu.qa |
| Admission Section | 44033733/3741 | admission@qu.edu.qa |
| Graduate Admission Section | 44033750 | graduate@qu.edu.qa |
| Recruitment & Orientation Section | 44033751/2752 | studentrecruitment@qu.edu.qa |
| Scholarships Section | 44033747/3748 | scholarships@qu.edu.qa |
| Transfers Section | 44033744/3745 | transfer@qu.edu.qa |
| Alumni Relations Section | 44033059/3071 | alumni@qu.edu.qa |
| Associate Vice President for Facilities & Information Technology | 44033107 | avpadmin@qu.edu.qa |
| Business Operation Department | 44033500 | bodhelpdesk@qu.edu.qa |
| Career Services Center | 44033883 | careerservices@qu.edu.qa |
| Central Advising and Retention Unit | 44033875 | caar@qu.edu.qa |
| Central Laboratory Unit | 44033927 | clu@qu.edu.qa |
| College of Arts & Science | 44034500 | cas@qu.edu.qa |
| Arabic for Non-Native Speakers Program | 44034584 | arabicprogram@qu.edu.qa |
| Department of Arabic Language | 44034820 | headdeparabic@qu.edu.qa |
| Department of Biological & Environmental Sciences | 44034530 | biology@qu.edu.qa |
| Department of Chemistry & Earth Sciences | 44034650 | headdepchemistry@qu.edu.qa |
| Department of English Literature and Linguistics | 44034900 | malghadeer@qu.edu.qa |
| Department of Health Sciences | 44034800 | health@qu.edu.qa |

| | | |
|---|---|---|
| Department of Humanities | 44034700 | headdephumanities@qu.edu.qa |
| Department of International Affairs | 44034957/4941 | iap@qu.edu.qa |
| Department of Mass Communication & Information Science | 44034860 | headdepmasscommunication@qu.edu.qa |
| Department of Mathematics, Statistics & Physics | 44034600 | math-physics@qu.edu.qa |
| Department of Psychological Sciences | 44035200 | psych@qu.edu.qa |
| Department of Social Sciences | 44034750 | headdeptsocsci@qu.edu.qa |
| Sports Science Program | 44034960 | sportscience@qu.edu.qa |
| College of Business & Economics | 44035000 | bus-econ@qu.edu.qa |
| Department of Accounting and Information Systems | 44035051 | accounting@qu.edu.qa |
| Department of Finance and Economics | 44035080 | fin-econ@qu.edu.qa |
| Department of Management and Marketing | 44035033/5034 | manmark@qu.edu.qa |
| College of Education | 44035100 | Dean-Edu@qu.edu.qa |
| College of Engineering | 44034100/4104 | dean-eng@qu.edu.qa |
| Department of Architecture and Urban Planning | 44034340 | architecture-urban@qu.edu.qa |
| Department of Chemical Engineering | 44034130 | che@qu.edu.qa |
| Department of Civil Engineering | 44034170 | civil@qu.edu.qa |
| Department of Computer Science and Engineering | 44034240 | cs@qu.edu.qa |
| Department of Electrical Engineering | 44034200 | electrical@qu.edu.qa |
| Department of Mechanical Engineering | 44034300 | mecheng@qu.edu.qa |
| College of Law | 44035252 | law@qu.edu.qa |
| College of Pharmacy | 44035550 | pharmacy@qu.edu.qa |
| College of Sharia & Islamic Studies | 44034400 | shariadean@qu.edu.qa |
| Department of Islamic Culture and Dawa | 44034450 | lanak@qu.edu.qa |
| Department of Islamic Studies | 44034470 | islamicstudies@qu.edu.qa |
| Environmental Studies Center | 44033939 | esc@qu.edu.qa |
| External Relations Department | 44033050 | ccer@qu.edu.qa |
| Faculty Senate | 44034018 | fs22@qu.edu.qa |
| Finance Department | 44033111 | Finance@qu.edu.qa |
| Fire Emergency | 44033999 | |

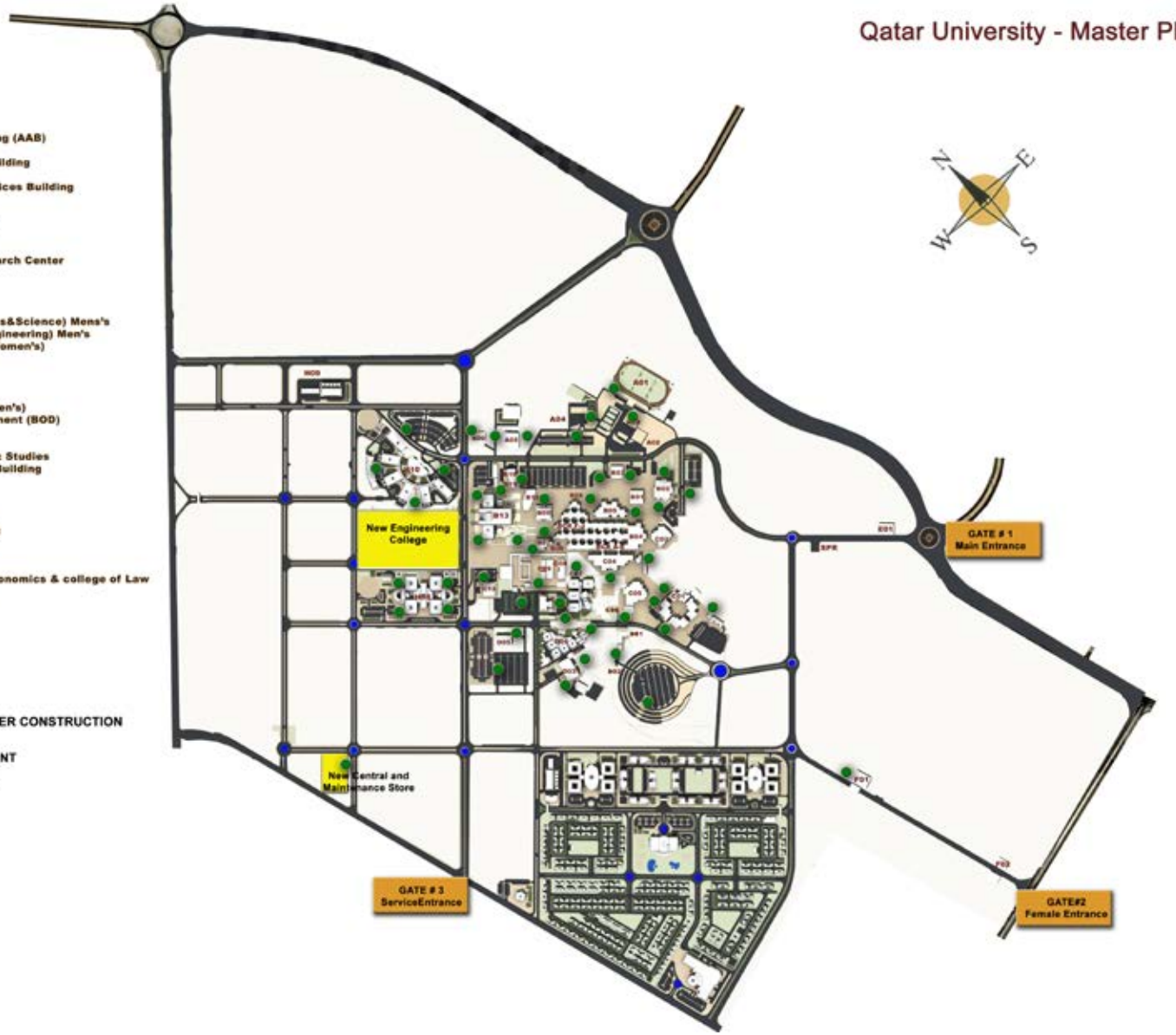
| | | |
|---|---|---|
| Gas Processing Center | 44034370 | gpc@qu.edu.qa |
| Health Clinic | 44033285/3290 | hhashad@qu.edu.qa |
| Health Emergency | 44035050 | hhashad@qu.edu.qa |
| Housing Department | 44033160 | housing@qu.edu.qa |
| Human Resources Department | 44033240 | hroffice@qu.edu.qa |
| Human Resources Helpdesk | 44033366 | hrdesk@qu.edu.qa |
| Continuing Education Office | 44034020 | continuingeducation@qu.edu.qa |
| Core Curriculum Program | 44034043/4044 | quccprogram@qu.edu.qa |
| Faculty and Instructional Development | 44034030 | ofid@qu.edu.qa |
| Foundation Program | 44035300 | foundation@qu.edu.qa |
| Honours Program | 44034990 | quhonors@qu.edu.qa |
| Library | 44034050 | library@qu.edu.qa |
| Information Technology Services | 44033400 | helpdesk@qu.edu.qa |
| Internal Audit Department | 44033097 | internal-audit@qu.edu.qa |
| ITS - Helpdesk | 44033456 | helpdesk@qu.edu.qa |
| Legal Office | 44033010 | labibg@qu.edu.qa |
| Materials Technology Unit | 44033988 | |
| Office of Academic Research | 44033919 | olfat@qu.edu.qa |
| Office of Quality Management | 44033913 | oqm@qu.edu.qa |
| Scholarships & Partnerships Office | 44034009/3156/4010 | quscholarships@qu.edu.qa |
| President's Office | 44033000 | president@qu.edu.qa |
| Procurement Office | 44033222 | Procurement@qu.edu.qa |
| Registration Department | 44033777 | registrationdir@qu.edu.qa |
| Records and Archiving Section | 44033796/3775 | records@qu.edu.qa |
| Registration Section | 44033740/3789 | registrations@qu.edu.qa |
| Schedules Section | 44033791/3785 | schedules@qu.edu.qa |
| Security Emergency | 44036999 | |
| Social and Economic Survey Research Institute (SESRI) Office | 44033020 | sesri@qu.edu.qa |
| Student Activities Department | 44033800 | studentactivities@qu.edu.qa |
| Annual Events and Special Projects Section | 44033826 | annualevents@qu.edu.qa |
| Exchange Programs Section | 44033813 | studentexchange@qu.edu.qa |

| | | |
|---|---|---|
| Sports and Recreation Section | 44033807 | sports@qu.edu.qa |
| Student Development Section | 44033806 | studentdevelopment@qu.edu.qa |
| Student Counseling Center | 44033755 | studentcounseling@qu.edu.qa |
| Student Learning Support Center | 44033870 | learningcenter@qu.edu.qa |
| Academic Support Unit | 44033870 | academicsupport@qu.edu.qa |
| Writing Lab | 44035347 | writinglab@qu.edu.qa |
| Student Services Department | 44033838 | studentservices@qu.edu.qa |
| International Students Section | 44033868/3869 | internationalstudents@qu.edu.qa |
| Primary Services Section | 44033862/3790 | primaryservices@qu.edu.qa |
| Food & Catreing Services Section | 44033865 | foodservices@qu.edu.qa |
| Students Transportation Unit | 44503746 | transportation@qu.edu.qa |
| Special Needs Section | 44033843/3854 | specialneeds@qu.edu.qa |
| Student Fund Section | 44033842/3859 | studentfund@qu.edu.qa |
| Textbooks Section | 44033840/3849 | textbooks@qu.edu.qa |
| Student Helpdesk Section | 44034444 | studenthelp@qu.edu.qa |
| Parents Program Unit | 44033768/5967 | parents@qu.edu.qa |
| Vice President and Chief Academic Officer | 44034000 | vpacademic@qu.edu.qa |
| Vice President and Chief Financial Officer | 44033100 | vpadmin@qu.edu.qa |
| Vice President for Institutional Planning & Development | 44033670 | vpipd@qu.edu.qa |
| Vice President for Research | 44033900 | vpr@qu.edu.qa |
| Vice President for Students Affairs | 44033700 | vpstudents@qu.edu.qa |

# Qatar University - Master Plan

**Existing Buildings**

A01 Arena Pavilion Complex
A02 Main Court Pavilion
A03 Tennis Court Pavilion
A04 Swimming Pool Pavilion
A05 Administrative Affairs Building (AAB)
A06 Men's Foundation Building
B01 University Administration Building
B02 Men's Activity Center
B03 Information Technology Services Building
B04 College of Education
B05 Main Men's Building
B06 Engineering Annex Building
B07 Engineering Workshop
B08 Green House
B09 College of Engineering Research Center
B10 Qatar National Bank
B11 Ibn Khaldoon Hall
B12 Mosque
B13 Library Building
BCR Corridors A-E (College of Arts&Science) Mens's
BCR Corridors F-J (College of Engineering) Men's
C01 College of Arts & Science (Women's)
C02 Faculty Building
C04 Main Women's Building
C05 Women's Activity Center
C06 Medical Clinic
C07 College of Engineering (Women's)
C08 Business Operations Department (BOD)
C09 Central Services Unit
C10 BOD Porta Cabins
C11 College of Sharia and Islamic Studies
C12 Admission and Registration Building
D01 Al-Bidda Building
D02 Women's Carpark Arena
D03 Women's Sports Facility
D04 Women's Food Court
D05 Women's Foundation Building
E01 Gate#1
F01 Security Services Office
F02 Gate#2
H08 College of Business and Acconomics & college of Law
H09 New Central Services Unit
H10 New Research Complex




LEGEND

= BUILDING UNDER CONSTRUCTION

= ASSEMBLY POINT

= ROUNDABOUT

جامعة قطر
QATAR UNIVERSITY

# Qatar University - Academic Calendar for 2014/2015

جامعة قطر
QATAR UNIVERSITY

### Aug-14 (Shawal/Thu Alquda)

| S | M | T | W | T | F | S |
|---|---|---|---|---|---|---|
| | | | | | 1 | 2 |
| 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| 17 | 18 | 19 | 20 | 21 | 22 | 23 |
| Fall | 25 | 26 | ☽27 | 28 | 29 | 30 |
| 31 | | | | | | |

### Sep-14 (Thu Alquda/Thu Alhuja)

| S | M | T | W | T | F | S |
|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 |
| 7 | 8 | 9 | 10 | 11 | 12 | 13 |
| 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 21 | 22 | 23 | 24 | ☽25 | 26 | 27 |
| 28 | 29 | 30 | | | | |

### Oct-14 (Thu Alhuja 35/Muharam 36)

| S | M | T | W | T | F | S |
|---|---|---|---|---|---|---|
| | | | 1 | 2 | 3 | 4 |
| 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| 12 | 13 | 14 | 15 | 16 | 17 | 18 |
| 19 | 20 | 21 | 22 | 23 | 24 | ☽25 |
| 26 | 27 | 28 | 29 | 30 | 31 | |

### Nov-14 (Muharam/Safar)

| S | M | T | W | T | F | S |
|---|---|---|---|---|---|---|
| | | | | | | 1 |
| 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| 16 | 17 | 18 | 19 | 20 | 21 | 22 |
| ☽23 | 24 | 25 | 26 | 27 | 28 | 29 |
| 30 | | | | | | |

### Dec-14

| S | M | T | W | T | F | S |
|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 |
| 7 | 8 | 9 | 10 | 11 | 12 | 13 |
| 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 21 | 22 | ☽23 | 24 | 25 | 26 | 27 |
| 28 | 29 | 30 | 31 | | | |

### Jan-15

| S | M | T | W | T | F | S |
|---|---|---|---|---|---|---|
| | | | | 1 | 2 | 3 |
| 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 11 | 12 | 13 | 14 | 15 | 16 | 17 |
| 18 | 19 | 20 | ☽21 | 22 | 23 | 24 |
| 25 | 26 | 27 | 28 | 29 | 30 | 31 |

### Feb-15

| S | M | T | W | T | F | S |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Spr. | 9 | 10 | 11 | 12 | 13 | 14 |
| 15 | 16 | 17 | 18 | 19 | ☽20 | 21 |
| 22 | 23 | 24 | 25 | 26 | 27 | 28 |

### Mar-15

| S | M | T | W | T | F | S |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| 15 | 16 | 17 | 18 | 19 | 20 | ☽21 |
| 22 | 23 | 24 | 25 | 26 | 27 | 28 |
| 29 | 30 | 31 | | | | |

### Apr-15

| S | M | T | W | T | F | S |
|---|---|---|---|---|---|---|
| | | | 1 | 2 | 3 | 4 |
| 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| 12 | 13 | 14 | 15 | 16 | 17 | 18 |
| 19 | ☽20 | 21 | 22 | 23 | 24 | 25 |
| 26 | 27 | 28 | 29 | 30 | | |

### May-15

| S | M | T | W | T | F | S |
|---|---|---|---|---|---|---|
| | | | | | 1 | 2 |
| 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| 17 | 18 | ☽19 | 20 | 21 | 22 | 23 |
| 24 | 25 | 26 | 27 | 28 | 29 | 30 |
| 31 | | | | | | |

### Jun-15 (Shaaban/Ramadan)

| S | M | T | W | T | F | S |
|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 |
| 7 | 8 | 9 | 10 | 11 | 12 | 13 |
| 14 | 15 | 16 | 17 | ☽18 | 19 | 20 |
| 21 | 22 | 23 | 24 | 25 | 26 | 27 |
| 28 | 29 | 30 | | | | |

### Jul-15 (Ramadan/Shawal)

| S | M | T | W | T | F | S |
|---|---|---|---|---|---|---|
| | | | 1 | 2 | 3 | 4 |
| 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| 12 | 13 | 14 | 15 | 16 | ☽17 | 18 |
| 19 | 20 | 21 | 22 | 23 | 24 | 25 |
| 26 | 27 | 28 | 29 | 30 | 31 | |

### Aug-15 (Shawal/Thu Alquda)

| S | M | T | W | T | F | S |
|---|---|---|---|---|---|---|
| | | | | | | 1 |
| 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| ☽16 | 17 | 18 | 19 | 20 | 21 | 22 |
| Fall | 24 | 25 | 26 | 27 | 28 | 29 |
| 30 | 31 | | | | | |

### Sep-15 (Thu Alquda/Thu Alhuja)

| S | M | T | W | T | F | S |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 |
| 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 13 | ☽14 | 15 | 16 | 17 | 18 | 19 |
| 20 | 21 | 22 | 23 | 24 | 25 | 26 |
| 27 | 28 | 29 | 30 | | | |

| | |
|---|---|
| | Start of semester for administrators |
| | Start of semester for faculty members |
| | Last day to withdraw from a course |
| | Last day to withdraw from semester |
| | Start of summer for faculty members |
| | End of summer for faculty members |
| | Start of summer for administrators |
| | End of summer for administrators |
| ☽ | Start of Arabic (Hijri) month |

| | |
|---|---|
| 1 | Woking days without classes |
| 1 | Working days with classes |
| 1 | Final exams days |
| 1 | Holidays |
| 1 | Weekends |
| | First day of classes |
| | Last day of classes |
| | Start of registration or add/drop |
| | End of registration or add/drop |

## UNIVERSITY TERMINOLOGY

**Academic Advisor**
A university employee assigned to counsel students on academic matters. The student is called the “advisee”.

**Academic Calendar**
Annual listing of all official dates and deadlines for the academic year.

**Academic Load**
Total credits for which a student is registered in a given semester or term.

**Academic Record**
Records directly related to the education of a student and maintained by the Registration Department.

**Academic Standing**
Determined by academic regulations governing good standing, probation and dismissal.

**Academic Year**
The period of time beginning with the first day of class of a fall semester and those which follow, up to, but excluding, the first day of class of the fall semester of the following year.

**Add and Drop**
A period of time at the beginning of each semester/term when students can adjust schedules by dropping or adding courses or changing sections of a course.

**Admission**
Formal acceptance as a student.

**Alumni**
Those who have graduated from Qatar University.

**Appeal of Academic Deficiency**
A mechanism allowing undergraduate students dismissed for academic deficiency to appeal the decision within 10 business days of the notification of academic dismissal.

**Audit a Course**
Permission to attend and participate in a course without receiving academic credit.

**Bachelor’s Degree**
A 120 credit hours minimum undergraduate degree.

**Catalog Year**
A student’s Catalog year denotes which specific set of graduation requirements will apply to that student. Unless altered, a student’s Catalog year is the year when the student was admitted to study at QU.

**Common Examinations**
Examinations for courses with multiple sections scheduled at a common time at the request of the college/department.

**Concentration**
Sub-specialization within a major that allows a student to focus on a particular aspect of the major field of study.

**Core Curriculum Requirements**
Requirements common to all undergraduate students designed to provide both breadth and specialization in their academic degree programs.

**Co-requisite**
A course required to be taken simultaneously with another course.

**Course**
A unit of study that may utilize lecture, discussion, laboratory, seminar, independent study, internship, or other similar teaching formats to facilitate learning for a student.

**Course Schedule**
A list of courses offered during a semester that specifies the days, hours, locations of classes, and the names of the instructors.

**Credit Hour**
The equivalent of a 50-minute lecture or two to three hours of laboratory per week for one regular semester.

**Curriculum**
A structured set of learning objectives built in a specified set of courses.

**Degree Audit**
Methodical examination and reviewing of students’ compliance with their degree requirements.

**Department**
An academic unit of a college or an administrative unit of the university.

**Directed Study**
An investigation under faculty supervision beyond what is offered in existing courses. Directed study may include, but is not limited to graduation, research or capstone projects.

**Dismissal**
the termination of a student's record in the university for unacceptable conduct or unsatisfactory academic achievement.

**Elective Course**
A course selected at a student's discretion and may require approval of the academic advisor.

**Extracurricular**
Enrichment and leadership development activities that are part of student life but are not part of the academic program, such as student activities, athletics and music.

**Fee**
Charges for services; does not include course tuition.

**First Year Student**
An undergraduate student admitted to QU who either has never attended a university or who has earned less than 24 credit hours at another university.

**Foundation Program Courses**
Pre-Undergraduate remedial courses numbered 099 and below. Students may be waived out of these courses by placement tests. Foundation courses do not count in the credits earned toward a degree, but they do count in the Foundation Program grade point average.

**Full-Time Student**
An undergraduate student who is registered for 12 or more credit hours in a given semester.

**Good Standing, Academic**
The academic standing of an undergraduate student who has achieved a cumulative GPA of 2.00 or higher after gaining 25 GPA hours or above. The academic standing of a diploma student who has achieved a cumulative GPA of 2.50 or higher. The academic standing of a graduate student who achieved a minimum cumulative GPA of 3.00.

**GPA**
Grade point average of the grades of QU courses within a specific level of study.

**Grade Points**
Numerical value associated with each grade.

**Graduate Student**
A student who is working toward completion of a master's or doctorate level degree.

**Hold**
A mechanism preventing a student from either registering in classes or receiving a University service. More common hold types include admission holds, department holds, advisor holds, and tuition holds. The student should see the department that placed the hold for resolution.

**Honors Course**
Honors section of core curriculum course or courses that are used to meet elective requirements. Only Honors students may enroll in an Honors course.

**ID Card**
University student identification card providing and controlling access to university facilities and services.

**Incomplete**
A temporary grade that a student may request from the instructor if he/she fails to attend the final exam or complete all the course requirements.

**Major**
A curriculum component of an academic program intended to provide in-depth study in a discipline or a professional field of study.

**Minor**
A secondary curriculum component of an academic program intended to provide a limited depth and/or breadth of -study in a discipline or a professional field of study.

**Non-degree Student**
Designation used for students who are admitted to QU and who are enrolled in courses but are not pursuing a degree program.

**Petition**
A written request seeking a waiver of, or an exception to, a university regulation, policy or deadline.

**Placement Test**
A proficiency examination given to determine a student's ability in a subject area. Placement test scores determine whether the corresponding preparatory course will be waived.

**Prerequisite**
A course required to be completed before a certain course may be taken.

**Probation, Academic**
Status of any undergraduate student who has completed a minimum of 25 undergraduate GPA hours with less than a 2.00 cumulative GPA. The academic standing of a diploma student who has a cumulative GPA of less than 2.50. The academic standing of a graduate student achieving less

than a 3.00 cumulative GPA.

**Probation, Disciplinary**
A formal notice affecting the non-academic status of the student resulting from unsatisfactory conduct .

**Readmission**
The act of admitting an undergraduate student back to the university through the Admissions Department after an interruption of studies for more than one semester.

**Re-enrollment**
A student who withdrew from QU without approval may seek re-enrollment through the Registration Department.

**Registration**
The process of enrolling in classes.

**Regular Student**
A degree-seeking student.

**Reinstatement, Request for**
A mechanism allowing undergraduate students dismissed for academic deficiency to apply for reinstatement after completing a minimum suspension period of 1 regular semester.

**Required Courses**
Courses other than free electives prescribed by the college/school necessary for the completion of a particular degree program.

**Second Degree Student**
A student who has completed an undergraduate degree and who is admitted to QU to pursue an undergraduate degree in a different major.

**Semester**
Either of the two (Fall and Spring) 16-week periods of instruction followed by an examination period into which the academic year is divided. A summer session is decided and offered on an annual basis.

**Student Classification**
QU students are classified as either regular degree-seeking or visiting /non-degree students.

**Student Schedule**
A listing of the courses a student is taking in a given semester that specifies the days, hours, locations of classes and the names of the instructors.

**Study Away**
A QU student who is taking courses at another university during a semester.

**Transcript**
The official result of the student's academic achievement.

**Transfer Credit**
Credit from coursework completed at another institution that is accepted at QU and which may or may not be applicable toward a specific QU degree.

**Transfer Student**
A student who previously attended another university and has been admitted to QU after satisfying the QU transfer admission requirements. Credits completed at the student's prior university may or may not be transferable to QU.

**Tuition**
The fees charged for courses each semester.

**Undergraduate Student**
A student who is working toward completion of a bachelor's degree.

**Visiting Student**
A student from another accredited institution who plans to graduate from that institution and who is admitted to QU for a limited period. .

**Warning, Academic**
An official notification to students who failed to achieve in any particular semester a term GPA equal to at least the minimum cumulative GPA requirement for "Good Standing" or whose additional failure in a particular course will result in an Academic Dismissal.

**Warning, Disciplinary**
An official notification that the student's behavior violates the Student Integrity Code.

**Withdrawal from a Course**
After the regular drop/add period, students may withdraw from one or more courses before the withdrawal deadline for the semester, provided that the total number of credit hours carried does not fall below the minimum credit hour requirement of the program.

**Withdrawal from the Semester**
Withdrawing from all registered courses for the semester of withdrawal.

**Withdrawal from the University**
Suspends enrollment in QU for a period not to exceed four semesters.

## DISCLAIMER

The Undergraduate Catalog is intended to reflect current academic policies, procedures, degree offerings, course descriptions, and other information pertinent to undergraduate study at Qatar University. This catalog identifies the minimum University requirements. Individual programs may prescribe additional requirements. Students should consult with their respective college and/or program director for a comprehensive listing of major/programmatic requirements.

As it is not possible in a publication of this size to include all of the rules, policies and other information that pertain to students and Qatar University; more current or complete information may be obtained from the appropriate college, academic department, or administrative office.

The QU Undergraduate Catalog contains the most accurate and recent information available for students of the university. However, due to potential issues in publication, readers are cautioned on the following:

1. Errors of typographical or editorial nature, or technological compatibility issues may be present due to the publication process, and the University assumes no responsibility for such errors.

2. There is an inevitable delay between the time new policies are approved and their appearance in the publication.

3. Degree-seeking students are held to the provisions of the catalog in effect at the time of their first semester of enrollment. Students who re-enroll, will be subject to the new terms and conditions of their first semester back.

4. The University reserves the right to change any provisions of this catalog at any time, including, but not limited to, course offerings, degree requirements, fees, and calendar listings, as required by the University or the State of Qatar.

The Undergraduate catalog is made available in printable format and online at www.qu.edu.qa/students/catalog.php. In the event that information in the online catalog differs from that of the printable form, the online catalog shall prevail as the governing document for the current academic year.



# CHAPTER 1
# ABOUT THE UNIVERSITY

Since its inception in 1973, Qatar University (QU) has served as Qatar's prominent national institution of higher education, and is positioned as a beacon of academic and research excellence in the region.
Serving over 15000 students, the organization provides a teaching and learning environment enhanced by top-rate faculty, facilities, resources, and student-driven services that enhance academic performance and produce quality student outcomes.
Seven colleges -- Arts and Sciences (CAS), Business and Economics (CBE), Education (CED), Engineering (CENG), Law (LAWC), Pharmacy (CPH), and Sharia and Islamic Studies (CSIS) – offer over 70 specializations at the undergraduate level – the widest range of academic programs in the State of Qatar.
QU has continued to respond to labor market needs for specialist professionals and national aspirations towards a knowledge-based economy by establishing a number of graduate programs which number 26 to date -- 19 Masters, four Diplomas, one PharmD and two PhDs, fielding current and emerging issues relevant to Qatar and the Gulf.

**They are distributed by college:**

**Arts and Sciences:** PhD in Biological & Environmental Sciences; Masters' in Biomedical Sciences, Environmental Sciences, Materials Science & Technology, Gulf Studies, and Arabic Literature & Language.
**Business and Economics:** MBA; Master's in Accounting.
**Education:** M. Ed in Educational Leadership; M. Ed in Special Education. Diploma programs include Early Childhood Education, Primary Education, Secondary Education, and Special Education.
**Engineering:** PhD in Engineering; Masters' in Civil Engineering, Electrical Engineering, Mechanical Engineering, Computing, Engineering Management, Environmental Engineering, and Urban Planning & Development.
**Pharmacy:** MSc Pharmacy, and Doctor of Pharmacy (PharmD).
**Sharia and Islamic Studies:** Masters in Quranic Sciences & Exegeses, and Fiqh & Usul Al Fiqh.

QU has committed considerable resources to upgrading its classroom and campus infrastructure with modern technology-enabled resources such as Lecture Capture, Blackboard, CiscoWebEx, and special needs assistive technology; advanced research labs, new and environmentally-friendly buildings, and well-equipped library facilities. These have made a positive impact on both teaching approaches and students' enjoyment of learning.
A diverse student body at QU comprises over fifty-two nationalities, the majority of which are Qatari nationals. Women make up approximately 77% of the student population.
QU has an alumni body of over 33,000 graduates and boasts a vibrant Alumni Association comprising 15 chapters. Its fifth and current President, Prof Sheikha Abdulla Al-Misnad, is a QU graduate of the Class of 1977. Also among its distinguished alumni are Her Highness Sheikha Mozah Bint Nasser, Class of 1986, as well as leaders in business, industry, government, academia and civil society.

## VISION

Qatar University shall be a model national university in the region, recognized for high-quality education and research and for being a leader of economic and social development.

## MISSION

Qatar University is the national institution of higher education in Qatar. It provides high quality undergraduate and graduate programs that prepare competent graduates, destined to shape the future of Qatar. The university community has a diverse and committed faculty who teach and conduct research, which addresses relevant local and regional challenges, advances knowledge, and contributes actively to the needs and aspirations of society.

## HISTORY

The University originally began as the College of Education in 1973, instituted by an Emiri decree as the first national higher education institution to be established in the state of Qatar. The country's burgeoning economic growth saw a push toward education reform to provide post-secondary education opportunities for Qatari citizens with the goal to building a workforce of competent and skilled graduates in line with labor market needs and adhering to the principles of Qatar National Vision 2030, National Development Strategy, National Health Strategy, and the National Research Strategy.
Intrinsic to QU's position as an institution of academic and research excellence, best practice and international standard, is its adherence to preserving the language, history, and cultural traditions of Qatar and the Islamic world.

## QU REFORM

Qatar University embarked on a comprehensive reform project in 2003, with a focus on three main goals: autonomy, academic reform, and administrative and

financial reform. The objective was to modernize its academic programs, and upgrade and decentralize its administrative processes and procedures with a central objective towards overall efficiency and creating an edifying and motivating academic experience for its students.
The project was led by then-H.H. the Heir Apparent Sheikh Tamim Bin Hamad Al-Thani, QU President Prof Sheikha Abdulla Al-Misnad, and the Office of Institutional Planning and Development (OIPD). Reform efforts resulted in the establishment of a Board of Regents that essentially guides QU's policies and operations.
The Reform Plan was the forerunner for the University's comprehensive Strategic Plan 2009-2013, which highlighted a priority focus on promoting quality education, research, community service, and institutional efficiency.
The current Strategic Plan 2013-2016 has enumerated 4 areas of focus -- nurture student experience, optimize institutional effectiveness, build international recognition, and recognize scholarly excellence.
An important aspect of the reform exercise was QU's strengthened commitment to its students. With the implementation of a number of initiatives and strategies such as a reformulated Foundation Program, amended policies on student academic probation and retention and a self-study to gauge students' first-year campus experience, QU strengthens its investment in student engagement, motivation and success.
These also include a refocused Student Learning Support Center, an award-winning Center for Academic Advising and Retention, Student Complaint System, peer tutoring and teacher-student mentoring, and counseling services. They form part of the organization's growth strategy which puts each student's interests at the heart of its plans by actively supporting the improvement of their learning skills and so advancing their competitiveness as students and later as graduates in the labor market.
Student participation in the life of the campus comes in the form of the Qatar University Student Representative Board (QUSRB), which was established to serve and act in the interest of the students and the QU community.

## ACADEMIC SYSTEM

This is based on the US semester system of two periods of study in Fall and Spring, and course work measured in credit hours. The academic year comprises 16 weeks of study in addition to a summer session. Credit hours are established depending on the scope of the course.
The normal duration of the course of study at QU may vary according to each program's requirements. However, the length of study may not exceed eight years from the date of enrollment at the undergraduate level and four years from the date of enrollment at the graduate level. This excludes the period spent in the Foundation Program.
A degree is awarded to each student who has fulfilled all the academic requirements of his/her program with a minimum cumulative GPA of 2.00 on a 4 point scale. Graduation ceremonies are held annually.

## LANGUAGE OF COMMUNICATION

Starting Spring 2012, several changes on language provision at QU came into effect. As a result, students joining Arabic-taught programs are exempt from Foundation requirements, and additional degree programs are being offered in Arabic, including International Affairs, and Business & Economics.
Arabic remains the official language of administrative communication at the organization.
The University strives to provide as many course hours as possible, based on the capacity within the different disciplines. Admission to all QU programs continues to be based on student competitiveness and program capacity. It is, however, compulsory that students enroll in core curriculum courses. Information about the core curriculum can be found on QU website.
The university continues to uphold its responsibility to promote the Arabic language, history, culture, and traditions through the programs offered by the College of Sharia & Islamic Studies, the Arabic Language department in College of Arts & Sciences, and at celebratory events such as Arabic Language Day and Cultural Village. Additionally, QU extends this role through its Arabic for Non-Native Speakers (ANNS) program, at which students from around the world participate in an intensive, year-long Arabic language course, in tandem with visits to cultural and historical sites in Qatar. The Program offers Beginner, Intermediate and Advanced levels, focusing on language functions and communicative skills of speaking, reading, writing and listening comprehension.

## RESEARCH

The institution considers research a priority area to develop and expand for the benefit of its students, faculty, the university as a whole and the Qatari community in general. This is evidenced by the incorporation of research in every aspect of the academic experience -- a fact reflected in its research funding, which amounted to USD 200 million in 2011-2012 and increased by over US$56 million in 2012-2013.
The institution's commitment to promoting a culture of research is also emphasized through its annual Qatar University Research Forum (QURF), and the introduction of a research complex and several specialized research centers of excellence. These centers, which today number 12, focus on a wide range of research areas, such as

the environment, marine conservation, data collection and statistical analysis, road and traffic safety, materials processing, mobility innovations, laboratory management and safety, and educator development.
Initiatives such as a ground-breaking biofuel project, a desalination plant, and water reuse study are among the research projects at QU that are geared towards addressing issues that present themselves in a country that is rapidly expanding.
QU continued to be top winner in the award cycles of the National Priorities Research Program (NPRP) and Undergraduate Research Experience Program (UREP) under the Qatar National Research Fund (QNRF). In the 7th NPRP cycle, QU researchers won the highest number of awards -- 62 (38.3%) -- out of 162 awarded proposals from organizations and institutions in Qatar.
The organization also achieved a success percentage of 31.9% in the 13th cycle of UREP, gaining awards for 29 out of 91 submitted student/faculty proposals.
The institution has also parlayed its research priorities into partnerships with government, business, industry and civil society organizations. This has included the establishment of Chair positions in various research areas, and agreements and MOUs that advance research collaboration opportunities for students and faculty.

## STUDENTS

Qatar University prides itself on the quality of its students and alumni. It started with 150 students in 1973, and grew to a total of approximately 15,000 in the academic year 2012-2013. The University is committed to ensuring that campus life is an enriching environment for encouraging volunteerism, civic responsibility, and leadership.
QU students actively participate in a wide range of national events and community service activities such as the Qatar Career Fair, planning and execution of Eid charity projects, organization of the National Day parade at QU, as well as many academic societies and clubs. A number of student events and extracurricular activities, such as the Cultural Village, Sponsorship and Internship Day, as well as Clubs Day, have become staples on the academic calendar.
The annual Study Abroad Fair organized by the Scholarships & Partnerships Office is a way in which the organization has encouraged students to pursue further studies at prestigious international universities.
In line with the organization's commitment to Qatarization, the Office facilitates national students' needs and aspirations in pursuing Masters and PhD studies at top tier universities around the world, so building a cadre of distinguished scholars to join QU's ranks after graduation and contribute their expertise to the organization's teaching and learning environment.
Today, 52 national scholars are studying at universities abroad and 20 are in preparation for their scholarship journey to pursue a wide range of studies which will be of considerable value to the "brain" of QU. Thirteen scholars have joined QU to date, bringing a wealth of knowledge and experience gained from their studies abroad.
The Office for Graduate Studies plays a major role in supporting graduate studies and research and scholarship. Its Grad Faculty Forum serves as a platform to build student/faculty relationships to advance quality research and collaboration.
During the academic year 2012-2013, QU awarded internal student grants totaling over QR11 million.
The grants create a positive competitive environment, encouraging students to engage and excel in projects of academic and social import, and advance the institution's reputation for talented studentship.
QU also supports exchange visits with foreign universities, and study and training trips abroad for its students to gain exposure and perspective on an international level.

## FACULTY

QU recruits qualified professionals and experts in their respective fields to ensure a continuum of academic excellence throughout the colleges, so guaranteeing the value and quality of the student experience.
The faculty framework at QU includes (by qualification) Professor, Associate Professor, and Assistant Professor. These positions are supported by lecturers and teaching assistants. Visiting professors also bring added expertise to the teaching/learning experience.
In addition, experts appointed to Chair positions at QU facilitate graduate research and training activities in conjunction with industry companies to provide students with hands-on experience at field sites and workplace environments.

## COMMUNITY SERVICE

Community service is another priority area at QU. Like research, it forms part of the learning environment, and enhances students' academic and extra-curricular life at the university.
The provision of optimum community service is an intrinsic part of the organization's Strategic Plan and is closely aligned with the goals outlined in Qatar National Vision 2030 and the National Development Strategy (2011-16). It is also detailed in the requirements of SACS, the accrediting body from whom QU is currently seeking institutional accreditation.
The wide range of community service activities by QU at the institution, college, department, student and faculty level include national capacity building, alumni

engagement, professional development training, health and wellness campaigns, high school outreach programs, environmental conservation, library facilities, consultancy support services, and research and collaboration.

## ACCREDITATION

Qatar University regards international accreditation as a crucial step in achieving its goal as an institution of quality and excellence. With this in mind, the organization has embarked on a long-term project of achieving international accreditation status for its colleges, programs and courses. It has been successful in gaining accreditation from leading international accrediting bodies and is currently undergoing an institution-wide exercise to gain accreditation status with the US-based Southern Association of Colleges and Schools (SACS).

# CHAPTER 2
# CAMPUS SERVICES

## THE CAMPUS

Qatar University is situated on the northern edge of Doha, approximately 16 kilometers from the center of the city. In addition to the main campus, the University has an experimental farm located 65 km north of Doha.
QU's main campus is built on a total area of approximately 8 square kilometers, with architecture which integrates distinction and modernism with the ideals of traditional Qatari design. Students enjoy a wide range of services offered on campus to enrich their academic and social experiences. Many of these services can be utilized by students whether during the day or after class hours, and students are encouraged to reach out for these excellent resources

## INFORMATION TECHNOLOGY

Information Technology Services is committed to the provision of the best infrastructure, applications, and services to faculty, students and staff of Qatar University. All QU students, faculty and staff are given secure access to the following University services:

• **myQU**: myQU is the University's web portal, a web-based tool that provides centralized access to e-mail, calendars, administrative services and classroom tools, and information through a single username and password. To access myQU, use a web browser to go to http://my.qu.edu.qa and log in with your QUID and password.

• **myBanner**: Banner is an effective information system providing students, faculty and staff with online access to course registration, Drop and Add services, class schedules, grade viewing, and online tuition payment.

• **QSpace**: Qatar University's Institutional Repository: QSpace, is a digital archive comprising the University's intellectual output. QSpace manages, preserves and makes available the academic works of faculty, graduate students and research centers.

• **Email**: The University provides all students, faculty and staff with a University email account. This account can be accessed via standard email clients as well as through the myQU portal. The QU e-mail account is the official form of communication between QU and students; therefore, students are expected to access their QU e-mail frequently.

• **Blackboard**: Blackboard Learning System is a course management system that provides students with course materials, discussion boards, virtual chats, online assessment and a dedicated academic resource center. Students can login to Blackboard using their QU ID accounts at: http://elearning.qu.edu.qa.

• **Wireless Network**: The campus wireless network is the largest wireless network at any campus in Qatar and allows students, faculty, and staff to connect to the internet from any point on campus

• **Help Desk:** The IT Services Helpdesk assists students with questions related to laptop and desktop computing, remote access issues, connecting to the QU network, password and login information, email, virus and spy-ware issues.

• **Lecture Capture Software**: To enhance the university teaching and learning experience, many lectures are captured using lecture capture software (echo360R). Lecture capture is available to the students and faculty as a streaming media file via Blackboard after each class. Lectures are posted permanently, so students can refer back to a particular lecture at any time during their tenure at QU.

**IT Helpdesk contact information:**
Phone: (+974) 4403-3456
Email: helpdesk@qu.edu.qa
Website: http://its.qu.edu.qa/
Hours: 7:30am – 7:30pm, Sunday – Thursday
8.00am- 3.00pm Saturday

## FACILITIES AND RESOURCES

### Athletics
Qatar University provides students, faculty, staff, and the Qatari community with a wealth of athletic and recreational facilities to enrich their academic experience. Equipment, play courts and coaching are available for many popular pastimes. QU supports several sports facilities including the stadium, the aquatic complex which offers a variety of cardiovascular machines, free weights, and weight machines, and a women's sports facility that hosts a wide range of games and activities, and contains a gymnasium. All facilities are open weekdays from 8:00 am to 10:00 pm. For further information, please contact the Sports and Recreational Section at sports@qu.edu.qa or 4403-3800.

### Banking
Students and employees are offered convenient access to banking services through two local bank branch offices and several ATM machines in key locations on campus.

Qatar National Bank (QNB) and Al-Rayyan Bank both offer a full range of services, and their campus branches are open weekdays from 8:00 am to 1:00 pm.

**Bookshop**
The Bookshop, located in the Food Court Building on the women's, section sells a wide selection of stationary and classroom supplies, study and research aides, paints & art materials, Arabic and English language books, and magazines and computer equipment. The bookshop also offers a copy service.

**Textbooks**
The Textbooks Hall provides faculty and students with text books designed to support course curriculum. As part of a University-wide initiative to boost learning skill acquisition and enhance research, QU provides a subsidy that equals 50% of the total price for text books costing more than QR 50. For more information, please see: http://www.qu.edu.qa/students/services/textbooks/index.php

**Food Services**
Qatar University offers extensive dining facilities across its campus, with services catering to a large variety of tastes and concepts. The women's section has a Food Court and 14 cafeterias. The men's section has 9 separate cafeterias. There are international café's on campus, including Starbucks, Coffee Time, Coffee Bean & Tea Leaf and Costa.

**Location:**
Main office: Food Court, Mezzanine Floor, Office #2

**Dining Outlets:**
Women: College of Arts & Sciences, Women's Main Building, Activities Building, Parking Lot, Sports Facility Building, College of Business & Economics, College of Education, Food Court, New Library
Men: College of Engineering- Corridor 08, Men's Main Building, Activities Building, Foundation Building, College of Business & Economics, Water Complex, New Library
Phone: 4403-3865 /5970 /5975
Email: foodservices@qu.edu.qa
Twitter: @QUFSS
Facebook: www.facebook.com/QUFSS
Working hours (Food Services Section): Sunday-Thursday 7:30am- 2:30pm
Working hours (Dining Outlets):

| Cafeteria | Opening and Closing Time | |
|---|---|---|
| **Women** | | |
| Women's Main Building 106 &161 | 7:00 am to 7:00 pm & 7:00 am to 6:30 pm | |
| College of Arts and Sciences-1 & 2 | 7:00 am to 7:00 pm & 7:00 am to 4:30 pm | |
| Women's Activities Building | 7:00 am | 4:30 pm |
| Parking Lot | 7:00 am | 7:00 pm |
| Sports Facility Building | 7:30 am | 4:00 pm |
| College of Business & Economics | 7:00 am | 8:30 pm |
| College of Education | 7:00 am | 7:00 pm |
| Female Activities | 7:00 am | 4:30 pm |
| Food Court | 7:30 am | 7:00 pm |
| New Library | 7:00 am | 9:30 pm |
| **Men** | | |
| College of Engineering: Corridor 08 | 7:00 am | 8:00 pm |
| Men's Main Building- 135 & 138 | 7:00 am to 7:00 pm & 7:00 am to 4:30 pm | |
| Men's Activities Building | 7:00 am | 6:00 pm |
| Men's Foundation Building | 7:00 am | 4:00 pm |
| College of Business & Economics | 7:00 am | 8:30 pm |
| Water Complex | 9:30 am | 9:00 pm |
| New Library | 7:00 am | 9:30 pm |

**Computer Labs**
A large number of academic computer laboratories are available throughout campus for student research and assignments. Students should contact academic departments directly for specific information regarding individual college computer labs and resources.

**Copying & Printing Center**
Qatar university provides copying and printing, laminating, and scanning services at the copy centers, which are located in both the Women's and Men's Activities Buildings and Library Building. Students may also request copying and printing service online via the myQU Portal.
For more information, please see:
**http://www.qu.edu.qa/students/services/primary_services/copy_center.php .**

**Internet Lounges**
Internet lounges are available to students in both the Women's and Men's Activities Buildings. The internet

lounges also offer wireless connectivity and are open weekdays from 8:00 am to 5:00 pm. For more information, see: **http://www.qu.edu.qa/student/services/primary_services/net_hall.php**

**Lockers**
Qatar university provides lockers in various buildings in the men's and women's sections.
For more information, please see:
**http://www.qu.edu.qa/students/services/lockers/index.php .**

**Student Campus Card**
The Student Campus Card is a part of the One Card program which is used mainly on campus as an identification card and for other important purposes, such as: accessing the University facilities, checking out library materials, purchasing books at the University Book Store, registering for any services at QU, etc.
For additional information, please see: **http://www.qu.edu.qa/students/services/uni_id_card/index.php**

**Mosque**
The University mosque serves not only as a religious and spiritual center, but a striking visual landmark and a beautiful reminder of the country's traditions and heritage. Although the women's campus does not have a central mosque or prayer facility, prayer rooms are available in many of the buildings. These rooms are appropriately furnished for prayer services and reserved for women.

**Post Office**
The on-campus Post Office is a branch of Q-Post, which offers a variety of solutions to meet student and employee mailing needs, whether they are sending urgent or valuable mail, parcels or international mail. This office is located in the Women's Activities Building.

## RESEARCH UNITS, CENTERS AND INSTITUTES

Qatar University has several centers and units dedicated to research:

**Center for Advanced Materials (CAM)**
The Center has been established as a multi-disciplinary research and resource center, bringing together state-of-the-art instrumentation, facilities and expert personnel. CAM is the hub of Materials Science and Engineering research activities in Qatar with the goal to develop knowledge base in design, synthesis, characterization as well as intelligent processing and application of advanced materials. The Center encourages and supports graduate students working on any related subjects.

Driven by the needs of potential technological applications and society demand, CAM concentrates on applied research in the areas of Nanotechnology, (Nano) Composites, Corrosion, Construction materials and life cycle assessment. The Center also implemented an integrated graduate training program that emphasizes both materials synthesis and characterization techniques covering a broad spectrum of materials and experimental probes. Furthermore, CAM offers community services through Al Bairaq, the untraditional educational program http://www.qu.edu.qa/offices/research/CAM/dmsprogram/index.php as well as Professional training courses to the industry, for which details and applications are available at the Center's website. http://www.qu.edu.qa/offices/research/CAM/index.php

**Central Laboratory Unit (CLU)**
The CLU provides analytical and technical support and consultancy to serve research activities and graduate studies and testing needs. The Unit also works to optimize and upgrade the practical performance of technical staff and students, as well as to provide hands-on experience on using the analytical instruments for university members.

**Environmental Studies Center (ESC)**
The ESC is the oldest research center in the region established in 1982 to focus on the study of the components of the natural ecosystem, with special focus on the marine environment. The Center is often contracted by government or private agencies outside QU for consultation and to conduct environmental impact assessment studies of big industrial and domesticprojects. The Center is equipped with cutting-edge analytical equipment and state-of-the art research vessel (Janan) for marine surveys and research. The center also hosts a large database of maps and audiovisuals of the natural heritage of the country. The ESC hosts and supports graduate students in all fields of environmental science and engineering.

**Gas Processing Center (GPC)**
The GPC is supported by a large industrial consortium of national and multi-national companies and addresses the problems, challenges, and opportunities facing Qatar's gas processing industry. The Center conducts research and development in areas pertinent to the consortium members' needs and directs its resources towards two areas; asset management/process optimization, and sustainable development. The GPC offers extensive training programs and engages with the broader community through its annual GASNA competition and conferences.

**Office of Academic Research (OAR)**
Established in 2007, the OAR reports to the Office of the Vice President for Research. The OAR plays a significant role in supporting faculty members in the preparation and submission of proposals, sources and opportunities of funding, review of budgets, compliance with University and sponsor policies and procedures and promoting technology throughout the University.

**Office of Quality Management (OQM)**
The OQM was established to ensure consistent management policies and practices across all the research centers/ units of the research sector, initiate a linkage between the testing and quality control results, encourage best practice sharing experiences, and eliminate duplication of efforts. The Unit helps the centers and units on their journey toward performance excellence. To achieve great performance, the Office works with research centers and units to ensure the best investment in terms of human assets and infrastructure, and to envision Qatar University mission to provide our customers with best quality services.

**Social and Economic Survey Research Institute (SESRI)**
Reporting directly to the Office of the President, the SESRI was established in 2008 with a mandate to conduct high quality survey research on issues related to the development and welfare of Qatari society in the social, economic, and cultural areas. With a sophisticated Survey Operations Unit and an experienced staff of researchers and research assistants, SESRI conducts national and regional studies utilizing best practices in survey research. It provides faculty and interested students with a platform to collaborate on diverse projects with topics ranging from education and values to gender, health and labor migration.
Students wishing to pursue research at the university are encouraged to visit and learn more about the centers, and work with their instructors to develop projects that suit their goals. QU offers a number of grants and funding resources, in addition to being a leading presence in obtaining external grants and recognition from organizations such as NPRP and UREP. Additional information is available on the QU website at: http://www.qu.edu.qa/offices/research/index.php.

## CONTINUING EDUCATION OFFICE (CEO)

The CEO is a link between the University and society. The Office identifies and meets the actual training needs of society through specialized training programs, in addition to preparedness programs for professional and international certifications. It enables the greater community to benefit from the expertise, experience and resources available at the university.
Since its inception in 1995, the CEO has provided tailor-made continuing education courses and training workshops, in cooperation with various academic departments. For years, these training programs, based on actual needs of society, reflect the growing demand by individuals and institutions for further programs established by the office.
The following programs are offered:

- **General**
Courses are offered in English (business or general) and Arabic. These are available to both the QU community and the public at large. Registration and course documentation are available online.

- **Contract (Special)**
Specific courses are tailored for government or private agencies. A minimum number of attendees must be present, and the course is not open to anyone outside that particular organization.

- **Certification Programs**
A number of helpful certification programs (CPA, ICDL, etc.) are available for employment qualifications and enhancing personal proficiency. These are available to the public, and may be studied for individually, at home.
For more information on these programs and how to apply, please visit the Continuing Education Office Website: http://www.qu.edu.qa/offices/ceo/programs/certificate_programs/index.php.

## LIBRARY

As an institution committed to academic excellence, as well as the preservation and expansion of Arabic culture, Qatar University maintains a robust library system to meet the needs of students, employees, and the Qatari community.

The new Library building was inaugurated in October 2012, and was designed to parallel QU expansion in its majors and number of students. It is located in the newly developed part of campus. It has five floors, and designed to hold a maximum capacity of 1 million text volumes. The Ground and first floors are designed for female students, faculty members, staff, and visitors, while the second floor is designed primarily for male students.

The QU Library has locations on both the men and women's campus, with the large new facility also available. The University faculty, staff and students are able to check out, reserve, and even request books from other

libraries through interlibrary loan services. Photocopy and computing services are also available during standard library working hours 7:30am – 7:30pm.

The QU Library also features a prominent set of E-Resources, including subscriptions to many renowned Journals, E-books, and other electronic publications. These resources may be freely accessed anywhere. Additional information is available at:
**http:// library.qu.edu.qa**

## MEDICAL CLINIC

The clinic at QU is an outpatient clinic staffed by physicians, The clinic at QU is an outpatient clinic staffed by physicians, nurses and pharmacists who provide medical care to students, faculty and staff of the University in accordance with policies set by Qatar Supreme Council of Health.
A team of dedicated staff is constantly on hand, working to secure the safety and well-being of the University's attendants, as well as contributing to health education and awareness programs.

**Services**
In order to best address the needs and health of the University's attendants, the clinic is continuously expanding the scope of its services. Presently, the following are addressed:
1. Emergency medical response at accident sites.
2. Transfer of urgent or critical medical cases to Hamad Hospital emergency ward, accompanied by a clinic nurse.
3. Routine medical procedures for patients, including medical checkups, diagnosis and prescription of treatments.
4. Antenatal healthcare to promote the health of the mother and her fetus during pregnancy.
5. Healthcare program to the children at the Childhood Center.
6. Referral of patients to different specialist clinics approved by the Supreme Council of Health.
7. Medical support during the exam periods, campus events and graduation days as required.
8. Contributing to University-wide Health Education and awareness programs.

**Location , Working Hours, and Contact numbers**

Emergency number: (974) 4403 5050

**Main Clinic:** Located in the women's section , at the main square. The clinic currently accepts walk-ins and appointments for female students and employees; anyone may call the clinic to request support at their location.
Working hours: 7:30am – 7:30pm
Phone: (+974) 4403 3294
Fax: (+974) 4403 3286

**College of Arts and Sciences Clinic:** Located in the women's College of Arts and Sciences building (at the main entrance), where nurses are available to provide basic medical services.
Working hours: 7:30am – 2:30pm
Phone: (+974) 4403 3295

**Men's Clinic:** Located in the Men's Student Activities building (on the ground floor), where nurses are available to provide basic medical services.
Working hours: 7:30am – 2:30pm
Phone: (+974) 4403 3287

## STUDENT HOUSING

Students attending Qatar University are eligible to apply for student housing. The University provides a safe and secure environment for students to enjoy their academic experience away from home. A purpose-built, state-of-the-art student housing and learning community is under construction and will soon provide on-campus housing to students.

At present, student accommodation is off-campus, offering a convenient location, positive learning environment and scheduled transportation to-and-from the university. Rooms are fully furnished and offer comfortable and practical living space for active students. Lounges and common areas are located throughout the building, enabling students to get together for studies and recreation. A computer lab is also available.

In order to ensure the best possible experience for everyone, QU has implemented guidelines and safety policies, which can be found online: **http://www.qu.edu.qa/offices/housing/**

## CAMPUS PARKING

Many parking lots are available for vehicles of faculty, staff, students and visitors, including areas designated specifically for students or employees. The University has prepared for the expansion of campus by adding more parking spaces, and reducing walking distances to the premises wherever possible.

## CAMPUS SECURITY & SAFETY

The Department of Security and Safety is committed to providing students with a safe learning environment while keeping the university community informed about

campus security. Visitor permits are issued to individuals, companies, alumni and conference attendees. Car permit is also issued for all students. For additional information, refer to website at:
**http://www.qu.edu.qa/students/services/primary_services/index.php**
**http://www.qu.edu.qa/offices/businessop/services/index.php**

**Lost and found**
Responsible about taking care, delivery of the lost and found items inside the QU campus. There are two ways to report a claim, either by visiting the primary services section in activiites building, or by filling an online claim form via the QU website. For more information, please see: http://www.qu.edu.qa/students/services/lost-and-found.php

## TRANSPORTATION

Qatar University provides the following transportation services:
• Bus transportation between the student residences and the university for men and women.
• Bus transportation for scientific and educational trips organized by various university departments.
• Campus Express: This is a free shuttle bus service that safely transports students around campus.

For additional information, please see:
**http://www.qu.edu.qa/students/services/tra/index.php**


QATAR
AIRWAYS
GERNAS
digital

# CHAPTER 3
# STUDENT SUPPORT AND SERVICES

## COMMUNITY INVOLVEMENT AND SERVICE LEARNING

Qatar University provides students with a support system and services that encourage them to make valuable choices towards their social, emotional and learning experiences, as well as their overall development. QU is devoted to the building of a conscientious community, and involves students in various community service initiatives which result in individual growth.
Qatar University's students are encouraged to participate in a wide array of Community and Learning Service Programs aimed at fostering civic engagement and responsibility, both in appreciation of the uniqueness of Qatari culture, as well as their exposure to a diversified experience.

## STUDENT ACTIVITIES

QU recognizes that much of the learning that a student experiences on campus takes place outside the classroom. It is the belief of the University that student activities assist in the growth of students to their fullest potential. Student activities aim to support the academic goals of the student by providing activities and programs designed to promote and maximize students› curricular and co-curricular experience in education, recreation, social interaction, and personal growth. For additional information, please visit the Student Activities Department›s website at **www.qu.edu.qa/students/activities.**

## STUDENT LIFE

### Campus Events

All students are encouraged to develop their unique personal as well as academic potential by participating in a wide variety of University sponsored student activities, programs, and events that combine culture, learning and entertainment. Such events include the National Day Festival, Cultural Village, and Club Days in addition to a wide variety of other co-curricular opportunities that are publicized on campus throughout the year.

### Sport and Recreation

QU offers students, alumni, faculty and staff a wide range of opportunities for competitive and recreational sports. Throughout the year, students are given the opportunity to compete against other QU teams, teams of other universities, or the community.

These programs are designed to promote a team-oriented atmosphere and leadership opportunities for all participants. The University also provides instructional classes in swimming, diving, first aid and similar classes that interest students. Additionally, certified workshops and training sessions in a variety of fields are frequently available.
Moreover, the QU community has accessibility to three well-equipped sports facilities, including an aquatic complex for men, and a stadium and Indoor Sports Complex for women. The aquatic complex includes a diving pool, an Olympic size pool, and a children's training pool. in addition to a well-equipped gymnasium that receives a large number of students and QU staff.
A variety of sports can be played in the outdoor courts, including tennis, volleyball, and basketball. An all-year football field and athletic track is also available for student use. Daily passes and yearly membership are available to the QU community and the public at nominal fees.
Table tennis, billiards, and other recreational games are available in the Student Activities Buildings. For more information or any inquiries please contact **sports@qu.edu.qa.**

### Culture and Exchange Programs

Qatar University students enjoy a diversity of programs and trips through which they can explore other institutions and cultures. The Student Activities Department facilitates and supports incoming and outgoing exchange students as well as any QU student who should travel to benefit from the educational opportunities offered through Qatar University.
Numerous and diverse off-campus opportunities are also available, including:
- Academic / research conferences where students represent Qatar
  University by presenting and defending their research in various forums, both regionally and internationally.
- Cultural / Educational excursions where select Qatar University
  students visit reputable educational institutions. Students from these institutions reciprocate by visiting QU. An example of this type of program is the program with Peace College located in North Carolina, USA.
- Students may be selected to officially represent QU regionally or
  internationally in sports, recreational or educational activities. Currently, QU students regularly participate in the Cultural and Scientific Week in Saudi Arabia, as well as sport tournaments in Turkey and Russia.
- For-credit study abroad and exchange programs.

Students who are interested in any off-campus learning opportunity can apply online or contact **studentexchange@qu.edu.qa**

**Career Services**
The Career Services Center is specialized in providing career counseling, training and professional development services and helps to prepare students to engage and compete for the best career opportunities. It specializes in providing QU students with a suitable career guidance and student employment during their study at QU.
Additionally, the Center assists students with sponsorship and internship opportunities and provides numerous career-related resources, programs and activities. For additional information, visit the Career Services Center website at **http://www.qu.edu.qa/students/services/csc/index.php**

**Counseling Services**
The Student Counseling Center provides QU community with a variety of counseling and psychological services. These services include individual and group counseling that help students overcome any impediments that affect their success. Also included is the Top Readers Program, which promotes reading culture among students and offers workshops that enhance students' self-development.
The aim of the Center is to promote the personal and social growth and development of the QU students, and to help them adjust to the demands of university life. Students can book their appointments online. For additional information regarding the services provided by the Student Counseling Center, please visit the Center's website at: **http://www.qu.edu.qa/students/services/scc.**

**Student Helpdesk**
The Student Helpdesk provides students with a single point of reference for all general inquiries. Communication between the section and students is done through the Reception desk, Student Call Center, and the official accounts of Qatar University on social media (Facebook and Twitter). Furthermore, the Student Helpdesk provides a campus tour service, "Explore QU", to introduce QU's buildings and services.
Students can contact Student Helpdesk through:
• Email: studenthelp@qu.edu.qa
• Telephone: 4403-4444
• Visit the Helpdesk in person
For more information, please see: **http://www.qu.edu.qa/students/services/helpdesk/**

**Reception Desk**
The Reception Desk responds directly to walk-in students for any general questions. The desk also helps students to ease any procedures that they may face difficulty with, in addition to trying to find the best solutions to complicated problems that need study and follow-ups.
The Reception Desk is located in the Admission and Registration building, on the ground Floor.

**Student Call Center**
The Student Call Center receives calls from prospective, current or graduate students, parents, and any external stakeholders, and provides them with answers on issues related to all services offered by the University, and if necessary, direct them to the related departments.
The Student Call Center is available during university working hours (7:30 am to 2:30 pm) at 4403-4444, and serves as a vital link for internal and external university communications. It remains an important part of the services offered by Qatar University; in addition to assisting students, it reduces the pressure on the rest of the departments in the Student Affairs Sector, colleges, and various offices at the university. For more information, please see: **http://www.qu.edu.qa/students/services/helpdesk/call_center.php**

**Explore QU Service**
The Explore QU Service is a campus tour service offered by the Student Helpdesk Section. This service allows Newly Admitted Students, Current Students and Student's Parents to get familiar with QU campus, and better know its buildings and services through well-organized, informative and entertaining tours.

**International Students Section**
The International Students Section provides support services that are designed to assist international students with any academic, personal, financial and immigration-related questions or issues, and presents students with an opportunity to become involved in the QU community. Currently, international students at QU represent more than 70 countries.
The International Students Section is responsible for the welfare of the students whose residency permit is sponsored by Qatar University, and helps international students to secure their entry visa, as well as residency permit and exit permit; issues annual airline tickets for eligible scholarship students; issues formal sponsorship letters; and coordinates accommodation with the QU Housing Department.
The International Students Section also oversees admission to the Arabic for Non-Native Speakers Program. For additional information, please visit: **http://www.qu.edu.qa/students/services/is/index.php**

**New Student Orientation**
New Student Orientation for graduate students is organized by individual programs. Students are encouraged to contact their program regarding New Student Orientation requirements and schedules.

**Special Needs**

Qatar University is committed to providing all academically qualified students with educational opportunity. Every effort is exerted to ensure fair and appropriate access to programs, services, facilities, and activities for students with special needs. The Special Needs Center provides services and support technologies that are tailored to the needs of individual students throughout their tenure at the University. Currently, support services are provided to the following special needs categories:

a. Physical impairment
b. Visual impairment (blindness or low vision)
c. Speech and language disorder
d. Students with learning difficulties (such as: Dyslexia)
e. Students who suffer from temporary disability such as temporary diseases or injury due to accidents.

For additional information on services offered by the Special Needs Center, please see: **http://www.qu.edu.qa/students/services/special_needs/index.php.**

# CHAPTER 4
# ADMISSION

Applicants who meet the minimum university admission requirements and have earned a Bachelor's degree or higher from an accredited institution of higher education or recognized by the Ministry of Higher Education in that country are eligible for admission to a graduate program at Qatar University. The university minimum admission requirements are based on a number of academic qualifications that ensure students' success throughout their course of study. In addition to these important academic qualifications, the admission process takes into consideration the capacity of each college and program, as well as the needs of the State of Qatar. Students are admitted to Qatar University on a competitive basis.

## GRADUATE APPLICATION CATEGORIES

Applicants are offered admission to Qatar University in one of the following categories:

**1. General Admission**
Prospective graduate students must satisfy all QU admission requirements for the semester of intended admission and submit all appropriate application materials and supporting documents to the Admissions Department by the admission deadline. General admission takes place during the fall semester (and spring semester for certain programs). Applicants are required to submit the following:
• Complete Online Admissions Application
• Final and official university transcript satisfying the degree and cumulative GPA requirements of the intended program
• Satisfy QU's English Proficiency requirement (and submit evidence to the Admissions Department)
• Health Certificate
• Photocopy of the applicant's Qatar ID card
• Non-Qatari applicants must also provide a copy of their passport
• Two recent, identical passport-size photographs with white background
First Year admits are not eligible to receive transfer credit consideration for coursework completed prior to their graduate admission to QU.

**2. Transfer Admission**
All applicants who are currently or who have previously attended a graduate program and who have earned at least 3 credit hours are considered transfer applicants and may apply for transfer admission to Qatar University. Transfer applicants may apply for Fall admission (and Spring admission for certain programs) and are required to submit the following:
• Complete Online Admissions Application
• Final and official university transcript of highest degree earned as well as official transcripts for any additional coursework completed beyond the previously earned degree
• Satisfy QU's English proficiency requirement (and submit evidence to the Admissions Office)
• Health Certificate
• Photocopy of the applicant's Qatar ID card
• Non-Qatari applicants must also provide a copy of their passport
• Two recent, identical passport-size photographs with white background

Transfer applicants must satisfy all QU graduate transfer admission requirements for the semester of intended admission and submit all appropriate application materials and supporting documents to the Admissions Department by the admission deadline. Applicants who were subject to disciplinary action or non-academic dismissal at a prior university/ college will not be considered for admission.

**Transfer of Credit**
Graduate coursework earned from an accredited university or an institution recognized by the Ministry of Higher Education in that country may be considered for transfer credit according to QU's transfer credit rules and regulations. Transfer applicants must submit an official transcript, as well as a catalog course description or course syllabus for all courses for which transfer credit is being sought.
Grades earned in courses accepted for transfer will not be calculated as part of the GPA at Qatar University. However, the credits earned will count toward the total number required for graduation.
A maximum of 9 credit hours with a minimum grade of 'B' may be considered for transfer credit evaluation. As some colleges accept fewer transfer credit hours, students are advised to consult the Program Director to determine the maximum number of credit hours and the specific courses that may be transferred to a particular degree program. Credit hours earned earlier than five years from the date of admission to QU cannot be transferred.

**3. Non-Degree Students**
Qatar University allows non-degree admission to a limited number of individuals who may enroll in graduate credit courses at QU, but who are not considered as pursuing a graduate degree program. Credit earned by non-degree students may not be used towards a graduate degree at Qatar University. Non-degree students may register for a maximum of 12 credit hours or 2 semesters of course work at QU, whichever comes first.

Non-degree applicants must submit all required original documentation, including an official transcript, to the Admissions Department. To be considered for non-degree admission, applicants must satisfy the following minimum requirements:
• Complete the Online Admissions Application
• Provide final and official university transcript, satisfying the requirements of the intended program.
• Satisfy QU's English proficiency requirement (and submit evidence to the Admissions Department).
• Health Certificate
• Photocopy of the applicant's Qatar ID card
• Non-Qatari applicants must also provide a copy of their passport
• Two recent, identical passport-size photographs with white background

Non-degree students are held to the same academic and Student Code of Conduct standards as all other Qatar University degree-seeking students. All QU coursework taken by a non-degree student will remain on the academic record. If a non-degree student is dismissed from Qatar University, the dismissal is permanent and the student is not eligible to return at any point in the future. Non-degree students are eligible to seek regular admission to a graduate program provided they meet program requirements and submit all application materials by the admission deadline.

**4. Visiting Students**
A student who is currently matriculated in an accredited graduate program outside of Qatar University with a minimum cumulative GPA of 3.0 is eligible to seek admission as a visiting student.
Similarly, a student who has been accepted to an accredited graduate program but has not started his/her coursework is also eligible to seek visiting admission at QU.
A Visiting student may register for up to nine credit hours of coursework.
A visiting student is eligible to seek general admission to a graduate program at Qatar University, provided he/she meets program admission requirements and university deadlines.

## ADMISSION REQUIREMENTS

In general, Qatar University considers only those applicants who have satisfied QU's English proficiency requirement and possess an earned degree appropriate to the program for which they are applying as indicated below:
• An earned Master's degree or higher with a minimum GPA of 3.00 for admission to a Ph.D. program.
• An earned Bachelor's degree or higher with a minimum GPA of 2.80 for admission to a Master's program and PharmD.
• An earned Bachelor's degree or higher with a minimum GPA of 2.00 for admission to a Diploma program.
• Under special circumstances, graduate programs may require applicants to supplement their GPA with standardized test scores.
It is important to note, however, that the minimum university GPA requirements do not guarantee admission to QU. Students are ultimately accepted to a graduate program according to the strength of the applicant pool and the available capacity in each graduate program.
While applicants are eligible to seek admission to more than one graduate program, a student may be matriculated in only one QU graduate program at a time. Additionally, no faculty member employed by Qatar University with a rank of Lecturer or higher is eligible to enroll in a graduate program offered by the department in which they are affiliated.
Students admitted to a graduate program in a field different from that of the previously earned degree may be required to complete bridging courses.
Students admitted to a graduate program may request to defer their first semester of enrollment for a maximum of two semesters, provided the program is still offered at Qatar University. Students requesting such an extension must submit an official written request to the Vice President for Student Affairs.

A complete listing of admission requirements by academic program is listed in Chapter 9 of this catalog.

## ADMISSIONS APPLICATION FEE

All graduate applicants seeking admission to Qatar University are required to pay a QR 350 application fee as part of the admission application. Admission applications will not be considered complete, and consequently an admission decision will not be made, until the application fee is submitted.

## ENGLISH COMPETENCY REQUIREMENT

QU graduate students are expected to be proficient in English. Therefore, applicants are required to demonstrate their English proficiency as part of the admission process by either possessing an earned degree from an accredited institution of higher education in a program where English was the language of instruction, or submitting a program-approved TOEFL score (or its equivalent), taken within the last two years. Score from tests taken more than 2 years before the start of the semester of intended admission are not accepted.

## UNIVERSITY TRANSCRIPT REQUIREMENTS

All graduate applicants must submit an official transcript directly to the Admissions Department. QU requires that all university transcripts submitted by non-QU graduates be final, official and authenticated, according to the following standards:

**1. Universities in Qatar**
All applicants who attended a private university located in Qatar must ensure that the following transcript requirements are met:
1. The transcript must be final.
2. The transcript must be official.
3. The transcript must be stamped and signed by an appropriate university official.
4. The university must be recognized by the Qatar Ministry of Education (no Ministry stamps required from recognized universities).

**2. International Universities**
All applicants who have attended a university outside of Qatar must ensure that the following transcript requirements are met:
1. The transcript must be final.
2. The transcript must be official.
3. An Arabic or English translation of the final transcript must accompany the transcript if it is issued in a language other than Arabic or English.
4. If the university is accredited by an international accrediting association (accreditation recognition must be listed on the official transcript), no further attestation is required.
5. If the university is not accredited internationally, the transcript must be certified by the Ministry of Higher Education or equivalent authority in the country in which the university is located. The transcript must also be certified by either:
• The Qatar Embassy in the relevant country; or
• The Embassy of the relevant country located in Doha.

## ADMISSION DATES AND DEADLINES

Admission to a graduate program at QU is both competitive and limited. Therefore, applicants are strongly encouraged to submit the admission application and all required documentation as early as possible. Applicants are reminded that all documents required to complete the admission process must be submitted to the Admissions Department by the appropriate deadlines, and applications will not be accepted after the published application deadline. A comprehensive listing of admission application deadlines can be found on the QU website at: www.qu.edu.qa.

## NO-SHOW STUDENTS

Admission to QU is competitive and considers the academic qualifications of applicants, as well as the capacity of each program for the semester of admission. Students admitted to Qatar University who fail to register for classes by the end of the Add/Drop period for the semester of their admission are considered no-show students, resulting in their admission being revoked and their admission file destroyed. No-show students who wish to attend Qatar University in a future semester will need to re-apply for admission and submit all required documents again.

## ACADEMIC DISMISSAL AND ADMISSION TO A DIFFERENT PROGRAM

A graduate student who is academically dismissed may apply for admission to a different graduate program. All appropriate admission requirements and timelines apply.

## ADMISSION DEFERRAL

Graduate students can defer their study before it begins for a maximum of two semesters, without counting within the semesters allowed them to leave or withdraw.

## ORIENTATION

Orientation for new graduate students varies by graduate program. As attendance at orientation is mandatory for some graduate programs, all students are encouraged to consult with their Program Director regarding orientation schedules.

# CHAPTER 5
# TUITION, ASSISTANTSHIPS AND ACADEMIC SCHOLARSHIPS, TEXTBOOK SECTION

## TUITION FEES

**Diploma Level Students**
Tuition fees for students enrolled in any Diploma Program are QR 1,000 per credit hour.

**Master Level Students**
Tuition fees for students enrolled in any Master's Program are QR 1,250 per credit hour.

**Doctorate Level Students**
Tuition fees for students enrolled in any Doctorate Program are QR 1,250 per credit hour.

**Students enrolled in the Arabic for Non-Native Speakers Program**
Tuition fees for students enrolled in the Arabic for Non-Native Speakers Program are QR 600 per credit hour.

**Tuition Fees Refund Policy**
Students who drop one or more courses, or withdraw from the semester after the add/ drop period are subject to the following penalties:

| Semester | Time of Drop or Withdrawal after End of Add/Drop Period | Penalty |
|---|---|---|
| Fall and Spring Semester | Up to 2 weeks<br>After 2 weeks and up to 4 weeks<br>After 4 weeks and up to 8 weeks<br>After 8 weeks | 20%<br>50%<br>75%<br>100% |
| Summer Semester | Up to 1 week<br>After 1 week and up to 2 weeks<br>After 2 weeks | 20%<br>50%<br>100% |

• If a full week falls within an official holiday, it is not counted in the weeks shown in the above table.
• Penalties shown in the above table apply to both tuition-paying and tuition- exempted students.

## OTHER UNIVERSITY FEES

**Lockers**
University lockers are available at a rate of QR 25 per semester; no refund is available.

**Campus Card**
The issuing fee for the student ID card is QR 50; the same fee is applicable for replacements in the event the card becomes damaged or lost.

**University Housing**
Students living in the student accommodation facilities provided by the University are charged QR 2000 per month for room and board, as well as transportation to and from the university. This is a non-refundable charge.

## TEXTBOOK SECTION
The Textbook Section assumes responsibility for selling Textbooks and eBooks to QU students and Faculty. The University provides a subsidy equaling 50% of the total price for books over QR 50, and the payment is non-refundable. The section announces a book selling table before each semester, which is made available to students and faculty. For more information, please see: http://www.qu.edu.qa/students/services/textbooks/index.php

## ACADEMIC SCHOLARSHIPS

As of November 2011, the Higher Education Institute of the Supreme Council for Education (HEI SCE) recognizes many Qatar University Masters and Doctoral degree programs.

**Diploma in Education Scholarships**
These scholarships are awarded under specific criteria to students admitted to the Diploma programs offered by the College of Education.
In order to maintain a scholarship award, a student must satisfy the minimum GPA and academic load requirements of the scholarship. Additionally, most scholarship awards are of a fixed duration which may vary by scholarship type. Scholarship recipients are bound by all applicable Qatar University rules and regulations, and are responsible for all financial penalties incurred.
For additional information regarding academic scholarships, please contact the Scholarship Office by e-mail at **scholarships@qu.edu.qa** or visit their website at: **http://www.qu.edu.qa/students/admission/scholarships/index.php**

## GRADUATE ASSISTANTSHIPS

Outstanding graduate students will be offered a Graduate Assistantship (GA) on a competitive basis. A GA will be paid QR 180 per hour for 20 hours of work per week. He/she is personally responsible for all expenses, including housing, tuition, insurance, travel and any other incurred expense while studying at Qatar University.

### Eligibility and Application Process

A student may be considered for a GA position based on:
1. The student is either accepted for admission or already enrolled in a graduate program at QU.
2. The student has demonstrated an exceptional performance at the undergraduate level (for those applying for a Master's degree) or graduate level (for those applying for a PhD degree). Exceptional performance is defined by no less than a GPA of 3.0 on a 4.00 scale.
3. A graduate assistant who is applying for a program that is either taught in English/Arabic or uses English/Arabic extensively must demonstrate language proficiency as defined by the University.

An application for a graduate assistantship should accompany the application for admission to the graduate degree program. The deadline for GA applications is the same as the deadline for admission applications.

## APPOINTMENTS

The Chair of the Department should forward recommendations for Graduate Assistantships to the Associate Dean of Research and Graduate Studies in the relevant College, along with the student's academic status, workload, and assigned duties. The Associate Deans' offices must receive the list of recommended GAs at the same time as the list of accepted graduate students. Those students selected to receive a GA position will be informed in writing once they have confirmed they will be attending QU.

Once all approvals are confirmed, and prior to the starting date of the appointment, newly accepted graduate assistants should receive a letter (email) from the Office of the Associate Vice President of Graduate Studies (with a copy to the Dean and Chair of the concerned GA's College /Program) summarizing their general duties along with a link where they can view the Qatar University rules and regulations.

In the first week of commencing duty, graduate assistants will undergo an initial orientation session regarding their assigned duties. The orientation may include a description of specific GA duties, standards for evaluation of performance, training (as appropriate), indication of whether GAs are assigned to laboratory instruction, and a list of available resources. The orientation and regular GA duties will be supervised by a faculty member designated by the Chair of the Department.

Once the graduate assistant arrives on campus, a special contract should be prepared and signed at the QU HR office; a copy will be delivered to the GA for his/her future reference.
In the event a student wishes to resign from a GA appointment, the student MUST give one semester's notice and complete the GA Resignation Form. Termination of a contract must follow the GA procedures and guidelines. The student should check with HR to ensure no other matters are left unresolved.
Reappointment to a GA position is contingent upon prior performance, departmental research and teaching needs, as well as available funds.

### Meeting the Language Proficiency Requirements

New graduate students must demonstrate that they have met the minimum English language proficiency requirements (TOEFL or IELTS tests) and/or , Arabic language proficiency requirements as defined by their College/Program. Applicants should contact their academic departments or the Admission Office for additional information.

### Maximum Duration of GA Support

The maximum length of a full-time graduate assistantship is limited to the normal length of time for completing the degree as defined in the program-approved Study Plan upon enrolment. In most cases, a Master's degree is not to exceed two years, and a Doctoral degree is not to exceed four years. The maximum duration of GA support for a part-time position will be pro-rated according to the full time duration.

### Responsibilities and Load

The duties and responsibilities of GAs should be clearly stated in the contract. GAs will serve under the direction and supervision of appointed faculty members as designated by the Chair of the Department. The following guidelines apply:
1. Graduate teaching responsibilities may include assignments such as assisting in laboratory sessions, teaching tutorials and help sessions, help in grading laboratory reports/papers and quizzes, proctoring exams, and organizing/uploading course handouts as instructed by the supervising faculty. In addition, graduate assistants could be assigned additional academic and/or research duties as deemed appropriate by the Department Chair.
2. Full-time students who are awarded graduate

assistantships are not allowed to have employment outside of the University.
3. Full support for a GA is defined as being registered for 9 credit hours.
4. A full-time GA works 20 hours per week.
5. GAs are expected to maintain the highest standards of academic honesty and integrity and abide by College and University rules and regulations.
6. GAs are not permitted to enroll in any course for which they are assigned assistantship responsibilities.
7. A GA who drops a course, withdraws from the University, or resigns an assistantship after the add/drop period of the semester will lose the paid tuition for those courses.
8. A GA can hold only one assistantship at a time.

**Evaluation**
The faculty member supervising or directing the instructional activities of the GA should complete an evaluation form of the student's performance at the end of each term and submit it to the Department Chair.
The Department Chair will evaluate all GAs working in the department at the end of every academic year, and provide each one of them with a written evaluation of their performance. A copy of the formal evaluation should be sent to the Dean's office and to the Office of the Associate Vice President of Graduate Studies.

**Summer Appointment**
If no teaching assistantships are available during the summer, GAs may be hired as research assistants by faculty who have research grants or be assigned other duties based on the approval of the AVP of Graduate Studies.

**End of Contract**
Graduate assistants are expected to meet the standards of performance described at the time of their appointment as well as maintain satisfactory academic progress toward their degree. A GA contract may be terminated with one month's notice at any time the student's performance is considered to be unsatisfactory by the concerned department.
Although immediate termination of contract may be called upon for serious misbehavior or failure to perform duties and/or fulfill responsibilities, all terminations must follow the legal guidelines adopted by Qatar University. Any appeals of the termination decision should also follow QU guidelines.

# CHAPTER 6
# ACADEMIC INTEGRITY

## STUDENT INTEGRITY CODE

Universities are unique communities committed to creating and transmitting knowledge. They depend on the freedom of individuals to explore ideas and advance their capabilities. Such freedom, in turn, depends on the good will and responsible behavior of all members of the community, who must treat each other with tolerance and respect. They must allow each other to develop to the full range of their capabilities and take full advantage of the institutions' resources.
The Student Integrity Code aims at providing all students at QU with clear standards of behavior. By registering as a student, all students acknowledge their awareness and knowledge of the student integrity code and its procedures. Moreover, they understand the consequences of their violation of these standards; violations may be of an academic or non- academic nature.
Students attending an off-campus event as representatives of the University (such as conferences, or athletic teams or engaging in club activities) are subject to this code.
QU expects its students to adopt and abide by the highest standards of conduct in their interaction with their professors, peers, staff members and the wider University community. Moreover, QU expects its students to act maturely and responsibly in their relationships with others. Every student is expected to assume the obligations and responsibilities of membership required by the QU community.
As such, a student is expected not to engage in behaviors that compromise the integrity of themselves, as well as that of QU. While the University encourages its students to express themselves freely, this freedom is forfeited when it infringes on the rights and respect of others. Specifically, a student is expected to abide by the principles within the academic and non-academic domains as outlined below.

## STUDENTS' RIGHTS AND RESPONSIBILITIES

### Student Rights
QU recognizes the rights of its students to include:

• Access to the academic and non-academic opportunities available to them at the University, providing such opportunities fall within the standards and/or requirements adopted by the University.
• Freedom of thought and expression, subject to applicable policies, rules and laws adopted by the University.
• Equal opportunities regardless of race, color, gender, religion, ethnicity, age or disability.
• A fair University judicial process whenever applicable.
• Confidentiality of university records, which are not disclosed to other parties unless there is a student's explicit written consent, with the exception of the authorized persons as stated in section "Confidentiality of Student Records".

### Student's Responsibilities
QU students should:

• Contribute to maintaining a safe and orderly University educational environment.
• Show respect to other individuals at QU; students, staff and visitors.
• Be familiar with and abide by all students bylaws, policies and procedures.
• Work to the best of their ability in all academic pursuits.
• Behave in a responsible manner.
• Pursue knowledge.
• Dress appropriately and according to the University rules and regulations in this regard.
• Accept responsibility for their actions.

## CONFIDENTIALITY OF STUDENT RECORDS

All student and associated financial records are considered confidential. Student's University records are established and maintained for administrative purposes. Access to these records is limited to the student and designated University officials as stated below. Access to these records by other individuals requires the student's explicit written consent, with the exception of the student's parents or his/her legal guardian.
Designated University officials are determined to have legitimate educational interest if the information requested is necessary for that official to perform a task that is related to their normally assigned job functions or related to their performance of a contract with the university. A "university official" includes faculty, staff, a member of the board of trustees, third-parties acting on behalf of the university, and individuals, including students, serving on university committees. The determination as to whether a legitimate educational interest exists will be made by the custodian of the records on a case-by-case basis. Should contractual agreements between the student and external agencies sponsoring him/her require the release of these records to such agencies, the student must sign a release letter to that effect once he/she is admitted to the University.
A student working at QU is considered an employee of the University and, as such, is sometimes required to handle confidential materials. Therefore, he/she is not permitted to divulge any confidential information, and is required to sign a statement of confidentiality prior to working at the University. Intentional release of confidential information

may result in disciplinary action against the student and could result in his/her suspension or dismissal from the University.

## JURISDICTION

All charges involving any violation of the Student Integrity Code will be transferred to the Vice President for Student Affairs (VPSA) for recording purposes and to determine appropriate action in consultation with concerned parties when the need arises.

## DEFINITIONS OF ACADEMIC AND NON-ACADEMIC VIOLATIONS

Academic violations include, but are not limited to, the following:

**Plagiarism**
Plagiarism includes the following examples and it applies to all student assignments or submitted work: use of the work, ideas, images or words of someone else without his/her permission; use of someone else›s wording, name, phrase, sentence, paragraph or essay without using quotation marks, and misrepresentation of the sources that were used.

**Inappropriate Collaboration**
Inappropriate Collaboration includes the following examples: working with someone else in developing, organizing or revising a submitted work without acknowledging that person›s help. This work may include: projects, papers, oral presentations, research, design projects or take-home examinations, use of tutors for writing, editing or fabricating a submitted work, and use of unauthorized assistance in all cases of submitted work.

**Inappropriate Proxy**
Inappropriate Proxy is the state in which a student attends an exam or any academic activity or obligation in replacement of another student.

**Dishonesty**
Dishonesty in examinations and submitted work may include the following forms: Submission of non-original paper, test result, work and materials; any form of communication between or among students during examination; cheating from another student during examination; 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 obtaining false scores on machine-graded examinations; submitting any material prepared by or purchased from another person or company.

**Work completed for one course and submitted to another**
In general, any work for one course should not be presented to another course. Similarly, the students are reminded that when incorporating their own past research in current projects, they must refer to such previous work.

**Deliberate falsification of data**
It involves the deliberate act of falsifying any kind of data or (manipulating) distorting any supporting documentation for a course work or other academic activity.

**Complicity in academic dishonesty**
Complicity in academic dishonesty means helping or attempting to help another student to commit an act of academic dishonesty, such as doing work for another student; designing or producing a project for another student; willfully providing answers during an exam or quiz; contacting a student on a mobile device while taking an exam and providing information; providing a student with an advance copy of a test; leaving inappropriate materials behind at the site of an exam or test and altering outcome results.

**Interference with other students' work**
It involves the intentional interference with the work of other students; sabotaging other students› laboratory experiments, research or digital files; and giving any misleading information or disrupting other students› class work.

**Intellectual Property (IP) violations**
Respect for original intellectual creativity is vital to academic discourse. This principle applies to works of all authors and publishers in all forms. This encompasses respect for the right to acknowledgement; the right to privacy and the right to determine the form, manner and terms of publication and distribution.
As a general rule, copying, distributing, making derivative work, displaying, or performing copyright-protected work requires the permission of the copyright owner. For purposes such as discussion, analysis, comment, news reporting, teaching, scholarship, or research, copyrighted work may be used without permission and will not be considered an infringement of copyright, provided that the source has been acknowledged. Since electronic information is easily reproduced, respect for the work and personal expression of others is especially critical in electronic media. Violations of authorial integrity, including plagiarism, invasion of privacy, unauthorized access, and trade secret and copyright violations may constitute grounds for disciplinary action against any member of the

academic community.

**Non-academic violations of QU's standard of conduct may include but are not limited to the following:**

• Illegal trespassing or entering on any University property including any building, structure or facility.
• Harassment (verbal or physical) and/or intimidation of peers, faculty, and University visitors and employees.
• Disruptive, destructive, and abusive behavior within the confines of QU campus.
• Behavior that threatens the physical or emotional safety and well-being of others within campus grounds, premises, and facilities.
• Any violation of the Qatari law committed within campus grounds, premises, and facilities.
• Theft, which includes stealing of private or University property or services while on University premises or in connection with any University activity.
• Violation of Qatar University Dress Code: QU recognizes cultural diversity and respects the requirements needed for a productive learning environment. Students are expected to dress in a manner respectful of the local culture and traditions. Inappropriate dress for both males and females is unacceptable. Violators will be subject to appropriate disciplinary measures.
• Damaging, destroying or defacing University property or that of any person while on University premises.
• Smoking in a non-smoking area in or around campus facilities.
• Unauthorized possession or duplication or use of keys of University buildings, facilities, or property.
• Unauthorized entry into or use of University facilities or property, including computer hardware and software.
• Unauthorized posting of signs, notices, flyers, banners, and announcements. Such material may be placed only on authorized bulletin boards, and other specified locations. They may not be posted on cars, trees, walls, doors, or glass surfaces. All students' events publicity to be distributed or displayed in most buildings on campus must be approved and stamped at Student Activities Department.

**Adjudication of offenses**
Cases resulting from alleged violations of the student integrity code are within the jurisdiction of a faculty member, department head, Dean of the College, and the Vice President for Student Affairs, who will consult with the Student Judiciary Committee (SJC), a university-wide committee to investigate cases of violations. The mandate of the Student Judiciary Committee is to advise the Vice-President for Student Affairs on individual cases with respect to academic or non-academic violation of the integrity code. The Committee, in conducting its business, will observe:
a) The concepts of procedural fairness, and
b) The existing QU Student Integrity Code.

This will be accomplished by considering the facts of each specific case; and examining the preceding deliberations to ensure that the procedures were consistent with QU policy.
In cases of academic offenses, if they are not resolved by the faculty member or within the department, the Dean of the College in which the alleged academic offense took place should consult with the College Student Affairs committee to investigate these cases. However, academic offenses which may lead to a student›s dismissal from the University should be forwarded to the Vice President for Student Affairs, who shall communicate the decision to the Vice President and Chief Academic Officer and President of the University for taking the decision. The ultimate decision to dismiss a student from the University lies within the jurisdiction of the University President.

## DISCIPLINARY ACTIONS

A student is advised that violations of the Student Integrity Code will be treated seriously, with special attention given to repeated offences. A notation of the student integrity code violation will be entered on the student›s permanent record. Penalties for violations of QU rules and regulations or for acts of student misconduct may include one or more of the following:

**Category One**
• Resubmission of work assigned by the faculty member.
• Submission of additional work for the course in which the offense occurred.
• A lowered grade or loss of credit for the work found to be in violation of the integrity code.
• A failing grade of (F) or (WF) or denial of credit for the course in which the offense occurred.
• Reprimand from the dean of the college, which is a written statement of disapproval of behavior issued to the student, and filed in the records.
• Educational activities: They may include writing essays or setting a presentation for the community.

**Category Two**
• University Service: A student may be required to do a number of service hours, engaging in light work tasks, such as the maintenance of College / University property and/or clerical work.
• Loss of student employment eligibility and/or merit scholarship.
• Restitution- reimbursement to the University for any damage or misappropriation of University property.
• Restriction by exclusion from participation in social activities which includes but not limited to being prohibited

from: representing QU in any official activity or event be it cultural or athletic; entering any of university facilities; or serving as an officer of any students' organizations.
• Warning: It is an official written notification that the student's behavior violates the Student Integrity Code; that the action or behavior must cease; and that further misconduct could result in additional disciplinary action.
• Probation: Disciplinary probation is a formal notice, affecting the non-academic status of the student, that the student's behavior is unacceptable within the University community. Probation requires that the student demonstrate during a specified period of time, that s/he is capable of meeting the conduct standards expected of members of the University community.

**Category Three :**
• Exclusion from academic privileges including Dean›s list and VP list of honors.
• Strongly advised to attend treatment or counseling as determined by the director of the counseling center, in consultation with the VPSA.
• Dismissal for a specified term(s) from the university
• Expulsion from the University.

## PROCEDURES AND GUIDELINES

The following procedures are to be followed in case of academic offenses by students:

1. The immediate responsibility for dealing with instances of academic dishonesty, plagiarism, disruption in classroom and other academic violations rests with the faculty member. In any case of an academic offense committed by a student, the faculty member should fill out the relevant form of student offense (Offense Record Form) which shall be documented in the student's personal file in the college›s archives and within the office of the VPSA. This action will allow the University to monitor and record multiple cases of students' offenses at the University level.
2. In the case that a faculty member is convinced that the alleged offense has resulted from a lack of judgment on the student's part rather than an intended dishonesty, the faculty member should instruct the student for an acceptable academic work and must record it in the student file. In such cases, the faculty member may, for example, require the student to rewrite or correct the original work or assignment or to resubmit a substitute work or assignment.
3. The faculty member who is reporting an allegation of dishonesty must report such action within 3 working days from the date of occurrence or discovery of the alleged offense. The form Offense Record Form should be forwarded to the VPSA and the Department Head in which the alleged offense took place.
4. Based on the level of severity of the alleged offense, and after consultation with the faculty member concerned, the Department Head records his/her opinion (on the form) after meeting with both the faculty member and the student.
5. The form is then forwarded to the Dean of the College for either the final decision, or to be forwarded to the Vice President for Student Affairs. At the college level the Dean's decision must be based on the recommendations given by The College Student Affairs Committee whose members are selected at the beginning of the academic year. Members of this committee serve for two years and they include the Associate/Assistant Dean of Student Affairs of the college, and one or two selected faculty member(s) depending on the enrollment number in the college, and a student.
6. Recommendations for disciplinary actions of the first category (refer to previous section) may be approved and implemented by the dean of the college in which the student is enrolled. Significant cases of violations that require second and third category actions should be referred to the Vice President of Student Affairs for further review by the Student Judiciary Committee.
7. In all cases, offenses must be recorded and sent to the Vice President for Student Affairs for monitoring purposes.
8. In all cases the student must attend any meetings requested by the college in which the offense has taken place, or by the University, for hearing purposes. Failure to do so may result in making decisions based on available facts.
9. In cases where the faculty member is not satisfied with the decision of the College Committee, he/she may appeal the decision to the Vice President for Student Affairs.

As for non-academic offenses, any member of the University community may file a charge of misconduct against any student. The concerned party should fill out a non-academic offense record form within three days of the occurrence of the incident. Charges are to be filed with the Vice President for Student Affairs who will notify the student of the offense with which s/he is being charged, conduct interviews, determine if the Code has been violated and decide an appropriate response.

## RECORDS OF DISCIPLINARY ACTIONS

Records of the violation and disciplinary actions› charges and sanctions will be maintained as part of the confidential records in the office of the VPSA and the respective dean of the college for a period of two years after the student graduates or ceases to be a student. Suspension and expulsion charges will become part of the student's official transcript of record.

## STUDENT COMPLAINTS

Qatar University is committed to a policy of fair treatment of students in their interactions with all other members of the University community.

## ACADEMIC COMPLAINTS

Academic disputes may include, but are not limited to: admission, grades during the academic semester, academic suspension, charges of dishonesty, plagiarism, deliberate forgery of data, work completed for one course and submitted for another, and violation of intellectual property. The Final Grade change appeal is excluded from this section, please refer to section 4.13.

### Scope

This section sets forth the procedures to be followed by a student who believes he/she has been unfairly or improperly treated by a faculty member in light of the academic process. For example, it applies to disputes over grade assignments during the academic semester, decisions about program or degree requirements or eligibility, or claims that course requirements are unfair.

### Informal Resolution

The student should first try to resolve the grievance iThe student should first try to resolve the grievance informally by discussing the grievance with the faculty member as soon as the student is aware of the matter. If the student and faculty member were not able to reach an agreement, the student should discuss the objection with the faculty member's department head. If the complaint remains unresolved, the student should discuss it with the College Dean. In these informal discussions, the department head or dean is encouraged to mediate the dispute. In particular he/she should talk to both the student and the faculty member, separately or together, and should examine any relevant evidence, including any documentation the parties wish to submit. If the student objection is against the department head or the dean, the student should discuss it with one administrative level higher than that of the department head/dean.

### Formal Resolution

1. Submit the official online application through myBanner within ten (10) business days of the incident outlining the complaint, the individuals involved, the date and the location of the incident. The student will be informed of the decision by e-mail within ten (10) business days of the complaint's submission. Note that this process is confidential.
2. If the student is not satisfied with the outcome, he/she has the right to appeal the decision within ten (10) business days of its announcement. The result of the appeal will be e-mailed to the student within ten (10) business days of submitting the appeal.
3. In all cases, if the student does not receive a formal response within ten (10) business days of the complaint/appeal submission, he/she should consider the request rejected.
4. In cases where the student believes that the procedures were not properly followed, he/she has the right to appeal the decision to the Vice President for Student Affairs. The appeal must be filed within ten (10) business days of the date of the decision. The Vice President for Student Affairs shall review all documentation relating to the appeal and make a decision. At this stage, the outcome of the appeal is final and no further appeal is available.
5. All documents related to the complaint, appeal, and decision shall be kept at the Office of Vice President for Student Affairs.

### WITHDRAWAL OF COMPLAINT

Students may withdraw a previously submitted complaint while the complaint is being investigated. In such cases, the complaint will be closed and applicable parties will be informed of the withdrawal. Complaints which have been closed may not be withdrawn.

## NON-ACADEMIC COMPLAINTS

Non-academic issues may include, but are not limited to, harassment (verbal or physical), intimidation, disruptive or abusive behavior within the limitations of QU campus, fines, fees, exclusion from a use of service, discrimination, record access, and violation of policy.

### Scope

This section sets forth the procedures which should be followed by a student who believes that he/she has been unfairly or improperly treated by a member of the University community with regard to a non-academic matter.

### Informal Resolution

The student should first try to resolve the complaint informally as soon as reasonably possible after the student becomes, or should become aware of the matter. If the matter involves a staff member, and the student and the staff member cannot reach an agreement, the student shall discuss it with the staff member's supervisor. Similarly, if the matter involves a faculty member, and the student and the faculty member cannot reach agreement, the student shall discuss the grievance with the faculty member's department head. Although students are encouraged to resolve the complaint informally, the nature of certain cases may require that the informal process be by-passed.

**Formal Resolution**
1. Submit the official online application through myBanner within ten (10) business days of the incident outlining the complaint, the individuals involved, the date and location of the incident.
2. The Vice President for Student Affairs will review and direct the complaint to the appropriate department. The personal details of the complainant will be removed to ensure confidentially. The student will be informed of the decision via e-mail within ten (10) business days of the complaint's submission.
3. If the student believes that the procedures have not been properly followed, he/she has the right to appeal the decision within ten (10) business days of the decision. The Vice President for Student Affairs shall review all documentation relating to the complaint and make a decision. At this stage, the outcome of the appeal is final and no further appeal is available.
4. The decision of the appeal is final and may not be appealed. In cases where the Vice President for Student Affairs recommends dismissal from the University, the student may submit an appeal to the University President.
5. All documents related to the complaint, appeal, and decision shall be kept at the Office of Vice President for Student Affairs.

**WITHDRAWAL OF COMPLAINT**
Students may withdraw a previously submitted complaint while the complaint is being investigated. In such cases, the complaint will be closed and applicable parties will be informed of the withdrawal. Complaints which have been closed may not be withdrawn.

## CONFIDENTIALITY

Information related to a complaint is treated as confidential and is only shared with authorized individuals on a need-to-know basis. This information is used for the purpose of investigating and resolving the complaint in accordance with QU policy.

### Violation of the Student Integrity Code Forms

**Non-Academic Violations:**
www.qu.edu.qa/students/documents/non-academic-violation-en.pdf
www.qu.edu.qa/students/documents/non-academic-violation-ar.pdf

**Academic Violations:**
www.qu.edu.qa/students/documents/academic-violation-en.pdf
www.qu.edu.qa/students/documents/academic-violation-ar.pdf

## NOTIFICATION OF OUTSIDE PARTIES

When deemed appropriate, the University reserves the right to notify a student's parents or guardians at any time during a disciplinary process.

# CHAPTER 7
# ACADEMIC POLICIES AND REGULATIONS

## REGISTRATION

Once admitted to QU, graduate students must select and register in courses that constitute the requirements towards the degree he/she pursues. Registration for classes takes place prior to the beginning of every semester. The student is assisted by his/her assigned advisor to ensure he/she has registered for the appropriate courses for each semester. Students requiring academic advisement should check with their advisors before registering. The following information outlines the steps and requirements necessary to successfully complete the course registration process.

**Methods of Registration**
Graduate students register for courses online through the myQU portal after first meeting and consulting with their academic advisor. In order to access their myQU account, new students must use the username and password information provided to them in their admission letter. Once students have successfully registered for the semester, they can view their course schedule, classroom locations, meeting times, and faculty assignments for all registered courses through their myQU account. Students experiencing difficulty accessing their myQU account should contact the Student Help Desk by e-mail at **studenthelp@qu.edu.qa.**

**Important Registration Information**
Graduate students are responsible for their own registration. They are only officially registered in a course when the course appears on the student's schedule in his/her myQU account.
It is sometimes necessary for an academic department or college to make changes to its class schedule, such as changing the class time, location, instructor, merging of sections, or even canceling the course. Departments will make every effort to announce such changes, however, it is the student's responsibility to revise his/her registration according to such changes. The first week of classes in the semester is designated for this purpose. Changes to a student's registration are not permitted beyond the last date for the drop and add period.
A student is allowed to pre-register for a course whose Prerequisite(s) he/she has not yet completed, on the assumption that he/she will pass the Prerequisite course(s) during the semester in which the pre-registration takes place. If the student fails in any pre-requisite course(s), the Registration Department will drop, without notification, all the pre-registered courses that the student is no longer eligible to take. Consequently, the student is responsible for checking his/her final grades to make sure that he/she has successfully satisfied the Prerequisite(s) and that he/she is successfully registered for the courses selected for the following semester.
If a student is not allowed to register for a course because of failing or dropping a Prerequisite course, it is the student's responsibility to ensure that his/her course load does not fall below the minimum number of credit hours allowed.

Dates for pre-registration and registration are determined by the University and stated in each year's academic calendar. This information is also published widely for the University community and updated regularly on the University's web site.

**Academic Load:**
Graduate students may register for a maximum number of credit hours each semester, as follows:
1. A graduate student is permitted a maximum semester course load of 12 credit hours. Students admitted to the College of Pharmacy's PharmD program may carry a maximum of 18 credit hours per semester.
2. A graduate student on academic probation is permitted to carry a maximum semester course load of 6 credit hours.
3. The maximum course load for all graduate students during the summer session is 6 credit hours.
Due to the nature and requirements of their programs, individual colleges may encourage students to register in fewer credit hours than the maximum academic load.

**Dropping and Adding Courses:**
Graduate students may drop or add courses online using myQU during the designated period for drop/add. This period is determined by the University, specified in the academic calendar and updated on the University's web site. A course that is dropped before the drop deadline will not appear on the student's transcript.

**Courses you cannot register for by using myQU:**
Graduate students may not register for the following courses via myQU: Independent Study, Master's Thesis/Project, and Continuous Enrollment and variable credit courses. Students requiring these courses should contact their program director for approval. Once registered for these courses, students can access the information regarding the course meeting time, classroom location and instructor through their myQU account.

**Prerequisites:**
When a student attempts to register for a course, the registration system will check the request against the

student's academic record. If the student has not satisfied the Prerequisite, the student will be prevented from registering for the course. Students should contact their program director regarding Prerequisite discrepancies.

**Registration Holds:**
Students with registration holds will not be allowed to register for classes until the hold is removed. The student should contact the department that placed the hold for a solution.

**Withdrawal from a Course:**
After the regular drop/add period at the beginning of each term, graduate students may withdraw from one or more courses before the end of the eighth week of the semester, provided that the total number of credit hours carried does not fall below the minimum credit hour requirement of the program. This withdrawal period results in differing refund rates. Students are encouraged to consult the University academic calendar for specific dates.
If a student withdraws from a course during the withdrawal period, the grade of "W" is entered on the student's transcript.

**Withdrawal from the Semester:**
Withdrawal from a semester (from all courses) requires the approval of the student's academic advisor and the director of the graduate program. Withdrawal from a semester must be within the time limit set by the academic calendar.
A graduate student cannot withdraw for more than two semesters; the exception to this provision is during a study adjournment (emergency reasons). If a graduate student withdraws from a semester, he/she must re-enroll before registering for the following semester. The Vice President for Student Affairs may grant exceptions to this regulation in extenuating circumstances.

**Withdrawal from the University:**
A graduate student may apply for withdrawal by contacting the Registration Department. Enrollment will be suspended and earned grades will be maintained in the student's record given that the student has completed at least one semester. The maximum period for which a student can leave the University must not exceed two semesters.

## RE-ENROLLMENT AND RE-ADMISSION

A graduate student, who withdraws without approval, must re-enroll before being allowed to register. Re-enrollment may be pursued by contacting the Registration Department before the deadline specified in the academic calendar. The decision to proceed with a re-enrollment request is determined by the Registration Department in consultation with the graduate office of the College in which the student wants to re-enroll.
A graduate student seeking to return to QU after an absence of more than two consecutive semesters may be required to re-apply for admission to the program and must satisfy the admission and program requirements for the semester of re-admission.

## FINAL EXAMINATION SCHEDULE

Final examinations are announced at the beginning of each semester and the final exams schedule is posted by the Office of Student Affairs on the University's web site. It is the responsibility of the student to be familiar with these dates. A graduate student who misses a final exam due to circumstances beyond his/her control (family illness or death, personal illness, etc.), must contact the instructor to justify his/her absence and submit proof of the circumstance. This must take place by the time the instructor submits his/her final grades to the Registrar. If the instructor accepts the excuse, the student is given an "Incomplete" grade and a date will be scheduled for a make-up exam to be given. Once the make-up exam has been taken and graded, the instructor will provide the Registrar with the final grade to replace the "Incomplete" grade.
In cases where a different form of assessment is administered in lieu of a final examination, the student is responsible for meeting all requirements and deadlines as determined by the instructor of the course.

## STUDY PRINCIPLES AND POLICIES

**Attendance**
Class participation and attendance are important elements of every student's learning experience at QU, and graduate students are expected to attend all classes. Keeping track of the student's attendance and observation of the student's performance in class are the responsibilities of the instructor.
A graduate student should not miss more than 25% of the classes during a semester. Those exceeding this limit, will receive a failing grade regardless of their performance. In exceptional cases, the student, with the instructor's prior permission, could be exempted from attending a class provided that the number of such occasions does not exceed the limit allowed by the University. The instructor will determine the validity of an excuse for being absent. A student who misses more than 25% of classes and has a valid excuse for being absent, will be allowed to withdraw from the course.

The following rules are applied in determining attendance of the students:
• If a graduate student attends only a part of a class,

the instructor determines whether he/she is considered present or absent for that day.
• Attendance record begins on the first day of class irrespective of the period allotted to drop and add.
• If an instructor reschedules a class, the new timing must be suitable and agreed upon in writing by all students; otherwise, instructors cannot hold a student responsible for not meeting the attendance requirement.
• If more than 25% of the classes for a course are cancelled during a semester and not rescheduled appropriately, no student in that course will be failed for reasons of absenteeism.
• A graduate student who, without prior permission from the instructor, does not take the final exam, will receive a zero score for that exam. The student may appeal to the instructor, who, based on documentation and evidence presented by the student, may invoke the regulations applicable to an incomplete grade.

**Student Coursework Assessment and Grading**
Graduate student assessment and grading is a continuous process starting on the first day of class and continuing until the end of the semester. Instructors evaluate students' performance using a variety of mechanisms, methods and tools. Instructors assess each student's performance and progress in the class while recognizing his/her areas of strengths and weaknesses.
Grading is a cumulative notion that is based on the student's performance during the semester. Where possible, the student's final grade is based upon several different assessment tools. These may include, but are not limited to, exams, projects, presentations, reports, quizzes, reading assignments, research papers, writing essays, classroom feedback and discussions etc. In all cases, every student has the right to see, review and discuss with the instructor all marked materials used in grading him/her.

**Grading Policy**
Instructors shall determine the grade for each student registered in their courses according to the following table:

### Letter Grades and their Corresponding Grade Points

| Letter Grade | Description | Percentage | Grade Points |
|---|---|---|---|
| A | Excellent | 90 to 100 | 4.00 |
| B+ | Very Good | 85 to <90 | 3.50 |
| B | Very Good | 80 to <85 | 3.00 |
| C+ | Good | 75 to <80 | 2.50 |
| C | Good | 70 to <75 | 2.00 |
| F | Fail | less than 70 | 0.00 |
| P+ | Pass with Distinction | | |
| P | Pass | | |
| NP | Not Pass | | |
| CC | Continuing Course | | |
| I | Incomplete | | |
| TC | Transfer Credit | | |
| W | Withdrawal | | |
| WF | Withdrawal Failing | | |
| Au | Audit | | |

**Grade Point Average (GPA)**

The Grade Point Average (GPA) is calculated on the basis of all graduate coursework identified in a student's program of study, as well as any additional coursework that is acceptable to the degree program. Qatar University coursework taken while in non-degree status will not be used in the calculation of the student's GPA.

Every letter grade has grade points corresponding to it. These constitute the basis for calculating the GPA. The total number of grade points earned for each course is calculated by multiplying the number of credit hours assigned to the course by the number of grade points corresponding to the letter grade received as shown above. The overall GPA is determined by dividing the total number of grade points accumulated for all courses by the number of credit hours attempted. The GPA is an indicator of the student's overall academic performance at QU. It is worth noting that each semester has a GPA, and all earned courses have another GPA known as the cumulative GPA.

**Grade Reports and Transcripts**

The QU transcript is a student's official record of academic achievement. The transcript contains all the essential information pertaining to his or her course grades, academic level, scholarship, and degrees received – a summary of the student's academic history. . At the end of each semester, every student is issued a grade report through their myQU account summarizing the final grades earned and the academic standing in that semester. Graduate students may obtain their official transcript from the Registration Department.

**Graduation Requirements**

Each graduate program offers a study plan consisting of required and elective courses. An academic degree is awarded to students who complete all the requirements of the graduate program in which he/she is enrolled with a minimum cumulative GPA of 3.00 for Masters and Doctorate level and 2.50 for Diploma level. As graduation and credit hour requirements do vary by graduate program, students are encouraged to consult with their graduate program advisor regarding their program's academic and graduation requirements.

**Incomplete Grades**

An incomplete (I) grade may be received in a course if the student attends but fails to complete all the course requirements. The Incomplete grade is not an alternative for an "F" due to poor performance. To be considered for an incomplete grade, the student must provide an acceptable justification for failing to complete the required work to the course instructor, which the director of the graduate program must also approve. If the justification is related to medical reasons, it must be supported by a medical report that is certified by the Public Health Authority or Hamad Medical Corporation and submitted to the Registration Department. Any person presenting the medical report on behalf of the student must provide his/her own ID in addition to that of the student. If the incomplete grade is given because the student did not take the final exam, the student should arrange with his/her instructor to take a make-up exam. The deadline for changing an (I) grade is the last day of the second week of classes in the following semester. Upon successful completion of the required work, the course instructor will replace the (I) grade with a letter grade (A through F) and submit it to the Registration Department.

If a grade of (I) is not changed by the end of the specified period, it will be changed automatically to an 'F'. Only the Vice President for Student Affairs may grant an extension beyond the specified time limit. At the end of the first week of classes in the following semester, the Office of the Registrar will remind instructors who have given incomplete grades to change them before the deadline.

**Grade Appeal and Changing a Grade**

A student who believes that an unfair or erroneous grade is received may contest the grade to the instructor of the course within ten (10) business days of the issuance of grade reports. If the instructor concurs with what the student claims, he/she submits a grade change to the director of the program/department head. The student will be notified of the grade change once it is made and sent to the Registration Department for posting .

If the instructor does not agree with the student's claim, the student may submit a written, signed, and dated appeal to the director of the program or department head, explaining his/her position. The director of the program/department head will review the merits of the appeal, and may consult with the relevant faculty in the college before ruling on the appeal. Should the course instructor also be the director of the program/department head, the student should submit his/her written complaint directly to the Dean of the College.

If the student is not satisfied with the decision of both the instructor and the director, he/she may submit a written appeal to the Dean of the College, who will then make the final decision on the appeal. In cases where the student feels that proper procedures were not followed regarding his claim, he/she may appeal in writing to the Vice President for Student Affairs. It should be noted here that the Vice President for Student Affairs will only assess whether proper procedures were followed. He/she will not make a decision regarding the grade change.

**Academic Probation**

While every effort is made by Qatar University to provide timely and accurate information to students about their academic standing, it is the sole responsibility of students to be aware of their academic standing at all times. Graduate students are placed under Final Probation when their cumulative GPA is below the 3.00 requirement for "Good Standing", regardless of the total number of Credit Hours earned. Diploma students are placed under Final Probation when they fail to satisfy the 2.50 cumulative GPA requirement for "Good Standing", regardless of the total number of credit hours earned. Academic probation is noted on the student transcript and academic records. Once placed under Final Probation, graduate students who fail to satisfy the cumulative GPA requirement for "Good Standing" at the end of the following semester of enrolment, excluding the summer term, are academically dismissed from the University.

Three non-consecutive academic probations will also result in an academic dismissal.

Graduate students under academic probation who fail to register in courses in a given semester will, unless they received prior approval from the Student Affairs Committee, be academically dismissed at the end of that semester. Students under academic probation may not withdraw from a semester, request a leave of absence, or leave the university for the remainder of the semester unless they receive prior approval from the Student Affairs Committee.

Graduate students placed under academic probation are allowed to register in a maximum of 6 CH per regular semester and a maximum of 3 CH in the summer term.

A hold is applied for all graduate students under academic probation or for failing a course twice. These students must meet with their academic advisor before registering in classes offered in the following semester.

Graduate students placed under academic probation may apply for transfer to another program subject to university rules and regulations.

The summer term is not considered for academic probation decisions. However, the GPA earned during a summer session will impact the student's cumulative GPA calculation and academic standing decision at the end of the subsequent semester.

**Academic Dismissal**

A graduate student will be academically dismissed from the University for the following conditions:

- Failing a course two (2) times.
- Failing to achieve the minimum cumulative GPA requirements for "Good Standing" by the end of the following semester after being placed under Final Probation (summer not included).
- Failing to achieve the minimum cumulative GPA requirement for "Good Standing" in three non-consecutive semesters.
- Not registering in any course in a given semester, excluding the summer term, while placed under Final Probation and without having secured prior approval from the Student Affairs Committee.
- Failing to register for two consecutive semesters without prior approval.
- Failing to meet graduation requirements within twice the period required for program completion as defined in the program approved study plan upon matriculation in the University.

Academic Dismissal is noted on student transcript and academic records.

**Readmission to Existing Program**

A graduate student who is academically dismissed from their graduate program for the first time may be eligible to apply to the Academic Dismissal, Appeal and Reinstatement Committee for readmission to their existing program. The readmission request should be submitted to the Director of the Registration Department within 5 business days of the official announcement of final grades.

Applicants may seek readmission to their existing graduate program after completing a minimum suspension period of 1 regular semester, excluding summer, and up to a maximum of one (1) year from the official notification of academic dismissal. The application for readmission to the existing program should be submitted to the Director of the Registration Department by the application deadline.

A graduate student who is academically dismissed from their graduate program is eligible to apply for readmission to their existing program under the following provisions:

- Failing to meet graduation requirements within twice the period required for program completion as defined in the program approved study plan upon matriculation in the University.
- Failing to register for two consecutive semesters without prior approval.

Only students who are academically dismissed from their graduate program for the first time and who satisfy one of the aforementioned criteria may apply for readmission. If a student is academically dismissed for a second time, the student is not eligible for readmission.

**Admission to a Different Program**

A graduate student who is academically dismissed and not eligible for readmission to their existing program may apply for admission to a different graduate program. All appropriate requirements and timelines apply.

**Repeating a Course**

The following applies to all Graduate students repeating a course:

- Graduate students are allowed to repeat a failed course only once. Failing a course for the second time will result in an academic dismissal. Students who failed a course, must obtain the approval of their academic advisor and the head of department of their program before repeating the course.
- The grades of a repeated course, including a grade of 'F', are included in the cumulative GPA calculation.
- The repeated course may only be counted once towards the total number of credit hours required for graduation.
- Courses transferred from another accredited college or university cannot be repeated for additional credit.
- A notation of 'R' next to the grade on the final transcript indicates that the course has been repeated.
- The degree GPA is not changed for any courses repeated after the degree is awarded.

**Auditing Courses**

QU allows students to audit courses on a non-credit basis, subject to approval of the director of the program/department head. Permission to audit a course is contingent upon the rules of the program, availability of space and class size. Priority is given to a student who takes the course for credit. A student who audits a course, however, is charged the standard tuition, fees, and registration costs. An audit student is expected to attend class regularly, but not obliged to take exams and so does not receive the nor-

mal grade (A-F); instead, upon completion of the course, a grade of 'AU' is recorded in the student's transcript to denote that the course was taken on an audit basis. Should a student wish to take the course for credit, he/she must get the status changed at the Registration Department no later than two weeks from the commencement of classes. A student can audit a course only once.

**Internships**
The University values internships and clinical experiences. Internships combine what the student has learned in the classroom with a real world environment, such as a company/business, laboratory, or governmental project. The graduate program director, in conjunction with the internship instructor, determines the number of credit hours to be awarded to an internship. Upon completing the requirements of an internship, the student receives a grade from the instructor. To apply for an internship, graduate students must have the support of their academic advisor and the head of the program in which he/she is enrolled.

**Transferring Credits to QU**
In order to take courses at another accredited university, students should seek approval before attending another university. Graduate students must submit their request to the Registration Department by the appropriate deadline. Masters and Doctorate level Students with a cumulative GPA below 3.00 and Diploma level students with a GPA below 2.50 are not eligible to take courses at another university, and will not be allowed to transfer courses taken at other universities.

Academic courses taken at other colleges or universities may be considered for transfer to QU under the following conditions:
• The college or university attended is accredited.
• A maximum of 9 credit hours may be transferred from a peer graduate program at another college or university.
• The student submits an application to the Registration Department, along with all official transcripts and course syllabi from the colleges and universities attended. The content of the transferred courses must match at least 90% of the course content of their counterparts at QU. Only courses with a grade of "B" or above are transferable.
• The respective academic department at QU will make the final decision on transfer of credit into its program. Courses accepted for transfer will be given a grade of 'TC' but will not bear on the GPA accumulated at QU.

**Change of Academic Major**
Graduate students may change their academic major within their particular graduate program with the approval of the program director. Students seeking to change their graduate programs need to apply for admission to the new program through the Admissions Department. All admissions requirements and timelines apply.

**Transferring QU Credit to Other QU Programs**
Transfer credit may be considered for graduate students transferring between graduate programs at Qatar University. Students seeking to transfer between QU graduate programs, must have earned a minimum cumulative GPA of 3.00 for Masters and Doctorate level or 2.50 for Diploma level course work at QU. Students must also meet the minimum admissions requirements for their intended program of study for the semester of application.

A maximum of 50% of the credit hours required for graduation in the intended program of study may be applied as transfer credit. Courses with a minimum grade of 'B' for Masters and Doctorate level and C+ for Diploma level course work from QU may be considered for transfer credit evaluation. As some colleges may accept fewer or no transfer credit hours, students are advised to consult the program director to determine the maximum number of credit hours and the specific courses that may be transferred and applied towards their new degree program. Credit hours earned earlier than five years from the date of graduation or the last semester of attendance cannot be transferred. Grades, credit hours, and quality points earned in QU courses accepted for transfer will count toward the total number required for graduation.

**Other Requirements**
Several programs require a written and/or oral general examination. The examination may be an initial diagnostic or a final comprehensive examination over the student's fields of study. Students must pass all examinations required by the program in order to complete all degree requirements. They are advised to consult with the director of the program/department head for specific program requirements.

**Transfer Students**
QU welcomes students transferring from other accredited institutions of higher education. Additional information regarding transfer admission requirements can be found in the admissions section of this catalog.

# CHAPTER 8
# ACADEMIC ADVISING

Academic advising is an ongoing partnership between students and their advisors that helps students to attain their academic, personal, and career goals.

The academic advisor serves as the primary link between the student's academic program and other resources available at the university. In order to assist students in making informed choices about their education and career goals, academic advisors help students identify available opportunities and options while also communicating accurate and timely information about academic policies and procedures, programs, resources, and career opportunities.

Graduate students are assigned to academic advisors in their respective colleges. Advisors assist students with course selection, registration, and educational planning.

Although advisors at QU actively assist students in making effective academic choices, students are personally responsible for planning their academic program to meet all graduation requirements. Therefore, students are encouraged to take the lead in developing an association with their academic advisor by communicating with them on a routine basis. Through regular contact with their advisors, students develop essential communication, decision-making, and problem-solving skills and become actively engaged in their educational expedition, thereby making it a richer experience.

# CHAPTER 9
# COLLEGES AND DEGREES

## COLLEGE OF ARTS AND SCIENCES

Male Section, Corridor 2, Dean's Office B111
Phone: (974) 4403-4500
Email: **cas@qu.edu.qa**
**http://www.qu.edu.qa/artssciences/**

**Dean**
Eiman Mustafawi

**Associate Dean for Research and Graduate Studies**
Mohamed Ahmedna

**Associate Dean for Academic Affairs**
Tahmina Rashid

**Associate Dean for Outreach and Engagement**
Fatima Mohammed H Al-Sowaidi

**Associate Dean for Planning and Quality Assurance**
Steven Wright

**Assistant Dean for Student Affairs**
Wesam Al-Madhoun

### ABOUT THE COLLEGE

The College of Arts and Sciences offers a variety of quality academic majors in a number of departments, comparable to those in other national and international educational institutions. The College applies rigorous academic standards in order to prepare students for leadership roles in a complex global society. It strives to graduate young men and women who are dedicated to the enhancement of knowledge and scientific research, and who are critical thinkers, independent lifelong learners, and responsible citizens.

### DEGREE OFFERINGS

The College of Arts and Sciences offers the following graduate degrees:
• Master of Arts in Gulf Studies
• Master of Arts in Arabic Language and Literature
• Master of Science in Environmental Sciences
• Master of Science in Biomedical Sciences
• Master of Science in Materials Science and Technology
• Ph.D. in Biological and Environmental Sciences

## MASTER OF ARTS IN GULF STUDIES

Main Men's Building Room 112 (Men's Section)
Phone: 974 4403-4987
Email: **gulfstudiesprogram@qu.edu.qa**
Website: **http://www.qu.edu.qa/artssciences/gulfstudies/index.php**

**Director**
Dr. Abdullah Baabood

### ABOUT THE PROGRAM

This in-depth interdisciplinary MA program offers students an opportunity to examine issues pertinent to the Gulf Region, encompassing the Arabian Peninsula, Iraq and Iran. Taught by experts in the field, the program offers students interested in politics, economics, history, literature, and ecology of the Gulf the opportunity to engage in their research while remaining present in the very region that they are studying.
The curriculum emphasizes advanced principles of research methodology in various areas of importance, including: culture, media and ICT, environment, politics, international relations, security, and the role of the energy industry in Gulf countries. This multi-disciplinary approach is suitable for gaining an in-depth understanding of the diversity, challenges and opportunities of this important area of the world.

**Objectives**
1.advance analytical approach to politics, economics, and social issues of the region
2.provide the means towards human capacity building
3.foster the integration of a broad knowledge base and human capacity building
4.address society's needs and aspirations
5.support Qatar National Vision 2030 for human, social, economic and environmental development

**Its educational objectives are:**
1. To address society's needs by developing human capacity equipped with a broad research-oriented training in the social sciences.
2. To establish a firm foundation from which students can progress onward to related doctoral studies.
3. To advance students' analytical capabilities in history and in the social sciences and to develop their appreciation of different approaches to the study of the polities, economies, societies, and the modern history of the Gulf and the Middle East in general.
4. To enable students to engage in advanced study of socio-economic problems and policy issues pertaining to the Gulf region and the Middle East more generally.

5. To develop students' research abilities and their understanding of the relationship between conceptual tools, a theoretical framework and methodological approaches.

**Admission Requirements**
Eligible applicants must have:
1. Completed a Bachelor degree with a grade point average of at least 2.80 out of 4.00, or equivalent, from a university or college accredited by an international accrediting association or by the Ministry of Higher Education or comparable in that country.
2. Achieved a minimum score of 520 on the paper-based TOEFL or equivalent test (score of 190 for TOEFL cBT or IELTS score of 6), taken within 2 years of the start of the intended semester of admission OR earned a previous degree from an accredited institution of higher education in a Program where English was the language of instruction.
3. A satisfactory performance in the personal interview with the Gulf Studies program.

All applicants to the Master of Art in Gulf Studies program are required to submit the following documents to the Admissions Department:
• Complete Online Admissions Application
• Final, official and certified university transcripts
• Official TOEFL score report or equivalent score report or other evidence of English proficiency in accordance with QU Policy
• A 500 word letter of intent
• Two confidential letters of recommendation should be e-mailed directly to the program at: gulfstudiesprogram@qu.edu.qa
• Curriculum Vitae (C.V.)
• Health Certificate
• Photocopy of the applicant's Qatar ID card (Non-Qatari applicants must provide a copy of their passport)
• Two recent identical passport-size photographs with white background
• Application Fees:

Admission to the Master of Art in Gulf Studies program is offered in the Fall and Spring semesters. For additional information on the program, please contact us at: **gulfstudiesprogram@qu.edu.qa.**

**Learning Outcomes**
To provide a comprehensive, interdisciplinary knowledge base of the contemporary Gulf States and their relationship within the regional and global context:
1. Students will apply independent research skills.
2. Students will apply social science concepts from different disciplines to their study on the Gulf region.
3.Students will analyze the social and political dynamics of the Gulf States.
4.Students will critically analyze the tools used for studying the modern history of the Gulf.
5.Students will evaluate the modern Gulf in relation to either the economic, political, cultural or social setting in global context.
6.Students will critically evaluate the processes that marked the historical development of modern states in the Gulf region.

**Opportunities**
As a result of the interdisciplinary nature of this program, the employment prospects for graduates are strong, and cater for several different career paths. Graduates will be suited to pursue career opportunities in both the public and private sectors. This degree will equip students with the necessary skills to pursue professions in governmental ministries and agencies that deal with foreign affairs, heritage and tourism; media organizations; the field of education; the non-profit sector and commercial organizations. It will also provide a solid foundation to those who would like to pursue doctoral studies.

## DEGREE REQUIREMENTS

**Master of Arts in Gulf Studies**
A minimum of 36 credit hours are required to complete the Master of Arts in Gulf Studies, including the following:
• A minimum of 21 credit hours of core courses
• A minimum of 15 credit hours of elective courses

**Core Requirements (21 credit hours)**
• GULF 510 Contemporary History and Politics in the Gulf
• GULF 520 State and Society in the Gulf
• GULF 530 International Relations of the Gulf
• GULF 500 Advanced Research Methodology
• GULF 531 Political Economy of the Gulf
• GULF 570 Thesis

**Major Electives (15 credit hours)**
• GULF 533 Global Energy Geopolitics
• GULF 532 Security of the Gulf States
• GULF 521 City and Society in the Gulf
• GULF 540 Environment and Climate Ecology
• GULF 523 Human Rights and the Gulf State
• GULF 550 Media and Information Communication Technology in the GCC
• GULF 524 The Arabian Peninsula Literature and Culture
• GULF 560 Special Topics
• GULF 511 Politics of the Gulf

## STUDY PLAN

| FIRST YEAR (18 credit hours) | | | |
|---|---|---|---|
| Term | Course # | Course Title | Cr Hrs |
| Fall | GULF 500 | Advanced Research Methodology | 3 |
| | GULF 510 | Contemporary History and Politics in the Gulf | 3 |
| | GULF 520 | State and Society in the Gulf | 3 |
| **Total** | | | **9** |
| Spring | GULF 530 | International Relations of the Gulf | 3 |
| | GULF 531 | Political Economy of the Gulf | 3 |
| | | Elective | 3 |
| **Total** | | | **9** |

| SECOND YEAR (18 credit hours) | | | |
|---|---|---|---|
| Term | Course # | Course Title | Cr Hrs |
| Fall | | Thesis 1 | 3 |
| | | Elective | 3 |
| | | Elective | 3 |
| **Total** | | | **9** |
| Spring | | Thesis 1 | 3 |
| | | Elective | 3 |
| | | Elective | 3 |
| **Total** | | | **9** |

## MASTER OF ARTS IN ARABIC LITERATURE AND LANGUAGE

Women's Main Building, Room 112 (Women's Section)
Phone: (974) 4403-4820
Email: **headdeparabic@qu.edu.qa**
Website: **http://www.qu.edu.qa/artssciences/graduate_programs.php**

**Head of Department of Arabic Language**
Ali Ahmed Alkubaisi

## ABOUT THE PROGRAM

The establishment of a Master's Program in Arabic Literature and Language resonates with the considerable focus the University is paying to scientific research, as is clearly referred to in the University Strategic Plan, and consistent with Qatar's vision to develop the field. In addition, there is a vested interest in Arabic Literature and Language, considering that QU is a national university and places the identity and needs of Qatari society at the top of its priorities.

### Educational Objectives

The master's program at the Department of Arabic Language and Literature aims to achieve the following objectives:
1. Develop students' research skills in literature and criticism, and language.
2. Prepare researchers and scholars who are active socially and culturally in the fields of literature, language and criticism.
3. Consolidate the integration between the Arab and Islamic heritage.
4. Deepen knowledge of comparative culture & literature, to promote communication and dialogue with other cultures.

### Admission Requirements

All applicants to the Master of Arts in Arabic Literature and Language program who meet the following minimum criteria will be considered for admission to Qatar University:
1. Completed a Bachelor Degree in Arts with a concentration in Arabic Language and Literature from Qatar University, with a minimum cumulative GPA of 2.80 out of 4.00 or equivalent from a university or college accredited by an international accrediting association, the Ministry of Higher Education, or another comparable institution in that country.
2. For applicants applying to the Comparative Cultural Studies concentration of the Master of Arabic Language

program, they required to achieve a minimum score of 500 on the paper-based TOEFL or equivalent test taken within 2 years of the start of the intended semester of admission OR earned a previous degree from an accredited institution of higher education in a Program where English was the language of instruction.
3. A satisfactory performance in the personal interview with the Admission Committee.

All applicants to the Master of Arts in Arabic Literature and Language program are required to submit the following documents to the Admissions Department:
• Online Admissions Application
• Final, official and certified university transcripts
• Official TOEFL score report or equivalent score report (Only required for applicants to the Comparative Cultural Studies concentration). Or other evidence of English proficiency in accordance with QU Policy.
• Health Certificate
• Photocopy of the applicant's Qatar ID card (Non-Qatari applicants must provide a copy of their passport)
• Two recent identical passport-size photographs with white background
• Application Fees

Admission to the Master of Arts in Arabic Literature and Language program is offered in the Fall semester only. For additional information on the program, please contact us at headdeparabic@qu.edu.qa.

**Learning Outcomes**
After successfully completing the required courses and preparing a thesis, the graduate student will be able to:
1. Achieve a high level of specialized academic research.
2. Utilize his/her high intellectual capability in dealing with sources relevant to his/her specialization.
3. Invest his/her knowledge (present and future) in serving his/her local, Arab and Muslim community.
4. Master the skills of critical, linguistic and literary analysis in various arts.
5. Communicate effectively using the Arabic language (written and orally).

**Opportunities**
Upon obtaining a master degree in the Arabic Literature & Language, graduates may use their scientific and academic skills to strengthen the existing research atmosphere at the university, and apply to the following jobs:
- A researcher in specialized cultural centers, including:
1. Center of Dialogue of Civilizations
2. Al-Jazeera Center for Strategic Studies
- Arabic language lecturer
- University Teaching Assistant
- Any job that requires applicants who display mastery and a high level of knowledge about the Arabic language.

## DEGREE REQUIREMENTS

**Master of Arts in Arabic Language and Literature**
A minimum of 33 credit hours are required to complete the Master of Arts in Arabic Language and Literature, which includes the following:
• A minimum of 9 credit hours in Major Core Requirements
• A minimum of 24 credit hours of in one of the three concentration areas offered by the program, including:
- Concentration Area Core Requirements: A minimum of 18 credit hours in the concentration area core requirements package.
- Concentration Area Electives: A minimum of 6 credit hours in the concentration area electives package.

For students holding a bachelor degree in a discipline other than Arabic, student may be required to complete additional bridge courses as specified at admission time.

**Major Core Requirements (9 CH)**
The following courses must be completed by all Master of Arts in Arabic Language and Literature students:
• ARAB 524 Practical Applications
• ARAB 548 Thesis

**Concentration in Linguistics (24 CH)**
Students must complete a minimum of 18 credit hours in concentration core requirements and 6 credit hours in concentration electives.

**Linguistics Concentration Core Requirements (18 CH)**
Students must complete a minimum of 18 credit hours in the concentration core requirements package, including:
• ARAB 500 Theory and Research Methodologies - Linguistics
• ARAB 502 Seminar in Linguistics
• ARAB 505 Arabs Linguistic Thought \
• ARAB 507 Phonetics and Phonology
• ARAB 509 Lexicography and Terminology
• ARAB 510 Syntax

**Linguistics Concentration Electives (6 CH)**
Students must complete a minimum of 6 credit hours in the concentration electives package, including:
• ARAB 513 Paleography
• ARAB 518 Sociolinguistics
• ARAB 519 The Arabic Language in the World
• ARAB 520 Arabic Dialectology
• ARAB 521 Discourse Analysis

**Concentration in Literature and Literary Criticism (24 CH)**
Students must complete a minimum of 18 credit hours in concentration core requirements and 6 credit hours in concentration electives.

**Literature and Literary Criticism Concentration Core Requirements (18 CH)**
Students must complete a minimum of 18 credit hours in the concentration core requirements package, including:
• ARAB 501 Theory and Research Methodology - Literature
• ARAB 503 Seminar in Literature & Literary Criticism
• ARAB 506 Arabs Critical and Rhetoric Thought
• ARAB 508 Contemporary Literary Theory
• ARAB 511 Issues in Arabic Poetry
• ARAB 522 Modern Arabic Narrative Genres

**Literature and Literary Criticism Concentration Electives (6 CH)**
Students must complete a minimum of 6 credit hours in the concentration electives package, including:
• ARAB 513 Paleography
• ARAB 517 Literature and Theories of Contemporary Psychoanalysis
• ARAB 521 Discourse Analysis
• ARAB 523 Studies in Gulf Literature
• ARAB 525 Cultural Criticism

**Concentration in Comparative Cultural Studies (24 CH)**
Students must complete a minimum of 18 credit hours in concentration core requirements and 6 credit hours in concentration electives.

**Comparative Cultural Studies Concentration Core Requirements (18 CH)**
Students must complete a minimum of 18 credit hours in the concentration core requirements package including:
• ARAB 501 Theory and Research Methodology - Literature
• ARAB 504 Seminar in Comparative Cultural Studies
• ARAB 514 The History of Literary Criticism
• ARAB 515 Philosophy and Critical Thought
• ARAB 516 Post-Colonial Literature
• ARAB 525 Cultural Criticism

**Comparative Cultural Studies Concentration Electives (6 CH)**
Students must complete a minimum of 6 credit hours in the concentration electives package, including:
• ARAB 512 Theory of Metaphor
• ARAB 521 Discourse Analysis
• ARAB 526 Post Modernism
• ARAB 527 Global Comparative Literatures
• ARAB 528 Comparative Literature

## MASTER OF SCIENCE IN ENVIRONMENTAL SCIENCE

College of Sciences Building,
Room 222 (Women's Section)
Phone: (974) 4403-4565 / 4566
Email: **biology@qu.edu.qa**
Website: **http://www.qu.edu.qa/artssciences/bioenvi/**

**Head of Department of Biological and Environmental Sciences**
Fatima Ammar Al-Naemi

## ABOUT THE PROGRAM

The M.Sc. Environmental Science Program is dedicated to the graduation of professionals and researchers who are committed to the development of a sustainable future for Qatar.
The program aims to provide a nationally prominent, interdisciplinary graduate program in environmental science that is the first choice of students, and one that provides every graduate with the acumen, literacy and knowledge of the environment that empowers them to be responsible and active citizens, with a deep social conscience.

**Objectives**
This M.Sc. program addresses the need for a workforce that can solve a broad range of burgeoning environmental issues. It prepares students for research in environmental science, for doctoral study, and for technical positions in universities, industry or governmental agencies.
The curriculum emphasizes advanced principles of environmental science in areas such as conservation, pollution, marine ecology, global change, environmental law and economics, and sustainable development. Being multidisciplinary in nature, this program will serve a wide variety of post-graduate students who may have diverse backgrounds and goals.

We would like to attain the following objectives:
1. Develop the student's sense of community, effective engagement with others, responsibility, integrity and ethics
2. Develop the student's foundation skills and the understanding necessary to comprehend, evaluate and solve a plethora of environmental problems and issues.
3. Explain the utility and dimension of the technologies available to the graduate students in their studies about the environment.
4. Explain how to communicate effectively and decisively as professionals, in diverse settings and communities, on an eclectic range of environmental issues.

**Admission Requirements**
Eligible applicants:
1. Completed a Bachelor degree in Science, engineering, or related field with minimum cumulative GPA of 2.80 out of 4.00 or equivalent from a university or college accredited by an international accrediting association, or by the Ministry of Higher Education or comparable authority in that country.
2. Achieved a minimum score of 520 on the paper-based TOEFL or equivalent test taken within 2 years of the start of the intended semester of admission OR earned a previous degree from an accredited institution of higher education in a Program where English was the language of instruction.
3. Passing an interview with the College›s admission panel. The panel may request additional bridging course(s).

All applicants to the Master of Science in Environmental Sciences program are required to submit the following documents to the Admissions Department:
• Complete Online Admissions Application
• Final, official and certified university transcripts
• Official TOEFL score report or equivalent score report or other evidence of English proficiency in accordance with QU Policy.
• Two confidential recommendation letters from undergraduate professors or employers
• Curriculum Vitae (C.V.)
• Health Certificate
• Photocopy of the applicant's Qatar ID card (Non-Qatari applicants must provide a copy of their passport)
• Two recent identical passport-size photographs with white background
• Application Fees
Admission to the Master of Science in Environmental Science program takes place in the fall semester only.
For additional information on the program, please see our website at: **http://www.qu.edu.qa/artssciences/bioenvi/environmental/index.php**

**Learning Outcomes**
Graduates of the Master of Science in Biological Sciences will be able to:
• Operate effectively as a team member
• Apply national and international environmental laws and regulations, specifically those relevant to the development of the environmental policy of the State of Qatar
• Apply analytical skills to choose solutions to environmental concerns of relevant industries in the region using interdisciplinary approaches
• Apply research methodologies to analyze Environmental issues
• Demonstrate communication skills about environmental issues

**Opportunities**
Excellent opportunities are available for graduates of this program, both in the public and the private sectors. These include professional services (ex. legal consultations, urban planning); research & development services (on natural sciences, social sciences/humanities) and other business services. Furthermore, various ministries (e.g. Health, Environment, Agriculture) are among the potential employers of these M.Sc. holders. Teaching and research institutions are also potential workplaces for these degree holders.

## DEGREE REQUIREMENTS

**Master of Science in Environmental Science**
A minimum of 34 credit hours are required to complete the Master of Science in Environmental Sciences, including the following:
• A minimum of 13 credit hours of core courses.
• A minimum of 21 credit hours in either the project option or the thesis option as detailed below:
- Project Option: A minimum of 6 credit hours in Project Option Required Courses and 15 credit hours of Major Elective courses.
- Thesis Option: A minimum of 9 credit hours in Thesis Option Required Courses and 12 credit hours of Major Elective courses.

**Core Requirements (13 credit hours)**
• BIOL 501 Earth Systems
• BIOL 504 Environmental Chemistry
• BIOL 505 Graduate Seminar in Environmental Science
• BIOL 506 Microbiological Processes in Environmental Systems
• BIOL 507 Regulation, the Environment and Qatar Public Policy

**Thesis Option Required Courses (9 credit hours)**
• BIOL 503 Experimental Design and Statistical Analysis
• BIOL 530 Graduate Research and Thesis

**Project Option Required Courses (6 credit hours)**
• BIOL 502 Geographic Information Systems (GIS) and Databases
• BIOL 510 Internship/Technical Report

**Major Electives (12 or 15 credit hours depending on the selected option)**
Students must complete a minimum of 12 or 15 credit hours depending on the student selected option. The minimum required number of credit hours may be taken from courses listed in the major electives sub-packages including the Environmental Health sub-package, the Environmental Protection sub-package, or the Sustainable Development and Energy sub-package:

**Environmental Health sub-package**
• BIOL 511 Environmental Health and Safety
• BIOL 513 Epidemiology
• BIOL 515 Air Pollution
• BIOL 517 Environmental Biosafety and Biosecurity

**Environmental Protection sub-package**
• BIOL 512 Environmental Bioethics
• BIOL 514 International Environmental Law
• BIOL 516 Environmental Impact Assessment and Bioremediation
• BIOL 518 Water and Human Development
• BIOL 520 Environmental Toxicology and Pollution

**Sustainable Development and Energy sub-package**
• BIOL 521 Marine Environment and Human Development
• BIOL 522 Renewable Energy Resources and Global Change
• BIOL 523 Biological Conservation and Biodiversity in Qatar
• BIOL 524 Environmental Genomics and Bio-Engineering
• BIOL 525 Solid Waste Management

## STUDY PLAN

### Master of Science in Environmental Science
Thesis Option

| FIRST YEAR (18 credit hours) | | | |
|---|---|---|---|
| Term | Course # | Course Title | CH |
| Fall | BIOL 501 | Earth Systems | 3 |
| | BIOL 504 | Environmental Chemistry | 3 |
| | BIOL 506 | Microbiological Processes in Environmental Systems | 3 |
| | BIOL 505 | Graduate Seminar | P/F 1 |
| | | **Total** | **10** |
| Spring | BIOL 503 | Experimental Design and Statistical Analysis | 3 |
| | BIOL 507 | Regulation, Environment, Qatar Policy | 3 |
| | | Elective | 3 |
| | | Elective | 3 |
| | | **Total** | **12** |

| SECOND YEAR (18 credit hours) | | | |
|---|---|---|---|
| Term | Course # | Course Title | CH |
| Fall | | Elective | 3 |
| | | Elective | 3 |
| | BIOL 530 | Research | 3 |
| | | **Total** | **9** |
| Spring | BIOL 530 | Research | 3 |
| | | **Total** | **3** |

## STUDY PLAN

### Master of Science in Environmental Science
Project Option

| FIRST YEAR (18 credit hours) | | | |
|---|---|---|---|
| Term | Course # | Course Title | CH |
| Fall | BIOL 501 | Earth Systems | 3 |
| | BIOL 504 | Environmental Chemistry | 3 |
| | BIOL 506 | Microbiological Processes in Environmental Systems | 3 |
| | BIOL 505 | Graduate Seminar | P/F 1 |
| | | **Total** | **10** |
| Spring | BIOL 502 | GIS and Databases | 3 |
| | BIOL 507 | Elective | 3 |
| | | Elective | 3 |
| | | **Total** | **12** |

| SECOND YEAR (18 credit hours) | | | |
|---|---|---|---|
| Term | Course # | Course Title | CH |
| Fall | | Elective | 3 |
| | | Elective | 3 |
| | | Elective | 3 |
| | | | |
| | | **Total** | **9** |
| Spring | BIOL 510 | Internship | 3 |
| | | **Total** | **3** |

## MASTER OF SCIENCE IN BIOMEDICAL SCIENCE

College of Sciences Building, Room 126
(Women's Section)
Phone: (974) 4403-4800
Email: **health@qu.edu.qa**
Website: **www.qu.edu.qa/artssciences/health/biomedical**

**Program Director**
Hassan Abdel-Aziz

## ABOUT THE PROGRAM

The Master of Science in Biomedical Sciences provides students with skills and knowledge for professional enhancement. Graduates of the program may be candidates for positions as laboratory managers, education coordinators, hospital or university faculty members, researchers, departmental supervisors, etc. The degree is offered in two concentrations; Advanced Clinical Practice with thesis or project option, and Laboratory management with project option.

## OBJECTIVES

The principle operational objective of the Biomedical Science Program is to address the need of the local workforce by providing excellent health services according to world-class standards. The Master's degree in Biomedical Sciences prepares students for research in clinical laboratory field, for technical and mid-management positions in universities, medical and research laboratories. The curriculum emphasizes advanced principles of medical laboratory sciences in areas such clinical chemistry, microbiology, hematology & immunohematology, molecular diagnostics and lab management. The degree provides formal training in clinical sciences through theoretical and practical coursework and the application of coursework to a research or applied project.

**Graduates of this M.Sc. program will:**
• Apply advanced knowledge to evaluate and solve problems related to biomedical laboratory testing, technical and administrative procedures
• Possess effective communication skills in a variety of professional settings
• Design, conduct and evaluate various types of research in their substantive area according to ethical standards

**Admission Requirements**
All applicants to the Master of Science in Biomedical Sciences program who meet the following minimum criteria will be considered for admission to Qatar University:
• Completed a Bachelor degree in biomedical science, biology or related fields with minimum cumulative GPA of 2.80 out of 4.00 or equivalent from a university or college accredited by an international accrediting association or by the Ministry of Higher Education or comparable in that country. The minimum GPA requirement might be waived if applicant passed the Medical Laboratory Scientist (MLS) exam offered by the Board of Certification (BOC) of the American Society for Clinical Pathology
• Achieved a minimum score of 520 on the paper-based TOEFL or equivalent test taken within 2 years of the start of the intended semester of admission OR earned a previous degree from an accredited institution of higher education in a Program where English was the language of instruction.
• A satisfactory performance in the personal interview with the Admission committee.
•Students with BS degrees in other than Biomedical Sciences are required to successfully complete the bridge courses prior to entering the MSc program.

All applicants to the Master of Science in Biomedical Sciences program are required to submit the following documents to the Admissions Department:
• Complete Online Admissions Application
• Final, official and certified university transcripts
• Official TOEFL score report or equivalent score report or other evidence of English proficiency in accordance with QU Policy.
• Two confidential recommendation letters from undergraduate professors or employers
• Curriculum Vitae (C.V.)
• Health Certificate
• Photocopy of the applicant's Qatar ID card, If available (Non-Qatari applicants must provide a copy of their passport)
• Two recent passport sized photograph
• Application Fees

Admission to the Master of Science in Biomedical Sciences program takes place in the fall semester only. For additional information on the program, please see our website at: http://www.qu.edu.qa/artssciences/Health/index.php

**Learning Outcomes**
Graduates of the Master of Science in Biomedical Science will be able to:
• Use statistical techniques, skills and tools to analyze problems, generate alternatives and evaluate their consequences.
• Demonstrate effective communication skills at the individual and group levels.

• Demonstrate ethical choices, values, safe and professional behavior in laboratory operation and management roles.
• Conduct experimental or theoretical study committed to ethical standards
• Apply knowledge in the specific specialty discipline to accurately interpret patients' results.
• Use laboratory techniques and equipment related to profession.
• Analyze laws and regulations that impact healthcare organizations, health services delivery and patient safety. Demonstrate critical thinking and effective decision-making through financial management, operations management, personnel management, marketing management and quality assessment and improvement.

**Opportunities**
Graduates of the Master of Science in Biomedical Sciences are offered employment opportunities to work in many aspects of the clinical laboratory. The major areas include Clinical Chemistry, Hematology, Immunohematology & Blood Banking, Microbiology, Cytogenetic, Molecular diagnostics and Laboratory Management and Administration. Potential employers include but are not limited to:
• Laboratory Medicine & Pathology, Hamad Medical Corporation
• Biomedical Research Department, Supreme Council of Health
• Pathology & Laboratory Medicine, Al-Ahli Hospital
• Weill Cornell Medical College of Qatar
• Laboratory Al-Khor Hospital
• Medical Research Centre, Sidra
• Aspetar
• El -Shafalah

## DEGREE REQUIREMENTS

**Master of Science in Biomedical Science**
• A minimum of 36 credit hours are required to complete the Master of Science in Biomedical Sciences including the following:
• A minimum of 15 credit hours in Major Core Requirements
• A minimum of 21 credit hours in Concentration Requirements

For students holding a baccalaureate degree in a discipline other than Biomedical Sciences, the following additional requirement apply:
• Student must complete 6 credit hours in Bridge Course Requirements

**Major Core Requirements (15 CH)**
The following courses must be completed by all Master of Science in Biomedical Sciences students:
• BIOM 510 Pathophysiology
• BIOM 520 Principles of Laboratory Management
• BIOM 530 Current Issues in Clinical Laboratory Science
• BIOM 540 Research Methods in Biomedical Sciences
• BIOM 550 Medical Laboratory Laws and Ethics

**Concentration in Advanced Clinical Practice (21 CH)**
Students who choose the Advanced Clinical Practice Concentration must complete 21 CH in either the Project Option or the Thesis Option for the Advanced Clinical Practice Concentration as detailed below:

**• Thesis Option for the Advanced Clinical Practice Concentration:**
Students must complete a minimum of 9 credit hours in the Thesis Option Required Courses and 12 credit hours from the Advanced Clinical Practice Elective courses.

**• Project Option for the Advanced Clinical:**
Practice Concentration: Students must complete a minimum of 9 credit hours in Project Option Required Courses and 12 credit hours from the Advanced Clinical Practice Elective courses.

**Thesis Option Required Courses (9 CH)**
students who choose the Thesis Option must complete the following courses:
• BIOM 515 Molecular Diagnostics
• BIOM 698 Thesis I
• BIOM 699 Thesis II

**Project Option Required Courses (9 CH)**
students who choose the Project Option must complete the following courses:
• BIOM 515 Molecular Diagnostics
• BIOM 696 Clinical Internship
• BIOM 697 Capstone in Advanced Practice

**Advanced Clinical Practice Electives Courses (12 CH)**
Students must complete 12 credit hours from the following list of Advanced Clinical Practice Elective Courses:
• BIOM 650 Pathogenic Microbiology
• BIOM 651 Viral Pathogenesis and Diagnosis
• BIOM 660 Biochemistry
• BIOM 670 Principles of Immunochemistry
• BIOM 675 Immunology and Serology
• BIOM 680 Oncology
• BIOM 681 Advanced Hematology
• BIOM 682 Advanced Immunohematology

**Concentration in Laboratory Management (21 CH)**
Students who choose the Laboratory Management Concentration area must complete 21 CH in the Laboratory Management Concentration Core Requirements.

**Laboratory Management Concentration Core Requirements (21 CH)**
Students must complete the following courses:
- BIOM 610 Medical Lab Financial Operation
- BIOM 620 Health Informatics
- BIOM 630 Quality Assurance & Outcome Assessment
- MAGT 602 Human Resource Management
- MAGT 603 Operations Management
- MAKT 603 Marketing Management
- BIOM 695 Capstone in Laboratory Management

**Bridge Course Requirements Package (6 CH)**
Students holding a bachelor degree in disciplines other than Biomedical Sciences, must complete 6 credit hours in Bridge Courses Requirements consisting of the courses listed below. The credit hours allocated to the Bridge Course Requirements courses are not counted towards satisfying the 36 credit hours required by the program. Students are required to pass the following bridge courses prior to taking the program courses.
- BIOM 501 Medical Laboratory Science I
- BIOM 502 Medical Laboratory Science II

## STUDY PLAN

### Master of Science in Biomedical Sciences Advanced Clinical Practice - Project Option

| FIRST YEAR (18 credit hours) | | | |
|---|---|---|---|
| Term | Course # | Course Title | CH |
| Fall | BIOM 510 | Pathophysiology | 3 |
| | BIOM 520 | Principles of laboratory Management | 3 |
| | BIOM 550 | Medical Lab Laws and Ethics | 3 |
| | | **Total** | **9** |
| Spring | BIOM 530 | Current Issues in Clinical Laboratory Sciences | 3 |
| | BIOM 540 | Research Methods in Biomedical Sciences | 3 |
| | BIOM 515 | Molecular Diagnostics | 3 |
| | | **Total** | **9** |

| SECOND YEAR (18 credit hours) | | | |
|---|---|---|---|
| Term | Course # | Course Title | CH |
| Fall | | Elective | 3 |
| | | Elective | 3 |
| | BIOM 696 | BIOM 696 Clinical Internship | 3 |
| | | **Total** | **9** |
| Spring | | Elective | 3 |
| | | Elective | 3 |
| | BIOM 697 | Capstone in Advanced Clinical Practice | 3 |
| | | **Total** | **9** |

## STUDY PLAN

### Master of Science in Biomedical Sciences
### Advanced Clinical Practice - Thesis Option

| FIRST YEAR (18 credit hours) | | | |
|---|---|---|---|
| Term | Course # | Course Title | CH |
| Fall | BIOM 510 | Pathophysiology | 3 |
| | BIOM 520 | Principles of laboratory Management | 3 |
| | BIOM 550 | Medical Lab Laws and Ethics | 3 |
| | | **Total** | **9** |
| Spring | BIOM 530 | Current Issues in Clinical Laboratory Sciences | 3 |
| | BIOM 540 | Research Methods in Biomedical Sciences | 3 |
| | BIOM 515 | Molecular Diagnostics | 3 |
| | | **Total** | **9** |

| SECOND YEAR (18 credit hours) | | | |
|---|---|---|---|
| Term | Course # | Course Title | CH |
| Fall | | Elective | 3 |
| | | Elective | 3 |
| | BIOM 698 | Thesis I | 3 |
| | | **Total** | **9** |
| Spring | | Elective | 3 |
| | | Elective | 3 |
| | BIOM 699 | Thesis II | 3 |
| | | **Total** | **9** |

## STUDY PLAN

### Master of Science in Biomedical Sciences
### Laboratory Management - Project Option

| FIRST YEAR (18 credit hours) | | | |
|---|---|---|---|
| Term | Course # | Course Title | CH |
| Fall | BIOM 510 | Pathophysiology | 3 |
| | BIOM 520 | Principles of laboratory Management | 3 |
| | BIOM 550 | Medical Lab Laws and Ethics | 3 |
| | | **Total** | **9** |
| Spring | BIOM 530 | Current Issues in Clinical Laboratory Sciences | 3 |
| | BIOM 540 | Research Methods in Biomedical Sciences | 3 |
| | BIOM 620 | Health Informatics | 3 |
| | | **Total** | **9** |

| SECOND YEAR (18 credit hours) | | | |
|---|---|---|---|
| Term | Course # | Course Title | CH |
| Fall | BIOM 610 | Medical Lab Financial Operation | 3 |
| | MAKT 603 | Marketing Management | 3 |
| | MAGT 602 | Human Resource Management | 3 |
| | | **Total** | **9** |
| Spring | MAGT 603 | Operations Management | 3 |
| | BIOM 630 | Quality Assurance & Outcome Assessment | 3 |
| | BIOM 695 | Capstone in Laboratory Management | 3 |
| | | **Total** | **9** |

## MASTER OF SCIENCE IN MATERIALS SCIENCE AND TECHNOLOGY

College of Sciences Building (male side),
Corridor 4, Room D103
Phone: (974) 4403- 5666
Email: **mats@qu.edu.qa**
Website: **http://www.qu.edu.qa/msp/index.php**

## ABOUT THE PROGRAM

Materials Science and Technology is a new interdisciplinary field needed in the modern society. The program will focus on the understanding of scientific principles, analysis and evaluation of the characteristics and behavior of materials, including microstructures, physical and chemical properties, energy thermodynamics of materials, transformation states and processes, compound materials and research on industrial applications of specific materials.
This is the first initiative MSc in Materials Science in Qatar and it will bring industry and some governmental institutes with academia to develop an important postgraduate program that can lead to a PhD degree and will serve Qatar vision 2030 to develop a knowledge-based economy. The program will deliver graduate education and research opportunities for students and professionals in 35 credit hours leading to the Master of Science in Materials Science and Technology.
The program will help in solving key issues facing the world in energy, environment, communication, healthcare and transport.
The understanding of the atomic and microscopic levels of materials through this program will lead to improvement of materials in several areas, such as new composites for more energy efficient applications, better radiation protection, safer biomaterials and greener materials for the environment.

### Objectives

The educational objectives of the program are to:
1. Prepare graduates to establish successful careers in industry, government or academia to pursue further graduate studies.
2. Provide graduates with interdisciplinary knowledge and skills for solving materials related problems and challenges while promoting sustainable practices.
3. Equip graduates with appropriate research methods and techniques to successfully conduct research or applied projects in the field of materials science and technology.
4. Prepare graduates to contribute to the advancement of the profession by addressing societal needs and through effective communication skills and collaboration with colleagues.

### Admission Requirements

All applicants to the Master degree program in Materials Science and Technology need to satisfy the following minimum criteria to be considered for admission to the program:
1. Completed a Bachelor degree in Science, engineering, or related field with minimum cumulative GPA of 2.80 out of 4.00 or equivalent from a university or college accredited by an international accrediting association or by the Ministry of Higher Education or comparable in that country, OR achieved a score of no less than 650 on the Quantitative part of the GRE exam, while there is no specified minimum for the Analytical part but score will be part of evaluation.
2. Achieved a minimum score of 520 on the paper-based TOEFL or equivalent test taken within 2 years of the start of the intended semester of admission.
3. A satisfactory performance in the personal interview with the program admission committee.

Students holding a Bachelor degree in disciplines other than Chemistry, Physics, and Mechanical, Industrial or Chemical Engineering may have to complete one or more bridge courses before starting this program based on the program admission committee decision.

All applicants to the Materials Sciences Master programs are required to submit the following documents to the Admissions Department :
1. Admissions Application and Signature page
2. Final official and certified university transcripts
3. Official TOEFL score report or equivalent score report
4. Two confidential recommendation letters from undergraduate professors or employers
5. Curriculum Vitae (C. V.)
6. Health Certificate
7. Photocopy of the applicant's Qatar ID card
8. (Non-Qatari applicants must provide a copy of their passport)
9. Two recent passport sized photographs
10. Application fees

### Learning Outcomes

Graduates of the program will be able to:
1. Apply independent research skills to investigate materials science and technology related issues.
2. Apply scientific concepts to solve problems related to materials science and technology.
3. Analyze the properties of materials using appropriate characterization techniques.
4. Apply techniques to predict and explain materials properties and behavior.
5. Assess the synthesis and processing techniques appropriate for the production of materials.

6. Assess the environmental impact of materials and related methods and processes.
7. Communicate, effectively, materials science related issues orally and in writing.

**Opportunities**
Excellent opportunities are available for graduates of this program, both in the public and the private sectors. Different local Qatari entities and industries need to master the new technologies applied to find better solutions for the old problems. Undoubtedly, these new technologies are accompanied by use of materials that have been designed and fabricated in accordance with new technologies

## DEGREE REQUIREMENTS

A minimum of 35 credit hours are required to complete the Master of Science in Materials Science and Technology for any of the two options offered by the program including the following:
• A minimum of 12 credit hours in Major Core Requirements
• A minimum of 23 credit hours as detailed below in either the Thesis Option or the Project Option
- Thesis Option:
• A minimum of 9 credit hours in the Thesis Option Requirements
• A minimum of 14 credit hours in the Major Elective Requirements.
- Project Option:
• A minimum of 6 credit hours in the Project Option Requirements
• A minimum of 17 credit hours in in the Major Elective Requirements.

Students holding a bachelor degree in a discipline other than Chemistry, Physics, and Mechanical, Industrial or Chemical Engineering may have to complete one or more bridge courses prior to taking the program courses based on the program admission committee's decision. Thus, the following additional requirements apply:
• Students must complete 0 to 9 credit hours in the Bridge Course Requirements based on the program admission committee decision.

**Major Core Requirements (12 CH)**
The following courses must be completed by all Master of Science in Materials Science and Technology students:
• MATS 511 Materials Principles and Characterization
• MATS 512 Thermodynamics and Kinetics of Materials
• MATS 513 Functional Properties of Materials
• MATS 514 Research Methodology
• MATS 580 Graduate Seminar

**Thesis Option Requirements (9 CH)**
Students who choose the Thesis option must complete the following course:
• MATS 599 Thesis

**Project Option Requirements (6 CH)**
Students who choose the Project option must complete the following course:
• MATS 598 Applied Materials Project

**Major Elective Requirements (14 or 17 CH)**
Students selecting the Thesis Option must complete a minimum of 14 credit hours in major elective courses while students selecting the Project option must complete a minimum of 17 credit hours in major elective courses including:
• MATS 520 Mechanics of Materials
• MATS 525 Sustainable Materials
• MATS 530 Radiation Technology for Materials
• MATS 535 Physical Metallurgy
• MATS 540 Advanced Materials and Composites
• MATS 545 Polymers Science and Analysis
• MATS 550 Polymer Processing
• MATS 555 Metals and Minerals Processing
• MATS 560 Materials Science Modeling
• MATS 565 Surface Science and Corrosion
• MATS 570 Nanotechnology and Advanced Characterization Methods
• MATS 590 Special Topics

**Bridge Course Requirements Package (0 - 9 CH)**
Students holding a bachelor degree in disciplines other than Chemistry, Physics, and Mechanical, Industrial or Chemical Engineering must complete 0 to 9 credit hours in Bridge Course Requirements prior to taking the program courses. The credit hours allocated to bridge courses are not counted towards satisfying the 35 credit hours required by the program.
Based on the program admission committee decision, students may be required to complete one or more of the following bridge courses:
• MATS 500 Modern Physics
• MATS 501 Physical Chemistry
• MATS 502 Materials Science

## STUDY PLAN

### Thesis Option

| FIRST YEAR (18 credit hours) | | | |
|---|---|---|---|
| Term | Course # | Course Title | CH |
| Fall | MATS 511 | Materials Principles and Characterization | 3 |
| | MATS 513 | Functional Properties of Materials | 3 |
| | MATS 514 | Research Methodology | 3 |
| | | **Total** | **9** |
| Spring | MATS 512 | Thermodynamics, Phase diagrams and Kinetics of Materials | 3 |
| | MATS XXX | Elective Course 1 | 3 |
| | MATS XXX | Elective Course 2 | 3 |
| | MATS 580 | Graduate Seminar | 0 |
| | | **Total** | **9** |

| SECOND YEAR (17 credit hours) | | | |
|---|---|---|---|
| Term | Course # | Course Title | CH |
| Fall | MATS XXX | Elective Course 3 | 3 |
| | MATS XXX | Elective Course 4 | 3 |
| | MATS 599 | Research | 3 |
| | MATS XXX | Special Topics | 2 |
| | | **Total** | **11** |
| Spring | MATS 599 | Research | 6 |
| | | **Total** | **9** |

## STUDY PLAN

### Non - Thesis Option

| FIRST YEAR (18 credit hours) | | | |
|---|---|---|---|
| Term | Course # | Course Title | CH |
| Fall | MATS 511 | Materials Principles and Characterization | 3 |
| | MATS 513 | Functional Properties of Materials | 3 |
| | MATS 514 | Research Methodology | 3 |
| | | **Total** | **9** |
| Spring | MATS 512 | Thermodynamics, Phase diagrams and Kinetics of Materials | 3 |
| | MATS XXX | Elective Course 1 | 3 |
| | MATS XXX | Elective Course 2 | 3 |
| | MATS 580 | Graduate Seminar | 0 |
| | | **Total** | **9** |

| SECOND YEAR (17 credit hours) | | | |
|---|---|---|---|
| Term | Course # | Course Title | CH |
| Fall | MATS XXX | Elective Course 3 | 3 |
| | MATS XXX | Elective Course 4 | 3 |
| | MATS XXX | Elective Course 5 | 3 |
| | MATS 598 | Applied Materials Project | 3 |
| | | **Total** | **12** |
| Spring | MATS 598 | Applied Materials Project | 3 |
| | MATS 590 | Special Topics | 2 |
| | | **Total** | **5** |

## PhD IN BIOLOGICAL AND ENVIRONMENTAL SCIENCES

College of Sciences Building,
Room 222 (Women's Section)
Phone: (974) 4403-4565 / 4566
Email: **biology@qu.edu.qa**
Website: **http://www.qu.edu.qa/artssciences/bioenvi/**

**Head of Department of Biological and Environmental Sciences**
Fatima Ammar Al-Naemi

## ABOUT THE PROGRAM

The PhD program in Biological and Environmental Sciences is an interdisciplinary program that provides graduates with strong research skills and educational background to prepare them to address specific issues related to the sustainable development of Qatar and the region.
This program aims to empower graduates to be responsible and active citizens, with a deep social conscience, with a nationally prominent, interdisciplinary graduate program in biological and environmental sciences.

**Objectives**
This Ph.D. program in Biological and Environmental Sciences is established due to the significant needs of using applications of biological and environmental research and knowledge in improving health care and answering environmental questions that are of importance to the entire community in Qatar. This program prepares students for research in biological and environmental sciences for, academic positions in universities, industry or governmental agencies. The curriculum emphasizes more advanced principles of biological and environmental sciences in areas such as molecular and cellular biology, biotechnology, marine sciences, pollution, epidemiology, conservation of biodiversity and sustainable use of natural resources.
Being multidisciplinary in nature, this program will serve a wide variety of MSc holders who may have diverse backgrounds and goals.
We would like to attain the following objectives:
1. Provide graduate students with advanced academic knowledge, research and practical skills needed for successful careers in Biological and Environmental Sciences related jobs at various private institutions, governmental agencies, academia and the industry.
2. Provide graduates with multidisciplinary and interdisciplinary knowledge and research training in biological and/or environmental sciences with focus on sustainability and innovation.
3. Engage students in research opportunities with research intensive organizations and industry
4. Train students on how to communicate effectively as professionals in scientific forums and through international publications, while protecting their intellectual properties
This PhD degree can be obtained through a study plan composed of 4 concentrations in:
• Cell and Molecular Biology
• Environmental Sciences
• Ecosystems and Marine Sciences
• Biotechnology

**Admission Requirements**
Eligible applicants:
1. Have A Master's degree in biology, environmental science, or in a related field with minimum cumulative GPA of 3 out of 4 or equivalent from a university or college accredited by an international accrediting association or by the Ministry of Higher Education or comparable in that country.
2. Have a minimum score of 520 on the paper-based TOEFL or equivalent test taken within less than 2 years prior to the start of the intended semester of admission.
OR earned a previous degree from an accredited institution of higher education in a Program where English was the language of instruction.
3. Successfully pass the personal interview with the steering committee.
4. Submit three confidential recommendation letters from professors or employers (Recommendation Letters should be sent by the professor to the following address: biology@qu.edu.qa and castudents@qu.edu.qa).

The following, while not part of the admission requirements, will strengthen the application:

- Submit GRE-General test score, taken within less than 5 years prior to the start of the intended semester of admission,
- Evidence of an outstanding academic record and a strong motivation for scientific research. Previous research experience and publications are a plus.
During the admission process, students will be accepted in the desired concentration according to their earned Master and Bachelor degree majors.

All applicants to the PhD of Science in Biological and Environmental Sciences program are required to submit the following documents to the Admissions Department:
• Complete Online Admissions Application
• Final, official and certified university transcripts
• Official TOEFL score report or equivalent score report or other evidence of English proficiency in accordance with QU Policy.
• Official GRE score report (not required but will strengthen the application)
• Three confidential recommendation letters from Graduate

professors or employers (Recommendation Letters should be sent by the professor to the following address: biology@qu.edu.qa and castudents@qu.edu.qa).
• Curriculum Vitae (C.V.)
• Health Certificate
• Photocopy of the applicant's Qatar ID card
• (Non-Qatari applicants must provide a copy of their passport)
• Two recent passport sized photographs
• Application Fees

Admission to the PhD of Science in Biological and Environmental Sciences program takes place in the fall semester only. For additional information on the program, please see our website at:
**http://www.qu.edu.qa/phdenvironmental/index.php**

**Learning Outcomes**
Once the graduate student successfully defends his/her PhD, he/she will be able to:
• Design original research projects in accordance with the scientific research method.
• Apply advanced research methodology to address biological and environmental Science issues in accordance with the scientific research method.
• Integrate advanced interdisciplinary knowledge and perspectives to analyze biological and environmental issues.
• Critically analyze the validity and reliability of biological and environmental research findings.
• Demonstrate excellent oral and written communication skills.

**Opportunities**
There is a growing need for highly qualified research personnel equipped with advanced knowledge, strong research, and communication skills to participate effectively in developing and sustaining the research culture and future to address the needs of Qatar National Vision 2030. Excellent opportunities are available for graduates of this program, both in the public and the private sectors. These include professional services, research & development services and other business services. Furthermore, various ministries (e.g. Health, Environment, Agriculture) are among the potential employers of these PhD holders. Academic and research institutions are also potential workplaces for these degree holders.

## DEGREE REQUIREMENTS

A minimum of 75 credit hours are required to complete the PhD in Biological and Environmental Sciences program including the following:
• A minimum of 12 credit hours in Major Core Requirements
• A minimum of 45 credit hours in Thesis Requirements
• A minimum of 15 credit hours in Concentration Area Requirements
• A minimum of 3 credit hours in Major Electives

**Major Core Requirements (12 CH)**
The following courses must be completed by all PhD in Biological and Environmental Sciences students:
• BIOL 600 Advanced Graduate seminar
• BIOL 601 Advanced Biostatistics
• BIOL 602 Lab Rotation I
• BIOL 603 Lab Rotation II

**Thesis Requirements (45 CH)**
Students must complete 45 credit hours in the Thesis Requirements package:
• BIOL 699 PhD Thesis

**Concentration Area Requirements (15 CH)**
Students must complete a minimum of 15 Credit Hours in one of the concentration areas offered by the program as detailed below.

**Concentration Area in Cell and Molecular Biology (15 CH)**
Students must complete a minimum of 15 Credit Hours in the Cell and Molecular Biology concentration electives package as detailed below.

**Cell and Molecular Biology Concentration Electives (15 CH)**
Students must complete a minimum of 15 Credit Hours in the Cell and Molecular Biology Concentration Electives package from the courses listed below:
• BIOL 604 Advanced Molecular and Cell Biology
• BIOL 605 Advanced Toxicology
• BIOL 608 Advanced Biotechnology
• BIOL 609 Molecular Genetics
• BIOL 610 Epidemiology
• BIOL 614 Systems Physiology
• BIOL 615 Plant Physiology
• BIOL 617 Special topic I
• BIOL 618 Special topics II
• BIOL 619 Molecular Basis of Diseases
• BIOL 620 Bio-informatics

**Concentration Area in Environmental Sciences (15 CH)**
Students must complete a minimum of 15 Credit Hours in the Environmental Sciences concentration electives package as detailed below.

**Environmental Sciences Concentration Electives (15 CH)**
Students must complete a minimum of 15 Credit Hours in the Environmental Sciences Concentration Electives package from the courses listed below:
• BIOL 605 Advanced Toxicology
• BIOL 606 Marine Sciences
• BIOL 607 Earth Systems
• BIOL 610 Epidemiology
• BIOL 611 Environmental Chemistry
• BIOL 612 Environmental Planning and Risk Management
• BIOL 613 Geospatial Methods
• BIOL 616 Bio-diversity
• BIOL 617 Special topic I
• BIOL 618 Special topics II

**Concentration Area in Ecosystems and Marine Sciences (15 CH)**
Students must complete a minimum of 15 Credit Hours in the Ecosystems and Marine Sciences concentration electives package as detailed below.

**Ecosystems and Marine Sciences Concentration Electives (15 CH)**
Students must complete a minimum of 15 Credit Hours in the Ecosystems and Marine Sciences Electives package from the courses listed below:
• BIOL 606 Marine Sciences
• BIOL 607 Earth Systems
• BIOL 609 Molecular Genetics
• BIOL 611 Environmental Chemistry
• BIOL 612 Environmental Planning and Risk Management
• BIOL 613 Geospatial Methods
• BIOL 614 Systems Physiology
• BIOL 616 Bio-diversity
• BIOL 617 Special topic I
• BIOL 618 Special topics II

**Concentration Area in Biotechnology (15 CH)**
Students must complete a minimum of 15 Credit Hours in the Biotechnology concentration electives package as detailed below.

**Biotechnology Concentration Electives (15 CH)**
Students must complete a minimum of 15 Credit Hours in the Biotechnology Concentration Electives package from the courses listed below:
• BIOL 604 Advanced Molecular and Cell Biology
• BIOL 606 Marine Sciences
• BIOL 608 Advanced Biotechnology
• BIOL 609 Molecular Genetics
• BIOL 615 Plant Physiology
• BIOL 616 Bio-diversity
• BIOL 617 Special topic I
• BIOL 618 Special topics II
• BIOL 619 Molecular Basis of Diseases
• BIOL 620 Bio-informatics

**Major Elective Requirements (3 CH)**
Students must complete a minimum of 3 Credit Hours in the major elective requirements package from the courses listed below:
• BIOL 604 Advanced Molecular and Cell Biology
• BIOL 605 Advanced Toxicology
• BIOL 606 Marine Sciences
• BIOL 607 Earth Systems
• BIOL 608 Advanced Biotechnology
• BIOL 609 Molecular Genetics
• BIOL 610 Epidemiology
• BIOL 611 Environmental Chemistry
• BIOL 612 Environmental Planning and Risk Management
• BIOL 613 Geospatial Methods
• BIOL 614 Systems Physiology
• BIOL 615 Plant Physiology
• BIOL 616 Bio-diversity
• BIOL 617 Special topic I
• BIOL 618 Special topics II
• BIOL 619 Molecular Basis of Diseases
• BIOL 620 Bio-informatics

## STUDY PLAN

### PhD of Science in Biological and Environmental Sciences

| FIRST YEAR (24 credit hours) | | | |
|---|---|---|---|
| Term | Course # | Course Title | CH |
| Fall | BIOL 600 | Advanced Graduate seminar | 3 |
| | BIOL 601 | Advanced Biostatistics | 3 |
| | BIOL 602 | Lab Rotation I | 3 |
| | | Elective course | 3 |
| | | **Total** | **12** |
| Spring | BIOL 603 | Lab Rotation II | 3 |
| | | Elective course | 3 |
| | | Elective course | 3 |
| | | Elective course | 3 |
| | | **Total** | **12** |

| SECOND YEAR (18 credit hours) | | | |
|---|---|---|---|
| Term | Course # | Course Title | CH |
| Fall | | Elective | 3 |
| | | Elective | 3 |
| | BIOL 699 | Research | 3 |
| | | **Total** | **9** |
| Spring | BIOL 699 | Research | 9 |
| | | **Total** | **9** |

| THIRD YEAR (18 credit hours) | | | |
|---|---|---|---|
| Term | Course # | Course Title | CH |
| Fall | BIOL 699 | Elective | 9 |
| | | **Total** | **9** |
| Spring | BIOL 699 | Research | 9 |
| | | **Total** | **9** |

| FOURTH YEAR (15 credit hours) | | | |
|---|---|---|---|
| Term | Course # | Course Title | CH |
| Fall | BIOL 699 | Elective | 9 |
| | | **Total** | **9** |
| Spring | BIOL 699 | Research | 6 |
| | | **Total** | **6** |

## COLLEGE OF BUSINESS AND ECONOMICS

College of Business and Economics Building
Phone: (974) 4403-5000 / 5004
Email: **bus-econ@qu.edu.qa**
Website: **http://www.qu.edu.qa/business**

**Dean**
Nitham Mohammed Hindi

**Associate Dean for Academic Affairs**
Adam Mohamedali Fadlalla

**Associate Dean for Research and Graduate Studies**
Belaid Aouni

## ABOUT THE COLLEGE

The College of Business and Economics at Qatar University provides a high-quality, applied business education in a collegial, intellectually stimulating, and supportive learning and working environment. Guided by the university reform plan and committed to innovative curriculum and continuous improvement, the College offers undergraduate and graduate business programs that connect theory to practice, promote critical thinking, and engage students in active and collaborative learning.

## DEGREE OFFERINGS

The College of Business and Economics offers the following graduate degree programs:
• Master of Accounting (MAC)
• Master of Business Administration (MBA)

## MASTER OF ACCOUNTING

College of Business and Economics
Department of Accounting and Information systems
Phone: (974) 4403-5051 / 5013
Email: **MAC@qu.edu.qa**
Website: **http://www.qu.edu.qa/business/programs/graduates/mac.php**

## ABOUT THE PROGRAM

The Master of Accounting (MAC) is a highly specialized program in Accounting. It provides a state of the art applied education in managing accounting information with the scope to allow its holders to get access to upper management and financial positions in a wide variety of industries.

**Objectives**
MAC has the following two educational objectives:
• Prepare graduate students with technical (quantitative and qualitative) and analytical skills and competencies in accounting; and,
• Develop effective and responsible accounting professionals.

**Admission Requirements**
All applicants to the Master of Accounting program who meet the following minimum criteria will be considered for admission to Qatar University:
1. Completed a Bachelor's degree in Accounting or Business related field from a university or college accredited by an international accrediting association, or by the Ministry of Higher Education or comparable authority in that country with minimum cumulative GPA of 2.85 out of 4.00 or GPA (out of 4.00 ) * 200 + GMAT >= 1000.
2. Applicants are required to demonstrate their English proficiency as part of the admission process by satisfying either of the following:
- Earned a previous degree from an institution of higher education in a program where English was the language of instruction.
- Achieved a minimum score of 520 on the paper-based TOEFL, or equivalent test taken within 2 years of the start of the intended semester or admission.
3. A short essay stating the candidate's objectives and interests in pursuing a MAC degree.
4. A satisfactory performance in the personal interview with the Admission's Committee.

All applicants to the Master of Accounting are required to submit the following documents to the Admission Department:
• Complete Online Admissions Application
• Final, official and certified university transcripts
• Evidence of English Proficiency according to QU Policy
• Official GMAT score report if submitting GMAT scores
• Two recommendation letters
• Curriculum Vitae (C.V.)
• Health Certificate
• Photocopy of the applicant's Qatar ID card
(Non-Qatari applicants must provide a copy of their passport)
• Two recent identical passport-size photographs with white background
• Application Fee: QR 350

Admission to the Master of Accounting program takes place in the fall semester only. For additional information on the program, please see our website at:
**http://www.qu.edu.qa/business/programs/graduates/mac.php**

**Learning Outcomes**
Graduates of the Master of Accounting will be able to:
- Assess the ethical regulatory environment for accountants
- Communicate effectively in writing
- Communicate effectively in oral presentations
- Collaborate effectively in teams to solve accounting and business related problems
- Apply analytical and critical thinking skills to accounting related problems
- Assess and apply information technology to financial and non-financial information
- Build appropriate research skills needed for accounting practice
- Appraise international accounting issues and practices, within a global context

**Opportunities**

Accounting degree holders are in high demand both locally and internationally. Businesses, governmental agencies, and auditing companies are always looking for people with a strong background in accounting. Opportunities for graduates exist in roles such as:
• Chief Accountants
• Chief Financial Officers
• External Auditors
• Internal Auditors
• Financial Managers
• Business Risk Managers
• Accounting Information Systems Specialists
• Business Consultants
Also, graduates will have a strong background to start and run their own business.

## DEGREE REQUIREMENTS

**Master of Accounting**
A minimum of 30 credit hours are required to complete the Master of Accounting, including the following :
• 21 credit hours of major core courses
• 9 credit hours of major electives

Students holding a Bachelor's degree in Accounting (students with other Business related disciplines need to take the foundation courses listed below) need to successfully complete the following courses:

**Major Requirements (21 credit hours)**
• ACCT603 International Accounting
• ACCT 613 Accounting Research Methods
• ACCT 623 Advanced Cost /Managerial Accounting
• ACCT 643 Fraud Detection & Prevention
• ACCT 653 Advanced Accounting Information Systems
• MIST 613 Information Security
• ACCT 663 Business Information Consulting

**Major Electives (minimum of 9 credit hours)**
• ACCT 606 Corporate Governance
• ACCT 608 Commercial Law
• MAGT 611 Business Ethics & Legal Environment
• MIST 616 Enterprise Resource Planning
• ACCT 633 Governmental and nonprofit Accounting
• ACCT 612 Special Studies in Accounting

## ADDITIONAL REQUIREMENTS

**Foundation Courses for Non-Accounting applicants (15 credit hours)**
Students who hold a Bachelor degree in disciplines other than Accounting are required to pass the following foundation courses prior to taking MAC, core/elective courses:
• ACCT 521 Intermediate Accounting I
• ACCT 522 Intermediate Accounting II
• ACCT 531 Cost & Management Accounting
• ACCT 533 Auditing I
• ACCT 523 Accounting Information Systems

## STUDY PLAN

Master of Accounting

| FIRST SEMESTER (9 credit hours) | | | |
|---|---|---|---|
| Term | Course # | Course Title | Cr Hrs |
| Fall | ACCT 603 | International Accounting | 3 |
| | ACCT 613 | Accounting Research Methods | 3 |
| | ACCT XXX | Accounting Elective Course | 3 |
| | | **Total** | **9** |

| SECOND SEMESTER (9 credit hours) | | | |
|---|---|---|---|
| Term | Course # | Course Title | Cr Hrs |
| Spring | ACCT 623 | Advanced Cost/ Managerial Accounting | 3 |
| | ACCT 643 | Fraud Detection and Prevention | 3 |
| | ACCT XXX | Accounting Elective Course | 3 |
| | | **Total** | **9** |

| THIRD SEMESTER (9 credit hours) | | | |
|---|---|---|---|
| Term | Course # | Course Title | Cr Hrs |
| Fall | ACCT 653 | Advanced AIS | 3 |
| | MIST 613 | Information Security | 3 |
| | ACCT XXX | Accounting Elective Course | 3 |
| | | **Total** | **9** |

| FOURTH SEMESTER (3 credit hours) | | | |
|---|---|---|---|
| Term | Course # | Course Title | Cr Hrs |
| Fall | ACCT 663 | Business Information Consulting | 3 |
| | | **Total** | **3** |

## MASTER OF BUSINESS ADMINISTRATION

College of Business and Economics
Phone: (974) 4403-5013/ 5004
Email: **mba@qu.edu.qa**
Website: **http://www.qu.edu.qa/business/programs/graduates/mba.php**

## ABOUT THE PROGRAM

QATAR MBA Program develops leaders through a holistic approach that combines the academic foundation acquired in the business curriculum with a broad range of opportunities for personal maturation and professional growth. The MBA program is a general management degree. It is designed to provide a solid foundation for making business decisions, to develop skills in applying financial, marketing, management, information technology and statistical techniques to complex management problems, and to improve skills in effectively presenting and implementing solutions to business problems.

### Educational Objectives

The Master of Business Administration aims to:
• Develop skills in integrating business knowledge necessary to perform as management professionals in a globalized business environment;
• Prepare ethically and socially responsible business leaders; and
• Provide the necessary technical and analytical skills for effective decision making.

### Admission Requirements

All applicants to the Masters of Business Administration program who meet the following minimum criteria will be considered for admission to Qatar University:
1. Completed a Bachelor degree from a university or college accredited by an international accrediting association or by the Ministry of Higher Education or equivalent authority in that country with a minimum Grade Point Average (GPA) of 2.85 on a 4.00 scale OR GPA (out of 4.00 ) * 200 + GMAT >=1000.
2. Achieved a minimum score of 520 on the paper-based TOEFL or equivalent test taken within 2 years of the start of the intended semester of admission, OR earned a previous degree from an accredited institution of higher education in a Program where English was the language of instruction.
3. A minimum of two-years' work experience is required. Additional experience will be recognized and may help with admission to the program.
4. Satisfactory performance in the personal interview.
5. Successful completion of a written short essay conducted during the personal interview.

All applicants to the Masters of Business Administration program are required to submit the following documents to the Admissions Department:
• Complete Online Admissions Application
• Final, official and certified university transcripts
• Evidence of English Proficiency according to QU official Policy
• GMAT score report if submitting GMAT scores
• Evidence of work experience
• Two recommendation letters
• Supporting statements (Essays)
• Curriculum Vitae (C.V.)
• Health Certificate
• Photocopy of the applicant's Qatar ID card (Non-Qatari applicants must provide a copy of their passport)
• Two recent identical passport-size photographs with white background
• Application Fee

Admission to the Master of Administration program takes place in the fall semester only. For additional information on the program, please see our website at: **http://www.qu.edu.qa/business/programs/graduates/mba.php**

**Learning Outcomes**
Upon successful completion of the MBA program, students will be able to:
1. Analyze the implications of making ethically responsible decisions.
2. Analyze the implications of making socially responsible decisions.
3. Apply IT effectively in making business decisions.
4. Evaluate leadership skills.
5. Engage in the business community by tackling practical business challenges.6. Integrate the knowledge and skills of the business functional areas.
7. Apply critical thinking skills in making business decisions.
8. Identify and consider global issues in making Business decisions.

**Opportunities**
Graduates in Master of Business Administration are highly regarded business professionals and entrepreneurs. They find employment in public and private organizations and firms as executives, financial and management analysts, HR specialists, information technology officers, high-level government officers, among many other highly rewarding career opportunities. Our MBA alumni are very successful, many of whom are holding highest positions in their respective organizations are finding fulfillment in serving their ambitions and the State of Qatar.

## DEGREE REQUIREMENTS

**Master of Business Administration**
All MBA students must successfully complete a minimum of 36 credit hours in the following:
• 27 credit hours in Major Requirements
• 9 credit hours in Major Electives OR in Concentration

**Area Requirements**
Students holding a bachelor degree in a non-business related major must complete the Foundation Course Requirements package including 4 bridging courses with 12 CH.
Students admitted into the program may select one of the two concentrations areas, Entrepreneurship or Business Analytics, , offered by the program or select no concentration.

**Major Requirements (27 CH)**
• ACCT 602 Managerial Accounting for Decision Making
• ECON 602 Managerial Economics
• FINA 605 Corporate Finance
• MAGT 612 Business Research Methods
• MAGT 603 Operations Management
• MAGT 610 Strategic Management
• MAGT 615 Applied Graduation Project
• MAKT 604 Marketing Management
• MIST 606 Management Information Systems

**Major Electives (9 CH)**
Students who are not selecting one of the program offered concentration areas must complete 9 credit hours taken from the following courses:
• MAGT 602 Human Resources Management
• MAGT 604 Management of Change and Innovation
• MAGT 605 Project Management
• MAGT 607 International Business Management
• MAGT 609 Entrepreneurship & Small Business Management
• MAKT 605 Entrepreneurial Marketing
• MAKT 614 Marketing Research
• FINA 607 Investment Analysis and Portfolio Management
• MIST 616 Enterprise Resources Planning
• MIST 660 Business Analytics
• MIST 670 Data Mining for Business

**Concentration in Entrepreneurship Requirements Package (9CH)**
Students selecting the Entrepreneurship concentration area must complete the following courses
• MAGT 609 Entrepreneurship & Small Business Management
• MAGT 604 Management of Change and Innovation
• MAKT 605 Entrepreneurial Marketing

**Concentration in Business Analytics Requirements Package (9CH)**
Students selecting the Business Analytics concentration area must complete the following courses:
• MIST 616 Enterprise Resources Planning
• MIST 660 Business Analytics
• MIST 670 Data Mining for Business

**Foundation Requirements Package (12 CH)**
Students who hold a Bachelor Degree in disciplines other than Business are required to pass the following foundation courses prior to taking core/elective courses
• ACCT 501 Introduction to Accounting
• ECON 501 Introduction to Economics
• FINA 501 Introduction to Finance
• MAGT 501 Introduction to Management

## STUDY PLAN

**Master of Business Administration**
Students who hold a Bachelor's degree in Business (Without Concentration)

| FIRST SEMESTER (9 credit hours) | | | |
|---|---|---|---|
| Term | Course # | Course Title | Cr Hrs |
| Fall | FINA 605 | Corporate Finance | 3 |
| | MIST 606 | MIS | 3 |
| | MAGT 612 | Business Research Methods | 3 |
| **Total** | | | **9** |

| THIRD SEMESTER (9 credit hours) | | | |
|---|---|---|---|
| Term | Course # | Course Title | Cr Hrs |
| Fall | MAGT 603 | Operations Management | 3 |
| | ECON 602 | Managerial Economics | 3 |
| | | Elective | 3 |
| **Total** | | | **9** |

| SECOND SEMESTER (9 credit hours) | | | |
|---|---|---|---|
| Term | Course # | Course Title | Cr Hrs |
| Spring | MAKT 604 | Marketing Management | 3 |
| | | Elective | 3 |
| | ACCT 602 | Managerial Accounting for decision Making | 3 |
| **Total** | | | **9** |

| FOURTH SEMESTER (9 credit hours) | | | |
|---|---|---|---|
| Term | Course # | Course Title | Cr Hrs |
| Fall | MAGT 615 | Applied Graduation Project | 3 |
| | MAGT 610 | Strategic Management | 3 |
| | | Elective | 3 |
| **Total** | | | **9** |

## STUDY PLAN

**Master of Business Administration**
Students who hold a Bachelor's degree in disciplines other than Business (Without Concentration)

| FIRST SEMESTER (9 credit hours) | | | |
|---|---|---|---|
| Term | Course # | Course Title | Cr Hrs |
| Fall | MAGT 501 | Introduction to Management | 3 |
| | FINA 501 | Introduction to Finance | 3 |
| | ACCT 501 | Introduction to Accounting | 3 |
| **Total** | | | **9** |
| **SECOND SEMESTER (9 credit hours)** | | | |
| Term | Course # | Course Title | Cr Hrs |
| Spring | ECON 501 | Introduction to Economics | 3 |
| | ACCT 602 | Managerial Accounting for Decision Making | 3 |
| | MAKT 604 | Marketing Management | 3 |
| **Total** | | | **9** |
| **THIRD SEMESTER (9 credit hours)** | | | |
| Term | Course # | Course Title | Cr Hrs |
| Fall | FINA 605 | Corporate Finance | 3 |
| | MIST 606 | MIS | 3 |
| | MAGT 612 | Business Research Methods | 3 |
| **Total** | | | **9** |
| **FOURTH SEMESTER (6 credit hours)** | | | |
| Term | Course # | Course Title | Cr Hrs |
| Spring | MAGT 610 | Strategic Management | 3 |
| | | Elective | 3 |
| **Total** | | | **6** |
| **FIFTH SEMESTER (9 credit hours)** | | | |
| Term | Course # | Course Title | Cr Hrs |
| Fall | MAGT 603 | Operations Management | 3 |
| | ECON 602 | Managerial Economics | 3 |
| | | Elective | 3 |
| **Total** | | | **9** |
| **SIXTH SEMESTER (6 credit hours)** | | | |
| Term | Course # | Course Title | Cr Hrs |
| Spring | MAGT 615 | Applied Graduation Project | 3 |
| | | Elective | 3 |
| **Total** | | | **6** |

## STUDY PLAN

**Master of Business Administration**
Students who hold a Bachelor's degree in Business (Entrepreneurship Concentration)

| FIRST SEMESTER (9 credit hours) | | | |
|---|---|---|---|
| Term | Course # | Course Title | Cr Hrs |
| Fall | FINA 605 | Corporate Finance | 3 |
| | MIST 606 | MIS | 3 |
| | MAGT 612 | Business Research Methods | 3 |
| **Total** | | | **9** |
| **SECOND SEMESTER (9 credit hours)** | | | |
| Term | Course # | Course Title | Cr Hrs |
| Spring | MAKT 604 | Marketing Management | 3 |
| | ACCT 602 | Managerial Accounting for decision Making | 3 |
| | MAGT 604 | Managements of change and Innovation | 3 |
| **Total** | | | **9** |
| **THIRD SEMESTER (9 credit hours)** | | | |
| Term | Course # | Course Title | Cr Hrs |
| Fall | MAGT 603 | Operations Management | 3 |
| | ECON 602 | Managerial Economics | 3 |
| | MAGT 609 | Entrepreneurship & Small Business | 3 |
| **Total** | | | **9** |
| **FOURTH SEMESTER (9 credit hours)** | | | |
| Term | Course # | Course Title | Cr Hrs |
| Spring | MAGT 615 | Applied Graduation Project | 3 |
| | MAGT 610 | Strategic Management | 3 |
| | MAKT 605 | Entrepreneurial Marketing | 3 |
| **Total** | | | **9** |

## STUDY PLAN

**Master of Business Administration**
Students who hold a Bachelor's degree in Business (Business Analytics Concentration)

| FIRST SEMESTER (9 credit hours) | | | |
|---|---|---|---|
| Term | Course # | Course Title | Cr Hrs |
| Fall | FINA 605 | Corporate Finance | 3 |
| | MIST 606 | MIS | 3 |
| | MAGT 612 | Business Research Methods | 3 |
| **Total** | | | **9** |
| **SECOND SEMESTER (9 credit hours)** | | | |
| Term | Course # | Course Title | Cr Hrs |
| Spring | MAKT 604 | Marketing Management | 3 |
| | ACCT 602 | Managerial Accounting for decision Making | 3 |
| | MIST 660 | Business Analytics | 3 |
| **Total** | | | **9** |
| **THIRD SEMESTER (9 credit hours)** | | | |
| Term | Course # | Course Title | Cr Hrs |
| Fall | MAGT 603 | Operations Management | 3 |
| | ECON 602 | Managerial Economics | 3 |
| | MIST 616 | ERP | 3 |
| **Total** | | | **9** |
| **FOURTH SEMESTER (9 credit hours)** | | | |
| Term | Course # | Course Title | Cr Hrs |
| Spring | MAGT 615 | Applied Graduation Project | 3 |
| | MAGT 610 | Strategic Management | 3 |
| | MIST 670 | Data Mining for Business | 3 |
| **Total** | | | **9** |

## STUDY PLAN

**Master of Business Administration**
Students who hold a Bachelor's degree in disciplines other than Business (Entrepreneurship Concentration)

| FIRST SEMESTER (9 credit hours) | | | |
|---|---|---|---|
| Term | Course # | Course Title | Cr Hrs |
| Fall | MAGT 501 | Introduction to Management | 3 |
| | FINA 501 | Introduction to Finance | 3 |
| | ACCT 501 | Introduction to Accounting | 3 |
| **Total** | | | **9** |
| **SECOND SEMESTER (9 credit hours)** | | | |
| Term | Course # | Course Title | Cr Hrs |
| Spring | ECON 501 | Introduction to Economics | 3 |
| | ACCT 602 | Managerial Accounting for Decision Making | 3 |
| | MAKT 604 | Marketing Management | 3 |
| **Total** | | | **9** |
| **THIRD SEMESTER (9 credit hours)** | | | |
| Term | Course # | Course Title | Cr Hrs |
| Fall | FINA 605 | Corporate Finance | 3 |
| | MIST 606 | MIS | 3 |
| | MAGT 612 | Business Research Methods | 3 |
| **Total** | | | **9** |
| **FOURTH SEMESTER (6 credit hours)** | | | |
| Term | Course # | Course Title | Cr Hrs |
| Spring | MAGT 610 | Strategic Management | 3 |
| | MAGT 604 | Management of Change and Innovation | 3 |
| **Total** | | | **6** |
| **FIFTH SEMESTER (9 credit hours)** | | | |
| Term | Course # | Course Title | Cr Hrs |
| Fall | MAGT 603 | Operations Management | 3 |
| | ECON 602 | Managerial Economics | 3 |
| | MAGT 609 | Entrepreneurship and small business | 3 |
| **Total** | | | **9** |
| **SIXTH SEMESTER (6 credit hours)** | | | |
| Term | Course # | Course Title | Cr Hrs |
| Spring | MAGT 615 | Applied Graduation Project | 3 |
| | MAKT 605 | Entrepreneurial Marketing | 3 |
| **Total** | | | **6** |

## STUDY PLAN

**Master of Business Administration**
Students who hold a Bachelor's degree in disciplines other than Business (Business Analytics Concentration)

| FIRST SEMESTER (9 credit hours) | | | |
|---|---|---|---|
| Term | Course # | Course Title | Cr Hrs |
| Fall | MAGT 501 | Introduction to Management | 3 |
| | FINA 501 | Introduction to Finance | 3 |
| | ACCT 501 | Introduction to Accounting | 3 |
| **Total** | | | **9** |

| SECOND SEMESTER (9 credit hours) | | | |
|---|---|---|---|
| Term | Course # | Course Title | Cr Hrs |
| Spring | ECON 501 | Introduction to Economics | 3 |
| | ACCT 602 | Managerial Accounting for Decision Making | 3 |
| | MAKT 604 | Marketing Management | 3 |
| **Total** | | | **9** |

| THIRD SEMESTER (9 credit hours) | | | |
|---|---|---|---|
| Term | Course # | Course Title | Cr Hrs |
| Fall | FINA 605 | Corporate Finance | 3 |
| | MIST 606 | MIS | 3 |
| | MAGT 612 | Business Research Methods | 3 |
| **Total** | | | **9** |

| FOURTH SEMESTER (6 credit hours) | | | |
|---|---|---|---|
| Term | Course # | Course Title | Cr Hrs |
| Spring | MAGT 610 | Strategic Management | 3 |
| | MIST 660 | Business Analytics | 3 |
| **Total** | | | **6** |

| FIFTH SEMESTER (9 credit hours) | | | |
|---|---|---|---|
| Term | Course # | Course Title | Cr Hrs |
| Fall | MAGT 603 | Operations Management | 3 |
| | ECON 602 | Managerial Economics | 3 |
| | MIST 616 | ERP | 3 |
| **Total** | | | **9** |

| SIXTH SEMESTER (6 credit hours) | | | |
|---|---|---|---|
| Term | Course # | Course Title | Cr Hrs |
| Spring | MAGT 615 | Applied Graduation Project | 3 |
| | MIST 670 | Data Mining for Business | 3 |
| **Total** | | | **6** |

## COLLEGE OF EDUCATION

College of Education Building
Phone: (974) 4403-5100 / 5118
Email: **Dean-Edu@qu.edu.qa**
Website: **http://www.qu.edu.qa/Education**

**Dean**
Hissa Mohamed Sadiq

**Associate Dean for Academic Affairs**
Yahya Al-Nakeeb

**Assistant Dean for Student Affairs**
Reem Khalid

## ABOUT THE COLLEGE

The mission of the College of Education is to provide excellence in the initial and advanced preparation of education professionals by establishing a foundation that fosters life-long learning, teaching, research, and community partnerships. The College provides:
• An educational, motivational, and supportive environment for both learning and teaching in a climate characterized by responsible freedom.
• Highly qualified education professionals and on-going professional development by supporting scholarly activities, and by sharing the responsibility of educational reform through effective partnerships.

The members of the College are committed to its conceptual framework, "Together we shape the future through excellence in teaching, scholarship, and leadership". Our graduate programs are designed to prepare competent teachers and educational leaders to support the Education Reform in Qatar. The unit learning outcomes are aligned to the Qatar National Professional Standards for Teachers and School Leaders.
In January 2011, the College was awarded International Recognition for Teacher Education (IRTE) from the Center for Quality Assurance in International Education, which administers this process in collaboration with the National Council for Accreditation of Teacher Education. The College is one of only two institutions in the Gulf, the Middle East and North African region to be so recognized.
The college established an important unit in recent times – the National Center for Educator Development (NCED). NCED operates closely with the Supreme Education Council, independent schools and international partners to develop and implement a Qatar-based national comprehensive educator development program.

## DEGREE OFFERINGS

The College of Education offers the following graduate degree programs:
• Master of Education in Educational Leadership
• Master of Education in Special Education
• Diploma in Early Childhood Education
• Diploma in Primary Education (with concentrations in either Arabic/Islamic Studies/Social Studies or English/ Mathematics/Science) Diploma in Secondary Education (with concentrations in Arabic studies, Islamic Studies, Social Studies, English, Mathematics, Biology, Chemistry, or Physics
• Diploma in Special Education

## MASTER OF EDUCATION IN EDUCATIONAL LEADERSHIP

Educational Sciences Department
College of Education Building, Room 217
Phone: (974) 4403-5205 / 5206
Email: **D.Bukshaisha@qu.edu.qa**
Website: **http://www.qu.edu.qa/education/leadership_master/**

**Coordinator**
Professor Michael Henry Romanowski

## ABOUT THE PROGRAM

The Master of Education in Educational Leadership prepares graduates to be highly qualified school leaders for Qatar, the region, and beyond, who demonstrate knowledge and skills in developing excellence in teaching, scholarship, and leadership.

**Objectives**
The Master of Education in Educational Leadership aims to:
• Prepare graduates who meet or exceed national and international standards for leaders in education.
• Encourage the habits of scholarship among faculty, candidates, and graduates, so that the program reflects and contributes to a growing body of knowledge in education.
• Graduate leaders who are committed to providing exemplary educational environments and opportunities to learn for every student.
• Reflect a commitment to diversity, equity, and justice in education.
• Honor and support professionalism and ethical practices in education.

**Admission Requirements**
All applicants to the Master of Education in Educational Leadership program who meet the following minimum criteria will be considered for admission to Qatar University:
1. Completed a Bachelor's degree with a minimum cumulative GPA of 2.8 out of 4.00 from a university or college accredited by an international accrediting association or by the Ministry of Higher Education or equivalent authority in that country or either (a) passed all of the courses (21 credits) required for the first two semesters of one of the Diploma Programs offered by the College of Education at Qatar university with a minimum GPA of 2.80 or (b) achieved a score of no less than 151 on the verbal reasoning section of the GRE revised General Test.
2. Achieved a minimum score of 520 on the paper-based TOEFL or equivalent test, taken within 2 years of the start of the intended semester of admission OR earned a previous degree from an accredited institution of higher education in a Program where English was the language of instruction.
3. Applicants are encouraged to submit standardized test scores, where available, in support of their application.

All applicants to the Master of Education in Educational Leadership program are required to submit the following documents to the Admissions Department:
• Complete Online Admissions Application• Final, official and certified university transcripts
• Official TOEFL or equivalent score report or other evidence of English proficiency in accordance with QU Policy
• Health Certificate
• Photocopy of the applicant's Qatar ID card (Non-Qatari applicants must provide a copy of their passport)
• Two recent identical passport-size photographs with white background
• Application fee: QR 350
Admission to the Master of Education in Educational Leadership program takes place in the Fall semester only. For additional information on the program, please see their website at: http://www.qu.edu.qa/education/leadership_master

**Learning Outcomes**
Graduates of the Master of Education in Educational Leadership will be able to:
• Apply key theories and concepts of the subject matter in educational settings
• Plan effective instruction to maximize student learning.
• Use current and emerging technologies in instructionally powerful ways
• Foster successful learning experiences for all students by addressing individual differences.
• Arrive at data-informed decisions by systematically examining a variety of factors and resources
• Actively engage in scholarship in education.
• Apply professional ethics in all educational contexts.
• Lead positive change in education

**Opportunities**
Graduates of the Master of Education in Educational Leadership will be suited for employment in various leadership positions such as principals, vice principals, subject coordinators, and professional development coordinators in schools, as well as other leadership positions within government agencies, non-governmental organizations and agencies, and centers providing educational services.

## DEGREE REQUIREMENTS

**Master of Education in Educational Leadership**
33 credit hours are required to complete the Master of Education in Educational Leadership.

**Major Requirements (33 credit hours)**
• EDEL 601 Foundations in Educational Leadership
• EDEL 602 Management of School Information Systems
• EDEL 603 Educational Policy in Qatar
• EDEL 604 Curriculum Design and Development
• EDEL 605 Instructional Supervision
• EDUC 606 Educational Research Methodologies
• EDEL 607 School Finance and Resource Development
• EDEL 608 Seminar in Issues in Educational Leadership
• EDEL 609 Action Research
• EDEL 610 Internship

## STUDY PLAN

Master of Education in Educational Leadership

| FIRST SEMESTER (9 credit hours) | | | |
|---|---|---|---|
| Term | Course # | Course Title | Cr Hrs |
| Fall | EDEL 601 | Foundations in Educational Leadership | 3 |
| | EDUC 606 | Educational Research Methodologies | 3 |
| | EDEL 604 | Curriculum Design and Development | 3 |
| **Total** | | | **9** |
| **SECOND SEMESTER (9 credit hours)** | | | |
| Term | Course # | Course Title | Cr Hrs |
| Spring | EDEL 605 | Instructional Supervision | 3 |
| | EDEL 608 | Seminar in Issues in Educational Leadership | 3 |
| | EDEL 602 | Management of School Information Systems | 3 |
| **Total** | | | **9** |

| THIRD SEMESTER (9 credit hours) | | | |
|---|---|---|---|
| Term | Course # | Course Title | Cr Hrs |
| Fall | EDEL 603 | Educational Policy in Qatar | 3 |
| | EDEL 607 | School Finance and Resource Development | 3 |
| | EDEL 609 | Action Research | 3 |
| **Total** | | | **9** |

| FOURTH SEMESTER (6 credit hours) | | | |
|---|---|---|---|
| Term | Course # | Course Title | Cr Hrs |
| Spring | EDEL 610 | Internship | 6 |
| **Total** | | | **6** |

## MASTER OF EDUCATION IN SPECIAL EDUCATION

Psychological Sciences Department
College of Education Building, Room 217
Phone: (974) 4403-5205 / 5206
Email: **noura.alattiyah@qu.edu.qa**
Website: **http://www.qu.edu.qa/education/special_master/**

**Coordinator**
Clayton Edward Keller

## ABOUT THE PROGRAM

The mission of the Master of Education in Special Education is to prepare Qatar's leaders in special education, who will improve the education provided to students with additional educational support needs in the country's schools, support the country's educational reform efforts, and advance Qatari society.

**Objectives**
The Master of Education in Special Education aims to:
• Develop leaders for Qatar's schools, organizations, agencies, and other entities that serve students with additional educational support needs and their families.
• Contribute to the development and use of educational practices that are research-based and culturally and technically appropriate for Qatar's students with additional educational support needs and their families.
• Develop and advance the skills of special educators and other professionals who serve students with additional educational support needs and their families in Qatar.
• Contribute to the special education knowledge base for Qatar, the Arab world, and beyond.

**Admission Requirements:**
All applicants to the Master of Education in Special Education program who meet the following minimum criteria will be considered for admission to Qatar University:
1. Completed a Bachelor's degree with a minimum cumulative GPA of 2.50 out of 4.00 from a university or college accredited by an international accrediting association or by the Ministry of Higher Education or equivalent authority in that country.or either (a) passed all of the courses (21 credits) required for the first two semesters of one of the Diploma Programs offered by the College of Education at Qatar university with a minimum GPA of 2.80 or (b) achieved a score of no less than 151 on the verbal reasoning section of the GRE revised General Test.
2. Achieved a minimum score of 520 on the paper-based TOEFL or equivalent test, taken within 2 years of the

start of the intended semester of admission OR earned a previous degree from an accredited institution of higher education in a Program where English was the language of instruction
Applicants are encouraged to submit standardized test scores, where available, in support of their application.

All applicants to the Master of Education in Special Education program are required to submit the following documents to the Admissions Department:
• Complete Online Admissions Application
• Final, official and certified university transcripts
• Official TOEFL or equivalent score report or other evidence of English proficiency in accordance with QU Policy
• Health Certificate
• Photocopy of the applicant's Qatar ID card (Non-Qatari applicants must provide a copy of their passport)
• Two recent identical passport-size photographs with white background
• Application fee: QR 350

Admission to the Master of Education in Special Education program takes place in the Fall semester only. For additional information on the program, please see their website at: http://www.qu.edu.qa/education/special_master

**Learning Outcomes**
Graduates of the Master of Education in Special Education will be able to:
• Apply key theories and concepts of the subject matter in educational settings
• Plan effective instruction to maximize student learning.
• Use current and emerging technologies in instructionally powerful ways.
• Foster successful learning experiences for all students by addressing individual differences
• Arrive at data-informed decisions by systematically examining a variety of factors and resources.
• Actively engage in scholarship.
• Apply professional ethics in all educational contexts
• Lead positive change in education

**Opportunities**
Graduates of the Master of Education in Special Education will be suited for employment as special education teachers and in leadership positions as advisors, specialists, and coordinators in the area of special education in schools, higher education, government agencies, non-governmental organizations and agencies, and centers providing services to students with additional educational support needs and their families.

## DEGREE REQUIREMENTS

**Master of Education in Special Education**
33 credit hours are required to complete the Master of Education in Special Education, including the following:
• 18 credit hours of major requirements
• 15 credit hours of concentration requirements

**Major Requirements (18 credit hours)**
• SPED 601 Issues, Policy and Practice in Special Education
• SPED 602 Inclusive Education for Students with Disabilities
• SPED 603 Advanced Applied Behavior Analysis
• SPED 604 Assessment of Students with Disabilities
• SPED 605 Collaboration with Family of Children with Disabilities
• EDUC 606 Educational Research Methodologies

**Concentration Requirements: Mild/Moderate Disabilities (15 credit hours)**
Students must complete the following 15 credit hours:
• SPED 607 Characteristics of Mild/Moderate Disabilities
• SPED 609 Methods of Teaching Learners with Mild/Mod. Disabilities
• SPED 611 Literacy Assessment & Remediation
• SPED 621 Internship: Mild/Moderate Disabilities

**Concentration Requirements: Severe/Profound Disabilities (15 credit hours)**
Students must complete the following 15 credit hours:
• SPED 608 Characteristics of Severe/Profound Disabilities
• SPED 610 Methods of Teaching Learners with Severe/Profound Disabilities
• SPED 612 Motor Development & Learning
• SPED 622 Internship: Severe/Profound Disabilities

## STUDY PLAN

Master of Education in Special Education

| FIRST SEMESTER (9 credit hours) | | | |
|---|---|---|---|
| Term | Course # | Course Title | Cr Hrs |
| Fall | SPED 601 | Issues, Policy and Practice in Special Education | 3 |
| | SPED 602 | Inclusive Education for Students with Disabilities | 3 |
| | SPED 603 | Advanced Applied Behavior Analysis | 3 |
| **Total** | | | **9** |

| SECOND SEMESTER (9 credit hours) | | | |
|---|---|---|---|
| Term | Course # | Course Title | Cr Hrs |
| Spring | SPED 604 | Assessment of Students with Disabilities | 3 |
| | | Concentration requirement | 3 |
| | EDUC 606 | Educational Research Methodologies | 3 |
| **Total** | | | **9** |

| THIRD SEMESTER (9 credit hours) | | | |
|---|---|---|---|
| Term | Course # | Course Title | Cr Hrs |
| Fall | SPED 605 | Collaboration with Family of Children with Disabilities | 3 |
| | | Concentration requirement | 3 |
| | | Concentration requirement | 3 |
| **Total** | | | **9** |

| FOURTH SEMESTER (6 credit hours) | | | |
|---|---|---|---|
| Term | Course # | Course Title | Cr Hrs |
| Spring | | Internship | 6 |
| **Total** | | | **6** |

## POST-BACCALAUREATE DIPLOMA PROGRAMS IN EDUCATION

College of Education
Phone: (974) 4403-5125/52045109
Email: **diplomaced@qu.edu.qa**
Website: **http://www.qu.edu.qa/education/diploma_program.php**

**Coordinator**
Fatma Al-Mutawaa

## ABOUT THE PROGRAMS

The mission of the Diploma Programs in Education is to prepare well-qualified, motivated teachers who have the knowledge, skills, and dispositions for teaching in early childhood, primary, or secondary schools or Special Education centers. Such teachers will prepare their students to achieve educational goals at the highest international standards and represent the ideals of educational reform in Qatar and the region.

## THE DEGREES AVAILABLE ARE

• Diploma in Early Childhood Education
• Diploma in Primary Education (with Concentrations in either Arabic/Islamic Studies/Social Studies or English/Mathematics/Science)
• Diploma in Secondary Education (with Concentrations in Arabic Studies, Islamic Studies, Social Studies, English, Mathematics, Biology, Chemistry, or Physics)
• Diploma in Special Education

**Objectives**
The Diploma Programs in Education aim to:
• Support the vision of Qatar University by offering high quality, learning-centered education to candidates seeking teacher certification.
• Support the mission of Qatar University by preparing experts in the field of education who have the knowledge, skills, dispositions, and experiences to be successful teachers.
• Prepare graduates who understand the importance and have the skills to promote academic achievement for all students.
• Promote education reform in Qatar by preparing a body of teachers qualified to model student-centered, standards-based instruction.
• Promote ongoing research in education in Qatar by teaching and modeling inquiry methodologies and data-informed instruction.

**Admission Requirements**
All applicants to any of the Diploma Programs must meet the following admission requirements to be considered for admission to Qatar University:
1. Completed a Bachelor's degree with a minimum cumulative GPA of 2.00 out of 4.00 from a university or college accredited by an international accrediting association or by the Ministry of Higher Education or equivalent in that country.
2. Hold an international computer driving License ICDL OR pass the computer efficiency test in the college. For more information on the ICDL, please contact the Qatar University's Office of Continuing Education at (00974) 4403-4023 / 4024 / 4026 / 4027.
3. Students must complete and succeed in a discipline specific content knowledge test.
4. Personal interview.

All applicants to any of the Diploma Programs are required to submit the following documents to the Admissions Department:
• QU Online Admissions Application
• Final, official and certified university transcripts
• Official TOEFL or other evidence of English proficiency in accordance with QU Policy
• Official International Computer Driving License ( ICDL)
• Health Certificate
• Photocopy of the applicant's Qatar ID card (Non-Qatari applicants must provide a copy of their passport)
• Two recent passport-size photographs (4x6 cm) with white background
• Application Fees.

For applicants who satisfy all admissions criteria listed above, admission to any of the Diploma Programs takes place in the Fall semester only. However, the university decided to freeze enrollment in all diploma programs for the Academic year of 2013-2014. For additional information on any of the programs, please see their websites at:
Early Childhood Education: **http://www.qu.edu.qa/education/echildhooddip**
Primary Education: **http://www.qu.edu.qa/education/primary_diploma**
Secondary Education: **http://www.qu.edu.qa/education/secondary_diploma**
Special Education: **http://www.qu.edu.qa/education/special_diploma**

**Learning Outcomes**
Graduates of the Diploma Programs in Education will be able to:
**1.** Apply key theories and concepts of the subject matter in educational settings.
2. Plan effective instruction to maximize student learning.
    2a. Design instructional plans to maximize student learning
    2b. Design a supportive educational environment
    2c. Use a range of assessments to inform teaching
3. Use current and emerging technologies in instructionally powerful ways.
4. Foster successful learning experiences for all students by addressing individual differences.
5. Arrive at data-informed decisions by systematically examining a variety of factors and resources.
6. Actively engage in scholarship in education.
7. Apply professional ethics in all educational contexts.
8. Lead positive change in education

**Opportunities**
Graduates of the Diploma Programs in Education will be prepared to be teachers in schools as well as serve as trainers, advisors, and specialists in their fields of education for organizations, agencies, and centers.

## DEGREE REQUIREMENTS

### POST-BACCALAUREATE DIPLOMA PROGRAM IN EARLY CHILDHOOD EDUCATION

A minimum of 30 credit hours are required to complete the Post-Baccalaureate Diploma Program in Early Childhood Education, including the following:
• 12 credit hours of core curriculum requirements
• 18 credit hours of major requirements

**Core Curriculum Requirements (12 credit hours)**
• EDUC 500 Qatari School and Society
• EDUC 501 Human Development & Learning
• EDUC 502 Instructional Planning & Assessment
• EDUC 503 Introduction to Special Education
• EDUC 504 Management of Educational Environment

**Major Requirements (18 credit hours)**
Students must complete the following 18 credit hours:
• EDEC 510 Preschoolers and Learning
• EDEC 511 Methods of Teaching in Early Childhood Education
• EDEC 512 Language & Literacy Development
• EDUC 520 Methods of Teaching ESL
• EDEC 580 Internship

### POST-BACCALAUREATE DIPLOMA PROGRAM IN PRIMARY EDUCATION

A minimum of 30 credit hours are required to complete the Post-Baccalaureate Diploma Program in Primary

Education, including the following:
• 12 credit hours of core curriculum requirements
• 18 credit hours of concentration area requirements

**Core Curriculum Requirements (12 credit hours)**
• EDUC 500 Qatari School and Society
• EDUC 501 Human Development & Learning
• EDUC 502 Instructional Planning & Assessment
• EDUC 503 Introduction to Special Education
• EDUC 504 Management of Educational Environment

**Concentration in Arabic Language, Islamic Studies, and Social Studies Requirements (18 credit hours)**
Students must complete the following 18 credit hours:
• EDPR 543 Arabic Methods I
• EDPR 544 Arabic Methods II
• EDPR 545 Social Studies Methods
• EDPR 546 Islamic Studies Methods
• EDPR 580 Internship

**Concentration in English, Mathematics, and Science Requirements (18 credit hours)**
Students must complete the following 18 credit hours:
• EDPR 540 Reading & Language Arts Methods
• EDPR 541 Mathematics Methods
• EDPR 542 Science Methods
• EDUC 520 Methods of Teaching ESL
• EDPR 580 Internship

## POST-BACCALAUREATE DIPLOMA PROGRAM IN SECONDARY EDUCATION

A minimum of 30 credit hours are required to complete the Post-Baccalaureate Diploma Program in Secondary Education, including the following:
• 12 credit hours of core curriculum requirements
• 18 credit hours of concentration area requirements

**Core Curriculum Requirements (12 credit hours)**
• EDUC 500 Qatari School and Society
• EDUC 501 Human Development & Learning
• EDUC 502 Instructional Planning & Assessment
• EDUC 503 Introduction to Special Education
• EDUC 504 Management of Educational Environment

**Concentration in Arabic Studies Requirements (18 credit hours)**
Students must complete the following 18 credit hours:
• EDSE 502 Second Language Learners in the Secondary Classroom
• EDSE 503 Reading and Writing Across the Curriculum
• EDSE 558 Methods I: Instructional Strategies-Arabic
• EDSE 568 Methods II: Inquiry and ICT for Arabic Studies
• EDSE 580 Internship

**Concentration in Islamic Studies Requirements (18 credit hours)**
Students must complete the following 18 credit hours:
• EDSE 502 Second Language Learners in the Secondary Classroom
• EDSE 503 Reading and Writing Across the Curriculum
• EDSE 553 Methods I: Instructional Strategies-Islamic Studies
• EDSE 563 Methods II: Inquiry and ICT for Islamic Studies
• EDSE 580 Internship

**Concentration in Social Studies Requirements (18 credit hours)**
Students must complete the following 18 credit hours:
• EDSE 502 Second Language Learners in the Secondary Classroom
• EDSE 503 Reading and Writing Across the Curriculum
• EDSE 557 Methods I: Instructional Strategies-Social Studies
• EDSE 567 Methods II: Inquiry and ICT for Social Studies
• EDSE 580 Internship

**Concentration in English Requirements (18 credit hours)**
Students must complete the following 18 credit hours:
• EDSE 502 Second Language Learners in the Secondary Classroom
• EDSE 503 Reading and Writing Across the Curriculum
• EDSE 559 Methods I: Instructional Strategies-English
• EDSE 569 Methods II: Inquiry and ICT for English
• EDSE 580 Internship

**Concentration in Mathematics Requirements (18 credit hours)**
Students must complete the following 18 credit hours:
• EDSE 502 Second Language Learners in the Secondary Classroom
• EDSE 503 Reading and Writing Across the Curriculum
• EDSE 560 Methods I: Instructional Strategies-Mathematics
• EDSE 570 Methods II: Inquiry and ICT for Mathematics
• EDSE 580 Internship

**Concentration in Biology Requirements (18 credit hours)**
Students must complete the following 18 credit hours:
• EDSE 502 Second Language Learners in the Secondary Classroom
• EDSE 503 Reading and Writing Across the Curriculum
• EDSE 554 Methods I: Instructional Strategies-Biology
• EDSE 564 Methods II: Inquiry and ICT for Biology
• EDSE 580 Internship

**Concentration in Chemistry Requirements (18 credit hours)**

Students must complete the following 18 credit hours:

- EDSE 502 Second Language Learners in the Secondary Classroom
- EDSE 503 Reading and Writing Across the Curriculum
- EDSE 555 Methods I: Instructional Strategies-Chemistry
- EDSE 565 Methods II: Inquiry and ICT for Chemistry
- EDSE 580 Internship

**Concentration in Physics Requirements (18 credit hours)**

Students must complete the following 18 credit hours:

- EDSE 502 Second Language Learners in the Secondary Classroom
- EDSE 503 Reading and Writing Across the Curriculum
- EDSE 556 Methods I: Instructional Strategies-Physics
- EDSE 566 Methods II: Inquiry and ICT for Physics
- EDSE 580 Internship

## POST-BACCALAUREATE DIPLOMA PROGRAM IN SPECIAL EDUCATION

30 credit hours are required to complete the Post-Baccalaureate Diploma Program in Special Education, including the following:

- 12 credit hours of core curriculum requirements
- 18 credit hours of major requirements

**Core Curriculum Requirements (12 credit hours)**

- EDUC 500 Qatari School and Society
- EDUC 501 Human Development & Learning
- EDUC 502 Instructional Planning & Assessment
- EDUC 503 Introduction to Special Education
- EDUC 504 Management of Educational Environment

**Major Requirements (18 credit hours)**

Students must complete the following 18 credit hours:

- SPED 520 Assessment of Students with Learning Difficulties
- SPED 521 Methods and Materials in Special Education
- SPED 522 Applied Behavior Analysis
- EDUC 520 Methods of Teaching ESL
- SPED 580 Internship

## STUDY PLAN

Post-Baccalaureate Diploma Programs

| FIRST SEMESTER (10 credit hours) | | | |
|---|---|---|---|
| Term | Course # | Course Title | Cr Hrs |
| Fall | EDUC 500 | Qatari School and Society | 1 |
| | EDUC 502 | Instructional Planning & Assessment | 3 |
| | EDUC 503 | Introduction to Special Education | 3 |
| | | Major Requirement | 3 |
| **Total** | | | **10** |

| SECOND SEMESTER (11 credit hours) | | | |
|---|---|---|---|
| Term | Course # | Course Title | Cr Hrs |
| Spring | EDUC 501 | Human Development and Learning | 2 |
| | | Major Requirement | 3 |
| | | Major Requirement | 3 |
| | | Major Requirement | 3 |
| **Total** | | | **11** |

| THIRD SEMESTER (9 credit hours) | | | |
|---|---|---|---|
| Term | Course # | Course Title | Cr Hrs |
| Fall | EDUC 504 | Management of Education Environment | 3 |
| | | Internship | 6 |
| | | | |
| **Total** | | | **9** |

## COLLEGE OF ENGINEERING

College of Engineering Building (Men's Section)
Phone: (974) 4403-4303
Email: **graduate_studies@qu.edu.qa**
Website: **http://www.qu.edu.qa/engineering/graduate.php**

**Dean**
Rashid Al-Ammari

**Associate Dean for Academic Affairs**
Adel Gastli

**Associate Dean for Research and Graduate Studies**
Abdelmagid Salem Hamouda

**Assistant Dean for Student Affairs**
Waled Abdulla Ahmad Mukahal

## ABOUT THE COLLEGE

The mission of the College of Engineering is to prepare globally competent and socially responsible graduates by providing high-quality education. Through its quality programs and partnerships, the College fosters research and scholarly endeavors that advance knowledge and contribute to the welfare of the country. In today's highly competitive today, an important criterion for academic and research excellence is the fostering of graduate-level training that features interdisciplinary, cutting-edge research and high-quality programs. Graduate training in the College of Engineering is committed to building strong foundations in order to advance knowledge and attract high caliber students. The College has successfully developed world-class educational programs, outstanding research activities, and strong industrial supports. It offers research and graduate programs that will enhance advanced knowledge of students, promote growth of their values, and prepare them to meet future engineering challenges.

## DEGREE OFFERINGS

The College of Engineering offers the following graduate degree programs:
- Master of Science in Civil Engineering
- Master of Science in Computing
- Master of Science in Electrical Engineering
- Master of Science in Engineering Management
- Master of Science in Environmental Engineering
- Master of Science in Mechanical Engineering
- Master in Urban Planning and Design
- Doctor of Philosophy in Architecture, Urban Planning, Chemical Engineering, Civil Engineering, Computer Science, Computer Engineering, Electrical Engineering, Mechanical Engineering, Industrial and Systems Engineering, Engineering Management, Environmental Engineering, and Materials Science and Engineering.

## MASTER OF SCIENCE IN COMPUTING

College of Engineering, Engineering Building
Phone: (974) 4403-4123 / 4303 / 4122
Email: **ms.computing@qu.edu.qa**
Website: **http://www.qu.edu.qa/engineering/computer/ms/**

**Program Coordinator**
Ali Jaoua

## ABOUT THE PROGRAM

The Master of Science in Computing program offers students an opportunity to acquire knowledge and understanding of advanced computing topics that enable them to apply information and communication technologies to real world business opportunities and challenges.
The program is aimed at professionals, as well as fresh graduates who would like to advance their knowledge in computing to gain competitive advantage which is essential in the current growing and dynamic environments of the computing profession. The program focuses on 'applied' rather than 'theoretical' aspects of computing, and stresses on applications of computing without neglecting research orientation. The research option provides students with the possibility to pursue further studies such as doctoral degree in computing in the future.
The Program covers a wide range of courses, such as data mining, wireless networking, service-oriented computing, advanced databases, computer security, project management, semantic Web, and more. It also offers continuing education opportunities to bachelor degree holders from other disciplines with non-computing exposure, to redirect their career towards computing. In order to be more flexible for working professionals, the Program offers all classes during the evening (after 5 pm). In addition, the course attendance is compacted into 'one-day-one-course' per week, to fit around busy work and family schedules of the students. The Program requires the student to complete a total of 31 credit hours, either as full-time or part-time study. The normal duration of full-time study is two years.

**Objectives**
Graduates of this program will be able to fulfill some of the following objectives:
1. Establish successful computing careers in industry or

government that will advance the economic development of the country and the region.
2. Serve industry or government by providing solutions to interdisciplinary, open-ended, and optimization problems.
3. Contribute effectively to the computing profession by fostering effective interaction with colleagues, by using ethical practices and communication skills, and by pursuing further education through lifelong learning.
4. Excel in careers due to the knowledge received as graduates of the Computing program.
5. Meet the changing needs of a knowledge-based economy by adapting and responding to changes in the constantly evolving computing field.
6. Prepare themselves for research, teaching and further graduate studies in computing.

**Admission Requirements**
All applicants to the Master of Science in Computing who meet the following minimum criteria will be considered for admission to Qatar University:
1. Completed a Bachelor's degree with a minimum cumulative GPA of 2.80 out of 4.00 from a university or college accredited by an international accrediting association or by the Ministry of Higher Education or equivalent in that country OR achieved a score of no less than 151 on the Quantitative portion of the GRE exam. While there is no specified minimum for the Analytical portion of the GRE exam, the score result will be considered in the evaluation.
2. Achieved a minimum score of 520 on the paper-based TOEFL or equivalent test taken within 2 years of the start of the intended semester of admission.
3. Passing an interview with the College's admission panel. The panel may request additional bridging course(s).

All applicants to the Master of Science in Computing program are required to submit the following documents to the Admissions Department:
• Complete Online Admissions Application
• Final and official university transcripts
• Official GRE score report if submitting GRE scores
• Official TOEFL or equivalent score report
• Two letters of recommendation from undergraduate professors or employers
• Health Certificate
• Photocopy of the applicant's Qatar ID card (Non-Qatari applicants must provide a copy of their passport)
• Two recent identical passport-size photographs with white background
• Application Fee

Admission to the Master of Science in Computing program takes place in the fall semester only. For additional information on the program, please see their website at: http://www.qu.edu.qa/engineering/computer/ms/.

**Opportunities**
Graduates of this program would be able to expand their knowledge with the latest advances in computing technologies. The program would also assist them to enhance and consolidate their existing computing knowledge. Currently, the Program offers two concentration areas: network systems and information sciences. The Program also offers flexibility in the choice of a thesis or a project. Graduates of the Master of Science in Computing program would find themselves suitable for a variety of job environments such as academia, research, industry, government and private organizations. The Program could help graduates to pursue a wide range of higher level jobs in computing related disciplines such as project manager, research associate, network systems designer, IT security officer, database administrator, IT manager etc.

## DEGREE REQUIREMENTS

Master of Science in Computing
A minimum of 31 credit hours are required to complete the Master of Science in Computing, which includes the following:
• A total of 10 credit hours in Core Requirements.
• A minimum of 9 credit hours in one of the two focus area packages defines by the program: The Information Science Focus are package or the Network Systems Focus area package
• A minimum of 12 credit hours in either the project option or the thesis option as detailed below:
- Project option: A minimum of 3 credit hours in the Project Option Requirements package and 9 credit hours in the Major Electives package or the focus area packages.
- Thesis option: A minimum of 6 credit hours in Thesis Option Requirements package and 6 credit hours in the Major Electives package or the focus area packages.

**Core Requirements (10 credit hours)**
The following courses must be completed by all Master of Science in Computing students:
• CMPT 506 Advanced Database Systems.
• CMPT 507 Advanced Operating Systems
• CMPT 508 Advanced Architecture and Design of Computer Systems.
• CMPT 509 Seminar in Computing.

**Information Sciences Focus Area Package (9 credit hours)**
Students must complete 9 credit hours in courses selected

from the following list:
• CMPT 521 Information Retrieval
• CMPT 522 Human Computer Interaction
• CMPT 523 Distributed Systems
• CMPT 524 Semantic Web
• CMPT 526 Systems Development
• CMPT 582: Special Topics in Information Science

**Network Systems Focus Area package (9 credit hours)**
Students must complete 9 credit hours in courses selected from the following list:
• CMPT 541: Advanced Computer Networks
• CMPT 542: Computer Security
• CMPT 543: Wireless Communication
• CMPT 544: Service Oriented Computing
• CMPT 546: Telecommunications Policies and Regulations
• CMPT 583: Special Topics in Network

**Thesis or Project options**

Project Option Requirements (3 credit hours)
• CMPT 591: Master Project
Thesis Option Requirements (6 credit hours)
• CMPT 595: Master Thesis

**Major Elective (6 or 9 credit hours)**
Students may select courses from the following list:
• CMPT 545: Simulation and Computer Network Analysis
• CMPT 561: Web Development
• CMPT 563: Data Mining
• CMPT 564: Storage Area Networks
• CMPT 567: Wide Area Digital Networking
• CMPT 568: Telecommunications Management
• CMPT 569: Project Management
• CMPT 570: Enterprise Resource Planning Systems
• CMPT 571: Advanced Algorithm Design and Analysis.
• CMPT 581: Special Topics in Computing

**Bridge Courses (12 credit hours)**
Students holding a bachelor degree in a discipline other than a computing related discipline are required to complete some or all of the following courses based on the decision of the program admission committee
• CMPT 501: Fundamentals of Computing I
• CMPT 502:Fundamentals of Computing II

## STUDY PLAN

Master of Science in Computing

| FIRST SEMESTER (9 credit hours) | | | |
|---|---|---|---|
| Term | Course # | Course Title | Cr Hrs |
| Fall | CMPT 506 | Advanced Database Systems | 3 |
| | CMPT 508 | Advanced Architecture & Design of Computer Systems | 3 |
| | CMPT | One free elective | 3 |
| **Total** | | | **9** |

| SECOND SEMESTER (10 credit hours) | | | |
|---|---|---|---|
| Term | Course # | Course Title | Cr Hrs |
| Spring | CMPT 507 | Advanced Operating Systems | 3 |
| | CMPT 509 | Seminar in Computing | 1 |
| | CMPT | One concentration elective | 3 |
| | CMPT | One free elective | 3 |
| **Total** | | | **10** |

| THIRD SEMESTER (9 credit hours) | | | |
|---|---|---|---|
| Term | Course # | Course Title | Cr Hrs |
| Fall | CMPT 595<br>Or<br>CMPT | Master Thesis,<br>Or<br>One free elective for the project option | 3 |
| | CMPT | One concentration elective | 3 |
| | CMPT | One concentration elective | 3 |
| **Total** | | | **9** |

| FOURTH SEMESTER (3 credit hours) | | | |
|---|---|---|---|
| Term | Course # | Course Title | Cr Hrs |
| Spring | CMPT 595<br>Or<br>CMPT 591 | Master Thesis,<br>Or<br>Master Project | 3 |
| **Total** | | | **3** |

## MASTER OF SCIENCE IN ENGINEERING MANAGEMENT

College of Engineering, Engineering Building
Phone: (974) 44034123 / 4303 / 4122
Email: **graduate_studies@qu.edu.qa**
Website: **http://www.qu.edu.qa/engineering/master_brief/master_meng.php**

**Program Coordinator**
Abdelmagid Salem Hamouda

## ABOUT THE PROGRAM

This Engineering Management (EM) program is designed to prepare professionals for the Qatari industrial world at levels higher than those requiring an undergraduate degree, while preparing them to pursue advanced research.
The program is fundamentally different from MBAs. MBA programs are designed to help prepare people for management roles while focusing on general business and managerial aspects rather than leveraging the technical background. However, in today's world, corporations also demand managers with strong technical backgrounds. The structure of the Engineering Management program is unique, as it helps the engineers become more effective technical specialists, and strengthens their ability to lead people and projects. As a specialist, the engineer becomes more effective through understanding how his or her engineering skills can best support the goals of the organization and its customers. In addition, the trained engineering manager becomes uniquely qualified for two types of positions: management of technical functions, and the management of broader functions in the high-technology enterprise. The world trend in graduate education suggests that MBA and EM programs are not supplementary but complementary to each other. There are many universities in the Gulf Region and around the globe which offer both programs separately.

**Objectives**
Graduates of this program will be able to fulfill some of the following objectives:
1. Establish a successful engineering management careers in industry or government that will help in advancing the development of the state of Qatar and gulf region.
2. Establish in-depth proficiency in engineering management fields relevant to local and regional industry.
3. Develop competitive skills in problem solving techniques, interdisciplinary teamwork and critical analysis of engineering management problems.
4. Develop a profound understanding of environmental, societal, global economic and technological aspects to meet the changing needs of a knowledge-based economy, by adapting and responding to changes.

**Admission Requirements**
All applicants to the Master of Science in Engineering Management program who meet the following minimum criteria will be considered for admission to Qatar University:
1. Earned Bachelor's degree with a minimum cumulative GPA of 2.80 out of 4.00 from a university or college accredited by an international accrediting association or by the Ministry of Higher Education or equivalent in that country OR achieved a score of no less than 151 on the Quantitative portion of the GRE exam. While there is no specified minimum for the Analytical portion of the GRE exam, the score result will be considered in the evaluation.
2. Achieved a minimum score of 520 on the paper-based TOEFL or equivalent test taken within 2 years of the start of the intended semester of admission OR earned a previous degree from an accredited institution of higher education in a Program where English was the language of instruction.
3. Passing an interview with the College's admission panel. The panel may request additional bridging course(s).

All applicants to the Master of Science in Engineering Management program are required to submit the following documents to the Admissions Department:
• Complete Online Admissions Application
• Final and official university transcripts
• Official GRE score report if submitting GRE scores
• Official TOEFL or equivalent score report or other evidence of English proficiency in accordance with QU Policy.
• Two letters of recommendation from undergraduate professors or employers
• Health Certificate
• Photocopy of the applicant's Qatar ID card
(Non-Qatari applicants must provide a copy of their passport)
• Two recent identical passport-size photographs with white background
• Application Fee

Admission to the Master of Science in Engineering Management program takes place in the fall semester only. For additional information on the program, please see their website at: http://www.qu.edu.qa/engineering/mechanical/academics/postgraduate.

**Learning Outcomes**
On completion of the master program, graduates will:
1. Be able to determine the engineering management variables of interest and processes to manage engineering alternatives.
2. Be able to assess the economic, social and environmental requirements, needs, and constraints of the

system and its impact on the society.
3. Have the ability to manage and administer large technical engineering projects, budgets and existing setups effectively.
4. Be able to use computational tools and management software and theories for finding analytical solutions to problems necessary for the practice of engineering management.
5. Have the ability to apply behavioral principles connected with awareness, communication, productivity, organizational change, and leadership keeping in mind the changing nature of business strategy and economic analysis needs.

**Opportunities**
Qatar's growing economy requires capable managers with solid technical skills. Engineering Management program will help engineers improve their managerial skills and equip them with the ability to scientifically oversee the managerial functions in various areas including infrastructure, construction, petrochemicals, utilities, power, and service industries.

## DEGREE REQUIREMENTS

The M.S. in Engineering Management degree requires a minimum of 36 credit hours of graduate-level course work for the thesis or the project options. Students with the Project option should pass a comprehensive exam.

For the thesis option, the coursework must include:
• A total of 18 credit hours in core requirements.
• A minimum of 12 credit hours from the three Focus Area package.
• A minimum of 6 credit hours in either the project option or the thesis option as detailed below:
- Project option: A minimum of 3 credit hours in the project option requirements package and 3 credit hours in the free electives package
- Thesis option: A minimum of 6 credit hours in thesis option requirements package
Students who did not take Operations Research or an equivalent course in their prior studies should take EMP 501 -Operations Research as the bridge course to the Engineering Management Program. This course is a Pass/Fail course and has zero credit hours.

**Core courses (18 credit hours)**
EMP 503 Business Fundamentals for Engineering Managers
EMP 504 Process Improvement Techniques
EMP 505 Project Management
EMP 506 Production and Operations Management
EMP 507 Enterprise Information Analysis and Business Applications
EMP 508 Decision Techniques and Data Analysis

**Focus Area courses (12 credit hours)**
Students must complete a minimum of 12 credit hours from the Focus Area packages, including the Logistics & Supply Chain Focus Area package; the Operations Focus Area package; and the Construction Focus Area package, by completing three courses from one of the focus area packages and a fourth course from one of the two remaining focus area packages.

**Logistics & Supply Chain Focus Area package (12 credit hours)**
EMP 511 Physical Distribution Management
EMP 512 Procurement Management
EMP 513 Suppliers Management
EMP 514 Supply Chain Management
EMP 515 Materials & Logistics Management

**Operations Focus Area package (12 credit hours)**
EMP 521 Facility Planning and Layout
EMP 522 Service Operations Management
EMP 523 Six Sigma & Strategic Quality Management
EMP 524 Systems Analysis and Design
EMP 525 Manufacturing & Enterprise Resource Planning
EMP 526 Innovation and Technology Management

**Construction Focus Area package (12 credit hours)**
EMP 531 Construction Engineering Management
EMP 532 Estimating & Financial Analysis for Construction
EMP 533 Construction Equipment Management
EMP 534 Construction Contracts & Legal Concepts in Construction
EMP 535 Concrete Formwork Design
EMP 536 Project Planning, Scheduling and Control
EMP 537 Engineering and Construction Materials and Methods

**Free Elective Courses**
For the project option, students concentrating in one focus area may take elective course in the other focus area, for the project option, students concentrating in one focus area may take an elective course in one of the two other focus areas (Only one elective course)

**Thesis or Project**

**Project Option Requirements (3 credit hours)**
EMP 591: Master Project

**Thesis Option Requirements (6 credit hours)**
EMP 595: Master Thesis I
EMP 596: Master Thesis II

## STUDY PLAN

Master of Science in Engineering Management
Thesis Option

| FIRST SEMESTER (9 credit hours) | | | |
|---|---|---|---|
| Term | Course # | Course Title | Cr Hrs |
| Fall | EMP 504 | Process Improvement Tech | 3 |
| | EMP 506 | Cost Estimation, Analysis & Contracts Management | 3 |
| | EMP 508 | Management of Information Systems | 3 |
| **Total** | | | **9** |
| **THIRD SEMESTER (9 credit hours)** | | | |
| Term | Course # | Course Title | Cr Hrs |
| Fall | | Track Based Course | 3 |
| | | Track Based Course | 3 |
| | EMP 595 | Master Thesis I | 3 |
| **Total** | | | **9** |

| SECOND SEMESTER (9 credit hours) | | | |
|---|---|---|---|
| Term | Course # | Course Title | Cr Hrs |
| Spring | EMP 505 | Project Management | 3 |
| | EMP 507 | Production and Operations Management | 3 |
| | EMP 509 | Decision Techniques and Data Analysis | 3 |
| **Total** | | | **9** |
| **FOURTH SEMESTER (9 credit hours)** | | | |
| Term | Course # | Course Title | Cr Hrs |
| Spring | | Track Based Course | 3 |
| | | Track Based Course | 3 |
| | EMP 596 | Master Thesis II | 3 |
| **Total** | | | **9** |

## STUDY PLAN

Master of Science in Engineering Management
Project Option

| FIRST SEMESTER (9 credit hours) | | | |
|---|---|---|---|
| Term | Course # | Course Title | Cr Hrs |
| Fall | EMP 504 | Process Improvement Tech | 3 |
| | EMP 506 | Cost Estimation, Analysis & Contracts Management | 3 |
| | EMP 508 | Management of Information Systems | 3 |
| **Total** | | | **9** |
| **THIRD SEMESTER (9 credit hours)** | | | |
| Term | Course # | Course Title | Cr Hrs |
| Fall | | Track Based Course | 3 |
| | | Track Based Course | 3 |
| | | Free Elective | 3 |
| **Total** | | | **9** |

| SECOND SEMESTER (9 credit hours) | | | |
|---|---|---|---|
| Term | Course # | Course Title | Cr Hrs |
| Spring | EMP 505 | Project Management | 3 |
| | EMP 507 | Production and Operations Management | 3 |
| | EMP 509 | Decision Techniques and Data Analysis | 3 |
| **Total** | | | **9** |
| **FOURTH SEMESTER (9 credit hours)** | | | |
| Term | Course # | Course Title | Cr Hrs |
| Spring | | Track Based Course | 3 |
| | | Track Based Course | 3 |
| | EMP 591 | Master Project | 3 |
| **Total** | | | **9** |

## MASTER OF ENVIRONMENTAL ENGINEERING

College of Engineering, Engineering Building
Phone: (974) 44034123 / 4303 / 4122
Email: **graduate_studies@qu.edu.qa**
Website: **http://www.qu.edu.qa/engineering/chemical/program/EEMP/index.php**

**Program Coordinator**
Abdelmagid Salem Hamouda

## ABOUT THE PROGRAM

The program is designed to suit engineering and suitably qualified science graduates who are seeking a formal qualification that will equip them to work in and contribute to this fast developing field. A distinctive feature of this program is that it is highly topical. Therefore, students in this program will have challenging, real-world issues to study 'on the doorstep' of the University. The real-world input (arising from the pressing needs of local industry) ensures that the curriculum is relevant to sustainable development of Qatar, as well as the industry's needs and assist with future employment of the program's graduates. Environmental engineers develop sustainable solutions to environmental problems. They deal with issues such as designing water and wastewater treatment plants, designing solid waste disposal systems, site remediation approaches and emission control measures. In addition, the new environmental challenges will provide new opportunities for environmental engineers. Successful response to the impacts of global climate change, fast-moving introduction of sustainable development practices in industry, and greener operations will require the skills of environmental engineers. Major corporations, governmental agencies, private consulting and construction firms, and universities are just some of the organizations that employ environmental engineers.

**Objectives**
Graduates of the Master of Environmental Engineering program will:
1. Contribute to sustainable development in their respective employment sectors such as industry and governmental agencies;
2. Take an active role in their continuous professional development to enable the state of Qatar to build the knowledge-based economy emphasized in QNV2030;
3. Promote ethical and professional standards in their careers with respect to the duty of care towards the environment and sustainable development.
4. Contribute to fulfilling the environmental, societal, economical and technological needs to address the challenges of the knowledge-based economy.

**Admission requirements**
All applicants to the Master of Science in Environmental Engineering who meet the following minimum criteria will be considered for admission to Qatar University:
1. Earned Bachelor's degree with a minimum cumulative GPA of 2.80 out of 4.00 from a university or college accredited by an international accrediting association or by the Ministry of Higher Education or equivalent authority in that country, OR if GPA is less than 2.8 a score of no less than 151 on the Quantitative portion of the GRE exam will be required. While there is no specified minimum for the Analytical portion of the GRE exam, the score result will be considered in the evaluation.
2. Achieved a minimum score of 520 on the paper-based TOEFL or equivalent test taken within 2 years of the start of the intended semester of admission OR earned a previous degree from an accredited institution of higher education in a Program where English was the language of instruction.
3. Passing an interview with the College's admission panel. The panel may request additional bridging course(s).

All applicants to the Master of Science in Environmental Engineering program are required to submit the following documents to the Admissions Department:
• Complete Online Admissions Application
• Final and official university transcripts
• Official GRE score report if submitting a GRE score is required
• Official TOEFL or equivalent score report or other evidence of English proficiency in accordance with QU Policy.
• Two letters of recommendation from undergraduate professors or employers
• Health Certificate
• Photocopy of the applicant's Qatar ID card (Non-Qatari applicants must provide a copy of their passport)
• Two recent identical passport-size photographs with white background
• Application Fees

Admission to the Master of Science in Environmental Engineering program takes place in the fall semester only (September). For additional information on the program, please see their website at: http://www.qu.edu.qa/engineering/master_brief/master_env_eng.php.

**Learning Outcomes**
On completion of the master program, graduates will able to:
1. Apply knowledge of biological science, chemistry, physics, mathematics, statistics, mass, energy and mass conservation, and transport principles needed to understand and solve environmental engineering

problems.
2. Design and conduct experiments necessary to gather data and create information for use in analysis and design.
3. Demonstrate advanced knowledge and skills essential for professional practice of environmental engineering.
4. Predict and determine fate and transport of substances in and among air, water and soil phases, as well as in engineered systems.
5. Gain knowledge on globalization and other contemporary issues necessary to understand the impact of environmental engineering solutions in a global, societal, and environmental context.

**Opportunities**
Environmental engineering training offers graduates the opportunities to work in several domains of environmental protection. The major areas include air pollution control, industrial hygiene, hazardous waste management, toxic materials control, water supply, wastewater management, storm water management, solid waste disposal, public health, and land management. Within each of these major categories are many sub-specialties. The degree will enhance prospects for potential employment in Governmental bodies (Ministry of Environment, Ministry of Works), national and international industries located in and outside Qatar as well as service and utility providers among others. Also, potential employment opportunities exist in consulting companies as well as in research institutions.

## DEGREE REQUIREMENTS

The M.S. Science in Environmental Engineering degree requires a minimum of 35 credit hours of graduate-level course work for the thesis or the project options. The students with the Project option should pass a comprehensive exam.

• A total of 19 credit hours in Core Requirements
• A minimum of 16 credit hours in either the project option or the thesis option as detailed below:
- Project option: A minimum of 4 credit hours in the Project Option requirement package and 12 credit hours in the Major Electives package.
- Thesis Option: A minimum of 7 credit hours in Thesis Option Requirements package and 9 credit hours in the Major Electives package.

**Core Requirements (19 credit hours)**
• EEMP 504 Environmental Chemistry
• EEMP 505 Environmental transport and water resources
• EEMP 506 Microbiological Processes in environmental systems
• EEMP 507 Environmental Systems and Modeling
• EEMP 508 Environmental Measurements and statistical labs
• EEMP 509 Physico-chemical Processes in environmental systems
• EEMP 510 Design project

**Elective courses**
• EEMP 521 Solid Waste Management
• EEMP 522 Hazardous Waste and Contaminated Sites Management
• EEMP 523 Marine Environment and Human Development
• EEMP 524 Environmental Sustainability
• EEMP 525 Industrial Waste Water Treatment
• EEMP 526 Clean Energy Resources
• EEMP 527 Research strategies and methods*
• EEMP 528 Special Topics in Environmental Engineering
• EEMP 529 Atmospheric pollution and air quality management
• EEMP 530 Environmental Assessment and Management**
* This is a required course for thesis option.
** This is a required course for project (non-thesis) option.

**Project Option Requirements (4 credit hours)**
• EEMP 591 Industrial Master Project
• EEMP 530 Environmental Assessment and Management

**Thesis Option Requirements (7 credit hours)**
• EEMP 595 Master Thesis I
• EEMP 596 Master Thesis II
• EEMP 527 Research strategies and methods

## STUDY PLAN

Master of Science in Environmental Engineering
Thesis Option

| FIRST SEMESTER (9 credit hours) | | | |
|---|---|---|---|
| Term | Course # | Course Title | Cr Hrs |
| Fall | EEMP 504 | Environmental Chemistry | 3 |
| | EEMP 505 | Environmental Transport and Water Resources | 3 |
| | EEMP 506 | Microbiological Processes in Environmental Systems | 3 |
| **Total** | | | **9** |
| **THIRD SEMESTER (10 credit hours)** | | | |
| Term | Course # | Course Title | Cr Hrs |
| Fall | EEMP XXX | Technical Elective | 3 |
| | EEMP 527 | Research Strategies and methods | 3 |
| | EEMP 595 | Thesis | 1 |
| | EEMP XXX | Technical Elective | 3 |
| **Total** | | | **10** |

| SECOND SEMESTER (10 credit hours) | | | |
|---|---|---|---|
| Term | Course # | Course Title | Cr Hrs |
| Spring | EEMP 507 | Environmental Systems and Modeling | 3 |
| | EEMP 508 | Environmental Measurements and Statistical Lab | 1 |
| | EEMP 509 | Physicochemical Processes in Environmental Systems | 3 |
| | EEMP 510 | Design Project | 3 |
| **Total** | | | **10** |
| **FOURTH SEMESTER (6 credit hours)** | | | |
| Term | Course # | Course Title | Cr Hrs |
| Spring | EEMP XXX | Technical Elective | 3 |
| | EEMP 596 | Thesis | 3 |
| | | | |
| **Total** | | | **9** |

## STUDY PLAN

Master of Science in Environmental Engineering
Project Option

| FIRST SEMESTER (9 credit hours) | | | |
|---|---|---|---|
| Term | Course # | Course Title | Cr Hrs |
| Fall | EEMP 504 | Environmental Chemistry | 3 |
| | EEMP 505 | Environmental Transport and Water Resources | 3 |
| | EEMP 506 | Microbiological Processes in Environmental Systems | 3 |
| **Total** | | | **9** |
| **THIRD SEMESTER (8 credit hours)** | | | |
| Term | Course # | Course Title | Cr Hrs |
| Fall | EEMP XXX | Technical Elective | 3 |
| | EEMP XXX | Technical Elective | 3 |
| | EEMP 530 | Environmental Assessment & Management | 2 |
| **Total** | | | **8** |

| SECOND SEMESTER (10 credit hours) | | | |
|---|---|---|---|
| Term | Course # | Course Title | Cr Hrs |
| Spring | EEMP 507 | Environmental Systems and Modeling | 3 |
| | EEMP 508 | Environmental Measurements and Statistical Lab | 1 |
| | EEMP 509 | Physicochemical Processes in Environmental Systems | 3 |
| | EEMP 510 | Design Project | 3 |
| **Total** | | | **10** |
| **FOURTH SEMESTER (8 credit hours)** | | | |
| Term | Course # | Course Title | Cr Hrs |
| Spring | EEMP XXX | Technical Elective | 3 |
| | EEMP XXX | Technical Elective | 3 |
| | EEMP 591 | Industrial Master Project | 2 |
| **Total** | | | **8** |

## MASTER OF URBAN PLANNING AND DESIGN

College of Engineering
Phone: (974) 4403-4340 / 4344
Email: **architecture-urban@qu.edu.qa**
Website: **http://www.qu.edu.qa/engineering/architecture/programs/MsUp/index.php**

**Program Coordinator**
Yasser Mahgoub

## ABOUT THE PROGRAM

The Master of Urban Planning and Design (MUPD) is tailored to address issues of importance to the urban environment in Qatar, the GCC region, and beyond. It aims to provide students with key knowledge on each and every aspect of urban planning and design, including urban sustainability, Geographic Information Systems (GIS), landscape planning in arid regions, integrated land use, transport planning, and more.

### Objectives

The Master of Urban Planning and Design aims to promote:
• Development of an understanding of the nature, purpose, methods and practice of planning. This includes knowledge about the governance, planning laws, and politics, and their impact on individuals and communities -often in a multicultural environment- and the techniques of policy analysis and project-making.
• An understanding of processes of change in the built environment and the relationships between the social, economic and physical factors associated with the development of the built environment;
• Development of the ability to undertake a substantial outcome of specialist-based independent research.

### Admission Requirements

All applicants to the Master of Science in Urban Planning and Design program who meet the following minimum criteria will be considered for admission to Qatar University:
1. Earned Bachelor's degree in a built environment-related discipline, including architecture, urban design, urban planning, planning, landscape architecture, interior architecture, construction engineering, and civil engineering, with a minimum cumulative GPA of 2.80 out of 4.00 from a university or college accredited by an international accrediting association or by the Ministry of Higher Education or equivalent authority in that country, OR achieved a score of no less than 151 on the Quantitative portion of the GRE exam. While there is no specified minimum for the Analytical portion of the GRE exam, the score result will be considered in the evaluation.
2. Achieved a minimum score of 520 on the paper-based TOEFL or equivalent test taken within 2 years of the start of the intended semester of admission OR earned a previous degree from an accredited institution of higher education in a Program where English was the language of instruction.
3. Passing an interview with the College's admission panel.

All applicants to the Master of Science in Urban Planning and Design program are required to submit the following documents to the Admissions Department:
• Complete Online Admissions Application
• Final and official university transcripts
• Official GRE score report if submitting a GRE scores
• Official TOEFL or equivalent score report or other evidence of English proficiency in accordance with QU Policy.
• Two letters of recommendation from undergraduate professors or employers
• Health Certificate
• Photocopy of the applicant's Qatar ID card (Non-Qatari applicants must provide a copy of their passport)
• Two recent identical passport-size photographs with white background
• Application Fee

For additional information on the program, please see their website at: http://www.qu.edu.qa/engineering/architecture/programs/MsUp

### Learning Outcomes

Graduates of the Master of Urban Planning and Design will be able to:
• Describe urban development in MENA countries and beyond.
• Apply urban analysis methodologies to explore developmental issues.
• Demonstrate skills in land use planning, strategic planning, and participatory techniques.
• Practice sustainable urban development.
• Demonstrate proficiency in written communication by writing with clarity, conciseness, and coherence about relationships among concepts.
• Demonstrate proficiency in oral communication by giving concise, clear, and organized oral presentations, with responses and leadership for the audience.
• Engage effectively in groups on critical thinking, while participating weekly on problem-solving activities and reporting their results to the class.

**Opportunities**
Following the recent success of Qatar's national bid for the FIFA 2022 World Cup, as well as current trends in the real estate industry, major job opportunities are to be found within the Ministry of Municipalities and Urban Planning and its departments (viz. Centre for GIS, Qatar National Master Plan, Transportation Planning Department) and other key players in the area such as Mshereib Properties, Qatari Diar, and Barwa, as well as private planning firms currently involved in the expansion of Doha.
Additionally, graduates may have opportunities to work with some international organizations that address developmental and environmental issues, including UNESCO, UNDP, UN-HABITAT and other international NGOSs.

## DEGREE REQUIREMENTS

A minimum of 45 credit hours are required to complete the Master of Urban Planning and Design, including the following:
• A minimum of 18 credit hours in Core Requirements.
• A minimum of 9 credit hours in Focus Area Requirements.
• A minimum of 9 credit hours of Thesis Option Requirements.
• A minimum of 9 credit hours of Major Electives.

**Core Requirements (27 credit hours)**
• MUPD 600 Planning Theory
• MUPD 610 Urban Planning Legislation
• MUPD 620 Urban and Regional Land Use
• MUPD 611 Urban Economics
• MUPD 601 Research and Statistical Analysis in Planning
• MUPD 621 Computer Aided Planning

**Urban Planning Focus Area (9 credit hours)**
• MUPD 700 Local and Regional Sustainability
• MUPD 701 Urban Infrastructure Planning
• MUPD 702 Housing Policies and Planning

**Urban Design Focus Area (9 credit hours)**
• MUPD 710 Sustainable Urban and Landscape Design
• MUPD 711 Urban Design in Practice
• MUPD 712 Evolution of Built Form and Townscapes

**Master Thesis Requirement (9 credit hours)**
• MUPD 750 Thesis focuses on Urban Planning
• MUPD 760 Thesis focuses on Urban Design

**Major Electives (minimum of 9 credit hours)**
• MUPD 650 Cultural and Physical Aspects of the Islamic City
• MUPD 651 Urban Renewal Planning
• MUPD 652 Theory on Urban Form and Design
• MUPD 653 Design and Regeneration
• MUPD 654 Urban Transportation Systems
• MUPD 655 City and Regional Planning in Arid Zones
• MUPD 656 Environmental Planning and Management
• MUPD 657 Techniques of Environmental Impact Assessment

## FULL TIME STUDY PLAN

Master of Urban Planning and Design
Track 1

| FIRST SEMESTER (12 credit hours) | | | |
|---|---|---|---|
| Term | Course # | Course Title | Cr Hrs |
| Fall | MUPD 600 | Planning Theory | 3 |
| | MUPD 610 | Urban Planning Legislation | 3 |
| | MUPD 620 | Urban and Regional Land Use | 3 |
| | | Elective | 3 |
| **Total** | | | **12** |
| **THIRD SEMESTER (12 credit hours)** | | | |
| Term | Course # | Course Title | Cr Hrs |
| Fall | MUPD 700 | Local and Regional Sustainability | 3 |
| | MUPD 701 | Urban Infrastructure Planning | 3 |
| | MUPD 702 | Housing Policies and Planning | 3 |
| | | Elective | 3 |
| **Total** | | | **12** |

| SECOND SEMESTER (12 credit hours) | | | |
|---|---|---|---|
| Term | Course # | Course Title | Cr Hrs |
| Spring | MUPD 611 | Urban Economics | 3 |
| | MUPD 601 | Research and Statistical Analysis in Planning | 3 |
| | MUPD 621 | Computer Aided Planning | 3 |
| | | Elective | 3 |
| **Total** | | | **12** |
| **FOURTH SEMESTER (9 credit hours)** | | | |
| Term | Course # | Course Title | Cr Hrs |
| Spring | MUPD 750 | Thesis focuses on Urban Planning | 9 |
| **Total** | | | **9** |

## FULL TIME STUDY PLAN

Master of Urban Planning and Design
Track 2

| FIRST SEMESTER (12 credit hours) | | | |
|---|---|---|---|
| Term | Course # | Course Title | Cr Hrs |
| Fall | MUPD 600 | Planning Theory | 3 |
| | MUPD 610 | Urban Planning Legislation | 3 |
| | MUPD 620 | Urban and Regional Land Use | 3 |
| | | Elective | 3 |
| **Total** | | | **12** |
| **THIRD SEMESTER (12 credit hours)** | | | |
| Term | Course # | Course Title | Cr Hrs |
| Fall | MUPD 710 | Sustainable Urban and Landscape Design | 3 |
| | MUPD 711 | Urban Design in Practice | 3 |
| | MUPD 712 | Evolutions of Built Form and Townscapes | 3 |
| | | Elective | 3 |
| **Total** | | | **12** |

| SECOND SEMESTER (12 credit hours) | | | |
|---|---|---|---|
| Term | Course # | Course Title | Cr Hrs |
| Spring | MUPD 611 | Urban Economics | 3 |
| | MUPD 601 | Research and Statistical Analysis in Planning | 3 |
| | MUPD 621 | Computer Aided Planning | 3 |
| | | Elective | 3 |
| **Total** | | | **12** |
| **FOURTH SEMESTER (9 credit hours)** | | | |
| Term | Course # | Course Title | Cr Hrs |
| Spring | MUPD 750 | Thesis focuses on Urban Planning | 9 |
| **Total** | | | **9** |

## MASTER OF SCIENCE IN CIVIL ENGINEERING

College of Engineering, Engineering Building
Phone: (974) 44034123 / 4303 / 4122
Email: **graduate_studies@qu.edu.qa**
Website: **http://www.qu.edu.qa/engineering/master_brief/**

**Program Coordinator**
Abdel Magid Hamouda

## ABOUT THE PROGRAM

As Qatar enters a phase of large scale development, the economical use of construction resources and technologies and the development of sustainable designs and materials will be of prime importance to a sustainable management of civil engineering structures. Research opportunities for a Master of Science in Civil Engineering program will be generated by faculty research work in structural engineering, geotechnical engineering, transportation engineering, civil engineering materials, and water resources.
The mission of the Master of Science in Civil Engineering is to prepare students for careers in private and public sectors and for advanced research level leading to high scholarly achievementsand advanced knowledge. The major emphasis of the program is to foster a deeper understanding of the engineering research process and to further develop professional skills.
The structure of the Master of Science in Civil Engineering program is unique, as it helps e engineers to be moreeffective technical specialists and able to manage people and projects. Conducting original research is an important goal of a Master program study in the College of Engineering atQatar University. Research provides a type of education not available through classroom teaching. The Master of Science in Civil Engineering program is designed to enhance students'abilities to contribute to the existing body of knowledge and to innovate and create new knowledge. Students are expected to gain strong theoretical and methodological foundations and to develop an ability to conduct research independently.

**Program Objectives**
The Master of Science in Civil Engineering program is a challenging and rewarding. Graduates of the Master of Science in Civil Engineering program will be able to fulfill most of the following educational objectives (Obj):
1. Act professionally and ethically in a modern work environment through effective communication and leadership, and responsible teamwork.
2. Maintain the desire for innovation and engagement in lifelong learning in response to emerging technologies, social developments, and contemporary issues.
3. Conduct research and present results in scientific forums and contribute to the advancement of the scientific body of knowledge.

**Learning Outcomes**
By the time he or she completes the requirements for the Master of Science in Civil Engineering program, the student will have achieved the following Learning Outcomes:
1. Able to apply knowledge of mathematics and science in a creative and innovative way to design, develop, and produce useful products and/or services for society; and to be able to manage these activities.
2. Able to apply knowledge of civil engineering concepts for the analysis and the design of civil engineering systems and to understand the impact of their civil engineering solutions in global and societal context.
3. Able to effectively communicate analysis and design ideas to peers, clients, and customers.
4. Able to review, analyze, and interpret the body of scientific literature, contemporary issues and innovations in the civil engineering area
5. Able to apply and validate innovations and discoveries in the lab or in real world settings using efficient and effective ways and modern engineering tools,
6. Able to conduct and produce quality research in civil engineering and to understand professional and ethical responsibility.
7. Able to effectively write and present the research output in international journals, conferences, patents, research proposals and other scientific venues.

**Admission Requirements**
All applicants who meet the following minimum criteria will be considered for admission to to the Master of Science in Civil Engineering :
1. Earned Bachelor of Science degree in engineering or a related field with a minimum cumulative GPA of 2.80 out of 4.00 from a university or college accredited by an international accrediting association or by the Ministry of Higher Education or equivalent in that country, OR achieved a score of no less than 151 on the Quantitative part of the GRE exam. While there is no specified minimum for the Analytical part, the score result will be considered in the evaluation.
2. Achieved a minimum score of 520 on the paper-based TOEFL or an equivalent English proficiency test taken within 2 years from the start of the intended admission semester. OR earned a previous degree from an accredited institution of higher education in a Program where English was the language of instruction.
3. Passing an interview with the College's admission panel. The panel may request additional bridging course(s).
All applicants to the Master of Science in Civil Engineering program are required to submit the following documents to

the Admissions Department:
• Complete Online Admissions Application
• Final and official university transcripts
• Official TOEFL or equivalent score report or other evidence of English proficiency in accordance with QU Policy.
• Official GRE score report if submitting GRE scores
• Two letters of recommendation from undergraduate professors or employers
• Health Certificate
• Photocopy of the applicant's Qatar ID card (Non-Qatari applicants must provide a copy of their passport)
• Two recent identical passport-size photographs with white background
• Application Fees
Admission to the Master of Science in Civil Engineering program takes place in the fall semester only. For additional information on the program, please visit the following website: http://www.qu.edu.qa/engineering/graduate.php

**Opportunities**
Qatar's growing economy requires capable managers with solid technical skills. The College of Engineering at Qatar University has already established itself as a recognized leader in many engineering and technology research areas as it has secured a good number of external research grants. The program is consistent with the recent emphasis of the State of Qatar on research and development to build a modern knowledge-based society. The master of science in civil engineering program aims for excellence in engineering research with regional, national, and international importance. Hence, the College of Engineering at Qatar University would further align itself with the vision of His Highness the Emir of Qatar, who stressed for more research by kindly allocating a considerable amount of the country's revenue to research.
Demand for professionals with intermediate level research skills is not new, but the current development activities and the expansion of the economy in Qatar certainly increases the need for individuals with this skill. The need to quickly enhance the research skills of the Qatari workforce is reflected in its sustainable development activities.

## DEGREE REQUIREMENTS

A minimum of 36 credit hours are required to complete the Master of Science in Civil Engineering including the following:
• A minimum of 12 credit hours of Major Core Requirements
• A minimum of 12 credit hours of Major Electives
• A minimum of 12 credit hours in Thesis Requirements

**Major Core Requirements (12 CH)**
Students must complete the following courses:
• GENG 602 Applied Research Methodology
• GENG 603 Advanced Numerical Analysis
• GENG 604 Project Management
• GENG 605 Applied Statistics Analysis
• GENG 606 Graduate Seminar

**Thesis Requirements (12 CH)**
Students must complete the following course:
• GENG 699 Master Thesis

**Major Electives (12 CH)**
Students must complete 12 credit hours from the following courses:
• CVEN 500 Advanced Topics in Civil Engineering
• CVEN 501 Advanced Steel Structures Design
• CVEN 502 Structural Dynamics and Seismic Analysis and Design
• CVEN 503 Design of Bridges and Other Special Structures
• CVEN 504 Finite Element Method
• CVEN 505 Theory of Plates and Shells
• CVEN 506 Advanced Geo-mechanics
• CVEN 507 Traffic Engineering
• CVEN 508 Geometric Design of Highways
• CVEN 509 Traffic Safety Analysis
• CVEN 510 Pavement Management Systems
• CVEN 511 Hydrology
• CVEN 512 Ground Water Contamination
• CVEN 513 Hydraulic Analyses

| **FIRST YEAR (18 credit hours)** | | | |
|---|---|---|---|
| Term | Course # | Course Title | Cr Hrs |
| Fall | GENG 602 | Applied Research Methodology | 3 |
| | GENG 603 | Advanced Numerical Analysis | 3 |
| | GENG 604 | Project Management | 3 |
| **Total** | | | **9** |
| Spring | GENG 605 | Applied Statistics Techni ques | 3 |
| | GENG 606 | Graduate Seminar | 3 |
| | CVEN XXX | Technical Elective I | 3 |
| **Total** | | | **9** |
| **SECOND YEAR (18 credit hours)** | | | |
| Term | Course # | Course Title | Cr Hrs |
| Fall | CVEN XXX | Technical Elective II | 3 |
| | CVEN XXX | Technical Elective III | 3 |
| | MSE 699 | Master Thesis | 3 |
| **Total** | | | **9** |
| Spring | CVEN XXX | Technical Elective IV | 3 |
| | MSE 699 | Master Thesis | 6 |
| **Total** | | | **9** |

## MASTER OF SCIENCE IN ELECTRICAL ENGINEERING

College of Engineering, Engineering Building
Phone: (974) 44034123 / 4303 / 4122
Email: **graduate_studies@qu.edu.qa**
Website: **http://www.qu.edu.qa/engineering/master_brief/**

Program Coordinator
Abdel Magid Hamouda

## ABOUT THE PROGRAM

The mission of the Master of Science in Electrical Engineering (EE) program in the College of Engineering is to prepare students for careers in private and public sectors and for advanced level in research that leads to high scholarly achievements, and advanced knowledge. The major emphasis of the program is to foster a deeper understanding of the engineering research process and learn relevant professional skills. The main research themes in the EE department are power systems and renewable energy, information processing, biomedical engineering and industrial electronics and control. The EE MSc program helps the electrical engineers become more effective technical specialists and scholars, and strengthens their ability to lead people and projects.
It is designed to enhance students' competencies in contributing to the existing body of knowledge and to innovation and creation of new knowledge. Students are expected to equip themselves with strong theoretical and methodological foundations and to develop their ability to independently conduct research.

### Program Objectives

The Master of Science in Electrical Engineering program is a challenging and rewarding way of study for a higher degree. Graduates of the Master of Science in Electrical Engineering program will be able to fulfill most of the following educational objectives:
1. Act professionally and ethically in a modern work environment through effective communication and leadership, and responsible teamwork.
2. Maintain the desire for innovation and engagement in lifelong learning in response to emerging technologies, social developments, and contemporary issues.
3. Conduct research and present results in scientific forums and contribute to the advancement of the scientific body of knowledge.

### Learning Outcomes

By the time a student completes the requirements for the Master of Science in Electrical Engineering program, the student will have achieved the following Learning Outcomes:
1. Able to apply knowledge of mathematics and science in a creative and innovative way to design, to develop and produce useful products and/or services for society; and be able to manage these activities.
2. Able to apply knowledge of specialized Electrical engineering concepts in engineering analysis, and design in a Electrical as well as understand the impact of their engineering solutions in global and societal context.
3. Able to effectively communicate analysis and design ideas to peers, clients and customers.
4. Able to review, analyze, and interpret the body of scientific literature, contemporary issues and innovations in Electrical engineering area,
5. Able to apply and validate innovations and discoveries in the lab or real world settings in efficient and effective ways utilizing modern engineering tools,
6. Able to conduct and produce quality research in Electrical engineering, and understand professional and ethical responsibility.
7. Able to effectively write and present the research output in international journals, conferences, patents, research proposals and other scientific venues.

### Admission Requirements

All applicants to the Master of Science in Electrical Engineering program who meet the following minimum criteria will be considered for admission to Qatar University:
1. Earned Bachelor degree in engineering or related field with minimum cumulative GPA of 2.80 out of 4.00 from a university or college accredited by an international accrediting association or by the Ministry of Higher Education or equivalent in that country, OR achieved a score of no less than 151 on the Quantitative part of the GRE exam, While there is no specified minimum for the Analytical part, the score result will be considered in the evaluation.
2. Achieved a minimum score of 520 on the paper-based TOEFL or equivalent test taken within 2 years of the start of the intended semester of admission OR earned a previous degree from an accredited institution of higher education in a Program where English was the language of instruction.
3. Passing an interview with the College›s admission panel. The panel may request additional bridging course(s).

All applicants to the Master of Science in Electrical Engineering program are required to submit the following documents to the Admissions Department:
- Complete Online Admissions Application
- Final and official university transcripts
- Official GRE score report if submitting GRE scores

• Two letters of recommendation from undergraduate professors or employers
• Health Certificate
• Photocopy of the applicant's Qatar ID card (Non-Qatari applicants must provide a copy of their passport)
• Two recent identical passport-size photographs with white background
• Application Fees

Admission to the Master of Science in Electrical Engineering program takes place in the fall semester only. For additional information on the program, please see their website at:
http://www.qu.edu.qa/engineering/graduate.php

**Opportunities**

Qatar's growing economy requires capable engineer managers with solid technical skills in electrical engineering. The department of Electrical Engineering in College of Engineering has already established itself as a recognized leader in many research areas related to engineering and technologies as has secured a good number of external research grants such as NPRP. The program supports the Qatar National Vision 2030 towards a modern knowledge-based society. The EE MSc program aims for excellence contributions to the electrical engineering research that has regional, national, and international importance. Moreover, the program intends to support those graduates interested in pursuing PhD studies.

## DEGREE REQUIREMENTS

**Master of Science in Electrical Engineering**

A minimum of 36 credit hours are required to complete the Master of Science in Electrical Engineering including the following:
• A minimum of 12 credit hours of Major Core Requirements
• A minimum of 12 credit hours of Major Electives
• A minimum of 12 credit hours in Thesis Requirements

**Major Core Requirements (12 CH)**

Students must complete the following courses:
• GENG 602 Applied Research Methodology
• GENG 603 Advanced Numerical Analysis
• GENG 604 Project Management
• GENG 605 Applied Statistics Analysis
• GENG 606 Graduate Seminar

**Thesis Requirements (12 CH)**

Students must complete the following course:
• GENG 699 Master Thesis

**Major Electives (12 CH)**

Students must complete 12 credit hours from the following courses:
• ELEC 551 Advanced Topics in Electrical Engineering
• ELEC 552 Power System Dynamics & Control
• ELEC 553 Advanced Energy Distribution Systems
• ELEC 554 Advanced Topics in Electric Power System Engineering
• ELEC 555 Statistical Signal Processing
• ELEC 556 Advanced Communication Engineering
• ELEC 557 Communication and Information Theory
• ELEC 558 Bioinstrumentation
• ELEC 559 Biomedical Signal Processing
• ELEC 560 Medical Imaging

## STUDY PLAN

Master of Science in Electrical Engineering Program

| **FIRST YEAR (18 credit hours)** | | | |
|---|---|---|---|
| Term | Course # | Course Title | Cr Hrs |
| Fall | GENG 602 | Applied Research Methodology | 3 |
| | GENG 603 | Advanced Numerical Analysis | 3 |
| | GENG 604 | Project Management | 3 |
| **Total** | | | **9** |
| Spring | GENG 605 | Applied Statistics Techniques | 3 |
| | GENG 606 | Graduate Seminar | 3 |
| | ELEC XXX | Technical Elective I | 3 |
| **Total** | | | **9** |

| **Second YEAR (18 credit hours)** | | | |
|---|---|---|---|
| Term | Course # | Course Title | Cr Hrs |
| Fall | ELEC XXX | Technical Elective II | 3 |
| | ELEC XXX | Technical Elective III | 3 |
| | MSE 699 | Master Thesis | 3 |
| **Total** | | | 9 |
| Spring | ELEC XXX | Technical Elective IV | 3 |
| | MSE 699 | Master Thesis | 6 |
| **Total** | | | **9** |

## MASTER OF SCIENCE IN MECHANICAL ENGINEERING

College of Engineering, Engineering Building
Phone: (974) 44034123 / 4303 / 4122
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Website: **http://www.qu.edu.qa/engineering/master_brief/**

**Program Coordinator**
Abdel Magid Hamouda

## ABOUT THE PROGRAM

The Master of Science degree program in Mechanical Engineering is a research intensive program, which offers a wide range of challenging and rewarding engineering experience. This includes research on energy, thermo-fluids, materials science and engineering, automotive, aerospace, design for sustainability, alternative-energy technologies, manufacturing processes, corrosion science and prevention, computational mechanics, combustion, mechatronics, robotics, computational science and engineering, process optimization, and biomedical engineering. Master degree in Mechanical engineering can be tailored to meet both broad and highly specialized interests (such as Materials Science and Engineering, Manufacturing Systems) can involve applied or fundamental research, and can prepare students for employment in industrial sectors. Students with the master's degree can be also prepared to continue his education toward a doctoral degree in Mechanical Engineering.

The mission of the Master of Science in Electrical Engineering program in the College of Engineering is to prepare students for careers in private and public sectors and for advanced level in research that leads to high scholarly achievements, and advanced knowledge. The major emphasis of the program is to foster a deeper understanding of the engineering research process and learn the professional skills.

The structure of the Master of Science in Mechanical Engineering program is unique, as it helps the engineers become more effective technical specialists, and strengthens their ability to lead people and projects. Conducting original research is an important goal of a Master program study in the College of Engineering, Qatar University. Research provides a type of education not available through classroom teaching. The Master of Science in Mechanical Engineering program is designed to enhance students› competencies in contributing to the existing body of knowledge and to innovation and creation of new knowledge. Students are expected to equip themselves with strong theoretical and methodological foundations and to develop their ability to independently conduct research.

**Program Objectives**
The Master of Science in Mechanical Engineering program is a challenging and rewarding way of study for a higher degree. Graduates of the Master of Science in Mechanical Engineering program will be able to fulfill most of the following educational objectives (Obj):
1. Act professionally and ethically in a modern work environment through effective communication and leadership, and responsible teamwork.
2. Maintain the desire for innovation and engagement in lifelong learning in response to emerging technologies, social developments, and contemporary issues.
3. Conduct research and present results in scientific forums and contribute to the advancement of the scientific body of knowledge.

**Learning Outcomes**
By the time a student completes the requirements for the Master of Science in Mechanical Engineering program, the student will have achieved the following Learning Outcomes:
1. Able to apply knowledge of mathematics and science in a creative and innovative way to design, to develop and produce useful products and/or services for society; and be able to manage these activities.
2. Able to apply knowledge of specialized Mechanical engineering concepts in engineering analysis, and design in a Mechanical as well as understand the impact of their engineering solutions in global and societal context.
3. Able to effectively communicate analysis and design ideas to peers, clients and customers.
4. Able to review, analyze, and interpret the body of scientific literature, contemporary issues and innovations in Mechanical engineering area,
5. Able to apply and validate innovations and discoveries in the lab or real world settings in efficient and effective ways utilizing modern engineering tools,
6. Able to conduct and produce quality research in Mechanical engineering, and understand professional and ethical responsibility.
7. Able to effectively write and present the research output in international journals, conferences, patents, research proposals and other scientific venues.

**Admission Requirements**
All applicants to the Master of Science in Mechanical Engineering program who meet the following minimum criteria will be considered for admission to Qatar University:
1. Earned Bachelor's degree in Engineering or related field with minimum cumulative GPA of 2.80 out of 4.00 from a university or college accredited by an international

accrediting association or by the Ministry of Higher Education or equivalent in that country, OR achieved a score of no less than 151 on the Quantitative part of the GRE exam. While there is no specified minimum for the Analytical part, the score result will be considered in the evaluation.
2. Achieved a minimum score of 520 on the paper-based TOEFL or equivalent test taken within 2 years of the start of the intended semester of admission OR earned a previous degree from an accredited institution of higher education in a Program where English was the language of instruction.
3. Passing an interview with the College›s admission panel. The panel may request additional bridging course(s).

All applicants to the Master of Science in Mechanical Engineering program are required to submit the following documents to the Admissions Department:
• Complete Online Admissions Application
• Final and official university transcripts
• Official TOEFL or equivalent score report or other evidence of English proficiency in accordance with QU Policy.
• Official GRE score report if submitting GRE scores
• Two letters of recommendation from undergraduate professors or employers
• Health Certificate
• Photocopy of the applicant's Qatar ID card (Non-Qatari applicants must provide a copy of their passport)
• Two recent identical passport-size photographs with white background
• Application Fees

Admission to the Master of Science in Mechanical Engineering program takes place in the fall semester only. For additional information on the program, please see their website at: http://www.qu.edu.qa/engineering/graduate.php.

**Opportunities**
Qatar's growing economy requires capable managers with solid technical skills. College of Engineering, Qatar University has already established itself as a recognized leader in many research areas related to engineering and technologies as it has secured a good number of external research grants. The program is consistent with the recent emphasis of Qatar on research and development to build a modern knowledge-based society. The master of science in Mechanical engineering program aims for excellence contributions to the engineering research that has regional, national, and international importance. Hence, College of Engineering Qatar University would further align itself with the vision of His Highness the Emir of Qatar, who stressed for more research by kindly allocating a considerable amount of the country›s revenue to research.
Demand for professionals with intermediate level research skills is not new, but the current development activities and the expansion of the economy in Qatar certainly need individuals with this skill. The need to quickly enhance the research skills of the Qatar workforce is reflected in its sustainable development activities.

## DEGREE REQUIREMENTS

Master of Science in Mechanical Engineering
A minimum of 36 credit hours are required to complete the Master of Science in Mechanical Engineering including the following:
• A minimum of 12 credit hours of Major Core Requirements
• A minimum of 12 credit hours of Major Electives
• A minimum of 12 credit hours in Thesis Requirements

**Major Core Requirements (12 CH)**
Students must complete the following courses:
• GENG 602 Applied Research Methodology
• GENG 603 Advanced Numerical Analysis
• GENG 604 Project Management
• GENG 605 Applied Statistics Analysis
• GENG 606 Graduate Seminar

**Thesis Requirements (12 CH)**
Students must complete the following course:
• GENG 699 Master Thesis

**Major Electives (12 CH)**
Students must complete 12 credit hours from the following courses:
• MECH 581 Advanced Topics in Mechanical Engineering
• MECH 582 Mathematical Analysis of Mechanical Engineering Systems
• MECH 583 Robotics and Automation Technology
• MECH 584 Computational Fluid Dynamics
• MECH 585 Advanced Heat Transfer
• MECH 586 Advanced Fluid Mechanics
• MECH 587 Combustion and Emission
• MECH 588 Energy Conversion
• MECH 589 Renewable Energy Utilization
• MECH 590 Materials Selection
• MECH 591 Conservation and Recycling of Materials
• MECH 592 Product Design
• MECH 593 Advanced Corrosion Engineering
• MECH 594 Failure Analysis
• MECH 595 Advanced Physical Metallurgy
• MECH 596 Fatigue and Fracture of Engineering Materials
• MECH 597 Coatings and Surface Engineering
• MECH 598 Nanotechnology
• MECH 599 Mechanics of Composite
• MECH 600 Advanced Finite Element Analysis

## STUDY PLAN

Master of Science in Mechnical Engineering

| **FIRST YEAR (18 credit hours)** | | | |
|---|---|---|---|
| Term | Course # | Course Title | Cr Hrs |
| Fall | GENG 602 | Applied Research Methodology | 3 |
| | GENG 603 | Advanced Numerical Analysis | 3 |
| | GENG 604 | Project Management | 3 |
| **Total** | | | **9** |
| Spring | GENG 605 | Applied Statistics Techniques | 3 |
| | GENG 606 | Graduate Seminar | 3 |
| | MECH XXX | Technical Elective I | 3 |
| **Total** | | | **9** |

| **Second YEAR (18 credit hours)** | | | |
|---|---|---|---|
| Term | Course # | Course Title | Cr Hrs |
| Fall | MECH XXX | Technical Elective II | 3 |
| | MECH XXX | Technical Elective III | 3 |
| | MSE 699 | Master Thesis | 3 |
| **Total** | | | 9 |
| Spring | MECH XXX | Technical Elective IV | 3 |
| | MSE 699 | Master Thesis | 6 |
| **Total** | | | **9** |

## DOCTOR OF PHILOSOPHY IN ENGINEERING

College of Engineering, Engineering Building
Phone: (974) 44034123 / 4303 / 4122
Email: **graduate_studies@qu.edu.qa**
Website: **http://www.qu.edu.qa/engineering/**

**Program Coordinator**
Abdelmagid Salem Hamouda

## ABOUT THE PROGRAM

The Doctor of Philosophy in Engineering is now offered for the first time in 2011. The mission of the doctoral program in the College of Engineering is to provide students with intensive advanced training in research that leads to the highest level of scholarly achievement, and enables them to conduct research independently to address new challenges as innovators. In the emerging development context in Qatar, this program is designed to fulfill the growing needs for engineers and scientists with advanced education and research experience. The PhD program is highly research-intensive and it is designed to enhance students' competencies in contributing to the existing body of knowledge, innovation and creation of new knowledge and techniques. Students are expected to equip themselves with strong theoretical and methodological foundations and to develop their ability to conduct research independently.
The College of Engineering has already established itself as a recognized leader in engineering and technologies. This leadership in research has further enhanced and complemented its capabilities with the offering of a doctoral degree in engineering. This program is enriched and augmented with the extensive research activities of the College of Engineering, and its world-class faculty members with expertise in sustainable research and reputation. Students enrolled in the program are required to complete a minimum of 6 credit hours of coursework and 54 credit hours of research work. A typical duration of the program is six semesters (three years) and the maximum duration is twelve semesters (six years). The Program currently caters only to full-time students. The Program offers concentration on Architecture, Urban Planning, Chemical Engineering, Civil Engineering, Computer Science, Computer Engineering, Electrical Engineering, Mechanical Engineering, Industrial and Systems Engineering, Engineering Management, Environmental Engineering, and Materials Science and Engineering.

**Objectives**
Graduates of the doctoral program will be able to fulfill the following educational objectives:

1. Foster innovation of new ideas, methods and techniques in science and engineering.
2. Contribute to the advancement of the scientific body of knowledge in engineering and related fields.
3. Lead research and express the results in scientific forums.

**Admission Requirements**
All applicants to the Doctor of Philosophy program who meet the following minimum criteria will be considered for admission to Qatar University:
1. Earned Master's degree in a related field with a minimum GPA of 3.00 out of 4.00 for Master's degree course work from a university or college accredited by an international accrediting association or by the Ministry of Higher Education or equivalent authority in that country.
2. Achieved a minimum score of 520 on the paper-based TOEFL or equivalent test, taken within 2 years of the start of the intended semester of admission OR earned a previous degree from an accredited institution of higher education in a Program where English was the language of instruction.
3. Passed an interview with the College's admission panel.

All applicants to the Doctor of Philosophy program are required to submit the following documents to the Admissions Department:
• Complete Online Admissions Application
• Final and official university transcripts
• Official TOEFL or equivalent score report or other evidence of English proficiency in accordance with QU Policy.
• Health Certificate
• Three letters of recommendation (at least two from instructors or current supervisors) addressing the applicant academic achievement and professional accomplishments
• Proposed thesis topic or general area of research (approximately 1000 words)
• Photocopy of the applicant's Qatar ID card (Non-Qatari applicants must provide a copy of their passport)
• Two recent identical passport-size photographs with white background
• Application Fee

Admission to the Doctor of Philosophy program takes place in the fall and spring semesters. For additional information on the program, please see the following website : **http://www.qu.edu.qa/engineering/phd_brief/phdprogram.php**

**Learning Outcomes**
By the time a student completes all requirements of the program, the student will have achieved the following learning outcomes:
1. Able to systematically review, analyze, assimilate and interpret the body of scientific literature and innovations in

their area of discipline.
2. Apply and validate innovations and discoveries in the lab or real- world settings in more efficient and effective ways.
3. Produce high quality research.
4. Disseminate effectively the research output in reputable international journals, conferences, patents, research proposals and other scientific venues.

**Opportunities**
Graduates from this doctoral program will be in a better position to secure employment in the state of Qatar and worldwide, especially in higher teaching and research institutions, NPRP projects, and in private and Government R & D sectors. The State of Qatar pledged 2.8% of its annual GDP to education and research, in support of building a knowledge-based economy in the future. This expansion in knowledge will create new employment opportunities in research centers such as QSTP, QF, Ministries, National laboratories and it is expected that PhD holders would be one of the major recruits in these entities.

## DEGREE REQUIREMENTS

**Doctor of Philosophy in Engineering**
A minimum of 60 credit hours are required to complete the Doctor of Philosophy in Engineering, including the following:
• A minimum of 15 credit hours in Core Required Courses
• A minimum of 12 credit hours in Concentration Elective Courses
• A minimum of 33 credit hours for the PhD Thesis

**Core Required Courses (15 CH)**
Students must complete 6 credit hours in the courses listed below in addition to 9 CH from the Core Supporting Requirements sub-package.
• DENG 602 Applied Research Methodology
• DENG 621 Graduate Seminar

**Core Supporting Requirements subpackage (9 CH)**
Students must complete 9 credit hours from the following courses:
• DENG 603 Advanced Numerical Analysis
• DENG 604 Applied Statistics Techniques
• DENG 624 Innovation and Technology Management
• DENG 625 Sustainable Development
• DENG 626 Modeling and Simulation

**Thesis Requirement (33 CH)**
Students must complete 33 CH in the Thesis Requirement Course:
• DENG 699 PhD Thesis

**Concentration in Civil Engineering (12 CH)**
Students who choose the Civil Engineering Concentration area must complete 12 CH in the Civil Engineering Electives package as detailed below.

**Civil Engineering Electives package (12 CH)**
Sstudents must complete 12 credit hours from the following courses:
CVEN 505 Theory of Plates and Shells
CVEN 506 Advanced Geo-mechanics
CVEN 507 Traffic Engineering
CVEN 509 Traffic Safety Analysis
CVEN 651 Advanced Special Topics I
CVEN 652 Advanced Special Topics II

**Concentration in Electrical Engineering (12 CH)**
Students who choose the Electrical Engineering Concentration area must complete 12 CH in the Electrical Engineering Electives package as detailed below.

**Electrical Engineering Electives package (12 CH)**
Students must complete 12 credit hours from the following courses:
ELEC 552 Power Systems Dynamics & Control
ELEC 563 Advanced Course in Digital Transmission
ELEC 566 Communication Networks
ELEC 568 Time-Frequency Signal Processing
ELEC 651 Advanced Special Topics I
ELEC 652 Advanced Special Topics II

**Concentration in Mechanical Engineering (12 CH)**
Students who choose the Mechanical Engineering Concentration area must complete 12 CH in the Mechanical Engineering Electives package as detailed below.

**Mechanical Engineering Electives package (12 CH)**
Students must complete 12 credit hours from the following courses:
MECH 564 Finite Element Analysis
MECH 565 Advanced Thermodynamics
MECH 569 Solar Energy Utilization
MECH 588 Energy Conversion
MECH 651 Advanced Special Topics I
MECH 652 Advanced Special Topics II

**Concentration in Materials Science and Engineering (12 CH)**
Students who choose the Materials Science and Engineering Concentration area must complete 12 CH in the Materials Science and Engineering Electives package as detailed below.

**Materials Science and Engineering Electives package (12 CH)**
Students must complete 12 credit hours from the following courses:
MSCE 591 Corrosion Engineering
MSCE 592 Failure Analysis and Prevention
MECH 595 Advanced Physical Metallurgy
MECH 597 Coatings and Surface Engineering
MECH 598 Nanotechnology
MSCE 651 Special Topics I
MSCE 652 Special Topics II

**Concentration in Industrial and Systems Engineering (12 CH)**
Students who choose the Industrial and Systems Engineering Concentration area must complete 12 CH in the Industrial and Systems Engineering Electives package as detailed below.

**Industrial and Systems Engineering Electives package (12 CH)**
Students must complete 12 credit hours from the following courses:
IENG 554 Decision Techniques and Data Analysis
IENG 556 Supply Chain and logistics
IENG 557 Systems Analysis and Design
IENG 558 Robotics and Automation Technology
IENG 651 Advanced Special Topics I
IENG 652 Advanced Special Topics II

**Concentration in Engineering Management (12 CH)**
Students who choose the Engineering Management Concentration area must complete 12 CH in the Engineering Management Electives package as detailed below.

**Engineering Management Electives package (12 CH)**
Students must complete 12 credit hours from the following courses:
• EMP 504 Process Improvement Techniques
• EMP 506 Production and Operations Management
• EMP 507 Enterprise Information Analysis and Business Applications
• EMP 508 Decision Techniques and Data Analysis
• EMP 522 Service Operations Management
• EMP 651 Advanced Special Topics I

**Concentration in Environmental Engineering (12 CH)**
Students who choose the Environmental Engineering Concentration area must complete 12 CH in the Environmental Engineering Electives package as detailed below.
**Environmental Engineering Electives package (12 CH)**
students must complete 12 credit hours from the following courses:
• EEMP 651 Special Topics
• EEMP 505 Environmental Transport and Water Resources
• EEMP 507 Environmental Systems and Modeling
• EEMP 509 PhysicoChemical Processes in Environmental Systems
• EEMP 521 Solid Waste Management
• EEMP 526 Clean Energy Resources

**Concentration in Chemical Engineering (12 CH)**
Students who choose the Chemical Engineering Concentration area must complete 12 CH in the Chemical Engineering Electives package as detailed below.

**Chemical Engineering Electives package (12 CH)**
Students must complete 12 credit hours from the following courses:
• CHME 652 Transport Phenomena
• CHME 653 Advanced Process Dynamics and Control
• CHME 661 Principles of Bioprocess Engineering
• CHME 662 Advanced Chemical Engineering Thermodynamics
• CHME 651 Special Topics I
• CHME 652 Special Topics II

**Concentration in Computer Science (12 CH)**
Students who choose the Computer Science Concentration area must complete 12 CH in the Computer Science Electives package as detailed below.

**Computer Science Electives package (12 CH)**
Students must complete 12 credit hours from the following courses:
• CMPT 507 Advanced Operating Systems
• CMPT 542 Computer Security
• CMPT 564 Storage Area Networks
• CMPT 571 Advanced Algorithm Design and Analysis
• CMPT 581 Special Topics in Computing
• CMPT 583 Special Topics in Network Systems

**Concentration in Computer Engineering (12 CH)**
Students who choose the Computer Engineering Concentration area must complete 12 CH in the Computer Engineering Electives package as detailed below.

**Computer Engineering Electives package (12 CH)**
Students must complete 12 credit hours from the following courses:
• CMPT 541 Advanced Computer Networks
• CMPT 543 Wireless Communication
• CMPT 546 Telecommunications Policies and Regulations
• CMPT 567 Wide Area Digital Networking
• CMPE 651 Advanced Special Topics I

• CMPE 652 Advanced Special Topics II

**Concentration in Architecture (12 CH)**
Students who choose the Architecture Concentration area must complete 12 CH in the Architecture Electives package as detailed below.

**Architecture Electives package (12 CH)**
Students must complete 12 credit hours from the following courses:
PHAP 701 Participatory Design and Planning
PHAP 702 Architecture and Urbanism of Globalized Cities
PHAP 710 Building Performance Assessments and Measurements
PHAP 711 History, Theory, and Criticism in Architecture
PHAP 712 Energy and Buildings
PHAP 751 Advanced Special Topics in Architecture I
PHAP 752 Advanced Special Topics in Architecture II

**Concentration in Urban Planning (12 CH)**
Students who choose the Urban Planning Concentration area must complete 12 CH in the Urban Planning Electives package as detailed below.

**Urban Planning Electives package (12 CH)**
Students must complete 12 credit hours from the following courses:
• MUPD 600 Planning Theory
• MUPD 652 Theory of Urban Form and Design
• PHAP 701 Participatory Design and Planning
• PHAP 702 Architecture and Urbanism of Globalized Cities
• PHUP 753 Sustainable Urbanism
• PHUP 751 Special Topics I
• PHUP 752 Special Topics II

## FULL TIME STUDY PLAN

Doctor of Philosophy in Engineering

| FIRST SEMESTER (12 credit hours) | | | |
|---|---|---|---|
| Term | Course # | Course Title | Cr Hrs |
| Fall | DENG 699 | PhD Thesis | 9 |
| | DENG XXX | One prescribed course | 3 |
| **Total** | | | **12** |

| SECOND SEMESTER (12 credit hours) | | | |
|---|---|---|---|
| Term | Course # | Course Title | Cr Hrs |
| Spring | DENG 699 | PhD Thesis | 9 |
| | DENG XXX | One prescribed course | 3 |
| **Total** | | | **12** |

| THIRD SEMESTER (9 credit hours) | | | |
|---|---|---|---|
| Term | Course # | Course Title | Cr Hrs |
| Fall | DENG 699 | PhD Thesis | 9 |
| **Total** | | | **9** |

| FOURTH SEMESTER (9 credit hours) | | | |
|---|---|---|---|
| Term | Course # | Course Title | Cr Hrs |
| Spring | DENG 699 | PhD Thesis | 9 |
| **Total** | | | **9** |

| FIFTH SEMESTER (9 credit hours) | | | |
|---|---|---|---|
| Term | Course # | Course Title | Cr Hrs |
| Fall | DENG 699 | PhD Thesis | 9 |
| **Total** | | | **9** |

| SIXTH SEMESTER (9 credit hours) | | | |
|---|---|---|---|
| Term | Course # | Course Title | Cr Hrs |
| Spring | DENG 699 | PhD Thesis | 9 |
| **Total** | | | **9** |

## COLLEGE OF PHARMACY

Women's College of Sciences Building
Phone: (974) 4403-5553 / 5554
Email: **pharmacy@qu.edu.qa, mscpharm@qu.edu.qa, pharmd@qu.edu.qa**
Website: **www.qu.edu.qa/pharmacy**

**Dean**
Ayman El-Kadi

**Associate Dean for Academic Affairs**
Sherief Khalifa

**Associate Dean for Research and Graduate Studies**
Feras Alali

**Assistant Dean for Faculty & Student Affairs**
Alla El-Awais

## ABOUT THE COLLEGE

The mission of the College is to prepare our students to provide optimal pharmaceutical care and advance health care outcomes, to promote research and scholarly activity, and to serve as a pharmacy resource for Qatar, the Middle East and the world. Our vision is to be the leading pharmacy school in the Middle East region. The specific goals of the program are:
1. To foster integration of knowledge and skills, and to develop our students' general and professional abilities in a systematic ability-based curricula.
2. To integrate knowledge with practical experience to enhance the career path and development.
3. To contribute to the professional education of practitioners.
4. To advance pharmaceutical and health outcomes by the conduct of internally and externally funded independent and collaborative research.
5. To provide an intellectual and academic atmosphere that is conducive to recruitment and development of qualified faculty.

## DEGREE OFFERINGS

The College of Pharmacy offers the following graduate degree programs:
1. Master of Science in Pharmacy
(Full-time program only)
a. Full-time program only
2. Doctor of Pharmacy programs
a. Full-time program
b. Part-time program

## MASTER OF SCIENCE IN PHARMACY

Women's College of Sciences Building
Phone: (974) 4403-5553 / 5554
Email: **mscpharm@qu.edu.qa**
Website: **www.qu.edu.qa/pharmacy/program/MSc_Program.php**

**Head**
Feras Alali

## ABOUT THE PROGRAM

The Master of Science in Pharmaceutical Sciences is a two-year, minimum 33 credit-hour, post-baccalaureate, thesis-based, research-oriented, graduate studies program, designed to build on the undergraduate degree experience and further enhance student critical thinking and research skills. The MSc (Pharm) program will also prepare students who wish to continue to pursue a subsequent Doctor of Philosophy (PhD) degree. Pharmacy graduate students will specialize in one of the pharmaceutical sciences research focus areas represented in our college, including pharmacognosy, medicinal chemistry, pharmacology, pharmacokinetics, pharmaceutics, clinical pharmacy and pharmacy practice. This list will expand in parallel with our faculty recruitment. The scope of the degree will include any aspect of the discovery, development and use of medicines to improve health care outcomes.

**Objectives**
The Master of Science in Pharmaceutical Sciences aims to:
• Provide an opportunity for students to advance their knowledge, skills and attitudes in special areas of interest within the pharmaceutical sciences, clinical pharmacy and pharmacy practice.
• Prepare students for research and teaching positions requiring personnel with a strong background in these specialty areas.
• Develop students with the research skills needed to carry out basic and applied studies.

**Admission Requirements**
All national and international female and male applicants to the Master of Science in Pharmaceutical Sciences who meet the following minimum criteria will be considered for admission to Qatar University:
1. Completed Bachelor degree or equivalent degree in Pharmacy, Chemistry, Biology, Biomedical Sciences, Human Nutrition, Chemical Engineering or related field with a minimum cumulative grade point average (GPA) of at least 2.80/4.00 from a university or college accredited by an international accrediting association or by the Ministry of Higher Education or equivalent in that country.

2. Students holding a bachelor degree in a discipline other than pharmacy will be required to complete bridge course(s) based on the decision of the program admission committee.
3. The Graduate Record Examination (GRE) score while not required, is recommended as it will strengthen the student application. The GRE score will be considered, when available, in evaluating student application.
4. Achieved a minimum score of 520 on the paper-based TOEFL or equivalent test taken within 2 years of the start of the intended semester of admission OR earned degree from an accredited institution of higher education in a program where English was the language of instruction.
5. Sufficient preparatory background to carry out graduate work in the chosen field.
6. A satisfactory performance in the personal interview (by invitation).
The application process for this degree program is coordinated by the Qatar University Admissions Department. For more information, please see: http://www.qu.edu.qa/pharmacy/program/MSc_Program.php

All applicants to the Master of Science in Pharmaceutical Sciences are required to submit the following documents to the Admissions Department:
• Complete Online Admissions Application
• Official, final and authenticated academic transcripts from all post - secondary educational institutions;
• Official and final TOEFL or Iother evidence of English proficiency in accordance with QU Policy
• Curriculum vitae (C.V.)
• Official, final and authenticated GRE scores (within past 2 years) sent to Designated Institution Code 7574 (if provided)
• Personal statement describing why you wish to pursue this degree
• Three letters of recommendation from undergraduate professors or employers
• Health Certificate
• Photocopy of the applicant's Qatar ID card (Non-Qatari applicants should also provide a copy of their passport)
• Two recent identical passport-size photographs with white background
• Application fee

**Learning Outcomes**
Graduates of the Master of Science in Pharmacy will be able to:
• Apply advanced knowledge and critical thinking skills required to master, generate, interpret and disseminate pharmacy knowledge.
• Work collaboratively with others within and external to the profession for the purpose of dissemination and extension of knowledge in pharmaceutical sciences, clinical pharmacy and pharmacy practice.
• Communicate with diverse audiences in written and spoken English, using a variety of strategies that take into account the situation, intended outcomes of the communication and the target audience.
• Honor their roles as future pharmaceutical scientists through the fulfillment of their obligations to the profession, the community, and the society at large, in accordance with the vision, mission and goals of the College of Pharmacy.
• Conduct themselves in a manner that demonstrates an understanding and adherence to the principles of scholarly integrity and ethical research.

**Opportunities**
Employment opportunities for graduates of the Master of Science in Pharmacy are available in academic institutions, governmental regulatory authorities, hospital and clinic settings, quality assurance and research and development in the pharmaceutical industry and in research laboratories in government and non-government organizations.

## DEGREE REQUIREMENTS

**Master of Science in Pharmaceutical Sciences**
A minimum of 33 credit hours are required to complete the Master of Science in Pharmaceutical Sciences, including the following:
• A minimum of 14 credit hours in Core Requirements.
• A minimum of 6 credit hours of Discipline-specific Package.
• A minimum of 10 credit hours in the Thesis Package.
• A minimum of 3 credit hours in Major Electives.

**Core Requirements (14 credit hours)**
• PHAR620 Research Design, Ethics and Statistical Methodology I
• PHAR621 Research Design, Ethics and Statistical Methodology II
• PHAR625 Life Cycle of Medication: From Discovery to Market Withdrawal
• PHAR640 Graduate Seminar I
• PHAR641 Graduate Seminar II
• PHAR642 Graduate Seminar III
• PHAR643 Graduate Seminar IV
• PHAR650 English-Based Communication Skills for Graduate Students
• PHAR660 Directed Studies in Pharmaceutical Sciences

**Discipline-Specific package (6 credit hours)**
Students must complete a minimum of 6 credit hours in courses that are discipline-specific:
• PHAR670 Advanced Topics in Pharmaceutical Sciences I
• PHAR671 Advanced Topics in Pharmaceutical Sciences II

**Major Electives (3 credit hours)**
Students must complete a minimum of 3 credit hours in Major Elective courses:
• PHAR680 Elective in Pharmaceutical Sciences
**Thesis package (10 credit hours)**
Students must complete a minimum of 10 thesis credit hours:
• PHAR690 MSc (Pharm) Thesis
• PHAR691 MSc (Pharm) Thesis

## STUDY PLAN

Master of Science in Pharmaceutical Sciences

| FIRST SEMESTER (10 credit hours) | | | |
|---|---|---|---|
| Term | Course # | Course Title | Cr Hrs |
| Fall | PHAR620 | Research Design, Ethics and Statistical methodology I | 2 |
| | PHAR625 | Life Cycle of Medication: From Discovery to Market Withdrawal | 2 |
| | PHAR640 | Graduate Seminar I | 1 |
| | PHAR650 | English-Based Communication Skills for Graduate Students | 2 |
| | PHAR670 | Advanced Topics in Pharmaceutical Sciences I | 3 |
| **Total** | | | **10** |
| **THIRD SEMESTER (6 credit hours)** | | | |
| Term | Course # | Course Title | Cr Hrs |
| Fall | PHAR642 | Graduate Seminar III | 1 |
| | PHAR690 | MSc (Pharm) Thesis | 5 |
| **Total** | | | **6** |

| SECOND SEMESTER (11 credit hours) | | | |
|---|---|---|---|
| Term | Course # | Course Title | Cr Hrs |
| Spring | PHAR621 | Research Design, Ethics and Statistical Methodology II | 2 |
| | PHAR642 | Graduate Seminar II | 1 |
| | PHAR660 | Directed Studies in Pharmaceutical Sciences | 2 |
| | PHAR671 | Advanced Topics in Pharmaceutical Sciences II | 3 |
| | PHAR680 | Elective in Pharmaceutical Sciences | 3 |
| **Total** | | | **11** |
| **FOURTH SEMESTER (6 credit hours)** | | | |
| Term | Course # | Course Title | Cr Hrs |
| Spring | PHAR643 | Graduate Seminar IV | 1 |
| | PHAR691 | MSc (Pharm) Thesis | 5 |
| **Total** | | | **6** |

## DOCTOR OF PHARMACY (PharmD) PROGRAM

Women's College of Sciences Building
Phone: (974) 4403-5553 / 5554
Email: **pharmd@qu.edu.qa**
Website: **www.qu.edu.qa/pharmacy/program/PharmD_Program.php**

**Director**
Dr. Kerry Wilbur

## ABOUT THE PROGRAM

The PharmD program is designed to prepare promising BSc (Pharm) graduates for a fulfilling career in advanced clinical pharmacy practice, research and academia.

### Objectives

The PharmD program is designed to meet international standards for an advanced degree in the health sciences field. It involves post-baccalaureate study designed to build on the knowledge, skills, attitudes and values developed during the undergraduate degree experience.
The goal of the PharmD program is to educate pharmacy practitioners to become highly proficient in the delivery and evaluation of pharmaceutical care, and to further advance the practice of pharmacy.

### Admission Requirements

The admission process for the PharmD degree program is designed to ensure that the best and brightest candidates are admitted to the program. Acceptance into the program is highly competitive and considers not only the academic qualifications of applicants but also program resources and capacity for the semester of admission. Only complete admission applications will be considered by the PharmD Degree Program Admissions Committee.
The PharmD degree program admits students either on full-time or part-time basis. Admission as full-time is limited only to select Qatar University graduates who have completed the degree requirements for the BSc (Pharm) degree at Qatar University. This option is not open for non-Qatar University graduates. Admission as part-time is open only to qualified BSc (Pharm) graduates who reside in Qatar and are practicing pharmacy.

All applicants with a complete application to the PharmD degree program who meet the following minimum criteria will be considered for admission to Qatar University:
1. For admission as full-time students, applicants must have completed a minimum of a 5-year BSc (Pharm) degree from Qatar University with a minimum cumulative grade point average (GPA) of 2.80 out of 4.00.
2. For admission as part-time students, applicants must have completed a minimum of a 5-year BSc (Pharm) degree with a minimum cumulative grade point average (GPA) of 2.80 out of 4.00 from a faculty, school or college accredited by an international accrediting association or by the Ministry of Higher Education or equivalent in the country.
3. Achieved a minimum score of 520 on the paper-based TOEFL or equivalent test taken within 2 years of the start of the intended semester of admission OR earned degree from an accredited institution of higher education in a program where English was the language of instruction.
4. Achieved a passing score on the Qatar Supreme Council for Health pharmacist licensure exam (Prometrics-based exam since April 2010).
5. A satisfactory performance in the personal interview (by invitation) as conducted by the Admission Committee.

The application process for this degree program is coordinated by the Qatar University Admissions Department. For more information, please see: http://www.qu.edu.qa/pharmacy/program/PharmD_Program.php

All applicants to the Doctor of Pharmacy program are required to submit the following documents to the Admissions Department:
• Complete Online Admissions Application
• Official, final and authenticated academic transcripts from all post
- secondary educational institutions
• Official and final TOEFL or other evidence of English proficiency in accordance with QU Policy.
• Curriculum Vitae (C.V.)
• Official, final and authenticated Qatar Supreme Council for Health pharmacist licensure exam results (Prometric-based exam taken after April 2010 only)
• Personal statement describing applicant's motivation to pursue a PharmD degree program
• Three letters of recommendation from undergraduate professors or employers
• Health Certificate
• Photocopy of the applicant's Qatar ID card
(Non-Qatari applicants should also provide a copy of their passport)
• Two recent identical passport-size photographs with white background
• Application fee

### Learning Outcomes

The goal of the Qatar University Doctor of Pharmacy (PharmD) degree program is to graduate medication therapy experts. Graduates of the PharmD program will achieve the following general learning outcomes:
• Care Provider - The PharmD student will use their knowledge, skills and professional judgment to provide

pharmaceutical care and to facilitate management of patient's medication and overall health needs.
• Communicator: The PharmD student will communicate with diverse audiences, using a variety of strategies that take into account the situation, intended outcomes of the communication and the target audience.
• Collaborator: The PharmD student will work collaboratively with teams to provide effective, quality health care and to fulfill their professional obligations to the community and society at large.
• Manager: The PharmD student will use their management skills in daily practice to optimize care of patients, to ensure the safe and effective distribution of medications, and to make efficient use of health resources.
• Advocate: The PharmD student will use their expertise and influence to advance the health and well-being of individual patients, communities, and populations, and to support pharmacist's professional roles
• Scholar: The PharmD student will possess and apply core knowledge and skills required to be a medication therapy expert, and be able to master, generate, interpret, and disseminate pharmaceutical and pharmacy practice knowledge
• Professional: The PharmD student will honor their roles as self-regulated professionals through both individual patient care and fulfillment of their professional obligations to the profession, the community, and society at large.
These educational outcomes will be achieved at a level of performance that is higher than a BSc (Pharm) graduate.

**Opportunities**
The PharmD program is designed to prepare promising BSc (Pharm) graduates for a fulfilling career in advanced clinical pharmacy practice, research and academia.

## DEGREE REQUIREMENTS

**Doctor of Pharmacy (PharmD) Program**
A minimum of 36 credit hours are required to complete the PharmD program. Students admitted on part-time basis may be required to complete up to 23 additional credit hours based on the decision of the program admission committee at admission time. The minimum of 36 credit hours required by the program for both full time and part time students over a 12-month period includes the following:
• A minimum of 4 credit hours of Didactic B courses (on campus).
• A minimum of 32 credit hours of Internship courses (off campus).

Students admitted into the program on **part-time** basis may be required to complete the following additional number of credit hours:
• Up to 23 credit hours of Bridge Courses (Qualifying and Didactic A).

**Didactic B Courses (4 credit hours)**
• PHAR605 Advanced Pharmacy Research, Evaluation and Presentation Skills I
• PHAR606 Advanced Pharmacy Research, Evaluation and Presentation Skills II

**Internship courses (32 credit hours)**
• PHAR630 Advanced Professional Practice Internship I
• PHAR631 Advanced Professional Practice Internship II
• PHAR632 Advanced Professional Practice Internship III
• PHAR633 Advanced Professional Practice Internship IV
• PHAR634 Advanced Professional Practice Internship V
• PHAR635 Advanced Professional Practice Internship VI
• PHAR636 Advanced Professional Practice Internship VII
• PHAR637 Advanced Professional Practice Internship VIII

**Bridge Courses (Up to 23 CH)**
Students admitted into the program on part-time basis may be required to complete up to 23 credit hours in bridge courses from the Qualifying courses and from the Didactic A courses packages as specified by the program admission committee at admission time.

**Bridge Courses include:**

**Qualifying courses**
• PHAR 306 Pharmacy Research Evaluation and Presentation Skills II
• PHAR 340 Professional Skills III
• PHAR 341 Professional Skills IV
• PHAR 371 Pathophysiology II
• PHAR 381 Pharmacotherapy II

**Didactic A courses**
• PHAR359 Interpretation of Laboratory Data I
• PHAR360 Interpretation of Laboratory Data II
• PHAR361 Patient Assessment Laboratory I
• PHAR362 Patient Assessment Laboratory II
• PHAR405 Pharmacy Research Evaluation and Presentation Skills III
• PHAR406 Pharmacy Research Evaluation and Presentation Skills IV
• PHAR440 Professional Skills V
• PHAR 446 Rx Elective II
• PHAR 480 Pharmacotherapy III
• PHAR 481 Pharmacotherapy IV

## STUDY PLAN

Doctor of Pharmacy (PharmD) - Full Time

| FIRST SEMESTER (18 credit hours) | | | |
|---|---|---|---|
| Term | Course # | Course Title | Cr Hrs |
| Fall | PHAR605 | Advanced Pharmacy Research, Evaluation and Presentation Skills I | 2 |
| | PHAR630 | Advanced Professional Practice Internship I | 4 |
| | PHAR631 | Advanced Professional Practice Internship II | 4 |
| | PHAR632 | Advanced Professional Practice Internship III | 4 |
| | PHAR633 | Advanced Professional Practice Internship IV | 4 |
| **Total** | | | **18** |

| SECOND SEMESTER (18 credit hours) | | | |
|---|---|---|---|
| Term | Course # | Course Title | Cr Hrs |
| Spring | PHAR606 | Advanced Pharmacy Research, Evaluation and Presentation Skills II | 2 |
| | PHAR634 | Advanced Professional Practice Internship V | 4 |
| | PHAR635 | Advanced Professional Practice Internship VI | 4 |
| | PHAR636 | Advanced Professional Practice Internship VII | 4 |
| | PHAR637 | Advanced Professional Practice Internship VII | 4 |
| **Total** | | | **18** |

## STUDY PLAN

Doctor of Pharmacy (PharmD) - Part Time

| FIRST SEMESTER (4 credit hours) | | | |
|---|---|---|---|
| Term | Course # | Course Title | Cr Hrs |
| Fall | PHAR371 | Pathophysiology II | 1 |
| | PHAR381 | Pharmacotherapy II | 3 |
| **Total** | | | **4** |

| SECOND SEMESTER (3 credit hours) | | | |
|---|---|---|---|
| Term | Course # | Course Title | Cr Hrs |
| Spring | PHAR306 | Pharmacy Research Evaluation and Presentation Skills II | 1 |
| | PHAR341 | Professional Skills IV | 2 |
| **Total** | | | **3** |

| THIRD SEMESTER (8 credit hours) | | | |
|---|---|---|---|
| Term | Course # | Course Title | Cr Hrs |
| Fall | PHAR359 | Interpretation of Laboratory Data I | 1 |
| | PHAR361 | Patient Assessment Laboratory I | 1 |
| | PHAR480 | Pharmacotherapy III | 3 |
| | PHAR440 | Professional Skills V | 2 |
| | PHAR405 | Pharmacy Research Evaluation and Presentation Skills III | 1 |
| **Total** | | | **8** |

| FOURTH SEMESTER (8 credit hours) | | | |
|---|---|---|---|
| Term | Course # | Course Title | Cr Hrs |
| Spring | PHAR360 | Interpretation of Laboratory Data II | 1 |
| | PHAR362 | Patient Assessment Laboratory II | 1 |
| | PHAR481 | Pharmacotherapy IV | 3 |
| | PHAR441 | Professional Skills VI | 2 |
| | PHAR406 | Pharmacy Research Evaluation and Presentation Skills IV | 1 |
| **Total** | | | **8** |

| FIFTH SEMESTER (18 credit hours) | | | |
|---|---|---|---|
| Term | Course # | Course Title | Cr Hrs |
| Fall | PHAR605 | Advanced Pharmacy Research, Evaluation and Presentation Skills I | 2 |
| | PHAR630 | Advanced Professional Practice Internship I | 4 |
| | PHAR631 | Advanced Professional Practice Internship II | 4 |
| | PHAR632 | Advanced Professional Practice Internship III | 4 |
| | PHAR633 | Advanced Professional Practice Internship IV | 4 |
| **Total** | | | **18** |

| SIXTH SEMESTER (18 credit hours) | | | |
|---|---|---|---|
| Term | Course # | Course Title | Cr Hrs |
| Spring | PHAR606 | Advanced Pharmacy Research, Evaluation and Presentation Skills II | 2 |
| | PHAR634 | Advanced Professional Practice Internship V | 4 |
| | PHAR635 | Advanced Professional Practice Internship VI | 4 |
| | PHAR636 | Advanced Professional Practice Internship VII | 4 |
| | PHAR637 | Advanced Professional Practice Internship VII | 4 |
| **Total** | | | **18** |

## COLLEGE OF SHARIA AND ISLAMIC STUDIES

College of Sharia and Islamic Studies Building
Phone: (974) 4403-4416
Email: **ssharia@qu.edu.qa**
Website: **http://www.qu.edu.qa/ar/sharia/index.php**

**Dean**
A. Hakeem Yousuf A. Alkhelaifi

**Associate Dean for Research and Graduate Studies**
Sultan Ibrahim S K Al-Hashmi

**Associate Dean for Academic Affairs**
Yousef Mahmood Al-Sidekey

**Assistant Dean for Student Affairs**
Muhammad Modassir Ali

## DEGREE OFFERINGS

The college of Sharia and Islamic Studies offers the following graduate degree programs:
• Master's of Fiqh and Usul Al-Fiqh
• Master of Quranic Sciences and Exegesis

## MASTER'S OF FIQH AND USUL AL-FIQH

**Head of the Department of Islamic Studies**
Salih K Karim al-Zanki

**About the Program**
This program seeks to prepare graduates carrying a bachelor's degree in Islamic law and Islamic studies to become highly proficient and intelligent experts with the requisite skills of research in the field of Islamic Jurisprudence and its principles and also equipped with the characteristic spaciousness of Islamic law. This would be achieved through an interactive, systematically progressive and stimulating learning environment, based on active learning and the integration of technology which would link theoretical issues to their practical applications and would allow the students to deal with the issues of contemporary life objectively depicting the tolerance of the Islam and its comprehensiveness, diversity, openness and culturally interactive nature.

**Objectives**
The Master›s in Fiqh and Usul al-Fiqh programme aims to assist the student to:
• relate the classic juristic heritage to the contemporary one thereby enabling them to interact with the original sources of Islamic law and utilize it in dealing with the emerging developments and problems,
• develop a juristic mind that has the ability to analyse, criticize and deduce arguments as well as the skills of comparison and judicious preference,
• contribute to research in order to provide practical solutions to con temporary issues related to sharia and juristic disciplines,
• provide the society with those in possession of expertise and competencies in myriad spheres of life for the service of Islam and Muslims.

## ADMISSION REQUIREMENTS

**Eligible applicants must have:**
1. Completed a Bachelor degree from the College of Sharia and Islamic Studies at Qatar University with a minimum cumulative GPA of 2.80 out of 4.00 or equivalent from a university or college accredited by an international accrediting association or by the Ministry of Higher Education or equivalent in that country.
2. Passing the personal interview with the College Admission Committee with a minimum grade of 75%.
3. Admission into the program is competitive and considers the English competencies of applicants.

It is to be noted that applicants admitted to the program with Bachelor degrees other than in Fiqh and Usul Al-Fiqh are to successfully complete bridge courses as required by the college admission committee prior to registering in the master level program courses. Students must successfully complete all required bridge courses with a minimum grade of (C+) before registering in the master program courses.

All applicants to the Master›s of Fiqh and Usul al Fiqh programme are required to submit the following documents to the Admissions Department:
• Complete Online Admissions Application
• Final, official and certified university transcripts
• Health Certificate
• Photocopy of the applicant's Qatar ID card
(Non-Qatari applicants must provide a copy of their passport)
• Two recent identical passport-size photographs with white background
• Application Fees

Admission to the Master›s in Fiqh and Usul al-Fiqh programme is offered in the Fall semester only.
For additional information on the programme, please see their website at: http://www.qu.edu.qa/ar/sharia

**Learning Outcomes**
1. Offer possible verdicts combining the classic juristic tradtion and modernity and be able to comprehend the

situation at hand in its generaland specific context.
2. Produce sound academic papers in the areas of Jurisprudence and its Principles and the purposes of law.
3. Utilize his/her knowledge of jurisprudence, its principles and purposes in setting modern contemporary issues in their correct legal framework.
4. Compare between the Islamic legal system and contemporary legal systems in various areas.
5. Propose appropriate solutions to family issues as well as judicial, economic and financial ones; in addition, be capable of addressing Islamic politics and international relations.

**Opportunities**
Graduates of the Masters of Fiqh and Usul al-Fiqh programme will be suitable for employment in various positions such as:
• Lecturers and Teaching Assistants in universities.
• Researchers in Specialized cultural centers, including the al-Jazeera
Centre for Strategic Studies.
• Teachers in government and independent schools.
• Media centers.
• Employees or Consultants in the following Institutions :
1. Ministry of Awqaf.
2. The Supreme Council for Family Affairs.
3. The Supreme Council of Magistracy.
4. Islamic banks.
5. Zakat Fund.
6. It will also provide a solid foundation to those who would like to pursue doctoral studies.

## DEGREE REQUIRMENTS

A minimum of 36 credit hours are required to complete the Master of Fiqh and Usul al-Fiqh
including the following:
• A minimum of 21 credit hours of Major Core Requirements
• A minimum of 9 credit hours of Major Electives
• A minimum of 6 credit hours in Thesis Requirements
For students holding a baccalaureate degree in a discipline other than Fiqh and and Usul al-Fiqh, they may be required to complete additional bridge courses as specified by the program admission committee at admission time.

**Major Core Requirements (21 CH)**
Students must complete the following courses:
• FIQH 610 Textual Study of Usul Al Fiqh
• FIQH 620 Analogy and Reasoning
• FIQH 630 Themes of Implications
• FIQH 640 Research Methodology of Fiqh and Usul Al Fiqh
• FIQH 650 Islamic Law of Judiciary and Evidence
• FIQH 660 Contemporary Issues of Islamic Family Law
• FIQH 670 Fiqh of Money and Economics

**Thesis Requirements (6 CH)**
Students must complete the following course:
• FIQH 680 Thesis

**Major Electives (9 CH)**
Students must complete 9 credit hours from the following courses:
• FIQH 605 The Purposes of Islamic Law
• FIQH 615 Methodology of Derivation of Legal Opinion and Judgment
• FIQH 625 Islamic Political System
• FIQH 635 Islamic Law of International Relations
• FIQH 645 New Issues of Islamic Worship
• FIQH 655 Islamic Penal Code and Contemporary Issues
• FIQH 665 Islamic Banking Operations
• FIQH 675 Textual Study of Fiqh

**Bridge Course Requirements Package (3-9 CH)**
Students holding a bachelor degree in disciplines other than Fiqh and Usul al-Fiqh, may be required to complete a maximum of three additional bridge courses as specified by the program admission committee at admission time. The credit hours allocated to bridge courses are not counted towards satisfying the 36 credit hours required by the program.

## STUDY PLAN

Master of Fiqh and Usul al Fiqh

| FIRST YEAR (18 credit hours) | | | |
|---|---|---|---|
| Term | Course No. | Course Title | Credit Hours |
| Fall | FIQH610 | Textual Study of Usul al-Fiqh | 3 |
| | FIQH 640 | Research Methodology of Fiqh and Usul al Fiqh | 3 |
| | | Elective | 3 |
| **Total** | | | **9** |
| Spring | FIQH 630 | Themes of Implications (al-Dalalaat) Implications (al-Dalalaat) | 3 |
| | FIQH 670 | Fiqh of Money and Economics (Fiqh al-Maal wa alqtisad) | 3 |
| | | Elective | 3 |
| **Total** | | | **9** |

| SECOND YEAR (18 credit hours) | | | |
|---|---|---|---|
| Term | Course No. | Course Title | Credit Hours |
| Fall | FIQH 660 | Islamic Law of Judiciary and Evidence (Fiqh al-Qada wa al-Ithbaat) | 3 |
| | FIQH 650 | Contempo-rary Issues of Islamic Family Law | 3 |
| | FIQH 620 | Analogy and Reasoning (al-Qiyas wa al-Ta'leel) | 3 |
| | | Elective | 3 |
| **Total** | | | **12** |
| Spring | FIQH 680 | Dissertation (al-Dalalaat) | 6 |
| **Total** | | | **6** |

## MASTER OF QURANIC SCIENCES AND EXEGESIS

College of Sharia and Islamic Studies Building
Email: **ssharia@qu.edu.qa**
Website: **http://www.qu.edu.qa/ar/sharia/index.php**
Phone: (974) 4403-4416

**Head of the Department of Islamic Studies**
Salih K Karim al-Zanki

## ABOUT THE PROGRAM

This program is a unique religious program in the college of Sharia and Islamic Studies. It seeks to prepare graduates carrying Master's degree in Quranic Sciences and Exegesis to become highly proficient, well equipped, deeply rooted and intelligent experts with required skills of understanding and research in the field of Qur'anic Sciences. and Exegesis This goal would be achieved through an interactive, stimulating, cooperative, systematic learning environment, based on active learning, utilizing recent technology. This program would enable Master students in Quranic Sciences and Exegesis and to interpret and defend the Noble Qur'an against western classical and contemporary skepticism and deviated doctrines.

**Objectives.**
The Master of Quranic Sciences and Exegesis aims at achieving the following:
• Deepening skills of research in the field of Qur'anic Sciences (Tafseer) and Exegesis ('Ulum al-Qur'an).
• Shaping and building active, efficient researchers and scholars to face different social, cultural and scientific challenges in the field of Qur'anic Sciences (Tafseer) and Exegesis ('Ulum al Qur'an).
• Integrating and consolidating between classical Arabic and Islamic heritage.
• Advancing and strengthening comparative studies in the field of Qur'anic Sciences (Tafseer) and Exegesis ('Ulum al Qur'an)
• Promoting the dialogue and intercommunication with other human sciences.

**Learning Outcomes.**
After the completion of the Master level program, the students will be able:
• Preparing, writing and publishing high quality scholarly works.
• Practicing obtained cognitive skills in serving the Noble Qur'an.
• Mastering the skills of the interpretation of the Noble Qur'an with its variety doctrines; analytical, thematic and jurisprudential comparative methodologies.
• Exercising his thinking skills in dealing and utilizing related sources to his majoring-specialty.

**Opportunities**
Graduates of the Master of Quranic Sciences and Exegesis will be qualified to be employed in the following positions:
• Ministry of Endowment (al-Awqaf).
• Supreme Education Council.
• Lecturers of religious courses.
• International Centre for Interfaith Dialogue.
• Assistant lecturers in the universities.
• Scientific and research centers.
• Any job vacancy needed for highly qualified candidate in the field of Qur'anic Studies.
• It will also provide a solid foundation to those who like to pursue their doctoral studies.

**Admission Requirements**
All applicants to the Master of Quranic Sciences and Exegesis program who meet the following minimum criteria will be considered for admission to Qatar University:
1. Completed a Bachelor degree from the College of Sharia and Islamic Studies at Qatar University with a minimum cumulative GPA of 2.80 out of 4.00 or equivalent from a university or college accredited by an international accrediting association or by the Ministry of Higher Education or equivalent in that country.
2. Passing the personal interview with the College Admission Committee with a minimum grade of 75%.
3. Admission into the program is competitive and considers the English competencies of applicants.

All applicants to Master of Quranic Sciences and Exegesis are required to submit the following documents to the Admission Department:
• Complete Online Admissions Application
• Final, official and certified university transcripts.
• Health Certificate
• Photocopy of the applicant's Qatar ID card (Non-Qatari applicants must provide a copy of their passport).
• Two recent identical passport-size photographs with white background
• Application Fees

Admission to the Master of Quranic Sciences and Exegesis is offered in the Fall Semester only. For additional information about the program, please see their website at: http://www.qu.edu.qa/ar/sharia

## DEGREE REQUIREMENTS

**Master in Quranic Sciences and Exegesis**
A minimum of 33 credit hours are required to complete the Master of Quranic Sciences and Exegesis including the following:

• A minimum of 18 credit hours of Major Core Requirements
• A minimum of 9 credit hours of Major Electives
• A minimum of 6 credit hours in Thesis Requirements

For students holding a baccalaureate degree in Arabic, in Dawaa and Mass communication, or in a related discipline other than Islamic Studies, the following additional requirement apply:
• Student must complete 12 credit hour in Bridge Course Requirements

**Major Core Requirements (18 CH)**
Students must complete the following courses:
• ISLA 600 Analytical Exegeses
• ISLA 601 Qur'anic Sciences
• ISLA 602 Inimitability of al Qur'an
• ISLA 603 The Qur'an and Contemporary Hermeneutics
• ISLA 604 Principles of Qur'anic Exegeses
• ISLA 605 Research Methodology in Qur'anic Studies

**Thesis Requirements (6 CH)**
Students must complete the following course:
• ISLA 690 Thesis

**Major Electives (9 CH)**
Students must complete 9 credit hours from the following courses:
• ISLA 606 Textual Studies in the Books of Tafseer
• ISLA 607 Qur'anic Rhetorics
• ISLA 608 Modern Trends of Qur'anic Exegeses
• ISLA 609 Ranks of Qur'anic Exegetes
• ISLA 610 Science of Divine Laws in Nature
• ISLA 611 Introduction to the Objectives of al Qur'an
• ISLA 612 Scholarly Responses to Skepticisms about the Noble Qur'an

**Bridge Course Requirements package (12 CH)**
Students holding a bachelor degree in Arabic, in Dawa and Mass communication, or in a related discipline other than Islamic Studies, must complete 12 credit hours in Bridge Course Requirements consisting of four courses as specified by the program admission committee at admission time.

## STUDY PLAN

Master of Quranic Sciences and Exegesis

| FIRST YEAR (18 Credit Hours) | | | |
|---|---|---|---|
| Term | Course No. | Course Title | Credit Hours |
| Fall | ISLA604 | Principles of Qur'anic (Usul al Tafseer) | 3 |
| | ISLA605 | Research Methodology in Qur'anic Studies (Usul al Bahth wa al Tahqiq fi al Dirasat al Qur'aniyah) | 3 |
| | | Elective | 3 |
| **Total** | | | **9** |
| Spring | ISLA606 | Textual Studies in the Books of Tafseer ( Dirasat Nassiyyah fi Kutub al Tafseer) | 3 |
| | ISLA600 | Analytical Advanced (Tafseer Tahlili Mutaqaddim) | 3 |
| | | Elective | 3 |
| **Total** | | | **9** |

| SECOND YEAR (18 Credit Hours) | | | |
|---|---|---|---|
| Term | Course No. | Course Title | Credit Hours |
| Fall | ISLA603 | The Qur'an and Contemporary Hermeneutics ( Naqd al Qiraat al Mu'asarah lil Qur'an) | 3 |
| | ISLA602 | Inimitability of al Qur'an (I'jaz al Qur'an ) | 3 |
| | ISLA601 | Qur'anic Sciences Advanced ('Ulum al Qur'an Mutaqaddim) | 3 |
| | | Elective | 3 |
| **Total** | | | **12** |
| Spring | ISLA690 | Thesis | 6 |
| **Total** | | | **6** |

## CHAPTER 10
## COURSE LISTINGS

**ACCT 501**
**Introduction to Accounting**
**Credit Hours: 3**
Presentation of theoretical and practical aspects of accounting information relevant to businesses. Examines basic accounting concepts, preparation and usages of financial statements (including income statement), balance sheet, statement of stockholders' equity, and statement of cash flow.

**ACCT 521**
**Intermediate Accounting I**
**Credit Hours: 3**
This course introduces essential financial accounting concepts and standards related to corporate reporting, with special emphasis on preparation of financial statements. Areas studied include cash, receivables, inventory, investment, plant and equipment, and revenue recognition.

**ACCT 522**
**Intermediate Accounting II**
**Credit Hours: 3**
This course provides a continuation of financial accounting concepts and standards related to corporate reporting. Areas to be studied include current and long-term liabilities, owners' equity, leases, statement of cash flow, and accounting changes and error analysis.

**ACCT 523**
**Accounting Information Systems**
**Credit Hours: 3**
This course focuses on concepts and procedures related to accounting information systems. Areas studied include system design and implementation, the relationship between accounting information systems and other information systems within the organization, flowcharts, and computer applications and tools.

**ACCT 531**
**Cost and Management Acct.**
**Credit Hours: 3**
This course provides an in-depth study of cost/management accounting concepts and principles as they apply to manufacturing and service environments. Students are introduced to cost accumulations and assignments using traditional and contemporary cost accounting approaches, and budgeting. The use of accounting information in planning, controlling, and evaluating business decisions both short- and long-term are covered.

**ACCT 533**
**Auditing I**
**Credit Hours: 3**
This course introduces basic concepts of auditing attestation and assurance. Areas studied include the quality control standards and the code of professional ethics, regulation and legal liabilities audit evidence and audit programs, assessment of risks and materiality, and audit reports.

**ACCT 601**
**Financial Accounting**
**Credit Hours: 3**
This course introduces financial accounting for various business entities. Topics covered include accounting concepts and principles based on Generally Accepted Accounting Principles (GAAP). Emphasis is placed on analyzing, recording, classifying, and communicating information including the preparation of financial statements.

**ACCT 602**
**Managerial Acct for Dec Making**
**Credit Hours: 3**
Preparation, analysis, interpretation and use of accounting information in the guidance and control of a business enterprise are discussed. The course concentrates on the decision-making process in measuring and reporting. Sophisticated approaches in budget preparation, performance evaluation, profit centers and transfer pricing are covered.

**ACCT 603**
**International Accounting**
**Credit Hours: 3**
This course focuses on accounting from a global perspective. The International Financial Reporting Standards are becoming the wide spread set of accounting standards adopted by several countries. Students study the impact of culture on the design of national accounting systems, national vs. international accounting standards setters, financial reporting and disclosure in the global era.

**ACCT 606**
**Corporate Governance**
**Credit Hours: 3**
This course considers current academic thinking about corporate governance and ownership. Topics include business structure of the firm, the role of institutional investors in the public corporation, major differences in large firm corporate governance around the world, and shareholder primacy.

**ACCT 608**
**Commercial Law**
**Credit Hours: 3**
This course provides a survey of important legal issues in commercial law. Emphasis is placed on the contracting process, payment for contracts (particularly through the use of negotiable instruments), and security for payments (particularly suretyship and secured transactions). The course also briefly deals with bills of lading and warehouse receipts (with emphasis on the negotiability of these documents) and letters of credit.

**ACCT 611**
**Business Ethics & Legal Envi.**
**Credit Hours: 3**
This course covers legal and case analysis of court systems and dispute resolution, contracts, employment, and professional obligations that influence the decision making process of managers. Discussions take place about the relationship between personal values, business conditions and the legal environment. Business law of other countries and international agreements that govern the business environment in the world are also examined.

**ACCT 612**
**Special Studies in Accounting**
**Credit Hours: 3**
This includes directed study and research on selected accounting topics, including the development of accounting thought and research in international accounting, professional ethics and managerial and financial accounting.

**ACCT 613**
**Accounting Research Methods**
**Credit Hours: 3**
This course introduces research methods used in accounting. It is intended to help Master's students to scientifically approach accounting related problems through a clear structure of ideas, using scientific methods to collect and analyze data. This is a "hands-on" course, covering topics such as developing the research idea, theory and hypothesis development, survey research, experimental research, case studies research, archival research, and tips on how to write the research report.

**ACCT 623**
**Adv.Cost-Managerial Accounting**
**Credit Hours: 3**
This course offers a study of contemporary developments and cover topics in the area of cost and managerial accounting. Topics include a discussion of quantitative techniques and their applicability to accounting problems.

**ACCT 633**
**Gov. & Non?profit Accounting**
**Credit Hours: 3**
A study of the objectives and standards underlying accounting and auditing practices in non-profit organizations, including governmental entities, colleges and universities, hospitals, and other non-profit organizations. Topical coverage includes the system of fund accounting, financial report preparation and analysis, and related audit and ethical considerations.

**ACCT 643**
**Fraud Detection and Prevention**
**Credit Hours: 3**
This course offers in-depth study of how and why fraud is committed, how fraudulent conduct can be deterred, and how allegations of fraud should be investigated and resolved.

**ACCT 653**
**Adv. Acct. Information Systems**
**Credit Hours: 3**
A Survey of advanced accounting information systems technologies used to enhance business process operations and management of risks and controls. Topics relevant to information technology as it pertains to the accounting profession and the changing nature of accounting information systems are examined.

**ACCT 663**
**Business Info. Consulting**
**Credit Hours: 3**
This is the capstone course for the Master of Accounting program. The student will experience an integrative course that is intended to address the knowledge base needed by accounting professionals in serving as consultants. Principles and concepts are applied through the analysis and presentation of case studies dealing with current issues or emerging trends in the fields of accounting.

**ARAB 500**
**Theo. & Res. Method. Ling.**
**Credit Hours: 3**
The aim of this course is to enable students to master the principles of research in linguistics. The main focus will be on the knowhow of dealing with cognitive problems and issues that occupy the science of language. The course will further address and define the methods of linguistics theory. Students will be expected to study a selection of reputable research and take part in presentations and discussions that will articulate their research and debating skills. The learning environment of the class will be student?oriented, utilizing a variety of assessment tools,

such as: papers, presentations, research projects and assignments.

**ARAB 501**
**Theo. & Res. Methodologies**
**Credit Hours: 3**
The aims of this course is to provide students with the theoretical tools necessary in grasping theories emerging from the Arts and Social Sciences and utilizing them in research, analytical studies and debates. This course will distinguish between scientific provisions and criticisms. Students will gain knowledge through scientific theory, principles and their procedures in the humanities, especially with how they relate in terms of philosophy and scientific reason. The learning environment of the class will be student?oriented, utilizing a variety of assessment tools, such as: papers, presentations, research projects and assignments.

**ARAB 502**
**Seminar in Linguistics**
**Credit Hours: 3**
This seminar aims to equip students with necessary research skills in the Arabic language, dealing with concepts and approaches of linguistics and language development. It aims to teach students the mechanisms of interpreting linguistic research in the context of different language curriculum with applied studies. Students will be assessed through the following tools: papers, presentations, research projects and assignments.

**ARAB 503**
**Seminar in Lit.&Literary Crit.**
**Credit Hours: 3**
This seminar aims to equip students with extensive research skills in methodology and critique in the study of Arabic literature as manifested in a variety of literary works. Students will be actively taking part in a multitude of workshops and open discussions analyzing the different perspectives and mechanisms used in Arabic literature (i.e. stories, novels, drama, etc.). Students will be assessed through the following tools: papers, presentations, research projects and assignments.

**ARAB 504**
**Seminar in Comp.Cult. Stud.**
**Credit Hours: 3**
This seminar aims to equip students with the research skills necessary for comparative studies, specifically those related to Arabic literature as to foreign language literature. Students will focus on literary subjects that are widely debatable in the Arts realm through ongoing applied workshops.

**ARAB 505**
**Linguistic Thought Among Arabs**
**Credit Hours: 3**
This course prepare students to identify the efforts of advent Arab linguists with their foundation work on contemporary linguistics studies. It introduces and links between the old and new linguistic studies through introducing students with the methodological foundations originating from early research on acoustics, morphology and lexicon. Topics to be covered in the course include: Historical and Cultural framework on the origin of linguistics research to the Arabs.; Arab Scholars' description of Arab vocals; Exploring ways to study issues and structure of the Arabic word; Grammatical research methodologies used by Arab linguist; Significance of lexical and research methods; and Evaluating language research methods of the Arabs. Students registering in this course will be assessed through the following tools: papers, presentations, research projects and assignments.

**ARAB 506**
**Critical&Rhet.Thou.Among Arab.**
**Credit Hours: 3**
This course aims to make student delve deeper into critical and rhetorical thought that has been developed in past Arab literature. For this reason, study will be in the form of applied research studying concepts of rhetorical theories developed by Arab veterans with a focus on simulation, concepts of pronunciation, and literary functions. Furthermore students will be expected to study the theoretical relationship between the past Arab literature and the theories presented by Aristotle in his books concerning the art of poetry and rhetoric. Students will thus be able to distinguish between acculturation and intentional conscious that took place between Arab and Greek culture. Students will be assessed through the following tools: papers, presentations, research projects and assignments.

**ARAB 507**
**Phonetics**
**Credit Hours: 3**
This course aims to deepen students' understanding of the physiological properties of sound and principles of phonology as applied to the Arabic language and spoken dialects. Students will compare spoken acoustic phenomena and deterministic over the Arab voice as to other languages. It also deals with the decision to test several theories of phonology through applied field research and laboratory data collection and audio from multiple sources, with a focus on Optimality Phonology. This course will provide students to take part in field research and laboratory data collection and audio from multiple sources. Students will be subject to the latest means of testing and analysis in both

a self?learning and collaborative environment. A variety of assessment tools will be used to assess students, including: research papers, and projects.

**ARAB 508**
**Contemporary Literary Theory**
**Credit Hours: 3**
This course seeks to guide student researchers at the Masters level to review various developments in the field of critical studies of modern and contemporary literature. This course will further introduce students to different theories such as: theory of reading and receiving, the theoretical structural and post? structuralism (the death of the author), the theoretical semiotics and stylistics theory, Freudian theory, the theory of reflection, the theory of displacement and feminist theory in literary criticism. Students will gain the ability to represent theories and analyze the literary discourse, and identify the leading figures in critical theory on, such as: Roland Barthes, Bakhtin, Lucien Goldman and Edward Said. A variety of assessment tools will be used to assess students, including: research papers, and projects.

**ARAB 509**
**Linguistic and Lexical Terms**
**Credit Hours: 3**
This course aims to deepen students' understanding on theories in the development of modern lexicon, and their applications in lexicography Arabic. There will also be a focus on the insight of Arabic language academies in Cairo and Damascus, Baghdad and Amman in the work and development of educational, historical scientific and contemporary dictionaries, and the drafting of great lexicon, and the lexicon of history, and dictionaries. In addition students will be introduced to the efforts of the Office of Arabization in Rabat, connecting them to theoretical and analytical studies to systematically address the achievements lexical modern Arabic. The course will offer a learning environment that allows students to develop research skills, and therefore instructors will use the following assessment tools: research paper, offers research and projects,and some assignments.

**ARAB 510**
**Syntax**
**Credit Hours: 3**
The aim of this course is to enable students to master the conventional system of works by studying their rules in forming grammatical sentences in linguistics. Students will also study the patterns of formation of sentences and phrases found in the Arabic language. The course will focus on the principles of structural analysis and application of the Arabic language and dialects spoken while also comparing it to other languages such as English, French, Chinese and Russian. The course will allow students to collect linguistic data from multiple sources for the purpose of analysis. The course will offer a learning environment that allows students to develop research skills, and therefore instructors will use the following assessment tools: research paper, offers research and projects, and some assignments.

**ARAB 511**
**Issues of Arab Poetry**
**Credit Hours: 3**
The aim of this course is for students to master the most important technical issues in classical and modern Arabic poetry through the study of historical and social contexts. The course will focus on the issues that represent distinctive achievements and that brought about an increase in awareness and understanding of Arabic poetry. Furthermore, the course will discuss the manifestation of Arabic poetry in Arab culture and its linkages to popular world culture. Some of the topics that will be discussed include: Awareness and structure of the Arabic poem; Reality or artificiality in the creation of a poem; Manifestation of modernity in Arabic poetry; The structures of meaning and functions of text; Poetry and Islam; Prose; Components of Arabic speed in poetry; and Poetic exchange between Arabic and western criticism. A variety of assessment tools will be used to assess students, including: research papers, and projects.

**ARAB 512**
**Metaphorical Theory**
**Credit Hours: 3**
This course aims to introduce students to extensive metaphorical theories and how they differ in Arabic and Western poetry. From this perspective, the course will focus on metaphorical theories such as; theory of knowledge, replacement theory and contextual theory. Furthermore, the course will delve into metaphorical approaches such as; Gestalt's approach, Anthropological approach, philosophical approach, grammatical approach, while concentrating on psychological metaphorical approaches and the importance in analyzing Arabic poetry and criticism. A variety of assessment tools will be used to assess students, including: research papers, presentations, projects and assignments.

**ARAB 513**
**Literary Discourse**
**Credit Hours: 3**
This course aims to provide students with the skill necessary to analyze cultural texts in order to identify discourses through a scientific method. The course will address several procedural issues related to the

art of composition from manuscripts collections while applying elements of investigative procedures. A variety of assessment tools will be used to assess students, including: research papers, presentations, projects and assignments.

**ARAB 514**
**The Hist.of Literary Criticism**
**Credit Hours: 3**
This course aims to equip graduate students with the background on the history of Arab and Western literary criticism, including their various schools of thought. The course will enable students to become familiar with the different stages of literary criticism, ranging from Aristotle, the role Arabic literary criticism and its contribution to 19th century and up to modern American literary criticism. A variety of assessment tools will be used to assess students, including: research papers, presentations, projects and assignments.

**ARAB 515**
**Philosophy & Critical Thinking**
**Credit Hours: 3**
This course aims to introduce graduate students to different methods of philosophical critic through critical thought. This course is intended for students who will follow the 'Literacy Criticism' concentration of the MA in Arabic program, since it will equip them with cultural contexts and knowledge on the roots of philosophical theories. The objective of the course is to raise understanding through analyzing philosophical and intellectual problems that arise from critical criticism. A variety of assessment tools will be used to assess students, including: research papers, presentations, projects and assignments.

**ARAB 516**
**Post?Colonial Literature**
**Credit Hours: 3**
This course aims to introduce students with insight on post?colonial cultural theory, which is considered one of the main components of the 'Post theories' that include, post structuralism and post modernism. 'Post theories' that have dominated the cultural scene in terms of literary criticism in Cultural Studies have been considered to be very much part of the post?colonial literature of the 80's and 90's, studying the literature written by Edward Said and Frantz Fanon. The course will also address literary texts that discuss concepts of post?colonial literature in the Arab world through analyzing the literary work of; Mohammad Deeb, Taher Bin Jalloun, Assia Jaban, Yousif Idris, Tayb Saleh and Yehia Al Tahir Abdallah. A variety of assessment tools will be used to assess students,

**ARAB 517**
**Lite. & Theo.of Cont. Psyc.**
**Credit Hours: 3**
This course aims to make students delve deeper into the study of literature based on achievements in psychology and its influence on the analysis of literary discourse. The course will particularly focus on the decisions of Sigmund Freud, Alfred Adler, Carl Gustav Jung, Mircea Eliade, Gaston Bachelard and Gilbert, particularly their work concerning the structure of language and structure of the human imaginary (imaginary) and archetypes. The course will also focus on the achievments and applied studies done by Arab scholars and ciritics, such as; Taha Hussein, and Azzedine Ismail and Yusuf Sami Alyousuf. Student will thus be able to realize the failure and limitations of prominent psychological literary figures through a thorough study of their essays. A variety of assessment tools will be used to assess students, including: research papers, presentations, projects and assignments.

**ARAB 518**
**Social Linguistics**
**Credit Hours: 3**
This course aims to address the relationship between language and the social environment in which they interact with all aspects of economic, political, religious and historical significance. The course focuses on bilingualism in the Arab world and the issue of localization and the problem of language planning especially in the fields of education and economic development and the relationship between Arabic and other languages, tradition and modernity and development, and globalization. Also this course will address the particularities of language in the Arab world and compares the linguistic status in other states. Students will practice the principles of research and methods in this field through collecting field data, and analysis. A variety of assessment tools will be used to assess students, including: research papers, presentations, projects and assignments.

**ARAB 519**
**The Arab Language in the World**
**Credit Hours: 3**
This course deals with the Arabic language and its impact outside the borders of the Arab world, through exploring its history and phases of the its spread outside the Arabian Peninsula into Asia, Africa and Europe. The course will also focus on the factors that aided the spread of the Arabic language in particular religious, cultural and scientific. Furthermore, an in?depth examination of Arabic's different stages and multiple levels of acoustic and morphological and lexical, and at the level of the letters in alphabetical order: such as language Farsi, Turkish, Swahili, Berber, Spanish, German, French, English and

many other languages in Asia and sub?Saharan Africa, and the effect that impact of these languages in the Arabic language. The course will also expose students to the problem of globalization and its repercussions on the Arabic language. A variety of assessment tools will be used to assess students, including: research papers, presentations, projects and assignments.

**ARAB 520**
**The Study of Arabic Dialects**
**Credit Hours: 3**
This course is intended to introduce students to the multiple Arabic dialects, as it is an important component of the study of linguistics. The course will aim to introduce students with the principles of linguistics, comparative and processed to the similarities the difference between the different Arabic dialects used in the Arab world and some countries Africa and Asian. The main focus will be on the development of dialects and conditions of their formation and evolution, referring to the characteristics of acoustic and morphological, structural and lexical and its interaction with the classical Arabic language. It will also address the different theories of Arabic Linguists and how they were influenced by the heritage of Arabic dialects and the readings and their relevance to other dialects. Students will have the opportunity to test these theories through practical applications.

**ARAB 521**
**Text Analysis and Discourses**
**Credit Hours: 3**
This course aims to introduce the concept of discourses in different texts, and the relationship between them through an in?depth study of text and linguistics. The course will also deal with the concept of analysis and deconstruction, the theory of grammatical patterns and consistency, and the theory of grammatical text spaces grammatical, and the impact of context in implicit text, approaches to linguistics. It also addresses the A variety of assessment tools will be used to assess students, including: research papers, presentations, projects and assignments.

**ARAB 522**
**Narrative of Mode. Arab. Lite.**
**Credit Hours: 3**
This course aims to familiarize students with modern Arabic narrative through research, analysis and critical thinking. The course will focus on 20th century modern Arabic narrative along with structuralism and post structuralism in the West. An in?depth analysis on narrative texts, and accurate classification of the components of narrative texts, in order to raise awareness of the societal contrasts apparent in Arab culture in contexts of the narrative texts of Arabic. A variety of assessment tools will be used to assess students, including: research papers, presentations, projects and assignments.

**ARAB 523**
**Literature of the Arab Gulf**
**Credit Hours: 3**
This course aims to enable students with the knowledge of literary works originating in the Arab Gulf, and to what extent it has been influenced by Gulf culture and regional issues. Students will study the characteristics of contemporary literature in the Gulf and the concept of identity in Arab Gulf literary context. Furthermore, Gulf literature will be analyzed through its relationship with Arab and Western literature. A variety of assessment tools will be used to assess students, including: research papers, presentations, projects and assignments.

**ARAB 524**
**Practical Applications**
**Credit Hours: 3**
This course aims to equip students with methods of scientific and ethical research in preparation of a Master's degree. The course will includes activities centered on how to select a topic, scope, and method of data collection. Students will be familiarized with different types of research and techniques of research writing, presentation and dissemination. It also will give students the opportunity to present their research projects to their classmates, to benefit from their peers' experience.

**ARAB 525**
**Cultural Criticism**
**Credit Hours: 3**
This course will provide graduate students enrolled in either the Comparative Cultural Studies or Literary Criticism concentrations with knowledge on the rhetorical dimensions and contextual review that are implicit to cultural patterns and cultural discourses of Arabic Literature. A variety of assessment tools will be used to assess students, including: research papers, presentations, projects and assignments.

**ARAB 526**
**Post Modernism**
**Credit Hours: 3**
This course is intended to transmit to students the stages of postmodern critical thought in three stages: (1) The terminological and historical referencing to post?modernism theory. Students will research the background of political and social culture that emitted from European literature and its manifestation in contemporary philosophical Arab literature; (2) Study the relationship between the cognitive thought and philosophy of

postmodern theory; (3) Study the relationship between the theory and principles of postmodern literary criticism. A variety of assessment tools will be used to assess students, including: research papers, presentations, projects and assignments.

**ARAB 527**
**Global Literary Comparison**
**Credit Hours: 3**
This course examines the theoretical and practical efforts that deal with literary creativity, in Muslim communities with different languages, including in Arab, Persian, Indian, French and English. A variety of assessment tools will be used to assess students, including: research papers, presentations, projects and assignments.

**ARAB 528**
**Comparative Literature**
**Credit Hours: 3**
This course gives students the opportunity to observe the acculturation taking place between Arabic literature and classical and modern literature, especially in regards to the use of religious symbols and historical figures, symbols, mythical and the way all the literature in employing them.A variety of assessment tools will be used to assess students, including: research papers, presentations, projects and assignments.

**ARAB 548**
**Thesis**
**Credit Hours: 6**
This course aims to enable students to enter the academic research system by directly framing them throughout the theses stages at the level of the program; in order to receive an academic grade. This course differs from previous courses for being a practical course which depends on direct supervision, guidance and advising through weekly meetings during which there is careful follow up on the researchers work in stages that form the research material, and during which he/she is provided with strict supervision. That all intending by the end of the second semester (spring) to submit the thesis for defense.

**BIOL 501**
**Earth Systems**
**Credit Hours: 3**
The core course provides a basic foundation of understanding of the processes in environmental systems that link biogenic and abiogenic components. Topics covered include the complex couplings and feedback mechanisms linking the geosphere, biosphere, hydrosphere, and atmosphere, and the cycling of components (including nutrients) from microbial systems to “higher-order” systems, including human. In this regard, the dependence of Earth Systems on the different kingdoms of life, especially microbial and photosynthetic systems, emphasizing for example “atypical communities” found in thermal deep-oceansea vents, is an especially important concept for the students to garner from the course. Of particular emphasis is the cycling of C, N, P, and S through natural and man-made systems with relevance to freshwater and marine aquatic environments and of especial relevance to environmental processes. The course focuses intensively on the basic principles of complex systems, through theoretical and practical considerations, as well as consideration of those case studies which illustrate them. The review and discussion of these topics, in addition to: energy resources and the environment; natural hazards: prediction and risk: society, the environment and public policy; steps from environmental science to effective policy; agriculture and global change provides the necessary basic understanding that the students carry with them through the curriculum.

**BIOL 502**
**Geog. Info. Syst (GIS) & Data.**
**Credit Hours: 3**
Through this course, students gain an advanced knowledge of information systems and how they are linked (with particular reference to the ministries of Qatar), computer science, and the analytical tools and approaches used in GIS. Students are taught how to implement the knowledge, tools and techniques of database management, application development, and analytical assessment, to address geographic information requirements, issues of importance to the environment, and to answer questions with a spatial/global perspective. Resources for this course include the Environmental Studies Center of Qatar University, where GIS is used effectively in a range of environmental issues, as well as ongoing research in the Department of Geography.

**BIOL 503**
**Expe. Design & Stat. Analysis**
**Credit Hours: 3**
To have a successful career in environmental science, it is essential for graduates to acquire an understanding of the principles of experimental design and statistics, including the ability to both obtain a critical appraisal of current knowledge, as well as develop a statistically valid framework and design for research. The primary purpose of this course is to provide a firm basis in experimental design, as well as an understanding of the reasoning of statistics, which allows students to design, complete, and critique their own research. The course gives students the opportunity to apply these principles through analysis of data, and allows them to review critically, literature of relevance to their area of research. Students study these

concepts in a practical sense through analysis of data from case studies.

**BIOL 504**
**Environmental Chemistry**
**Credit Hours: 3**
This course covers current analytical techniques, and the scientific background and skills needed for research in environmental chemistry. Topic areas include the development of advanced technologies and materials for air and water purification and for the saving and storage of energy, water and air pollution control, soil and sediment remediation, environmental technology, chemical limnology, and groundwater chemistry. Students design mass and energy flows and quantify matter transformations, in particular those of pollutants; analyze scientific literature; describe and evaluate the role of compounds and processes in soil, water and air at the molecular-mechanistic level; identify effects and toxicity of pollutants on living organisms; and evaluate methods for studying of eco-toxicology and risk assessment.

**BIOL 505**
**Graduate Seminar in Envi Sc.**
**Credit Hours: 1**
The graduate seminar is graded P/F and is compulsory for all students in the M.Sc. program. The seminar is presented once per week, and is designed so that during the progress of the semester, different speakers present information on a range of topics, which provides a comprehensive survey of Environmental Science. Grading is based upon attendance, short on-line quizzes and preparedness. The important feature of the seminar is that it not only provides a critical appraisal of salient environmental issues, it also serves to help students make informed choices when they select elective courses. For example, students may select an elective based upon interest generated in a talk in the seminar. Also, by declining to take some electives, students should not compromise their holistic appreciation of environmental issues, since they are exposed to a spectrum of topics in the seminar. All reading materials, case studies, and instructional content are available online. Students read the material for each topic, and take a self-paced quiz to test their comprehension of the material before the presentation in which the material is discussed. In-depth debate of the seminar topic and materials is encouraged. The responsibility for organizing the seminar is on a rotating basis within the faculty of DBES.

**BIOL 506**
**Micr. Proc. in Envi Syst.**
**Credit Hours: 3**
This course focuses on microbiological processes that may be applied to a broad range of environmental concerns. Wastewater Characteristics, Chemical and Biochemical Oxygen Demand, Kinetics of Suspended Growth Biological Processes, Kinetics of Attached Growth Biological Processes, Nitrification, Denitrification, Biotransformation of Hazardous Compounds are some of the topics covered in this course.

**BIOL 507**
**Regu. the Envi.&Qtr Publ. Poli**
**Credit Hours: 3**
The Qatar National Vision 2030 (QNV 2030), launched in October 2008 by His Highness Sheikh Tamim bin Hamad Al Thani, Heir Apparent, defines long- term development outcomes for Qatar, and provides a framework within which national development strategies and implementation plans can be prepared. QNV2030 is taken as the basis for this course, upon which the regulatory framework of the State of Qatar is based. In large part, the consideration of the latter, and relevant laws, is considered from the content of Decree of Law No. (30) in the year 2002: Issuance Law of Environment Protection. This includes due consideration of the law and regulations that pertains to topics such as: conservation of petroleum resources, agricultural quarantine, exploitation and protection of live sea resources, animal's health, public and private real estates, organization of excavation of groundwater wells.

**BIOL 508**
**Reg. ,the Envi. & qtr pub. pol**
**Credit Hours: 3**
The Qatar National Vision 2030 (QNV 2030), launched in October 2008 by His Highness Sheikh Tamim bin Hamad Al Thani, Heir Apparent, defines long-term development outcomes for Qatar, and provides a framework within which national development strategies and implementation plans can be prepared. QNV2030 is taken as the basis for this course upon which the regulatory framework of the State of Qatar is based. In large part the consideration of the latter, and relevant laws, is considered from the content of Decree of Law No. (30) in the year 2002: Issuance Law of Environment Protection. This includes due consideration of the law and regulations that pertains to topics such as: conservation of petroleum resources, agricultural quarantine, exploitation and protection of live sea resources, animal's health public and private real estates, organization of excavation of groundwater wells.

**BIOL 509**
**Grad. Seminar in Envi. Scie.**
**Credit Hours: 3**
The graduate seminar is graded P/F and is compulsory for all students in the M.Sc. program. The seminar

is presented once per week, and is designed so that during the progress of the semester, different speakers present information on a range of topics, which provides a comprehensive survey of Environmental Science. Grading is based upon attendance, short on-line quizzes, and preparedness. The important feature of the seminar is that it not only provides a critical appraisal of salient environmental issues, it also serves to help students make informed choices when they select elective courses. For example, students may select an elective based upon interest generated in a talk in the seminar. Also, by declining to take some electives, students should not compromise their holistic appreciation of environmental issues, since they are exposed to a spectrum of topics in the seminar. All reading materials, case studies, and instructional content are available online. Students read the material for each topic, and take a self-paced quiz to test their comprehension of the material before the presentation in which the material is discussed. In-depth debate of the seminar topic and materials is encouraged. The responsibility for organizing the seminar is on a rotating basis within the faculty of DBES.

**BIOL 510**
**Internship-Technical Report**
**Credit Hours: 3**
This internship course should be conducted in industry, governmental or a non-governmental organization (NGO). It refers to a research project that the student undertakes to generate results. Upon conclusion of the project, the student shall prepare, present and defend a final report on the project.

**BIOL 511**
**Environmental Health & Safety**
**Credit Hours: 3**
The course gives a comprehensive overview of modern health and safety practices in a wide range of work environments. A major objective of the course is to consider the legislative and practical basis that underpins practices in the work environment and to allow students to examine critically workplace conditions and risk management policies. As in other courses of the program, special emphasis is placed upon ISO certification guidelines, as well as case histories and relevant examples in Qatar; this is particularly relevant for those students who complete an internship.

**BIOL 512**
**Environmental Bioethics**
**Credit Hours: 3**
The approach taken in this course is from a philosophical perspective. Current literature, debate and discussion is used extensively in this course to focus on many issues in the bioethics of the environment, such as the theory of general ethics, human relationships, nature, the built environment, global change, ecological risks associated with bio-engineered crops and livestock, reproductive health and the environment, infectious disease, environmental change, and effects on national security and development, environmental concerns, moral and political reasoning in environmental practice. Students are encouraged to consider the question: How can one implement philosophy to achieve progress in solving environmental problems?

**BIOL 513**
**Epidemiology**
**Credit Hours: 3**
The objective of this course is to develop a comprehensive understanding of basic concepts and methods in contemporary epidemiology. The essential part of the course deals with methodology and basic concepts, including the methods used to measure disease occurrence and association; design of epidemiological studies; the role of bias and confounding; working with data, statistical analysis of data-sets and application of these by computer; epidemiological theory and practice. The course focuses on communicable and non-communicable diseases in developed and developing countries. The use of statistical software is an important skill for the epidemiologist and students complete a number of exercises with available computer programs.

**BIOL 514**
**Inte. Environmental Law**
**Credit Hours: 3**
Students are introduced to international environmental law by considering the events that can lead to environmental protection. An emphasis is on international legal issues. The role of the United Nations in international law is also considered. An important aspect of the course is the use of case studies (oil spills, biohazards, deforestation, etc.). Other topics considered include the use of nuclear energy, laws for the protection of the environment, conservation and consequences of war and armed conflict.

**BIOL 515**
**Air Pollution**
**Credit Hours: 3**
The course considers the basic science of the atmosphere, both its physics and its chemistry, and how this is applied to understanding air pollution and its dispersal. Of fundamental importance in the course is, understanding the consequences of air pollution for living systems; including life in aquatic environments, as well as the effects of air pollution on human and animal physiology. The course explains the causes and the effects of air

pollution, its management at the local (Doha), national (Qatar) and international levels, and those controls that are used to reduce emissions from industry and transport.

**BIOL 516**
**Envl. Impact Asse.& Bior.**
**Credit Hours: 3**
The course considers the processes and procedures required to perform an Environmental Impact Assessment (EIA) or Strategic Environmental Assessment (SEA), and provides a practical introduction to students regarding the methods available for assessing, predicting and mitigating a wide range of ecological and socio-economic environmental issues. The course emphasizes fieldwork in Qatar and case studies. Important features of the course include the consideration of the International Organization for Standardization's Environmental Management System standard, ISO 14001, as well as the pursuit of employment with environmental consultancies, government agencies and a wide range of other public and private organizations to further develop skills in the areas of Environmental Impact Assessment, Strategic Environmental Assessment and Sustainability Appraisal. Topics that are considered include: the principles of sustainability, national and international policy, approaches to valuing the environment, attitudes to conservation, and the role of the public in environmental decision making; key aspects of sampling techniques with the goal of acquiring representative samples of air, soil and water for environmental monitoring. Students learn the key analytical techniques that are available, develop the practical skills in the monitoring of environmental pollution, and study the practical methods and their implementation for the analysis of air, soil and water quality. Practical experience is gained in: Sampling techniques; analytical techniques for environmental monitoring; practical experiments and case studies of relevance to Qatar; emphasis on knowledge already acquired in foundation courses on statistical methods, data handling and retrieval; site visits to ministries and corporations in Qatar, as well as local sites such as Abu Nakhla; report compositions for potential clients.

**BIOL 517**
**Envr. Biosafety % Biosecurity**
**Credit Hours: 3**
The course focuses on key aspects of biosafety and biosecurity, including the biological risk factors affecting the environment and biodiversity, and the strategies available for improving biosafety and biosecurity. Principal topics covered include the different types of biological risk factors associated with the environment; how to enhance knowledge and to understand biological safety issues in the environment; and risk assessment. Students study the best practices for studying biosafety and biosecurity issues; how to influence and support emerging legislation and standards in the areas of biological safety, biosecurity, biotechnology, transport and associated activities. The course covers topics as diverse as the storage of nuclear waste and nuclear weapons, food security, and biological weapons.

**BIOL 518**
**Water & Human Development**
**Credit Hours: 3**
On completion of this course, students are expected to be able to: 1) Explain the principles, concepts and methods pertaining to national and international water and environmental laws, and common and needed institutional management practices. 2) Pursue - either independently or in a multidisciplinary team - relevant research in the area of water quality management, including the design of research questions, hypotheses and experimental approaches, selection and application of appropriate research methods and techniques, and summation of sound conclusions and recommendations. 3) Identify the consequences (relating to water resources) of human activities as well as available options for remediation, under different levels of environmental perturbation and in different socio-economic contexts.4) Successfully design and optimize water quality monitoring and assessment schemes in the watershed, and interpret the consequences, for example, by using statistical and modeling tools acquired through different courses of the program. Examples are drawn from around the world.

**BIOL 520**
**Envi. Toxicology & Pollution**
**Credit Hours: 3**
The course provides advanced training in environmental toxicology, monitoring techniques. The course should be taken with courses on international law and environmental legislation in Qatar. The course aims to fulfill the demand for trained personnel in the environmental regulatory agencies in Qatar, in companies subject to such regulation, and those involved in providing support services such as monitoring and consultancy with regard to environmental matters. Topics covered in the course include: mechanisms of toxicity in humans, the setting environmental quality standards, the fate of contaminants in water, air and desert soils, toxicity contaminants in the environment, and legislative controls on contaminants.

**BIOL 521**
**Mari. Envi. & Human Deve**
**Credit Hours: 3**
The course focuses on key aspects of the interface between human development and environmental

sustainability of the marine environment, including the influence of economic growth, social development and environmental management; sustainable use and access to water; management and conservation of the marine environment; and the influence of climate change on human development. The major environmental challenges that Qatar faces and that need to be resolved effectively are considered, particularly achieving water security, reducing carbon emissions, increasing energy efficiency, and reducing risks that threaten the safety of the marine environment. Cross-reference to other courses dealing with regulatory and policy issues is emphasized.

**BIOL 522**
**Rene.Energy Reso.&Global Chan.**
**Credit Hours: 3**
The course focuses on worldwide concerns about climate change, renewable energy supply, the carbon economy, sustainable management of water and solid resources, and hydrogen and biofuels for the future. Students study the generation and provision of renewable energy, hydrogen, water, wastewater treatment and solid wastes management, solar energy, wind power, bioconversion of biomass and pollutants, valorization of environmental resources, production of bioenergy, and the different generations of biofuels. Emphasis is also placed on regulation, policy and legislation, such as the Kyoto protocol, and special needs and problems such as those of the aviation industry and the effects of global warming on human activities.

**BIOL 523**
**Biol. Cons.& Biod. in Qatar**
**Credit Hours: 3**
Conservation and the study of biological diversity are key aspects of the 2030 sustainability vision for Qatar; a theme that is considered in many courses of the M.Sc. program. This course on biological conservation in Qatar examines the principles of human interactions with the environment. We take advantage of Qatar University being situated in Qatar's capital city, Doha, and promote contributions from leading experts from a range of government ministries, research and not-for-profit organizations located here. The world's human population exerts a profound influence on the environment, its flora, fauna, and their habitats, no more so than here in the Gulf. This is reflected in a decrease in those areas unexploited by man and industry. Furthermore, social and governmental pressures promote use of land for agriculture, ecotourism, sports, meat production and conservation. These diverse requirements can only be managed through an appreciation of population biology, habitat and species management, fisheries, genetics and landscape ecology. A solid understanding of the theoretical side of an issue must be coupled with equally important practical considerations. Future conservation managers in Qatar have a critical role to play in the country.

**BIOL 524**
**Envi. Geno & Bio-Eng**
**Credit Hours: 3**
It is becoming clear, from the application of the techniques of metagenomics, that biological diversity on Earth is vast and far greater than previously anticipated. Environmental Genomics and Engineering consider the use and improvement of engineering methods and skills that are needed to understand genomic complexity in different environments, including extreme ones; how to exploit such genomic complexity for human benefit; the contents of the genomes of all living systems existing in the environment, as well as their continuous plasticity driven by environmental stresses. The elucidation of many genomes and particularly those existing in particular environments is widely believed to be the basis for one of the most important expansions of human knowledge and activity in the 21st century. All such expansions require engineering activity, genomic engineering and capacity building. Further topics include: Functional genomics is the major approach to understanding how genomes of organisms influence their activities, depending on the environmental conditions. Proteomics and metabolomics study the functions of proteins and metabolites, and this information, in turn, shows how and why the function and morphology of cells come to be.

**BIOL 525**
**Solid Waste Management**
**Credit Hours: 3**
This course deals with solid waste handling worldwide, and specifically in the Gulf region, through lectures, case studies, assignments and field visits. The course covers the different types of waste with a primary focus on treatment and disposal techniques and the underlying principles of management options, environmental impact, and problems associated with activities such as open dumping, landfill, composting, incineration, and non-incineration thermal techniques. Specific topics include problems associated with household hazardous wastes, demolition waste, domestic waste, sewage sludge and municipal waste, agricultural waste, and construction site waste. Students are taught how to evaluate ground water pollution and options for protection at disposal sites; susceptibility of aquifers to contamination; computer modeling of how pollutants reach groundwater; designs of ground water protection systems at hazardous waste disposal sites and facilities; biological warfare.

**BIOL 530**
**Graduate Research and Thesis**
**Credit Hours: 6**
This course requires student to undertake research to generate results sufficient to warrant the production and defense of a formal thesis. The intensive research necessary for the research thesis will normally be completed over two semesters.

**BIOL 561**
**Rene. Energy Reso.& Glob.Chan.**
**Credit Hours: 3**
The course focuses on worldwide concerns about climate change, renewable energy supply, the carbon economy, sustainable management of water and solid resources, and hydrogen and biofuels for the future. Students study the generation and provision of renewable energy, hydrogen, water, wastewater treatment and solid wastes management, solar energy, wind power, bioconversion of biomass and pollutants, valorization of environmental resources, production of bioenergy, and the different generations of biofuels. Emphasis is also placed on regulation, policy and legislation, such as the Kyoto protocol, and special needs and problems such as those of the aviation industry and the effects of global warming on human activities.

**BIOL 562**
**Biological Cons.& Biod. in Qtr**
**Credit Hours: 3**
Conservation and the study of biological diversity are key aspects of the 2030 sustainability vision for Qatar; a theme that is considered in many courses of the M.Sc. program. This course on biological conservation in Qatar examines the principles of human interactions with the environment. We take advantage of Qatar University being situated in Qatar's capital city, Doha, and promote contributions from leading experts in a range of government ministries, research and not-for-profit organizations located here. The world's human population exerts a profound influence on the environment, its flora, fauna, and their habitats, no more so than here in the Gulf. This is reflected in a decrease in those areas unexploited by man and industry. Furthermore, social and governmental pressures promote use of land for agriculture, ecotourism, sport, meat production and conservation. These diverse requirements can only be managed through an appreciation of population biology, habitat and species management, fisheries, genetics and landscape ecology. A solid understanding of the theoretical side of an issue must be coupled with equally important practical considerations. Future conservation managers in Qatar have a critical role to play in the country.

**BIOL 563**
**Env. Geno.& Bio-Eng.**
**Credit Hours: 3**
It is becoming clear, from the application of the techniques of metagenomics, that biological diversity on Earth is vast, and far greater than previously anticipated. Environmental Genomics and Engineering considers the use and improvement of engineering methods and skills that are needed to understand genomic complexity in different environments, including extreme ones; how to exploit such genomic complexity for human benefit; the contents of the genomes of all living systems existing in the environment, as well as their continuous plasticity driven by environmental stresses. The elucidation of many genomes and particularly those existing in particular environments is widely believed to be the basis for one of the most important expansions of human knowledge and activity in the 21st century. All such expansions require engineering activity and genomic engineering and capacity building. Further topics include: Functional genomics that is the major approach to understanding how genomes of organisms influence their activities, depending on the environmental conditions. Proteomics and metabolomics study the functions of proteins and metabolites, and this information, in turn, shows how and why the function and morphology of cells comes to be.

**BIOL 564**
**Solid Waste Management**
**Credit Hours: 3**
This course deals with solid waste handling world-wide, and specifically in the Gulf region, through lectures, case studies, assignments and field visits. The course covers the different types of waste with a primary focus in treatment and disposal techniques and the underlying principles of management options, environmental impacts, and problems associated with activities such as open dumping, landfill, composting, incineration, and non-incineration thermal techniques. Specific topics include problems associated with household hazardous wastes, demolition waste, domestic waste, sewage sludge and municipal waste, agricultural waste, and construction site waste. Students are taught how to evaluate ground water pollution and options for protection at disposal sites; susceptibility of aquifers to contamination; computer modeling of how pollutants reach groundwater; designs of ground water protection systems at hazardous waste disposal sites and facilities; biological warfare.

**BIOL 580**
**Graph. Info. sys. (GIS) & DB**
**Credit Hours: 3**
Through this course students gain an advanced knowledge of the information systems and how they are linked (with

particular reference to the ministries of Qatar), computer science, and the analytical tools and approaches used in GIS. Students are taught how to implement the knowledge, tools and techniques of database management, application development, and analytical assessment, to address geographic information requirements, issues of importance to the environment, and to answer questions with a spatial/global perspective. Resources for this course include the Environmental Studies Center of Qatar University where GIS is used effectively in a range of environmental issues, as well as ongoing research in the Department of Geography.

**BIOL 590**
**Exp. Design & Stat. Analysis**
**Credit Hours: 3**
To have a successful career in environmental science, it is essential for graduates to acquire an understanding of the principles of experimental design and statistics, including the ability to both obtain a critical appraisal of current knowledge, as well as develop a statistically valid framework and design for research. The primary purpose of this course is to provide a firm basis in experimental design, as well as an understanding of the reasoning of statistics, which will allow students to design, complete, and critique their own research. The course gives students the opportunity to apply these principles through analysis of data, and allows them to review critically literature of relevance to their area of research. Students study these concepts in a practical sense through analysis of data from case studies.

**BIOM 501**
**Medical Laboratory Science I**
**Credit Hours: 3**
An intensive, didactic and clinical curriculum in the field of Biomedical Sciences. Areas covered include: Hematology/Coagulation/Urinalysis and Body Fluids (includes Special Hematology/Coagulation); Chemistry (includes Special Chemistry/Immunology/Serology); and Phlebotomy & Lab Safety.

**BIOM 502**
**Medical Laboratory Science II**
**Credit Hours: 3**
An intensive, didactic and clinical curriculum in the field of Biomedical Sciences. Areas covered include: Immunohematology [Blood Bank]; and Microbiology, Virology, Mycology, Parasitology, and Molecular Pathology.

**BIOM 510**
**Pathophysiology**
**Credit Hours: 3**
This course provides an in?depth study of human pathological processes and their effects on homeostasis. Emphasis is on interrelationships among organ systems in deviations from homeostasis. Upon completion, students should be able to demonstrate a detailed knowledge of pathophysiology. Course topics include the ethiology, physical signs and symptoms, prognosis, and complications of commonly occurring diseases and their management

**BIOM 515**
**Molecular Diagnostics**
**Credit Hours: 3**
This course covers the principles of molecular technology and techniques used in clinical and research laboratories. Topics include: nucleic acid chemistry, nucleic acid extraction and hybridization; target, signal and probe amplification; microarrays and in?situ hybridization. Quality assurance and control issues used to monitor molecular tests are addressed.

Prerequisite
BIOM 510

**BIOM 520**
**Principles of Laboratory Mang.**
**Credit Hours: 3**
This course provides a foundation in the technical and non?technical aspects of supervising and managing clinical laboratory testing services within the current health care delivery system.

**BIOM 530**
**Currt. Issues in Clin. Lab. Sc**
**Credit Hours: 3**
The course covers current topics in the field such as clinical laboratory testing within the context of the current health care delivery system, the influence of other aspects of society, accreditation of laboratories, financial management, information systems management, management of the quality of clinical laboratory testing, leadership and communication skills, and ethics in the clinical laboratory testing environment. The emphasis of the course is on the knowledge, skill, and attitudes needed to work successfully in a health care setting at the entry?level and beyond.

Prerequisite
BIOM 520

**BIOM 540**
**Res. Methods in Biom. Sciences**
**Credit Hours: 3**
This course provides the student with a working knowledge of research methods for collecting, analyzing,

and interpreting healthcare data and an appreciation of the value and application of these methods in healthcare organizations. Students will learn to distinguish between types of research (quantitative and qualitative) with an emphasis on the use of quantitative analysis in healthcare organizations. Basic research methods are described, including surveys, observational studies, experimental and quasi?experimental design; and the use of primary and secondary data sets. Statistical techniques for analyzing and interpreting data will include descriptive statistics, hypothesis testing, probability, sampling, t?tests, ANOVA, chi?square analysis, correlation, linear regression, and multiple regression.

Prerequisite
BIOM 520

**BIOM 550**
**Medical Lab. Laws & Ethics**
**Credit Hours: 3**
This advanced level courses covers licensure and accreditation, compliance and risk management concepts and practices as applied to medical laboratory operations. Accreditation standards as required by international agencies is included. The course also provides the student with an understanding of law, regulation, and court decisions that affect healthcare organizations as well as the ethical underpinnings and principles that healthcare organizations follow in the delivery of services.

**BIOM 610**
**Medical Lab Fina Operation**
**Credit Hours: 3**
This advanced level course covers the entirety of financial management as practiced in the medical laboratory or biomedical research laboratory setting. It includes capital equipment acquisition, cash flow analysis, contract negotiations, cost analysis, inventory control, revenue and cost?accounting practices, salary and wage management, and material management in the context of the laboratory budget.

Prerequisite
BIOM 520

**BIOM 620**
**Health Informatics**
**Credit Hours: 3**
This course addresses the importance of information systems and information technology in improving decision?making in healthcare organizations. The student will be exposed to the need for and uses of information technology in healthcare organizations, and how integrated, computer?based information systems can lead to decisions that improve and better coordinate care, allow for better management of medical records and orders, increase the timeliness of care, improve cost controls, enhance supply inventory and management, and improve vendor contracting and management.

Prerequisite
BIOM 510 AND BIOM 520

**BIOM 630**
**Quality Assu. & Outcome Asses.**
**Credit Hours: 3**
This advanced level course covers the breadth and depth of various quality management, performance improvement and assurance theory, principles and practices (CQI, TQM, ISO, etc.) as specifically applied to medical and research laboratories.

**BIOM 650**
**Pathogenic Microbiology**
**Credit Hours: 3**
The fundamentals of microbial physiology, genetics and immunology are presented with important bacterial, viral, parasitic and mycotic infections discussed from the standpoint of etiology, epidemiology, and pathogenesis and laboratory diagnosis.

Prerequisite
BIOM 510

**BIOM 651**
**Viral Pathogenesis & Diagnosis**
**Credit Hours: 3**
This course covers the advanced study of viruses with regard to the basic, biochemical, molecular, epidemiological, clinical, and biotechnological aspects of animal viruses primarily and bacteriophage, plant viruses, viroids, prions, and unconventional agents secondarily. Specific areas of virology, including viral structure and assembly, viral replication, viral recombination and evolution, virus?host interactions, viral transformation, gene therapy, antiviral drugs, and vaccines, are presented. The major animal virus families are discussed individually with respect to classification, genomic structure, virion structure, virus cycle, pathogenesis, clinical features, epidemiology, immunity, and control. The viral vectors and their applications in biotechnology are discussed.

Prerequisite
BIOM 510

**BIOM 660**
**Biochemistry**
**Credit Hours: 3**

Clinical aspects of biochemistry, including overview of principles and instrumentation with emphasis on practical laboratory application of analytical procedures, specimen collection and handling, significance of results, and quality assurance. Includes analysis of blood and other body fluids for blood gas content, electrolytes, enzymes, hormones, therapeutic drugs, toxicology, and other constituents of clinical interest, utilizing both automated and manual techniques

Prerequisite
BIOM 510

**BIOM 670**
**Principles of Immunochemistry**
**Credit Hours: 3**
This course is based on theoretical and experimental applications of immunochemistry and immunobiology.

Prerequisite
BIOM 660

**BIOM 675**
**Immunology & Serology**
**Credit Hours: 3**
Performance and interpretation of a broad range of clinical serological and immunological procedures with emphasis on principles and clinical correlation. Formal lecture series included.

Prerequisite
BIOM 510

**BIOM 680**
**Oncology**
**Credit Hours: 3**
The course provides an overview of cancer biology, including tumor/host interactions, metastasis and invasion, tumor cell biochemistry, tumor heterogeneity, tumor cell surfaces and developmental aspects.

Prerequisite
BIOM 510

**BIOM 681**
**Advanced Hematology**
**Credit Hours: 3**
Principles, theories, and instrumentation related to qualitative and quantitative evaluation of cellular elements of blood and other body fluids; factors of hemostasis; quantitative chemical analysis of urine; and renal function studies. Emphasis is placed on microscopic identification of cells and the significance and correlation of laboratory data.

Prerequisite
BIOM 680

**BIOM 682**
**Advanced Immunohematology**
**Credit Hours: 3**
Theory and practice in blood bank operation, including identification of erythrocyte antigens and antibodies and their normal and abnormal immunology. Standard technical practices are used in evaluating blood typing, cross?matching, antibody detection, and preparation of blood components for transfusion. Safety control methods standard to efficient blood banking.

Prerequisite
BIOM 680

**BIOM 695**
**Capstone in Lab. Mang.**
**Credit Hours: 3**
The Capstone seminar serves as the culminating educational experience in the program. Students use the knowledge they have gained in the courses to complete a project. This process requires an in?depth knowledge of laboratory management.

**BIOM 696**
**Clinical Internship**
**Credit Hours: 3**
This course is supervised rotation in a clinical laboratory. The student will perform assays, apply quality control, interpret results and correlate results with the clinical condition. The rotation will include preventive and corrective maintenance on instruments and equipment used in the laboratory.

**BIOM 697**
**Capstone in Advanced Practice**
**Credit Hours: 3**
The Capstone seminar serves as the culminating educational experience in the program. Students use the knowledge they have gained in the courses to complete a project. This process requires an in?depth knowledge of laboratory science.

Prerequisite
BIOM 696
**BIOM 698**
**Thesis I**
**Credit Hours: 3**
Basic research in a field of interest under faculty direction

**BIOM 699**
**Thesis II**
**Credit Hours: 3**
In this course, students will use the knowledge and clinical skills they have acquired in their courses to prepare a written manuscript that is suitable for publication. The paper will include relevant literature review and include the following: abstract, introduction, methods and materials, statistics, results, discussion, conclusion and references. Students will present the study to students and faculty at the conclusion of the program.

Prerequisite
BIOM 698

**CHME 650**
**Transport Phenomena**
**Credit Hours: 3**
This course will acquaint the student with important topics in advanced transport phenomena (momentum, heat and mass transport) and the mathematical analysis of transport problems. Topics include laminar and turbulent flow, thermal conductivity and the energy equation, molecular mass transport and diffusion with heterogeneous and homogeneous chemical reactions, as well as flow in/through/cross difference geometries. Focus will be to develop physical understanding of principles discussed and with emphasis on chemical engineering applications.

**CHME 651**
**Special Topic I**
**Credit Hours: 3**
An advanced course on a specialized topic with high relevance to contemporary issues in the field of Chemical Engineering. The choice of these topics will take into considerations the match between the expertise of available faculty and needs of special knowledge to serve both academic and practical aspects of Chemical Engineering.

**CHME 652**
**Special Topic II**
**Credit Hours: 3**
An advanced course on a specialized topic with high relevance to contemporary issues in the field of Chemical Engineering. The choice of these topics will take into considerations the match between the expertise of available faculty and needs of special knowledge to serve both academic and practical aspects of Chemical Engineering.

**CHME 653**
**Advanced Process Dynamics and Control**
**Credit Hours: 3**
Process control plays a central role in the efficient and smooth operation of modern chemical plants. This course comprises review of the basic fundamentals, development of non-linear dynamics of chemical systems/processes, recent advances and applications of conventional and computer based control strategies, and control systems design. Advanced control topics include model predictive control, MIMO control systems design, and analogue vs. digital control systems. Lectures will be accompanied by illustrative examples and subsequent homework exercises.

**CHME 661**
**Principles of Bioprocess Engineering**
**Credit Hours: 3**
Biotechnology and bioprocess engineering. Enzyme catalysis, enzyme kinetics, enzyme inhibition and immobilization. Microbial growth kinetics, substrate utilization and product formation. Batch, fed batch and continuous cultures, chemostat with recycle and bioreactors in-series. Stoichiometry of microbial growth and product formation. Bioreactor design, optimization and scale-up. Aeration, agitation and oxygen transfer. Biological waste treatment. Downstream processing. Recent developments in bioprocess engineering.

**CHME 662**
**Advanced Chemical Engineering Thermodynamics**
**Credit Hours: 3**
Advanced thermodynamics course provides a rigorous and advanced foundation in chemical engineering thermodynamics suitable for students interested in graduate study. Course focuses on quantitative study and application of thermodynamic principles including equations of state, properties of ideal and non-ideal solutions, complex physical and chemical.

**CMPE 651**
**Advanced Special Topics I**
**Credit Hours: 3**
The content of these first special topics varies to cover emerging advanced theoretical and practical issues in Computer Engineering. The department must approve the contents of this course as offered per semester. Topics covered in this course must be different from those covered in the course "Advanced special topics II" .

**CMPE 652**
**Advanced Special Topic II**
**Credit Hours: 3**
The content of these second special topics varies to cover emerging advanced theoretical and practical issues in Computer Engineering. The department must approve the contents of this course as offered per semester. Topics covered in this course must be different from those

covered in the course "Advanced special topics I".

**CMPT 501**
**Fundamentals of Computing I**
**Credit Hours: 6**
Overview of discrete mathematical structures, introduction of computer programming; elements of procedural and object-oriented paradigms; assignments, relational expressions, decisions, repetition, pointers, and functions; classes, objects, inheritance and polymorphisms; programming applications in a variety of computer related areas such as software engineering; elements of algorithms and data structures; introduction to databases with their programming and applications are covered. Credits are not applicable towards the M.S. degree.

**CMPT 502**
**Fundamentals of Computing II**
**Credit Hours: 6**
This course covers logic gates and circuits, Boolean algebra, circuit simplification; elements of computer organization and architecture such as computer systems, CPU components, memory considerations, I/O considerations; elements of computer operating systems such as real and virtual storage, deadlocks, performance, and distributed systems. Also covered are principles of data communication, layered reference models, network topologies, Transmission Media, Local Area Networks, switching and routing, Backbone Networks and Virtual LANs, Wide Area Networks.

Prerequisite:
Baccalaureate degree. Credits are not applicable toward the M.S degree.

**CMPT 506**
**Advanced Database Systems**
**Credit Hours: 3**
The course covers elements of data modeling; relational models and mapping; system architectures; security, transactions, concurrency control, recovery, query, optimization, and database tuning; hands-on applications on the design and use of database systems.

**CMPT 507**
**Advanced Operating Systems**
**Credit Hours: 3**
The course covers process concepts, management, and asynchronous concurrency; storage management related to real and virtual storage as well as disk performance optimization; multiprogramming operating systems including process distributed memory, multiprocessors and distributed systems; network communication issues and special purpose systems; network operating systems.

**CMPT 508**
**Adv Archt & Design of Comp Sys**
**Credit Hours: 3**
Description of computer systems at the system and register transfer levels; computer system models; CPU components such as the control unit, the ALU, integer and floating point processors; memory considerations such as hierarchy, associative memory, virtual memory, memory contention resolution; I/O processors considerations; comparison of well-known architectures are covered.

**CMPT 509**
**Seminar in Computing**
**Credit Hours: 1**
The course covers the art of writing research proposals and finding related materials as with libraries, web access, and other resources; discussion of delivery and presentation styles; techniques for writing scientific papers and technical reports.

**CMPT 521**
**Information Retrieval**
**Credit Hours: 3**
This course includes Introduction, modeling, retrieval evaluation, query languages, query operations, text and multimedia languages and properties, text operations, indexing and searching, user interfaces and visualization, multimedia information retrieval, searching the web, digital libraries.

**CMPT 522**
**Human Computer Interaction**
**Credit Hours: 3**
Interface design theories, principles and practices for computer-based systems; methods and tools for developing effective user interfaces; evaluation methods; design of appropriate interface elements including the design of menus and other interaction styles. Psychological and cultural issues in making an interface more appealing to the user are also covered.

**CMPT 523**
**Distributed Systems**
**Credit Hours: 3**
Clients, servers, application servers, database servers, clusters of servers; distributed architectures such as single-tier, two-tier, multi-tier; implementation issues such as performance, security, transactions; enterprise application server capabilities coding, access, and software development tools.

**CMPT 524**
**Semantic Web**
**Credit Hours: 3**

Introduction to semantic web technologies; semantic web objectives; ontology construction and evolution, mediation, merging, aligning, and engineering methodologies; semantic annotation, human language technology, information access, and web services.

**CMPT 526**
**Systems Development**
**Credit Hours: 3**
Study of structured systems development methods and techniques as applied to information systems development; use of principal project management elements such as planning, organizing and controlling applied to systems development processes; use of software engineering elements such as planning, estimating, requirements, modeling, documenting, implementation, testing, maintenance, as applied to product and systems development.

**CMPT 541**
**Advanced Computer Networks**
**Credit Hours: 3**
Network technologies; packet/circuit switching, switching and routing: packet switch architectures, Interior and Exterior internet routing protocols and their performance; protocol processing. Network control: traffic management, congestion (flow and rate) control, admission control. Applications demanding high-speed communication are included.

**CMPT 542**
**Computer Security**
**Credit Hours: 3**
This course deals with the advanced issues of computer security and information assurance. It provides students with a deeper understanding of the security topics such as threats, vulnerabilities, intrusion detection, cyber security, security strategic policy, legal and ethical factors in security, security management technologies, tools and practices. It also focuses on several emerging threats including, drive-by-pharming, online extortion, next-generation phishing, multi-application botnets, crimeware, mobile worms, and VoIP security. Emphasis is on secure software models and design, including discovery and prevention of computing systems security vulnerabilities.

**CMPT 543**
**Wireless Communication**
**Credit Hours: 3**
This course covers transmission fundamentals; communication networks, protocols, TCP/IP suite; antennas and propagation; signal encoding techniques; spectrum, coding and error control, satellite communications, cellular wireless networks, cordless systems and wireless local loop, mobile IP and wireless access protocol, wireless LAN technology, IEEE 802.11; wireless LAN standard; Bluetooth. Wideband CDMA, Wideband OFDM, and MIMO techniques.

**CMPT 544**
**Service Oriented Computing**
**Credit Hours: 3**
Service-oriented computing is the new emerging paradigm for distributed computing that is increasingly changing the way software applications are architected and used. This course investigates some of the latest developments in the field of web-based applications such as Web services, an insight into the latest developments in service discovery, dynamic service composition, services adaptation, and QoS, compliances among services. The major topics covered in this course include identifying remote services, assigning appropriate service types, allocating ownership of data to services, and composing quality features. Emphasis is given to the design of a functional infrastructure for business processes and how to achieve process integrity, systems heterogeneity, and initiate the technical infrastructure. This course examines architectures for Web based systems on the classical publish, discover, and compose triangle of services.

**CMPT 545**
**Simul & Comp Network Analysis**
**Credit Hours: 3**
Introduction to the probability models, queuing theory, and simulation techniques; event probability, standard discrete and continuous probability distributions; Poisson processes, random number generation; discrete-event system modeling and simulation techniques, statistical estimation, and basic queuing models.

**CMPT 546**
**Telecom Policies & Regulations**
**Credit Hours: 3**
Principles of organizational policy; review of historical events and current trends of regulatory agencies; technology and structure of telecommunications industry; strategic considerations in the planning of major telecommunications systems are covered.

**CMPT 561**
**Web Development**
**Credit Hours: 3**
Comprehensive introduction to web development with scripting languages currently used in industry; client side and server side development; overview of JavaScript language, embedding JavaScript code in a HTML page; events, multimedia, client side form data validation; dynamic HTML; data transmission between a client

and a web server; processing data forms and database connectivity (ODBC or JDBC).

**CMPT 563**
**Data Mining**
**Credit Hours: 3**
Principles of data mining; classification (decision tree induction, Bayesian, Rule based, k-nearest neighbors, etc.), clustering (hierarchical methods, density based methods, grid based methods, outlier analysis, etc.), association rules (frequent itemset mining methods, mining multi-level association rules, mining multi-dimensional association rules), text, spatial, and temporal mining.

**CMPT 564**
**Storage Area Networks**
**Credit Hours: 3**
Network storage landscape; data flood and fluid data; data storage on open systems servers; SCSI systems servers and their limitations, volume managers and device drivers, software mirroring over LAN and WAN, cashes in storage networks are covered; boosting availability and performance with RAID and disk subsystems; laboratories include usage of SAN protocols at hardware and software levels.

**CMPT 567**
**Wide Area Digital Networking**
**Credit Hours: 3**
Introduction to access, transmission, and switching technologies used in high-speed, wide-area digital networks, including the public telephone network, enterprise networks and the internet; topics include integrated services digital network (ISDN) and as required, frame delays, ATM, SONET, and emerging technologies are covered.

**CMPT 568**
**Telecommunications Management**
**Credit Hours: 3**
Principles of managerial accounting; financial analysis and project management as applied to the planning, implementation and operation of telecommunications systems.

**CMPT 569**
**Project Management**
**Credit Hours: 3**
Introduction to projects and project management as applied to software systems; project selection, research methods, managing progress and change, project planning (activities, schedules and cost management), leadership and team work, project quality management, project risk management, project review and reflection.

**CMPT 570**
**Enterprise Resource Plng Syst**
**Credit Hours: 3**
Business functions, processes and data requirements; development of enterprise resource planning systems, marketing information systems, production and supply chain management information systems, accounting in ERP systems; human resources and processes with ERP, process modeling, process improvement; ERP implementation including ERP and electronic commerce.

**CMPT 571**
**Adv Algrthm Design & Analysis**
**Credit Hours: 3**
Design and analysis of problems involving sorting, searching, scheduling, graph theory, and geometry; design techniques such as approximation, branch-and-bound, divide-and-conquer, dynamic programming, greed, and randomization applied to polynomial and NP-hard problems; analysis and space utilization; implementation of algorithms based on advanced data representation techniques and object oriented modeling.

**CMPT 581**
**Special Topics in Computing**
**Credit Hours: 3**
The content of this course varies to cover emerging theoretical and practical issues in computing. The department must approve the contents of this course as offered per semester.

**CMPT 582**
**Specia Topics in Info. Science**
**Credit Hours: 3**
The content of this course varies to cover emerging theoretical and practical issues in information science. The department must approve the contents of this course prior to the offering each semester.

**CMPT 583**
**Special Topics in Network Sys.**
**Credit Hours: 3**
The content of this course varies to cover emerging theoretical and practical issues in network. The department must approve the contents of this course prior to the offering each semester.

**CMPT 591**
**Master Project**
**Credit Hours: 3**
Students may choose and pursue an intensive computing project based on a practical computing application derived from industry or other related area. The work culminates in a project report that is evaluated by three committee

members including the student project advisor.

**CMPT 595**
**Master Thesis**
**Credit Hours: 3**
Students may choose and pursue a research topic with their respective advisors. The work culminates in a thesis report that is evaluated by three committee members, including the student thesis advisor.

**CVEN 500**
**Advanced Topics in Civil Eng.**
**Credit Hours: 3**
A selection of state-of-the-art topics in civil engineering.

**CVEN 501**
**Adv. Steel Structures Design**
**Credit Hours: 3**
Design of steel structures according to LRFD and ASD techniques, Tension members, axially loaded compression members, Beam design, Design of members subjected to combined flexure and axial compression (beam?columns), Design of Plate girders, Composite concrete steel members, steel connections (bolted and welded).

**CVEN 502**
**Stru. Dyn.& Seis.& Anal. Desi.**
**Credit Hours: 3**
Numerical analysis of simple systems; rigorous analysis of one?degree systems; lumped mass multi?degree systems and structures with distributed mass and load; approximate analysis and design methods; earthquakes, blast?resistant design, beams subjected to moving loads; calculation of results by analog and digital computer. Introduction to seismology, ground movements, typical accelograms. Response spectra for linear and non?linear responses, role of damping and inelastic behaviour. Equivalent lateral load for design, code requirements. Structural design concepts to mitigate seismic effects. Design of steel structures for earthquake motions. Design of concrete frames and walls for earthquake motions.

**CVEN 503**
**Des. of Beid.&Other Spec. Stru**
**Credit Hours: 3**
Forces due to prestressing in statically indeterminate structures, such as continuous beams, frames, slabs, using load balancing method, force method and prestressing influence coefficients. Limit analysis of continuous prestressed concrete structures. Initial and time?dependent deflections. Effect of creep and shrinkage in statically indeterminate structures; effect of differential settlement; creep behaviour of structures made continuous by cast?in situ concrete. Discussion of various types of prestressed concrete bridges; selection of cross?section, pier arrangement, abutments, approach slab, bearings. Loads. Design of skew and curved bridges. Cable layout in skew and curved bridges, methods of bridge construction. Aesthetic considerations in bridge design.

**CVEN 504**
**Finite Element Method**
**Credit Hours: 3**
Finite Element Discretization and the Direct Stiffness Method, Basic concepts of structural modeling. Finite element discretization: interpretations. Review of the direct stiffness method (DSM) of structural analysis. Modeling, stiffness, loads, boundary conditions and constraints. substructuring. Formulation of Finite Elements: Mathematical interpretation of finite elements: variational formulation. Shape functions. Structural and continuum elements. Isoparametric elements. Numerical integration. Computer Implementation of the Finite Element Method Model definition: Element level calculations. Equation assembly. Equation solver. Strain/stress recovery and post?processing. Constitutive models for geotechnical materials; application of the finite element method to static analysis of earth structures.

**CVEN 505**
**Theory of Plates and Sh**
**Credit Hours: 3**
Two?dimensional elasticity theory, Analysis and design of rectangular and circular plates, Analysis of plates including shear deformations, Numerical methods for shells, Analysis and design of thin shells; cylindrical vaults, domes, circular?cylindrical tanks, intersection shells and folded plates.

**CVEN 506**
**Advanced Geo?mechanics**
**Credit Hours: 3**
Advanced treatment of topics in soil mechanics, including consolidation and settlement analysis; shear strength of soils; soil improvement; soil reinforcement; and slope stability analysis.

**CVEN 507**
**Traffic Engineering**
**Credit Hours: 3**
Study of operator and vehicle characteristics, and design for street capacity, signals, signs, and markings.

**CVEN 508**
**Geometric Design of Highways**
**Credit Hours: 3**
Study of highway geometric design in the engineering of transportation system.

**CVEN 509**
**Traffic Safety Analysis**
**Credit Hours: 3**
Understanding crash research concepts, and identifying factors contributing to traffic crash occurrence.

**CVEN 510**
**Pavement Management Systems**
**Credit Hours: 3**
Role of pavement in today's transport system, basic components of pavement management systems (PMS). Planning pavement investments and pavement research management. Evaluation of pavement structural capacity performance, distress and safety. Analysis and economic evaluation of alternative design strategies. Construction, rehabilitation and maintenance as related to other phases of PMS. Data management requirements.

**CVEN 511**
**Hydrology**
**Credit Hours: 3**
Analysis and synthesis of the hydrograph. Stream?flow routing. The hydrograph as a function drainage characteristics; estimation of runoff from meteorological data. Infiltration theory. Sea water intrusion in coastal aquifers. Application of hydrologic techniques including statistical methods.

**CVEN 512**
**Ground Water Contamination**
**Credit Hours: 3**
Introduction of Darcy's equation and governing equation; construction of flow?nets, flow quantifications, and ground water resource evaluation; contaminant hydrogeology, mas transport equations, reaction, and adsorption; introduction to biodegradation and natural attenuation; simulation of ground water flow and transport.

**CVEN 513**
**Hydraulic Analyses**
**Credit Hours: 3**
This course deals with advanced methods of analyzing hydraulics and water resources. Exact and approximate methods are reviewed. The formulation and solution of problems by finite difference and finite element methods is a major part of the course. Typical examples from open channel and ground water flows are included. The method of characteristics is applied to transient flow in open channels and closed conduits.

**CVEN 651**
**Advanced Special Topics I**
**Credit Hours: 3**
This course includes a selection of state-of-the-art topics in civil engineering.

**CVEN 652**
**Advanced Special Topics II**
**Credit Hours: 3**
This course includes a selection of state-of-the-art topics in civil engineering.

**DENG 602**
**Applied Research Methodology**
**Credit Hours: 3**
This course will develop the research abilities of PhD students in Engineering. The goal of the course is to equip students with both qualitative and quantitative tools to conduct research. This is a practical course, designed to help graduate students arrive at a workable thesis plan, and a comprehensive knowledge of the resources available to them to pursue it. It covers the thesis as a type of writing, project planning, time management, research ethics, information retrieval, and professional skills.

**DENG 603**
**Advanced Numerical Methods**
**Credit Hours: 3**
This course aims at understanding the construction and appropriate use of numerical algorithms that provide solutions to science and engineering problems. The following algorithms are studied; root finding, interpolation and approximation of functions, numerical differentiation and integration, numerical solutions of ordinary differential equations and boundary value problems. An emphasis will be given to understanding the accuracy, convergence, divergence, limit analysis, efficiency, and stability of various algorithms. The course will use some commercially available software such as MATLAB.

**DENG 604**
**Applied Statistics Techniques**
**Credit Hours: 3**
This applied course is designed for graduate students. The goals of the course are to develop the skills necessary to identify an appropriate technique, estimate models, and interpret results for independent research and to critically evaluate contemporary research using advanced quantitative methods. The focus of the course is on estimating models and interpreting the results, rather than understanding in detail the mathematics behind the techniques. The course will provide students with a solid foundation in advanced quantitative methods, which is in high demand in many fields. The course will include random distributions, error analysis, confidence levels, statistical analysis of reduced sample size and other important topics to help the students understand the importance of applying statistical techniques to their research findings.

**DENG 605**
**Special Topics**
**Credit Hours: 3**
This course covers selected topics that meet student interests and reflect trends in the field.

**DENG 621**
**Graduate Seminar**
**Credit Hours: 3**
This course covers the art of writing research papers, technical reports, grant proposals and finding related materials; discussion of delivery and presentation styles. Graduate students are required to attend the seminars given by faculty, visiting scholars, and fellow graduate students. It is expected that students will actively participate by asking questions of the speaker. They will be required to make professional presentations of their work to diverse audiences. Among other things, this course is designed to give the student an overview of research in their department and professional societies in their discipline as well as contemporary issues in engineering.

**DENG 624**
**Innovation & Tech. Mgmt**
**Credit Hours: 3**
Understanding of the dynamics of innovations and processes of technological development as well as insight into new approaches, methods and tools to handle complex systems and social aspects of innovations. Principles of new approaches in managing complex systems; Exploring Information Driven Management approach and Self-Organizing principles. Exploring the principles of Dependence Structure Matrix and Domain Mapping Matrix in managing complexity and uncertainty. Exploring the principles of self-organizing systems approach as an alternative approach beyond the present concurrent engineering approach.

**DENG 625**
**Sustainable Development**
**Credit Hours: 3**
Challenges of sustainable development in Qatar and and in other countries, influence of sustainable development concepts on environmental decision-making, sustainable development as a paradigm for environmental policy-making. The course will cover Concept of Sustainable development, strategies to implement sustainable development, sustainable development policies, sustainability metrics, sustainability and innovation, and ecological design.

**DENG 626**
**Modelling and Simulation**
**Credit Hours: 3**
The course gives an introduction to modelling/simulation/analysis, with an emphasis on the first two parts. The contents of the course include direct simulations of discrete-time models (e.g. cellular automata), event based simulations (both in queuing system and as a method to speed up discrete time models), methods to solve ordinary differential equations and a short introduction to Markov chain Monte Carlo. There is a strong emphasis on applications and implementations, both with Matlab and with programs that link to numerical libraries.

**ECON 501**
**Introduction to Economics**
**Credit Hours: 3**
The course provides the students with the essential tools of economic analysis, to allow them to utilize these tools in their work, and to make sense of the economic events occurring around them. This might include the following issues: Economic problems, supply and demand, consumer theory, producer theory, circular flow of income, measurement of GDP, fiscal and monetary policies, business cycle, inflation and unemployment.

**ECON 602**
**Managerial Economics**
**Credit Hours: 3**
An overview of the fundamental concepts in microeconomics as they apply to managers in a global environment, this course covers the use of quantitative and computer applications to determine optimal levels of output, resource usage and capacity planning, application of appropriate decision-making models, and mathematical tools for optimal business decisions.

**ECON 604**
**Intl Trade & Finance**
**Credit Hours: 3**
The course aims to provide the participants with essential information about the most important issues in the fields of international trade and finance. It allows the participants to understand the importance of international trade recent related theories, and how they affect the performance of the domestic economy. On the international finance front, the course aims to acquaint participants with the main tools of the role and functions of the international capital market, foreign exchange markets, and international financial systems (including the various tools used).

**EDEC 510**
**Preschoolers and Learning**
**Credit Hours: 3**
This course introduces students to the historical, philosophical, and sociological foundations of programs for young children. The course further focuses on an understanding of children's physical, cognitive, linguistic, emotional and social growth and development. Child development history, theory, and research strategies are discussed, as well as the effect of family, peers, media, and schooling on processes of learning.

**EDEC 511**
**Method of Teach.in Early Child**
**Credit Hours: 3**
This course focuses on instructional strategies appropriate to educating young children. Curriculum development principles and practices are reviewed, with a particular emphasis on the need for flexibility and the construction of appropriate learning environments. Students are also taught how to select and evaluate prepared materials and how to create new materials for young children that are consistent with program goals and objectives; how to create learning environments that foster creativity and intellectual inquiry; how to support play in the early childhood classrooms across domains, how to incorporate families and communities into the teaching process and the importance of supporting young children's literacy.

Prerequisite
EDUC 500 AND EDUC 502 AND EDUC 503

**EDEC 512**
**Lang&Lity. Dev. in Early Chid.**
**Credit Hours: 3**
This course provides students with an overview of current knowledge on children's literacy and language development, with an emphasis on planning an appropriate curriculum to promote literacy in early childhood classrooms. Other areas of emphasis include language acquisition theories, core components of comprehensive early literacy programs such as print awareness and supporting children's writing, the importance of children's literature and second language learning issues.

Prerequisite
EDUC 500 AND EDUC 502 AND EDUC 503

**EDEC 580**
**Internship**
**Credit Hours: 6**
This field based course provides an opportunity for students to assume the role of a preschool teacher, while being jointly supervised by a mentor teacher and a university faculty member. Students spend four weeks working with their university instructors, preparing for their internships, and 10 weeks in the field, in a preschool classroom, under the joint supervision of the university instructor and a mentor teacher. Students are also required to participate in a seminar with their university instructor; topics for the seminar include student concerns as well as instructor and mentor teacher suggestions for teaching improvements. This course requires a minimum of 400 hours in the field

**EDEL 601**
**FN in Educational Leadership**
**Credit Hours: 3**
This course is designed as a survey course in educational leadership. Topics of study include creating and sustaining a school vision; promoting a positive school culture, providing an effective instructional program for all students; supporting staff development; managing the organization, and providing ethical leadership.

**EDEL 602**
**Management of Information Sys**
**Credit Hours: 3**
This course is designed to provide candidates with the knowledge and ability to use school information systems, which include collecting, analyzing, and interpreting data, to assess and monitor the development, implementation, and stewardship of a vision; to assess and monitor the school culture, the curriculum and instruction, and the instructional practices; to assess and monitor the safety, effectiveness, efficiency, and equity of the organization, operations, and resources; and to assess and monitor issues and trends related to community conditions and dynamics.

**EDEL 603**
**Educational Policy in Qatar**
**Credit Hours: 3**
This course is designed to provide candidates with knowledge related to the historical development of the education system in Qatar and the development of its educational policies. In addition, the candidates will acquire the knowledge and ability to promote the success of all students by collaborating with families and other community members, responding to diverse community interests and needs, and mobilizing community resources. Moreover, this course will provide candidates with the knowledge and ability to promote the success of all students by understanding, responding to, and influencing the larger political, social, economic, legal, and cultural context.

**EDEL 604**
**Curriculum Design &Development**
**Credit Hours: 3**
This course provides candidates with the knowledge and abilities needed to promote the success of all students by providing an effective instructional program, applying best practice to student learning, collaborating with families and other community members, and responding to diverse community interests and needs. It engages candidates in examining and applying State of Qatar requirements for a well balanced curriculum.

**EDEL 605**
**Instructional Supervision**
**Credit Hours: 3**
This course includes the examination of theories and practices in curriculum development, evaluation, and alignment and the application of these concepts to create an effective instructional program to support effective learning for all students. It engages candidates in examining and applying the requirements of the State of Qatar for a well balanced curriculum.

Prerequisite
EDEL 604 AND EDEL 601

**EDEL 607**
**School Finance & Resource Mgmt**
**Credit Hours: 3**
This course provides candidates with basic concepts in school finance. Additionally, it prepares candidates to recognize investment in education as an important human resource; to identify, analyze, and manage major sources of fiscal and non-fiscal resources for schools. This course helps in developing human resources and practices in school systems and in identifying responsibilities for attracting, selecting, developing, evaluating and retaining competent faculty and staff.

**EDEL 608**
**Seminar Issues in Educ Leader**
**Credit Hours: 3**
This course provides an opportunity for the learner to explore current issues in educational leadership, to become involved in the life of a school, and to identify and reflect on the daily work and duties of those individuals who hold leadership positions.

Prerequisite
EDEL 604 AND EDEL 601

**EDEL 609**
**Action Research**
**Credit Hours: 3**
The focus of this course is to apply action research in authentic contexts to improve teaching and learning. Candidates are expected to use action research as a vehicle for addressing individual or organizational problems. This cyclic method consists of describing a problem, gathering data to understand the problem, planning action to solve the problem, implementing the actions, monitoring and reviewing the effects of these actions, and then determining next steps based on the evidences. Students will also investigate the role of the administrator as an educational leader who supports the teaching and learning processes at the school. During this course, the learner will formulate a professional development plan for a teacher and implement the plan, with the approval of the school academic coordinator and faculty teaching staff. This course includes 50 field-based hours

**EDEL 610**
**Internship**
**Credit Hours: 6**
In this course, the learner will integrate, synthesize, and apply knowledge acquired during all program courses in relation to educational leadership. The course allows the learner to practice and develop skills required of an educational leader (school principal or vice principal) during a period of ten weeks for a total of 250 field hours. The internship is supervised by a college staff member and a school educational leader (principal or vice principal). Leadership responsibilities in regard to students, employees, parents, and the community increase gradually in number and complexity over the course of the internship.

**EDPR 540**
**Reading and Language**
**Credit Hours: 3**
This course deals with the methods and strategies essential for the effective teaching of literacy skills (word knowledge, reading and writing) in English as a second language to primary schoolchildren. Course topics include: components of reading identified by the “National Reading Panel” report (NICHD, 2000): phonemic awareness, phonics (decoding), fluency, vocabulary, and comprehension, besides teaching spelling, and writing.

**EDPR 541**
**Mathematics Methods**
**Credit Hours: 3**
This course assists a student teacher (Prospective teacher) in knowing the Primary mathematics structure, nature, different components, methods, and techniques of

the teaching process. Moreover, it helps a student teacher to acquire fundamental and appropriate teaching skills by using microteaching technique for peers. As it is known in practical education this leads to acquiring different aspects of experience.

Prerequisite
EDUC 500 AND EDUC 501 Concurrent AND EDUC 502 AND EDUC 503

**EDPR 542**
**Science Methods**
**Credit Hours: 3**
This course analyses curricula, laboratory equipment, and various resources for teaching science, examines methods relevant for active, authentic learning and appropriate teaching of science to young learners and helps children acquire knowledge, attitudes and skills essential to science literacy. The focus is on science for understanding and inquiry skills. Qatar standards for science in elementary schools is presented and analysed.

Prerequisite
EDUC 500 AND EDUC 501 Concurrent AND EDUC 502 AND EDUC 503

**EDPR 543**
**Arabic Methods I**
**Credit Hours: 3**
This course covers the nature of the structure of Arabic language and its characteristics and objectives, and the characteristics of the language development for primary school children and how to satisfy it and develop it through the Arabic language curriculum. It aslo equips students with basic general teaching skills that prepare them to teach various Arabic language arts successfully as it is needed for the next methods course (methods of teaching Arabic language 2), with a focus on the national curriculum standards for the Arabic language and what these developed standards require in terms of changes in course content and the method of implementing it.

**EDPR 544**
**Arabic Methods II**
**Credit Hours: 3**
This course covers the different teaching methods and effective strategies used in teaching various Arabic language arts in primary grades. It gives the candidates the opportunity to practice these skills and strategies using the peer method of teaching, Micro teaching, improved modern methods, and the use of modern technologies in line with national standards for primary school. It also paves the way for the acquisition of educational field experiences in its various aspects in internship schools.

Prerequisite
EDPR 543
**EDPR 545**

**Social Studies Methods**
**Credit Hours: 3**
This course is designed to provide methods and content of teaching social studies to primary school students. It includes theoretical topics, lesson planning, visual teaching, evaluation, and a general overview of the content and standards included in the social studies curriculum and many other topics. It also includes a preliminary focus on the development of your educational philosophy in the teaching of social studies in the primary school, as well as the use and application of innovative teaching methods to be an excellent social studies teacher and effective for the primary grades.

**EDPR 546**
**Islamic Studies Methods**
**Credit Hours: 3**
This course covers the concept of Islamic education and its characteristics, objectives of teaching it, and the teaching skills that the teacher should know, as well as the modern teaching methods and strategies which focus on the positive involvement of the learner such as active learning, cooperative learning, and brainstorming and more. The learner also studies the teaching of the different branches of Islamic education which include recitation, interpretation, the authentic sayings of prophet Mohammad and his tradition, Islamic beliefs, worship, discipline in line of the objectives of teaching, the principles to consider in teaching, and steps of teaching. It also covers how to use technology in the teaching of Islamic education. Likewise, it covers the role of the Islamic calendar in the Islamic Education, and the attributes and characteristics of the teacher of Islamic education. Finally, it covers how to conduct research in Islamic education.

**EDPR 580**
**Internship**
**Credit Hours: 6**
Describe, week-by-week, a frame work for your progress from supportive activities in the classroom towards full responsibility for all teaching, and then scaling back your involvement with the class until the mentor teacher is again the main instructor.

**EDSE 502**
**Scnd Lang Lrnrs Scnd Classroom**
**Credit Hours: 3**
This course is designed for preservice teachers to enable them to teach in multi-lingual settings by selecting and modifying curriculum and instruction for English language

learners (ELLs). During this course, current and past methodologies for teaching limited English-proficient students at the secondary level are thoroughly introduced and analyzed. Students determine which strategies are best for their particular teaching situations. As the course progresses, participants reference the varying methodologies and make their own instructional plans and units. Emphasis is placed on incorporating a variety of teaching strategies and standards while stressing both content skills and language skills.

**EDSE 503**
**Read and Writ Across Curr**
**Credit Hours: 3**
The purpose of this course is to extend the candidate's thinking about the concept of literacy, and to prepare the candidate to critically analyze learning and literacy instruction in today's schools. The focus is on providing a critical perspective for teaching reading and writing across the curriculum. The emphasis of the class is on developing conceptual tools that enable the candidate to use reading and writing as instructional tools in the classroom. The course focuses on the nature of the literacy processes and instructions that facilitate learning, particularly as it applies to secondary students. The course uses a social-constructivist theoretical perspective and involves a field-based experience.

**EDSE 553**
**Mthds I:Instr Strt Islmc Studs**
**Credit Hours: 3**
This course covers the concept of Islamic education and its characteristics, objectives of teaching it, content analysis of its different topics, and the teaching skills that the teacher should know, as well as the modern teaching methods and strategies which focus on the positive involvement of the learner such as active learning, cooperative learning, and brainstorming and more. The learner also studies the teaching of recitation and the interpretation in line of the objectives of teaching it, the principles to consider in teaching it, the steps to teach each of them, as well as studying some of the rules of recitation and tajwid.

**EDSE 554**
**Methods I:Instr Strat-Bio**
**Credit Hours: 3**
This course covers goals, methods, and materials appropriate for teaching secondary levels courses in biology, with special emphasis on the Science Curriculum Standards for the State of Qatar. Topics include constructivist learning theories, discovery learning, inquiry, learning cycle models, project and problem-based learning, and the design and management of science laboratories. The differences between the Advanced and Foundation Curriculums for the State of Qatar National Curriculum Standards and the changes in strategies that are required are explored. This course has a field-based component.

**EDSE 555**
**Methods I:Instr Strat-Chem**
**Credit Hours: 3**
This course covers goals, methods, and materials appropriate for teaching secondary levels courses in chemistry, with special emphasis on the Science Curriculum Standards for the State of Qatar,. Topics include constructivist learning theories, discovery learning, inquiry, learning cycle models, project and problem-based learning, and the design and management of science laboratories. The differences between the Advanced and Foundation Curriculums for the State of Qatar National Curriculum Standards and the changes in strategies that are required are explored. This course has a field-based component.

**EDSE 556**
**Methods I:Instr Strat-Phys**
**Credit Hours: 3**
This course covers goals, methods, and materials appropriate for teaching secondary levels courses in physics, with special emphasis on the Science Curriculum Standards for the State of Qatar. Topics include constructivist learning theories, discovery learning, inquiry, learning cycle models, project and problem-based learning, and the design and management of science laboratories. The differences between the Advanced and Foundation Curriculums for the State of Qatar National Curriculum Standards and the changes in strategies that are required are explored. This course has a field-based component.

**EDSE 557**
**Methods I:Instr Strat-Soc Stdy**
**Credit Hours: 3**
This course covers goals, methods, and materials appropriate for teaching secondary level courses in social studies. Students learn research-based methods of effective instruction in the knowledge and skills related to the discipline. This course has a significant field-based component.

**EDSE 558**
**Mthds I:Instr Strat Arab**
**Credit Hours: 3**
This course covers goals, methods, and materials appropriate for teaching secondary levels courses in the Arabic language, with special emphasis on the

Arabic Curriculum Standards for the State of Qatar. The differences between the Advanced and Foundation Curriculums for the State of Qatar National Curriculum Standards and the changes in strategies that are required are explored. This course has a field-based component.

**EDSE 559**
**Methods I:Instr Strat-Engl**
**Credit Hours: 3**
This course covers goals, methods, and materials appropriate for teaching secondary levels courses in English (ESL, EFL), with special emphasis on the English Curriculum Standards for the State of Qatar. The differences between the Advanced and Foundation Curriculums for the State of Qatar National Curriculum Standards and the changes in strategies that are required are explored. This course includes an extensive content- specific ICT component and includes field-based experience in a preparatory or secondary school setting.

**EDSE 560**
**Methods I:Instr Strat-Math**
**Credit Hours: 3**
A study of teaching strategies designed to put into practice the major ideas of mathematics learning and teaching, including the theories of Piaget, Vygotsky and others, as applied to such topics as scaffolding, formal thinking, and problem solving. Strategies are studied for teaching learners of different ages, developmental stages, cognitive styles, and other individual differences. The differences between the Advanced and Foundation Curriculums for the State of Qatar National Curriculum Standards and the changes in strategies that are required are explored. This course has a field-based component.

**EDSE 563**
**Mthd II:Inquiry&ICT Islmc Stud**
**Credit Hours: 3**
This course covers the teaching of the different branches of Islamic education which include the authentic sayings of prophet Mohammad and his tradition, Islamic beliefs, worship, and discipline in line of the objectives of teaching, and the principles to consider in teaching, and steps of teaching. It also covers how to use technology in the teaching of Islamic education, the role of the Islamic calendar in the Islamic Education, the attributes and characteristics of the teacher of Islamic education and finally, how to conduct research in Islamic education.

Prerequisite
EDSE 553

**EDSE 564**
**Mthds II Inquir & ICT in Biol**
**Credit Hours: 3**
This course covers goals, methods, and materials appropriate for teaching secondary levels courses in science, with special emphasis on the Science Curriculum Standards for the State of Qatar. Topics include the use of ICT in biology; use of action research to inform instruction; and strategies to encourage, design, mentor and assess student research.

Prerequisite
EDSE 555

**EDSE 565**
**Mthds II Inquir & ICT in Chem**
**Credit Hours: 3**
This course covers goals, methods, and materials appropriate for teaching secondary levels courses in science, with special emphasis on the Science Curriculum Standards for the State of Qatar. Topics include the use of ICT in chemistry; use of action research to inform instruction; and strategies to encourage, design, mentor and assess student research.

**EDSE 566**
**Mthds II Inquir & ICT in Phys**
**Credit Hours: 3**
This course covers goals, methods, and materials appropriate for teaching secondary levels courses in science, with special emphasis on the Science Curriculum Standards for the State of Qatar. Topics include the use of ICT in physics; use of action research to inform instruction; and strategies to encourage, design, mentor and assess student research. This course has a field-based component.

Prerequisite
EDSE 556

**EDSE 567**
**Meth.II:Inqu.&ICT for Soci.Stu**
**Credit Hours: 3**
Candidates will study goals, methods, and materials appropriate for teaching secondary levels courses in social studies, with a special emphasis on the use of ICT in social studies instruction. The course will also include the use of action research to inform instruction; and strategies to encourage, design, mentor and assess student research.

Prerequisite
EDSE 557

**EDSE 568**
**Mthds II: Inquiry&ICT for Arab**
**Credit Hours: 3**
This course covers goals, methods, and materials appropriate for teaching secondary levels courses in Islamic Studies. The differences between the Advanced and Foundation Curriculums for the State of Qatar National Curriculum Standards and the changes in strategies that are required are explored. This course has a field-based component.

Prerequisite
EDSE 558

**EDSE 569**
**Mthds II Inquiry & ICT in Engl**
**Credit Hours: 3**
This course covers goals, methods, and materials appropriate for teaching secondary levels courses in English. The differences between the Advanced and Foundation Curriculums for the State of Qatar National Curriculum Standards and the changes in strategies that are required are explored. Candidates learn how to conduct action research, initiate and guide student research, and to use ICT in English teaching. This course has a field-based component.

Prerequisite
EDSE 559

**EDSE 570**
**Mthds II Inquir & ICT in Math**
**Credit Hours: 3**
The course introduces student-centered methods in teaching mathematics. Special attention is devoted to technological aids to instruction and hands-on mathematics equipment such as computer-aided instruction and mathematics explorations to stimulate discovery learning. The course also includes the use of action research to assess and inform instruction and strategies to teach, encourage, mentor, and assess student research. This course has a field-based component.

Prerequisite
EDSE 560

**EDSE 580**
**Internship**
**Credit Hours: 6**
This course provides ongoing mentoring and reflection during a 10-week internship experience and the four weeks preparation for that internship. Topics for study emerge from the interns' authentic concerns and interests, from the university supervisor's classroom observations, and from mentor teacher suggestions. Candidates enrolled in this course assume the responsibilities of a classroom teacher in a preparatory or secondary school setting. This course requires a minimum of 400 field hours.

**EDUC 500**
**Qatari Schools and Society**
**Credit Hours: 1**
This course has been designed to acquaint the learners with the progress of education in Qatar, including schools and the various elements that impact education and learning, such as the family and society. Learners become acquainted with the roles that they may be expected to play within the initiative of educational progress in Qatar through examining some of the issues related to the initiative and the responsibilities of teachers.

**EDUC 501**
**Human Development & Learning**
**Credit Hours: 2**
Human Development and Learning is an applied field of psychology that relies on a number of psychological principles and theories in order to offer a scientific explanation to the process of the teaching and learning. Among the topics that this course covers are cognitive development, language development, personal development theories, intelligence, individual differences, learning theories, motivation, classroom management, and measurement and evaluation in the school. The focus of this course is on how learning occurs and strategies that support learning (pedagogy). This course has a field-based component.

**EDUC 502**
**Instructional Planning& Assess**
**Credit Hours: 3**
This course engages class participants in examining curriculum theory and models and provides experience in designing individual lessons, units, and assessments that promote the learning of all preparatory or secondary students. Participants in the class learn to plan an effective instructional program through applying best practices, responding to diverse community interests, and planning for student mastery of State of Qatar National Curriculum Standards and explore the differences and policies related to the Advanced-Foundation division of these standards. This course has a field-based component.

**EDUC 503**
**Introduction to Special Edu**
**Credit Hours: 3**
This course provides broad knowledge and skills in special education for candidates in all teacher education

programs. It mainly covers: models, theories, etiology, philosophies, legal provisions, ethical and professional commitment, assessment and identification procedures and instructional strategies for students with exceptional learning needs. It also provides knowledge of different characteristics of learners with special needs and their educational implications. This course stresses on adapting teaching strategies and differentiating instructions to meet the needs of individuals with exceptional learning needs. This course has a field-based component.

**EDUC 504**
**Magt of the Educational Envir**
**Credit Hours: 3**
This course focuses on principles and strategies for developing and maintaining an effective classroom environment. A variety of models conducive to maintaining a positive environment are explored. Students are introduced to classroom management practices, instructional strategies, and collaborative consultation that facilitate a positive and effective educational climate. The reflective teaching model is integrated through the internship learning activities.

**EDUC 520**
**Methods of Teaching ESL**
**Credit Hours: 3**
This course deals with the techniques, methods and strategies for the instruction of English as a second language. The following main topics are discussed: theories of first and second language acquisition, variables affecting second language acquisition, language transfer and inter language, techniques and methods of English instruction for Limited English Proficient students, teaching ESL in content areas and instructional modification, use of instructional strategies and appropriate assessment practices for ESL students, the ESL/Bilingual teacher and learner; strategies for developing listening, speaking, reading and writing skills of ESL/Bilingual learners (more emphasis will be given to oral skills), sociocultural issues related to education of ESL/Bilingual students, English as a world language and its teaching implications and issues related to nonnative English speaking teachers. Students have to cover 36 hours field practice and reinforcement of skills

**EDUC 606**
**Educational Research Meth**
**Credit Hours: 3**
This course provides an overview of research methods, designs, and techniques. Course content includes applying public information and research-based knowledge of issues and trends and the use of appropriate assessment strategies and research methodologies to address authentic issues in education. Students also explore the use of action research as a means to improve teaching and learning.

**EDUC 607**
**School Fin & Resour Mgmt**
**Credit Hours: 3**
This course provides candidates with basic concepts in school finance. Additionally, it prepares candidates to recognize investment in education as an important human resource; to identify, analyze, and manage major sources of fiscal and non-fiscal resources for schools. This course helps in developing human resources and practices in school systems and in identifying responsibilities for attracting, selecting, developing, evaluating and retaining competent faculty and staff.

**EEMP 504**
**Environmental Chemistry**
**Credit Hours: 3**
This course covers current analytical techniques, and provides the scientific background and skills needed for research in environmental chemistry. Topic areas include the development of advanced technologies and materials for air and water purification and for the saving and storage of energy, water and air pollution control, soil and sediment remediation, environmental technology, chemical limnology, and groundwater chemistry. Students design mass and energy flows and quantify matter transformations, in particular those of pollutants; analyze scientific literature; describe and evaluate the role of compounds and processes in soil, water and air at the molecular-mechanistic level; identify effects and toxicity of pollutants on living organisms; and evaluate methods for the study of eco-toxicology and risk assessment.

**EEMP 505**
**Env. trans. & water resources**
**Credit Hours: 3**
The course covers the integration of two modern fields of study, environmental hydraulics and water quality modelling. It deals with the development and application of models that integrate our current understanding of the transport and transformation of materials to predict the fate of those materials in the natural environment. The course includes the engineering applications of the hydrodynamic principles to predict the fate and transportation of pollutants in the environment. Emphasis is divided between groundwater, coastal engineering and atmospheric transport.

**EEMP 506**
**Micro. process in env. systems**
**Credit Hours: 3**
This course focuses on microbiological processes that may

be applied to a broad range of environmental concerns. Wastewater Characteristics, Chemical and Biochemical Oxygen Demand, Kinetics of Suspended-Growth Biological Processes, Kinetics of Attached-Growth Biological Processes, Nitrification, Denitrification, Biotransformation of Hazardous Compounds are some of the topics covered in this course.

**EEMP 507**
**Env. systems and modelling**
**Credit Hours: 3**
Systems analysis is at the heart of engineering and this is what allows both quantitative analysis of both environmental problems and technologies. This course covers mathematical modelling that includes mass and energy balances, kinetics, transport, reactor theory, and modelling approaches for air, surface and groundwater and treatment systems. In this course, students learn to use the MatLab software package for modelling. Topics discussed in Environmental Systems and Processes: Principles, Modelling, and Design include: fluid flow and mass transport; passive and reactive interphase mass transfer; elementary and complex process rates; ideal, hybrid, and non-ideal system modelling and design; and multiphase and interfacial process dynamics and design.

Prerequisite
EEMP 505

**EEMP 508**
**Env. Measurements & stat. lab**
**Credit Hours: 1**
This practical course consist of a series of laboratory experiments that enable the students to plan/hypothesize, design, and execute laboratory experiments of various complexity, collect and analyze data, write technical reports, and make presentations of their research outcome. Experiments include: Reactor operations, Physio-chemical processes such as Water Softening and Colour Removal by Coagulation/Flocculation, Membrane Filtration, Biological Processes such as: Biofilms Development Kinetics.

**EEMP 509**
**Phy.-chem. Proce. in env. sys**
**Credit Hours: 3**
This is an advanced graduate course in water treatment, with a broadened focus on physical-chemical processes. The course retains a strong emphasis on water treatment, however, because of its process-based nature; the same concepts can be applied to waste treatment, site remediation and pollutant transport. This course focuses on regulatory and control trends, and environmental impact determinations as well as Government and municipal regulations.

Prerequisite
EEMP 504

**EEMP 510**
**Design Project**
**Credit Hours: 3**
This is a project-based course on the design of environmental systems such as waste water treatment units, air pollution abatement units, contaminated soil remediation units, etc... It is anticipated that specialist software such as Superpro Designer, and AspenPlus will be utilized in the design projects.

Prerequisite
EEMP 506

**EEMP 521**
**Solid Waste Management**
**Credit Hours: 3**
This course deals with solid waste handling world-wide, and specifically in the Gulf region, through lectures, case studies, assignments and field visits. The course covers the different types of waste with a primary focus on treatment and disposal techniques and the underlying principles of management options, environmental impacts, and problems associated with activities such as open dumping, landfill, composting, incineration, and non-incineration thermal techniques. Specific topics include problems associated with household hazardous wastes, demolition waste, domestic waste, sewage sludge and municipal waste, agricultural waste, and construction-site waste. Students are taught how to evaluate ground water pollution and options for protection at disposal sites; susceptibility of aquifers to contamination; computer modelling of how pollutants reach groundwater; designs of ground water protection systems at hazardous waste disposal sites and facilities; biological warfare.

Prerequisite
EEMP 504

**EEMP 522**
**Hazard. Waste & Con. Sit. Mana**
**Credit Hours: 3**
This course covers integrated waste management, functional and fundamental properties of hazardous waste, toxicological properties of contaminants, contaminant release mechanisms, fate and transport of contaminants in the environment, contaminated site assessment principles, Quantitative Human Health Risk Assessment (QHHRA) as applied to contaminated sites, hazard identification, exposure pathway analysis, risk characterization, risk management and site remediation, methods of hazardous waste treatment and contaminated site

remediation, secure land disposal of hazardous waste and contaminated soils and sludges.

Prerequisite
EEMP 504

**EEMP 523**
**Marine Env. & Human Develop.**
**Credit Hours: 3**
The course focuses on key aspects of the interface between human development and environmental sustainability of the marine environment including the influence of economic growth, social development and environmental management; sustainable use and access to water; management and conservation of the marine environment; and the influence of climate change on human development. The major environmental challenges that Qatar faces and that need to be resolved effectively are considered, particularly achieving water security, reducing carbon emissions, increasing energy efficiency, and reducing risks that threaten the safety of the marine environment. Emphasis is placed on cross-reference to other courses dealing with regulatory and policy issues.

Prerequisite
EEMP 504

**EEMP 524**
**Environmental Sustainability**
**Credit Hours: 3**
This course covers products, contexts and capacities; life cycle design; minimizing resource consumption; product lifetime optimization; extending the lifespan of materials; system design for eco-efficiency; methods and support tools for environmental sustainability analysis and design; and evolution of sustainability in design.

**EEMP 525**
**Industrial Waste Water Treat.**
**Credit Hours: 3**
This course covers treatment of industrial water from refining, petrochemical and gas processing industries; Oil separation, flocculation, sedimentation, flotation, treatment of spent caustic, cooling water systems, protection against scale and corrosion.

Prerequisite
EEMP 506 AND EEMP 509

**EEMP 526**
**Clean Energy Resources**
**Credit Hours: 3**
This course covers the emissions from industrial activities, energy systems, power plants, renewable energy; solar and wind, photovoltaic power generation, geothermal energy, energetic use of biomass.

**EEMP 527**
**Research Strateg. & Methods**
**Credit Hours: 3**
This course is an introduction to research methodologies including literature review techniques, record keeping, technical report and scientific paper writing, experimental design, statistical analysis, usage of specialist software in research.

**EEMP 528**
**Special Topics in Envi. Eng.**
**Credit Hours: 3**
This is a course on specialized topics relevant to environmental engineering. It may also be offered to specific students to enable them to pursue advanced studies in particular areas under the direction of a faculty member, which must be arranged and approved prior to registration.

**EEMP 529**
**Atmo. Pollu. & Air Qua. Manag.**
**Credit Hours: 3**
This course covers Clean Air Act quality, emission standards, sources and effects of air pollution, air pollution from fuel combustion, fuel pre-cleaning, control of particulate matter (gravity settlers, cyclones, electrostatic devices, scrubbers and filtration), control of VOCs, SOx, and Nox, adsorption and absorption of air pollutants, and Air Pollution Control.

Prerequisite
EEMP 504

**EEMP 530**
**Envi. Assess. & Manag.**
**Credit Hours: 2**
This course includes review of EIA basics: definitions, cause-effect mechanisms, description of engineered activities and baselines, environmental impact predictions, testing and monitoring of effects, project evaluation and decision making for engineering design, and impact management of engineered facilities, environmental management plans and audits, communication with stakeholders, and review of projects.

**EEMP 591**
**Industrial Master Project**
**Credit Hours: 2**
This is a one-term project which offers students the opportunity to work on a comprehensive research or design project under the supervision of one or more faculty members, which must be arranged and approved prior to

registration. A written proposal, progress reports, and a final report are required.

Prerequisite
EEMP 530

**EEMP 595**
**Master Thesis I**
**Credit Hours: 1**
This course is the first of a two-term thesis which offers students the opportunity to work on a comprehensive research or design project under the supervision of one or more faculty members, which must be arranged and approved prior to registration. A written proposal, progress reports, and a final thesis are required.

Prerequisite
EEMP 508

**EEMP 596**
**Master Thesis II**
**Credit Hours: 3**
This course is the second in the sequence of a two-term thesis which offers students the opportunity to work on a comprehensive research or design project under the supervision of one or more faculty members, which must be arranged and approved prior to registration. A written proposal, progress reports, and a final thesis are required.

Prerequisite
EEMP 595 AND EEMP 527

**EEMP 651**
**Special Topics**
**Credit Hours: 3**
This is a course on specialized topics relevant to environmental engineering. It enables the students to conduct advanced statistical analysis of experimental data. It may also be offered to specific students to enable them to pursue advanced studies in particular areas under the direction of a faculty member, which must be arranged and approved prior to registration.

**ELEC 552**
**Power Sys. Dynamics & Control**
**Credit Hours: 3**
Dynamic performance of power systems with emphasis on stability. Modeling of system components including FACTS devices and control equipment. Analysis of the dynamic behavior of the power system in response to small and large disturbances.

**ELEC 553**
**Advanced Energy Distrib. Sys.**
**Credit Hours: 3**
Transient models of distribution components, automated system planning and distribution automation, surge protection, reliability, power quality, power electronics and intelligent systems applications.

**ELEC 554**
**Adv. Top. in Ele. Pow. S. Eng.**
**Credit Hours: 3**
A selection of state-of-the-art topics on electric power system engineering that spans both theoretical background and practical application considerations

**ELEC 555**
**Statistical Signal Processing**
**Credit Hours: 3**
Foundations-Stochastic process in continuous-time and discrete-time with its first and second order description, sampling process, stochastic dynamical models, simulation of stochastic processes, basics of constrained and unconstrained optimization; Basics of estimation theory - parameter estimation, adaptive filtering, optimal filtering; Basics of detection theory - hypothesis testing, sequential detection, detection of signals in noise; Markov Decision Processes; Compressive sensing. Case studies in wireless communications and target tracking.

**ELEC 556**
**Advanced Comm. Engin.**
**Credit Hours: 3**
Fading channel characterization and simulation; Performance of digital modulation in fading and inter-symbol interference; Capacity of wireless channels; Flat fading countermeasures, diversity, coding and interleaving, adaptive modulation; Multiple antenna systems (MIMO); Inter-symbol interference countermeasures, equalization, multi-carrier modulation, spread spectrum and RAKE receivers; Multiple access, modern cellular systems, modern data networks, and ad-hoc networks. Particular emphasis is placed on the interplay between concepts and their implementation in systems.

**ELEC 557**
**Comm. and Information Theory**
**Credit Hours: 3**
Mathematical models for channels and sources, the basic concepts of entropy, relative entropy, and mutual information are defined, and their connections to channel capacity, coding, and data compression are presented; Limits for error-free communication, channel capacity; Limits for data compression and source coding; Shannon's theorems and rate distortion theory; Basics of coding

for noisy channels, linear block codes, cyclic codes, convolutional codes, maximum likelihood decoding.

**ELEC 558**
**Bioinstrumentation**
**Credit Hours: 3**
Biomedical engineering is the study of how the human body functions from an engineering perspective.
An essential part of the functionality concerns the determination and analysis of signals generated within the body. Bioinstrumentation presents a means whereby the signals are measured, monitored and analyzed. This module concentrates on the extraction, processing and manipulation of the signals to aid in the therapeutic and diagnostic process.

**ELEC 559**
**Biomedical Signal Processing**
**Credit Hours: 3**
Part 1: Bio-systems and modelling of physiology; Engineering and human senses; Brain studies and EEG (electrical activity and disorders); heart, ECG and prevention of heart attacks; eye, perception and image processing ; human body as a communication system (auditory system, speaker and speech analysis); Part 2: Review of Digital Signal Processing and Digital Filtering; Time- Frequency Analysis; Modeling of Biomedical processes and systems; Filtering for removal of artefacts; Biomedical Event detection, characterization and automatic diagnostic; Frequency characterization; Pattern classification and diagnostic decision; Lab experiments.

**ELEC 560**
**Medical Imaging**
**Credit Hours: 3**
The aim of the Medical Imaging Course is to provide broadly based and multidisciplinary training in medical imaging. The major themes will include background and introduction to the principles underlying the main types of imaging including technology, engineering and their application in clinical and research environments. The course will cover different aspects of medical imaging, including acquisition systems, pre-processing methods, reconstructions 2D-3D, image analysis using segmentation and registration, image compression and real-time medical imaging systems. Emphasis will be also given to interesting new areas of biomedical imaging relevant to current biomedical research.

**ELEC 563**
**Advanced Course in Digital Transmission**
**Credit Hours: 3**
The goal is to strengthen the communication theoretic basis for advanced wireless system development. Topics to be covered are: Elements of single-carrier digital transmission systems; Multicarrier techniques; Digital communication through fading multipath channel; Diversity techniques, Outage probability and outage capacity; Statistical signal processing principles with applications in adaptive equalization and estimation; Channel estimation principles; Multi-antenna techniques; Advanced channel coding methods: Turbo codes & LDPC codes; Advanced channel estimation and equalization methods; EM algorithm

**ELEC 566**
**Communication Networks**
**Credit Hours: 3**
A course on the basics of data communication network protocols, basics of queuing theory, basics of multiple access techniques, methods of performance analysis and simulations

**ELEC 568**
**Time-Frequency Signal Processing**
**Credit Hours: 3**
Signal time-frequency characteristics; time-frequency signal design; analytic signal; instantaneous frequency; time-varying spectral analysis; Wigner-Ville Distribution; quadratic time-frequency distributions; optimal design; efficient implementations; IF estimation; detection and classification methodologies; performance measures; noise filtering and signal enhancement; real life applications in communications, geophysics, engineering diagnosis and biomedicine.

**ELEC 651**
**Advanced Special Topics I**
**Credit Hours: 3**
A selection of the state-of-the-art advance topics in Electrical Engineering

**ELEC 652**
**Advanced Special Topics II**
**Credit Hours: 3**
A selection of the state-of-the-art advance topics in Electrical Engineering

**EMP 500**
**Probability and Statistics**
**Credit Hours: 3**
This course covers the classification of data, graphical representation, arithmetical description, probability theory, probability of an event and composite events, addition rule and multiplication rule, independent events,counting techniques, random variables and probability distributions, expected values, continuous and discrete random variables, normal distribution, binomial distribution, poisson

distribution, joint and marginal probability distributions, independence of random variables, covariance and correlation, random sampling, unbiased estimates, statistical intervals and test of hypothesis for a single sample.

**EMP 501**
**Engineering Management**
**Credit Hours: 3**
This course covers the nature of management, leadership, organizations, motivation, organization structures, planning, network analysis, critical path method, resources allocation, application in critical path method, personnel management, communication.

**EMP 502**
**Operations Research**
**Credit Hours: 3**
Introduction to fundamental operations research concepts covering modeling and solution methodologies, modeling of industrial decision making problems, linear, non-linear, and mixed integer programming formulations, linear programming solution techniques network models, decision making under uncertainty; decision trees, multi-criteria decision making.

**EMP 503**
**Bus Fundmntls for Eng Managers**
**Credit Hours: 3**
Introduction to business fundamentals in the areas of cost accounting, cost analysis, financial accounting, marketing, and human resources management.

**EMP 504**
**Process Improvement Techniques**
**Credit Hours: 3**
Concepts of work, role of product & process design in improvements, techniques for work analysis, principles of method improvement at operator, process, line, and organizational levels, Concepts of process mapping & charting at various levels, understanding various types of wastes and their removal, concepts of lean operations and management, lean sigma and case studies.

**EMP 505**
**Project Management**
**Credit Hours: 3**
Role of projects in organization's competitive strategy; standard methodologies for managing projects; project life cycle; design-implementation interface; estimating: preliminary and detailed; contractual risk allocation; scheduling: PBS; WBS; integration of scope, time, resource and cost dimensions of a project; evaluation of labor, material, equipment, and subcontract resources; scheduling techniques including CPM/ PERT, GERT, critical chain; solving real world project schedules; Monte Carlo simulation; cost budgeting; cost baseline; cash flow analysis; earned value analysis; cost control; proposal presentation; application of software for project management.

**EMP 506**
**Production and Ops Management**
**Credit Hours: 3**
This course offers a comprehensive overview of Production and Operations Management to enable the students to understand Production and Operations Management tasks related to product development and design and production planning and production. Uses general principles and selected models and methods to work on Production and Operations Management problems.

**EMP 507**
**Entrp Info Anlysis and Bus App**
**Credit Hours: 3**
This course includes types of information and fundamentals of information systems, business processes, organizations and systems, the relational data bases, architecture and logical data base design, Information & decision making, understanding the information requirements of an enterprise—understanding user interface, design and implementation of forms and reports based working for varied user requirements, introduction to E-commerce and fundamentals of enterprise applications.

**EMP 508**
**Decsn Techn and Data Analysis**
**Credit Hours: 3**
Quantitative methods for interpreting and understanding data; the use of partial information derived from random samples; and techniques summarizing applications, quantitative and qualitative aspects of problem solving and decision-making, includes: structuring and basics of decision-making, application of probability, functional relationships, marginal analysis and linear programming.

**EMP 511**
**Physical Distrib Management**
**Credit Hours: 3**
This course includes scope, functions, strategy and planning for physical distribution, order processing, selecting warehouse location, inventory storage, calculating cost, freight and storage fee, transportation management and organization, packaging, methods and techniques for physical distribution management.

**EMP 512**
**Procurement Management**
**Credit Hours: 3**

This course provides students with a detailed view of the integration for project and procurement life cycles, defining roles and responsibilities for the project procurement and contracting function, integrating procurement and contracting (P-C) planning with up-front project planning, and managing the procurement and contracting scope as a project. In addition, it includes discussion on topics such as performance-based contracting, economic analysis tools and quality programs.

**EMP 513**
**Suppliers Management**
**Credit Hours: 3**
This course covers strategies for creating value through supply alliances. Topics include the scope, structure and dynamics of strategic relationships; how to work with different external and internal organizational structures; how to evaluate a relationship for alliance potential, including a real-world opportunity to work on a relationship of your choice; how to incorporate a purchasing/ supplier alliance into your organization; how to plan, negotiate, implement and monitor/ manage alliance relationship in your organization's supply strategy and operations; and to recognize and address cultural and organizational barriers to forming positive relationships.

**EMP 514**
**Supply Chain Management**
**Credit Hours: 3**
The course covers supply chain operating practices and principles (i.e., the fundamentals of materials and logistics management). Topics includes analyzing the dynamic nature of supply chain management for products and services, the impact of the global economy on the supply chain management process, strategies for customer service, quality, logistics management, inventory management, forecasting, postponement, sourcing (in particular, global sourcing), network design, and virtual integration (web-centric) and integrated supply chain management , practices and performance measures to diagnose supply chain performance and to develop supply chain strategies. Topics include the formulation of supply chain management strategies that would integrate with companies' e-business strategies and practices and develop action plans for upgrading the supply chain practices and supporting ICT systems to deliver improved supply chain performance.

**EMP 515**
**Materials and Logistics Mang**
**Credit Hours: 3**
Includes Material Classification, Codification, Standardization and Variety Reduction, Operating Cycle: Working Capital Turn-Over Ration; Role And Functions Of Purchasing; Vendor Development And Rating Systems; Material Requirement Planning For Dependent Demand Items, Logistics System Design, Demand Planning, Multiple Channel Distribution, Concept of Warehousing, Warehousing Locations, Method Of Storage, Primary and Secondary Transportation, Logistic Costing, Logistic Information Systems, Integrating all activities for effective supply chain performance.

**EMP 521**
**Facility Planning & Layout**
**Credit Hours: 3**
Covers fundamentals of facilities planning and design; facilities planning models including location selection and location allocation modeling; product, process and schedule design; flow, space and activity relationships as well as personnel requirements; material handling equipment selection and materials handling systems, systematic layout planning and computer aided layout improvements and design, storage and warehouse system.

**EMP 522**
**Service Operations Management**
**Credit Hours: 3**
Provides an understanding of Services, how the operations and management of services is different from manufacturing, role of services in the economy and value chains, service strategies and competitiveness of value chain, design of services, service systems and the various considerations, managing and operating services, service considerations for select sectors such as health care, public and private nonprofit organizations, global performance aspects of services.

**EMP 523**
**Six Sigma and Stratg Qual Mang**
**Credit Hours: 3**
This course covers the concepts of Six Sigma methodology and how to improve the quality of manufacturing and business process improvement. Topics include measuring, evaluating and improving performances in conjunction with Six Sigma methodology and Quality Function Deployment (QFD), loss function; system, parameter and tolerance design using statistically designed experiments.

**EMP 524**
**Systems Analysis and Design**
**Credit Hours: 3**
This course introduces systems analysis and design methods, techniques and tools that organizations use to assess how computer based technologies can most effectively add value to the enterprise. The course covers a systematic methodology for analyzing an organizational

problem or opportunity, determining what role, if any, computer-based technologies can play in addressing the needs, articulating organizational requirements for the technology solution, specifying alternative approaches to acquiring the technology capabilities needed to address the organizational requirements, and articulating the specifications for the information systems solution.

**EMP 526**
**Innovation and Tech Management**
**Credit Hours: 3**
This course covers the process and dynamics of innovation and characteristics of different types of innovations, relations between innovations, technology and product development, dynamics of technological evolution and technological shifts, social and human side of innovations, technology development incremental and radical, and product development, impact of creativity in fostering innovations and motivating professional people in technologically oriented corporations, organizational and managerial aspects of organizing product development in concurrent engineering way in cross-functional teams and exploring barriers to integration, principles of new approaches in managing complex systems, exploring Information Driven Management (IDM) approach and Self-Organizing principles, exploring the principles of Dependence Structure Matrix (DSM) and Domain Mapping Matrix (DMM) in managing complexity and uncertainty.

**EMP 531**
**Construction Engineering Mang**
**Credit Hours: 3**
Includes macro-level principles and practice of construction engineering and project management, introduction to Project planning, development of cost estimates and project schedules, construction methods and fundamental terminology used in the engineering and construction industry, introduction to project management processes, the owner's study & project evaluation methods, formation of project teams, project coordination in construction, and project closeout.

**EMP 532**
**Est and Fin Anlys for Cnstruct**
**Credit Hours: 3**
This course covers the construction industry, its makeup, operation, estimating and bidding procedures, theory and practice of estimating materials, labor, equipment and overhead costs for various types of construction. Emphasis is on preliminary cost estimates during the conceptual design phase of a construction project.

**EMP 533**
**Construction Equipment Managmt**
**Credit Hours: 3**
Includes analysis of construction equipment, performance under various operating conditions, application of engineering fundamentals to construction methods, selection of equipment production rates, and unit costs of work in place.

**EMP 534**
**Cnstr Ctrct & Lgl Cncpt Cnstr**
**Credit Hours: 3**
Includes the nature of contracts, contract documents, master format, principles of specification writing, contract types, bonds and insurance, bidding, subcontracting, methods and techniques of tracking and control of construction projects, contract administration, evaluation of current research findings top contract implementation, managing the pre-award and the post award phases of construction projects, legal concepts in construction projects, and claim analysis.

**EMP 535**
**Concrete Formwork Design**
**Credit Hours: 3**
Includes design of formwork for concrete structures, analysis of loads, deflections, and stresses of forming systems, evaluation of economics of formwork design.

**EMP 536**
**Project Plang Sched and Cntrol**
**Credit Hours: 3**
This is a project planning course in the principles and practice of scheduling and control management, pre-project planning, development of critical path methods, and project schedules, fundamental cost and schedule analysis, and earned value concepts used in the engineering and construction industry, linear scheduling techniques and scheduling techniques based on artificial neural networks, Building Information Modeling (BIM) technique for construction projects, integration of project planning & modeling techniques, 5D planning & scheduling of construction projects.

**EMP 537**
**Eng and Cnstr Mtrials and Meth**
**Credit Hours: 3**
Covers the analysis of engineered materials for construction and project operations, examination and analysis of construction methods for civil engineering projects, management of engineered materials development of site operations and analysis of construction methods and materials.

**EMP 591**
**Master Project**
**Credit Hours: 3**
Students may choose and pursue an intensive practical project base derived from industry or other related areas. The work culminates in a project report that is evaluated and approved by the student advisory.

**EMP 595**
**Master Thesis I**
**Credit Hours: 0 OR 3**
Students may choose and pursue a major research topic with their respective supervisor(s). The work culminates in a thesis report that is approved by the thesis supervisor before submission to the thesis examination committee. The course is considered pass/fail.

**EMP 596**
**Master Thesis II**
**Credit Hours: 0 OR 3**
This course is the continuation of EMP 595; it represents the completion of the thesis started in EMP 595.

Prerequisite
EMP 595

**EMP 651**
**Advanced Special Topics I**
**Credit Hours: 3**
Selected topics from specialized areas of engineering management or a related discipline aimed at broadening or deepening the student's knowledge and skills in the preparation of her/his dissertation. The specific contents of the course are published one semester in advance.

**FINA 605**
**Corporate Finance**
**Credit Hours: 3**
**The objective of the course is to provide an** understanding of the nature of business finance, financial planning and analysis tools and help students acquire the necessary skills to be able to take important financial decisions which add and protect value to the corporation such as, the decision of financing investments and efficient resource allocation. The course also deals with the different types of risks that faces the financial manager, and how to incorporate these risks in financial decision making.

**FIQH 605**
**The Purposes of Islamic Law**
**Credit Hours: 3**
This course discusses the concept and history purposes of Islamic Law, their to jurisprudence and provides an overview on the issue of logical reasoning and its relationship with the purposes of Islamic Law. contents also include various classifications of these Purposes, means of identifying them, possibility of re-arranging or adding on to them, importance of Purpose oriented ijtihad, its areas and principles, its role in social development and human rights, establishing a new discipline for purposes based on the axioms of Usul al-fiqh.

**FIQH 610**
**Textual Study of Usul al Fiqh**
**Credit Hours: 3**
The course is based on a textual study of the following works: Jam' al-Jawami of Subki and his commentary on Mahalli's work. This includes the definition of Islamic jurisprudence, the position of Mu'tazilis on arbitration of the mind, also includes defining terms such as implication, definition, concept, judgment, knowledge, ignorance, good and evil. Second: chapters on Judgments from Abdullah bin Masood Bukhari's al-Tawdeeh li matn al-Tanqeeh and Tafzani's commentary al-Talweeh. Third: Conflict and preference from Ibn Qudama's Rawdat al-Nazir and its commentary Nuzhat al-Khatir.

**FIQH 615**
**Meth. of deri. Legal Op.& Jud.**
**Credit Hours: 3**
This course deals with the functional and purpose-oriented definition of Ijtihad its types, rulings, stages, terminological development. It further examines the issue of commitment to a particular school of thought or to schools other than the four known ones, the non-availability of a mujtahid, countering or changing ijtihad, ways through which mistakes creep in this process, intermingling of various opinions. It also deals with the term ifta', its pillars, conditions and etiquettes, anomalies in financial transactions.

**FIQH 620**
**Analogy and Reasoning**
**Credit Hours: 3**
The course covers the definition of Qiyas (Analogy), its definition, origin and authority, and the difference between juristic analogy and logical analogy, difference between the methodologies of jurists and theologians in deriving rulings through qiyas. Contents also include the pillars of analogy i.e. the original case and its conditions, the new case and its conditions and the effective cause, its types and conditions and lastly contemporary application of analogy and reasoning.

**FIQH 625**
**Islamic Political System**
**Credit Hours: 3**
Addresses basic issues of Islamic political system by defining important terms and works while stating its purpose, legitimacy, importance, rules, sources and its

relation to the sources of legislation. Furthermore its various implications in creed, worship, the judiciary, economics, management, education etc. Comparison of the authorities of the executive, legislature and judiciary in man-made organizations, separation of religion and state, codification of the constitution, means of reform and dealing with corruption and lastly by studying empirical models of Islamic governance.

**FIQH 630**
**Themes of Implications**
**Credit Hours: 3**
This course deals with a comparison between the majority's methodology and that of the Hanafis with relation to the study of words and their implied meanings through four aspects: ascribing a word for a certain sense (the general and particular and the common word), second: use of a word in a sense (plain speech, trope), third as the emergence of a certain sense and its absence (the apparent/hidden meaning, the text, etc.) and fourthly how a word denotes a certain sense (mafhum al-muwafaqah wal-mukhalafah etc.)

**FIQH 635**
**Isla. Law of Inter. Relations**
**Credit Hours: 3**
Introducing the concept of international relations, the state, relationship between Muslims and 'others', governance of non-Muslims in a Muslim state and the general principles underlying relationships in the state of peace in various fields. It further clarifies rights of dhimmis and Muslim minorities the general principles underlying relationships in a state of war, Jihad, suicide operations, spying, prisoners and wounded and their rights. It also looks at peace and treaties comparing them to other international laws and international organizations (e.g. UN).

**FIQH 640**
**Res. Me. of Fiqh & Usul alFiqh**
**Credit Hours: 3**
This course begins with an in-depth study of the general approaches to scientific research in general, and research methods in Islamic jurisprudence in particular and their characteristics such as creativity, originality etc. Moreover it teaches referencing, quoting from primary and secondary sources. It also teaches preparation of a synopsis, means of research in juristic sources understanding terms used by authors and observance of copyright information.

**FIQH 645**
**New Issues of Islamic Worship**
**Credit Hours: 3**
The course includes what constitutes 'new issues' and an introduction to the most important contemporary sources in this regard such as the modern encyclopedia of fiqh and decisions of fiqh councils etc. It then studies emerging issues in the domain of Islamic worship such as medication to regulate menstrual cycle, prayer timings, Zakat of stock shares, determining the birth of a new moon in Ramadan, modern techniques of circumambulation and other related issues.

**FIQH 650**
**Isla. Law of Judici. & Evide.**
**Credit Hours: 3**
This course starts with the concept and history of the Islamic law of judiciary and evidence, its difference with the judicial system. It also deals with the conditions required for a judge, his appointment, etiquettes, integrity, independence, and means of his removal through resignation or otherwise. It also provides an overview of a case with respect to its types, legality, judgment, conditions and its study. It also studies means of evidencing, oath and its breach, Judicial verdict and other concerned issues.

**FIQH 655**
**Isla. Penal Code & Cont. issu.**
**Credit Hours: 3**
The concept of punishment and its implementation on the offender in Islamic jurisprudence; this is done through defining both crime and punishment and the general principles of Islamic criminal legislation. Contents include retribution for murder and other crimes, prevention of crimes and ways of dealing with criminals, in depth study of contemporary issues (intellectual property, international cross border offences, etc. how Islamic states deal with conflicting man-made laws), authority of legislature and international legal organizations such as International Criminal Court.

**FIQH 660**
**Con. Issu. of Isla. Family Law**
**Credit Hours: 3**
The course covers the study of Muslim family law in the Muslim countries in general and the West in particular, contemporary challenges, including modern forms of marriages like misyar, urfi and through phones and internet, medical examination prior to marriage, marriage of Muslims to non-Muslims, abortion, genetic engineering, birth control, semen banks, surrogate mothers etc. It also studies rights of women, children, the elderly between Islamic jurisprudence and international declarations, arbitration in western courts keeping the provisions of Qatari law in this regard.

**FIQH 665**
**Islamic Banking Operations**
**Credit Hours: 3**
Addresses the definition of Islamic banks, its basic

principles, origins and evolution, the resources of Islamic banks and how the bank uses the capital; this is done through three areas: financial operations of individuals/ companies (Murabaha etc.), investment operations (currency exchange etc.) and operation facilities (internet banking etc.) in each case focusing on their respective modes of financing. All three areas are studied theoretically and practically in accordance with the operational procedures of Islamic banks, with a comparison of both Islamic and non-Islamic operations.

**FIQH 670**
**Fiqh of Money and Economics**
**Credit Hours: 3**
This course provides an in-depth analysis of topics related to money and Islamic economics, comparing it to man-made economy in terms of the foundations, areas and ideological and ethical dimensions. Contents include the ability of Islamic economics to achieve economic development, solve economic problems such as poverty, and unemployment, various financial contracts such as usury, debt sale etc. and related issues such as bank cards, dealing with stocks and bonds, inflation, privatization, globalization of the economy and dealing with financial crises through an Islamic perspective.

**FIQH 675**
**Textual Study of Fiqh**
**Credit Hours: 3**
This course deals with the schools of Islamic jurisprudence and focuses on terminologies of jurists in the expression of their respective schools and their methodologies of understanding and developing their schools of thought, and the terms required for research in jurisprudence. It also studies various juristic issues in five commentaries of various schools of thought starting with the status of that commentary, its origin and identifying through application of the author's methodology and use of terms.

**FIQH 680**
**Thesis**
**Credit Hours: 6**
This course provides the student a wonderful opportunity to whet and polish their research as well as academic writing skills by making an in-depth study of a topic of their interest - yet one that would extend the frontiers of knowledge - with the assistance of their advisors/supervisors applying various methodologies related to the fields of social sciences, humanities and study of religious traditions. Thereafter it would be evaluated by a committee.

**GENG 602**
**Applied Research Methodology**
**Credit Hours: 3**
This course will develop the research abilities of graduate students in Engineering. The goal of the course is to equip students with both qualitative and quantitative tools to conduct research. This is practical course designed to help graduate students arrive at a workable thesis plan, & a comprehensive knowledge of the resources available to them to pursue it. It covers the thesis as a type of writing, project planning, time management, research ethics, information retrieval, and professional skills.

**GENG 603**
**Advanced Numerical Analysis**
**Credit Hours: 3**
This course aims at understanding the construction and appropriate use of numerical algorithms that provide solutions to science and engineering problems. The following algorithms are studied; root finding, interpolation and approximation of functions, numerical differentiation and integration, numerical solutions of ordinary differential equations and boundary value problems. An emphasis will be given to understanding the accuracy, convergence, divergence, limit analysis, efficiency, and stability of various algorithms. The course will use some commercially available software such as MATLAB.

**GENG 604**
**Project Management**
**Credit Hours: 3**
Role of projects in organization's competitive strategy; standard methodologies for managing projects; project life cycle; design?implementation interface; estimating: preliminary and detailed; contractual risk allocation; scheduling: PBS; WBS; integration of scope, time, resource and cost dimensions of a project; evaluation of labor, material, equipment, and subcontract resources; scheduling techniques including CPM/ PERT, GERT, critical chain; solving real world project schedules; Monte Carlo simulation; cost budgeting; cost baseline; cash flow analysis; earned value analysis; cost control; proposal presentation; application of software for project management.

**GENG 605**
**Applied Statistics Analysis**
**Credit Hours: 3**
This applied course is designed for graduate students. The goals of the course are to develop the skills necessary to identify an appropriate technique, estimate models, and interpret results for independent research and to critically evaluate contemporary research using advanced quantitative methods. The focus of the course is on estimating models and interpreting the results, rather than understanding in detail the mathematics behind the techniques. The course will provide students with a solid foundation in advanced quantitative methods, which is in

high demand in many fields. The course will include random distributions, error analysis, confidence levels, statistical analysis of reduced sample size and other important topics to help the students understand the importance of applying statistical techniques to their research findings.

**GENG 606**
**Graduate Seminar**
**Credit Hours: 0**
The course covers the art of writing research proposals and finding related materials as with libraries, web access, and other resources; discussion of delivery and presentation styles; techniques for writing scientific papers and technical reports. Graduate students are required to attend the seminars given by faculty, visiting scholars, and fellow graduate students. Additionally each student must present at least two seminar on a timely research topic. Among other things, this course is designed to give the student an overview of research in the department and professional societies in their discipline. Graded on a Pass or Fail basis.

**GENG 699**
**Master Thesis**
**Credit Hours: 12**
A distinct and original contribution to basic knowledge of the subject. The student will be required to show initiative and resourcefulness in overcoming both theoretical and practical difficulties by devising novel ways and means of achieving objectives that elude the more conventional approaches to them. The course is a test of initiative and of the student's ability to accept responsibility and bring a task to a satisfactory conclusion.

**GULF 500**
**Advanced Research Methodology**
**Credit Hours: 3**
This course provides advanced knowledge about conducting high-quality research. This includes providing a theoretical framework about the latest in research methods in social sciences and humanities. By providing an advanced knowledge for both quantitative and qualitative methods, the course will encourage and train students to develop their own research in accordance with the interdisciplinary demands of the degree. The course will focus on developing research skills in term of dealing with sources (books, journals, electronic sources).

**GULF 510**
**Cont. Hist & Pol. in the Gulf**
**Credit Hours: 3**
This course provides comprehensive knowledge about the contemporary history of the Gulf, starting at the end of the First World War, through to the emergence of the Modern State in the Gulf region. The course will focus on how political developments shaped the history of the region. It will focus on the history of Iran under the Pahlavi dynasty and the history under the Islamic Republic, the history of Iraq after the first world war, and the histories of each of the GCC states. The course will look at the dynamic of politics in each country, and at the relations within the region. In addition, the role of oil and external players will be an important part of the themes that this course will focus on.

**GULF 511**
**Politics of the Gulf**
**Credit Hours: 3**
The Gulf states political systems can be understood as having a unique character within the international system. This course seeks to examine the cotemporary political structures and drivers of change. Key issues such as the role and nature of civil society; elections; sociopolitical movements; and the impact of the rentier economy on the politics in the Gulf are examined. Students will be equipped with a theoretical understanding of these core issues, which will be grounded from a historical perspective.

Prerequisite
GULF 510

**GULF 520**
**State and Society in the Gulf**
**Credit Hours: 3**
This gateway course to the program provides students with an introduction to the scholarly work concerning society, social change, and the state in Arabia. While the course includes substantial historical material, the focus remains fixed on the contemporary era. The survey of the literature will move beyond the generalities of globalization theory to examine and explore rentier state theory, tribalism and post?tribalism, nationalism and citizenship, the shifting gender dynamics of contemporary Arabia, and the identity politics often subsumed in the tradition/ modernity dichotomy. Students should expect to prepare a substantial paper based on original research.

**GULF 521**
**City and Society in the Gulf**
**Credit Hours: 3**
In the span of a few decades, the states of the Arabian Peninsula have emerged as some of the most urbanized in the world. This course presents an interdisciplinary approach to the study of city and society in the Gulf States. The course begins with selections from the substantial classic literature concerned with the Middle Eastern City, a literature which provides a starting point from which the development of the Gulf City can be compared and contrasted. From that starting

point, students will examine the political, economic, and social forces that have driven the rapid growth of the Gulf City; the social problems, both those of a universal nature and those unique to Arabia, that accompany that rapid urbanization; the role of master?planning and the state in this urban growth; the architectural literature concerned with supermodernism and the urban form; and the analyses of the role of migrant populations in establishing a basic spatial discourse for the Gulf City. Students should expect to conduct original research and prepare a substantial term paper for this course.

**GULF 523**
**Human Rights & the Gulf State**
**Credit Hours: 3**

This course provides students with a comprehensive understanding of the current discourse on human rights and the role it plays in shaping the relationship between states and citizens. The course begins by examining the religious and philosophical texts that predated the articulation of human rights in the modern era, including texts of both western European and Middle Eastern pedigree. Students then explore the historical articulation and ongoing extrapolation of a set of universal human rights through a set of overarching topical areas of inquiry, including one focused on labor, migration and human trafficking in the Gulf States; another on political rights and civil society in the GCC; a third area of inquiry focused on gender and human rights in Arabia; and a final area of inquiry examining media, freedom of expression, and censorship. Students will also explore the arguments of scholars who counter the individualistic and western notion of human rights by highlighting cultural rights in the increasingly globalized era. Students will conduct original research and prepare a substantial term paper for this course.

Prerequisite
GULF 520

**GULF 524**
**The Arab. Peni. Lite. & Cult.**
**Credit Hours: 3**

This course is primarily a comprehensive introduction to literature and culture of the Arabian Peninsula and the Gulf countries and will survey key texts, focusing on modern literature and contemporary technology writing. The course will address how authors have rewritten and overturned, through resistance or ambivalence, the classical Arabic tradition. It will examine the different types of opposition, conflict and limits reproduced in the articulation of modernity, demonstrating how cultural politics regulates and/or suppresses the construction of identity and self?expression. Special attention will be given to the rise of the novel in the Arabian Peninsula and will show how modern narratives have been influenced and marked by questions of canon formation, globalization and social change. The readings will include modern novels, short stories, poems, electronic writing and critical texts.

**GULF 530**
**Inte. Relations of the Gulf**
**Credit Hours: 3**

This course provides an advanced and comprehensive understanding of the contemporary international relations of the Gulf region since 1971 when Britain ended its protectorate relationship with the smaller states of the lower Gulf. The course begins with key contextual events being analyzed which include the oil embargo of 1973?74; the Iranian Revolution; the Iran?Iraq War; the emergence and functioning of the GCC; the Gulf War of 1990?91; and the American?led invasion of Iraq in 2003. The nature of the Arab Gulf states foreign policies is also encompassed in addition to the broader contextual issues that shape its development which includes a range of issues such as interstate cultural identity, security challenges, the political economy of the global oil market, and also an analysis of the nature and drivers of U.S. foreign policy towards the Gulf region since 1971 with particular regard to Gulf security. The course concludes by examining emerging security challenges to the immediate and broader Gulf region.

**GULF 531**
**Political Economy of the Gulf**
**Credit Hours: 3**

This course focuses on the study of international political economy by examining its conceptual foundations and empirical applications within the Gulf region. The course first provides a comprehensive approach to the study of political economy by introducing the main theoretical perspectives in the field. The course pays attention to the traditional political economies of the Gulf and the impact of the discovery of oil and the transformation of their economies to rentier states. The impact of the rentier economic system is examined in detail by looking at the economic structure in addition to its effect on political participation and the labour market. Case studies will then be adopted whereby the political economies of Saudi Arabia, Dubai, Qatar and in addition to the other Gulf States are examined. Issues of direct relevance such as the political economy of regional integration in the Gulf will be examined, in addition to the role of Gulf sovereign wealth funds. This will be built on through an examination of the how the GCC states are impacting the global economy in terms of oil, gas, Finance and Trade. The course will conclude with an examination of the challenges of economic reform in the GCC states.

**GULF 532**
**Security of the Gulf States**

**Credit Hours: 3**
The study of international security has evolved since the end of the Cold War as the concept of war, the threat to use force and defence is no longer considered exclusively part of the security equation. This course addresses the range of global dangers that threaten the modern state in the Gulf, which range from pandemics and environmental degradation to the more traditional security concerns of nuclear proliferation and direct violence, such as terrorism and inter?state armed conflict. This course provides an advanced theoretical approach to the field of security studies and examines multifaceted aspects in addition to applying this to the traditional and non?traditional issues that have emerged on the security policy agenda such as threats of piracy in the Horn of Africa. This course seeks to use various case studies on a global basis to underline the various challenges which exist in the contemporary system and how there are relevant to the Gulf region.
Prerequisite
GULF 530

**GULF 533**
**Global Energy Geopolitics**
**Credit Hours: 3**
This course examines the political economy of the global energy industry and its economic relationship to international markets. The key themes that this course seeks to address include the multifaceted interaction between economics and the politics of energy markets; the challenges of managing energy policy and security; in addition to questions of sustainable energy development. The course offers a global perspective of energy geopolitics and begins with an introduction to the fundamentals of energy production, transportation, consumption, and the functioning of the global energy markets and its industry. Emphasis will be initially given to the oil industry but the role of natural gas is also addressed. An additional feature of this course will be to offer students an in?depth understanding of the major countries, regions, institutions, political, and economic character of the contemporary world energy market.

**GULF 540**
**Envi. & Climate Ecology**
**Credit Hours: 3**
This course focuses the impact of climate change on the Arabian Gulf States. The themes include environmental challenges and developments that are newly emergent, such as desertification, biodiversity loss, urbanization, marine and coastal pollution, carbon dioxide pollution, limited water resources, and rising sea levels. Therefore, the course presents themes for inquiry that support an interdisciplinary study from social science dimensions. Study will be within environmental studies and climate ecology, and informed by analysis around energy, security, political economy and development. The course investigates not only the impact but inter-relationship between these sources of environmental change and development. It guides students to consider means for human responsibilization and enables students to conceptualize solutions and various policy recommendations from a grounded and broad study of the various dynamics affecting climate in the Gulf.

**GULF 550**
**Med.& Inf.Comm.Tech.in the GCC**
**Credit Hours: 3**
The information technology revolution is considered one of the major events in the twentieth century. This is due to the fact that media is indeed influencing every society in today's world. It also shapes images and dynamics in those societies. This course will provide a comprehensive background about the history of this media revolution, with particular focus on media and Information Communication Technology in the GCC in the Gulf reign. The course will look at the emerging impact of media and Information Communication Technology in the GCC, especially with the increasing use of media sources such as TV satellites, Internet, mobile phone, and radios. The social, economical and political impact of the media and Information Communication Technology in the GCC sources will be covered in this course.

**GULF 560**
**Special Topics**
**Credit Hours: 3**
The course on special areas in the social sciences and humanities will be offered depending on student interest and faculty specializations. This course offers the opportunity to explore in more depth topics within politics, the economy and society as relate to geographical areas in the Gulf region, Iran or Iraq and/or thematic areas. Thematic areas may, for example, include gender studies, educational and economic reform, human development, civil society, socio-economic participation, public policy, regional and international relations, labour migration, identity and globalization.

**GULF 570**
**Thesis**
**Credit Hours: 6**
The thesis is a required piece of work that demonstrates students' own research interests. The length of the thesis will be between 60?70 pages, not counting the endnotes and bibliography. Students can develop their thesis topic based on seminar work and in consultation with the academic advisor or with faculty member. Students are encouraged to begin thinking of the thesis around the end

of the second semester (preferably after completing 18 credit hours of course work). At the beginning of the third semester, students should start writing a proposal, choose an advisor, and form a committee. The committee consists of the advisor and two faculty members who will read and evaluate the thesis. There will be an oral defence scheduled after the submission of the thesis.

Prerequisite
GULF 500

**HECO 563**
**School, Family Partnership**
**Credit Hours: 2**
This course is designed to introduce students to the international and local organizations related to children and examine ways of establishing and maintaining positive collaborative relationships with families and communities. It examine the effects of parents involvement on childerns' learning and development.

**IENG 554**
**Decision Techniques and Data Analysis**
**Credit Hours: 3**
This course discusses modeling techniques and analytical decision tools that can be used in managerial decision-making. It will focus on building models that are simplified representations of the decision-making environment. Such models will allow for the generation of various scenarios, perform what-if analysis, find optimal business solutions, and, in general, learn more about a problematic situation. They can involve multiple business functions, including operations, finance, and marketing.

**IENG 556**
**Supply Chain and logistics**
**Credit Hours: 3**
This course provides an overview of supply chain management. It starts with the vitality of effective supply chain management in today's competitive and globalized economies. Then it presents a review of demand forecasting and inventory management and links these with supply chain management. Building on this, the course covers supply chain coordination. It sets the rationale for coordination, presents the challenges against coordination, and discusses the mechanisms for coordination and, furthermore, building strategic alliances. The course also talks about designing a supply chain with an emphasis on synchronization of procurement, inventory, and production. The course demonstrates how information technologies should be coupled with business processes and how effective sharing of information between supply chain partners can improve the supply chain performance.

**IENG 557**
**Systems Analysis and Design**
**Credit Hours: 3**
This course covers systems process, systems lifecycle, new techniques in systems lifecycle design, Fundamentals of systems analysis, systems preliminary investigation, systems cost benefit analysis, Data flow diagrams, Data dictionary, process description, Data models and data warehouse concepts, Design principles and computer interface design, Design principles and input design, design principles and output design, System hardware and software selection, implementation and quality assurance of system.

**IENG 651**
**Advanced Special Topics I**
**Credit Hours: 3**
Selected topics from specialized areas of engineering management or a related discipline aimed at broadening or deepening the student's knowledge and skills in the preparation of her/his dissertation. The specific contents of the course are published one semester in advance.

**IENG 652**
**Advanced Special Topics II**
**Credit Hours: 3**
Additional selected topics from specialized areas of engineering management or a related discipline aimed at broadening or deepening the student's knowledge and skills in the preparation of her/his dissertation. The specific contents of the course are published one semester in advance.

**ISLA 600**
**Analytical Exegeses**
**Credit Hours: 3**
Providing the students with a good grasp of the principles of interpretation of the Quran and its sciences with particular focus on the definition and types of interpretation, analysis of the scientific verses of the Quran and those that serve the individual, society and the state. These verses include those related to beliefs, narrations and legislation and the method of inference from them. The course also includes introducing the main works of tafseer so that the student grasps its theoretical aspect.

**ISLA 601**
**Qur'anic Sciences**
**Credit Hours: 3**
This course links past studies of Quranic sciences with the present ones by focusing on the principles and methodological issues upon which Quranic studies are based. Issues to be discussed include: documenting

the Quranic text through the following terms: revelation, revelation of the Qur'an, its compilation, its seven characters and readings, sitz em leben, the use of plain speech, metaphors, linguistic connotations and their impact on its interpretation and issues such as its parables and narratives and western studies on it.

**ISLA 602**
**Inimitability of al Qur'an**
**Credit Hours: 3**
Deepening the students' understanding of studies regarding the inimitability of the Qur'an with regard to its relation to faith and its relation to its linguistic magnificence, and rhetorical beauty. A number of related issues also include examining evidences regarding its divine origin, uniqueness, structural continuity and continuity, eloquence, authentication of prophethood and their impact on demonstrating Quranic inimitability. All this would be based on the works of leading linguistics and exegetes.

**ISLA 603**
**The Qur'an & Con. Hermeneutics**
**Credit Hours: 3**
Reviewing the various developments in the field of modern and contemporary studies by comparing scientific theories dealing with the methodologies of the study of the Quranic text in different cultures. The course offers studies of various theories, such as the reader-response theory, structuralism and post-structuralism (death of the author), semiotic and stylistic, inter-textuality, feminist theory of interpretation…etc.…The course also directs students to represent ancient theories in analyzing the Quranic discourse and introducing them to the proponents of contemporary readings of the Quran.

**ISLA 604**
**Princ. of Qur'anic Exegeses**
**Credit Hours: 3**
This course seeks to inculcate an in-depth study of the interpretation of the Koran based on linguistic and juristic principles. Principles of Quranic exegesis are studied with particular concentration on connotations of words during the revelation of the Qur'an, the importance of language and implications in the understanding of the Quranic text, sources of Quranic exegesis and the sciences and the prerequisites needed to interpret the Qur'an.

**ISLA 605**
**Res. Method. in Quran. Studies**
**Credit Hours: 3**
This course aims at preparing students for applying their knowledge base of research and investigative skills in Quranic studies and further enriching them on research methodologies and the academic and ethical nature of research. It will focus on training the researchers to think on visualizing and writing their future research proposal and further improve their writing skills, referencing and methodological steps required while working on their research. It also trains the students and researchers on reading ancient Arabic manuscripts of classical Qur'anic studies.

**ISLA 606**
**Text. Stud.in Books of Tafseer**
**Credit Hours: 3**
This course seeks to enable students to encounter classical books of Quranic exegesis and discover their characteristics and mutual differences and the efforts of Quranic exegetes and their methodologies. The course seeks to entrench the principles of analyzing the Quranic text and apply them on various Quranic exegeses. This would provide them a rich linguistic, juristic and creedal data from multiple sources which can then be subjected to scientific exegetical approaches.

**ISLA 607**
**Qur'anic Rhetorics**
**Credit Hours: 3**
This course aims at discussing the relationship between language and rhetorics in the Qur'an, the secrets of the Quran in the formulation of the word, sentences, and its link to the characteristics of rhetorical methods of the Qur'an. Contents include the Quranic linguistic and its comparison with pre-Islamic poetry and Arab syntax, the definition of style: rhetorical and scientific, the difference between them, the Quranic words, their choice and inherent splendour, Quranic idiom, the aptness and richness of Quranic connotations.

**ISLA 608**
**Mod. Trends of Quran. Exegeses**
**Credit Hours: 3**
Provides background for a scientific study of modern trends of Quranic exegesis and the most important schools to enable the student to familiarize with modern thought beginning from Mohammed Abduh, to Rashid Rida's book al-Manar which pioneered modern exegetical movement in the Muslim world down to for Taher Ben Aashoor's al-Tahrir wal-Tanweer. Contents include: features of modern trends of exegesis, methodologies of Mohammed Abduh and Rashid Rida and their comparison and lastly the contribution of their students such as al-Maraghi, al-Shaltout.

**ISLA 609**
**Ranks of Quranic Exegetes**
**Credit Hours: 3**
This course studies the levels of Quranic exegetes, their cultural and intellectual and the problems that emerged

through their varying levels. It starts with the sahabah to the sixth level of exegetes. It further addresses the first interpreter of the Qur'an, i.e. Prophet Muhammad peace be upon him, then the various rank of interpreters from among the companions and the Tabi'un and their representatives, their differences and lastly the era of compilation represented by Ibn Abi Hatim, Ibn Jarir and others.

**ISLA 610**
**Sci. of Divine Laws in Nature**
**Credit Hours: 3**
Enabling the student to get an understanding of the disciplines required for the divine - cosmic laws mentioned in the Quran; several verses of the Quran can only be thus explained. This started in the last century with Mohamed Abduh and his disciples and has developed into an independent discipline since. Contents include: God's cosmic laws humanity, human civilizations: their rise and fall, the law of cause-effect and issues related to predestination and divine cosmic laws.

**ISLA 611**
**Int. to the Object. of alQuran**
**Credit Hours: 3**
Gaining knowledge of objectives of the Quran and its overall purpose i.e. to be voluntary servants of God. The course also discusses the ultimate purpose of this religion, how the Quran is the greatest miracle of God and how it demonstrates the veracity of our Prophet Muhammad, peace be upon him. It also includes the relationship between the objective of the Quran and the sharia, the need to know these purposes, their types according to Rashid Rida and Tahar Ben Aashoor and comparison.

**ISLA 612**
**Sc. Res. to Sk. about Noble Q.**
**Credit Hours: 3**
This course responds to suspicions regarding the Quran, whether of old or contemporary, and aims at demonstrating that the Quran is really the word of the wise God and therefore does not contain errors. It also instructs the student to use the scientific method in responding to suspicions. The syllabus includes doubts regarding verification of the Quran, Meccan and Madinan surahs, its stories, the unseen world and the language, eloquence and legislation of the Quran

**ISLA 690**
**Thesis**
**Credit Hours: 6**
This course provides the student a wonderful opportunity to whet and polish their research as well as academic writing skills by making an in-depth study of a topic of their interest - yet one that would extend the frontiers of knowledge - with the assistance of their advisors/ supervisors applying various methodologies related to the fields of social sciences, humanities and study of religious traditions. Thereafter it would be evaluated by a committee.

**MAGT 501**
**Introduction to Management**
**Credit Hours: 3**
This course covers the definition of management, its characteristics, evolution and importance, as well as the functions performed by managers-planning, organizing, directing and controlling. The course also intends to show students the applications of the management functions in various enterprises such as marketing, finance, personnel, production, etc.

**MAGT 602**
**Human Resources Mgmt**
**Credit Hours: 3**
This course aims at exploring key issues related to the management, performance, and development of human resources in the workplace. It places special emphasis on making decisions and developing plans that enable managers to make the best possible use of their human resources, and covers areas such as: manpower planning, analysis and evaluation, recruitment and selection, wages and salaries, training and management development, performance appraisal, and industrial relations

**MAGT 603**
**Operations Management**
**Credit Hours: 3**
This course helps students to understand how to manage the conversion process, whether with goods, services or systems. It is also intended to broaden the scope of students' knowledge relating to the application of decision-making techniques to production problems with special emphasis on production control, operation system design, quality, operational strategy, relationship of production to other functions within the organization, and characteristics of the effective production/operations manager.

**MAGT 607**
**International Business Mgmt**
**Credit Hours: 3**
This course examines the theories that explain the need for international business in both international trade and direct investment. It also covers the complex environmental factors (political/legal, cultural, social, economic/ financial) that affect the activities of multinational companies and international management practices in the areas of marketing, operations, finance,

and human resources.

**MAGT 608**
**Total Quality Management**
**Credit Hours: 3**
This course discusses how firms can improve the effectiveness and flexibility of their business by managing across functions and throughout all areas of the business in an integrated and coherent fashion. It covers areas such as: quality policies and strategies, quality improvement programs, quality planning, quality systems and manuals, process control, quality costing, communication and team-building, measurement, benchmarking and self-assessment.

**MAGT 609**
**Entrep-Small Bus Mgmt**
**Credit Hours: 3**
This course deals with the problems and challenges facing the management of small businesses in raising funds, marketing products and services, improving effectiveness and flexibility, and achieving growth.

**MAGT 610**
**Strategic Management**
**Credit Hours: 3**
This integrative course relies heavily on other business disciplines previously studied, and aims to promote students' business analysis skills. It places special emphasis on tools and techniques of strategic planning, decision-making and implementation. It covers areas such as: setting corporate missions and objectives, analysis of external environment and internal resource positions, evaluation of strategic options, implementation, and control.

Prerequisite
MAGT 603 AND FINA 605

**MAGT 611**
**Bus Ethics & Legal Envir**
**Credit Hours: 3**
This course covers legal and case analysis of court systems and dispute resolution, contracts, employment, and professional obligations that influence the decision-making process of managers. The relationship between personal values and business conditions and legal environment takes place. Other countries' business law and international agreements that govern the business environment in the world are also examined.

**MAGT 613**
**E-Business**
**Credit Hours: 3**
This course examines database management, application of the concepts and theories of management to e-commerce, trading over the web, the challenges facing marketing in business-to-business contexts, and strategic applications of marketing mix in e-business environments.

**MAGT 615**
**Applied Graduation Project**
**Credit Hours: 3**
This is the final part of the program. This project provides students with the necessary skills to carry out research. Students are expected to submit a written project about a specific topic under the guidance of a member of academic staff. Students present a dissertation of not more than 20,000 words.

Prerequisite
MAGT 603 AND FINA 605

**MAKT 604**
**Marketing Management**
**Credit Hours: 3**
This course develops students understanding of how organizations match the requirements of consumers in competitive environments, and develop strategies to create a competitive edge. It covers areas such as analysis, planning, implementation, and control, as well as the marketing mix, exportation, and the social aspects of marketing.

**MAKT 614**
**Marketing Research**
**Credit Hours: 3**
The course deals with scientific research methods and used is by marketing managers. It focuses on issues such data collection, use of analytical techniques, and presentation of results. Special emphasis is placed on market research results in solving real life marketing issues.

**MATS 500**
**Modern Physics**
**Credit Hours: 3**
The special theory of relativity - Particle properties of wave - Wave properties of particles -Schrodenger's equations and its applications to potential wells and potential barrier - tunnel effect - harmonic oscillat

**MATS 501**
**Physical Chemistry**
**Credit Hours: 3**
The kinetic model of gases: molecular interaction, the Vander Waals equation. Chemical thermodynamics: The first law, work, heat and energy, The second law, entropy and free energy, Free energy, chemical potential, effect of temperature and pressure on free energy changes,

Tourton's and Richard's rules - Free energy changes and equilibrium constant, effect of temperature on the equilibrium constant. Absolute entropy- the third law. Phase diagrams and the phase rule: phase stability and phase transition, the physical liquid surface; surface tension, curved surface, and capillary action.

**MATS 502**
**Materials Science**
**Credit Hours: 3**
A study of relationships between the structure and the properties of materials. Atomic structure, bonding, crystalline and molecular structure and imperfections. Mechanical properties of metals, alloys, polymers, and composites. Electrical properties of materials, semiconductors and ceramics. Creep, fatigue, fracture and corrosion in metals. Laboratory experiments

**MATS 511**
**Materials Principles & Charac.**
**Credit Hours: 3**
Atomic arrangement & its relation to the physical and chemical properties, dislocations, diffusion, materials design, crystal structures using X- rays, electrons and neutrons and the chemistry of structure atom by atom. Lab practice to characterize the molecular weight of the materials, thermal transitions, the rheology behavior, mechanical properties of materials, determination of surface energy of homogenous solid surface, AFM analysis, Fourier Transformation Infrared analysis, Ultra-Violet Visible (UV-VI) analysis, Scanning electron microscope (SEM) and Transmission electron microscope (TEM) for morphology studying.

**MATS 512**
**Therm. & Kinetics of Materials**
**Credit Hours: 3**
Thermodynamics for Materials provides an overview of behavior of matter. In Materials science, the thermodynamic matter is usually about chemical reaction systems. Thermodynamics is one of the sciences used in the analysis of processes. This course covers the basics of thermodynamics, and gives many examples for applying it to materials processing. The principles behind phase transformations and the underlying knowledge for phase diagrams are also briefly covered.

**MATS 513**
**Func. Properties of Materials**
**Credit Hours: 3**
This course explains the functional properties of different types of materials - metals, semiconductors, polymers, ceramic, glasses, composites, and biomaterials. Coverage includes electrical, photovoltaic, optical, magnetic, and superconducting properties. It presents modern vision of magnetism, electrical- and thermal conductivity including superconductivity, and optical properties. It covers both nano/microscopic and phenomenological aspects.

**MATS 514**
**Research Methodology**
**Credit Hours: 3**
This course will develop the research and ethics abilities in Materials Science and Technology. The following will be covered, preliminary design of the research, sampling, validity, study measure, analyzing data and importance of research. All the students will be required to attend the graduate seminar. The students will decide with the supervisor the selected seminar series.

**MATS 520**
**Mechanics of Materials**
**Credit Hours: 3**
Mechanical integrity and response to adverse environmental factors. Properties of materials and the relation to the nature of the interatomic interactions, crystal structures, microstructures and defects. Stress, strain, elasticity, dislocation in crystal structures, plastic deformation, and fracture mechanics. Students will study the following in the lab: stress – strain tests, effect of chemical structure on thermal transitions in materials, structural factors affecting thermal transitions in materials, crystallinity of materials, elastic moduli of materials, flexural strength, nano and micro hardness of materials.

**Prerequisite**
MATS 511

**MATS 525**
**Sustainable Materials**
**Credit Hours: 3**
Explore the policy framework, operational practices, energy efficiency and economics of technologies for industrial and urban waste minimization, incineration, recycling and re-use. This unit develops scientists' concepts and principles, and integrates these with industrial practice. Life cycle analysis and its use for life cycle assessment, LCA, of energy systems. Methodologies, boundary issues, data bases and applications. The uses of LCA will be illustrated with industrial case studies and with studies aimed at quantifying externalities associated with different technologies.

**MATS 530**
**Radiation Tech. for Materials**
**Credit Hours: 3**
Atomic and nuclear structure, nucleus and nuclear

radiation, radioactive decay, neutron, fission and criticality, radiation interactions with matter, methods of radiation protection, radiation dosimetry, radiation effects, radiation criteria and exposure, external radiation protection and internal dosimetry and radiation. In lab, various types of radiation & their interactions with different materials, stopping distance, dosimetry and exposure measurements, various types of detectors, material properties that enable radiation detection as well as the effect of radiation on enhancing durability and other materials properties.

**MATS 535**
**Physical Metallurgy**
**Credit Hours: 3**
This course aims to introduce a theoretical basis for understanding how structure is controlled by means of providing a link between various transformations taking place in materials and the resulting microstructural and physical properties. Structure of metals, properties, dislocation theory and application, grain boundaries, annealing, precipitate hardening, diffusion of metals, phases, Fe-C phase diagram, alloy systems.

**Prerequisite**
MATS 512

**MATS 540**
**Adv. Materials & Composites**
**Credit Hours: 3**
Advanced materials, different types of composites & their applications e.g. biomaterials and energy saving materials. Advanced materials plasticity and applied dislocation theory emphasizing failure mechanisms and its modeling, understanding of nanocomposites systems, relationship between product and choice of process. Students will study the following in the lab: macro, micro, and nano mechanics of advanced materials, thermal analysis (DSC, and TGA), resistance measurements, dielectric spectroscopy, aging and degradation of advanced system, and structural determination by x- ray scattering.

**Prerequisite**
MATS 511 AND MATS 513

**MATS 545**
**Polymers Science and Analysis**
**Credit Hours: 3**
This course will introduce the techniques used for the analysis and characterization of polymers and polymeric based materials. It covers the main aspects of polymer science and technology e.g. identification, different types of polymerization, different techniques for molecular weight determination and molecular weight distribution, structure, surface properties, degradation mechanisms and mechanical properties.

**Prerequisite**
MATS 511

**MATS 550**
**Polymer Processing**
**Credit Hours: 3**
This course will address the flow behavior and properties related to processing of polymers into useful materials such as plastics. Processes covered in the course will include: Extrusion, Film Blowing, Injection Molding, Blow Molding, compression molding, Thermoforming, Rotational Molding, and Fiber Spinning. The relationship between process and product requirement will also be discussed.

**Prerequisite**
MATS 545

**MATS 555**
**Metals and Minerals Processing**
**Credit Hours: 3**
Processing and fabrication of minerals and metals are essential steps to make them useable and this also adds significant economic value when applied in the markets. All comprehensively used processes such as extraction, casting, rolling, extrusion, forging, heat treatment etc, are covered. This depends on an understanding how these extraction, shaping and fabrication processes affect the microstructure and properties of metals. This course covers the fabrication methods and their impacts on material properties.

**Prerequisite**
MATS 535

**MATS 560**
**Materials Science Modeling**
**Credit Hours: 3**
The students will understand and use Computational materials' modeling as an increasingly important branch of materials science due to the evolution of modeling frameworks, invention of novel numerical algorithms and increased computer capability. As a consequence, modeling and simulation as emerging as powerful complementary approaches will be used as experiment and traditional theory. The outermost effective modeling is based on physical mechanisms and real internal structures at various levels (nano-, micro,-meso).

**Prerequisite**
MATS 511

**MATS 565**
**Surface Science and Corrosion**
**Credit Hours: 3**
Topics contributing to a better understanding of applications of surfaces, interfaces and nanostructured will be covered. The course will concern on atomic and molecular level of materials. Corrosion will be determined as an example related to the current need of the industry. This will be determined by many analytical techniques and structure analysis.

**Prerequisite**
MATS 511

**MATS 570**
**Nano. & Adv. Charact. Methods**
**Credit Hours: 3**
Introduction to nanotechnology and its applications in different materials will be introduced. Several advanced techniques will be used such as TEM, SEM and AFM. The students will learn the operational techniques of this equipment. Other lab practice techniques will also be introduced depending on the size of the students and availability of equipment (i.e. surface tensions analysis).

**Prerequisite**
MATS 511

**MATS 580**
**Graduate Seminar**
**Credit Hours: 0**
All the students will be required to attend the graduate seminar. The students will decide with the supervisor the selected seminar series. The student will give at least one seminar during this course. It is a pass/ fail course. This will include seminars from invited speakers from Industry and from regional and international universities.

**MATS 590**
**Special Topics**
**Credit Hours: 2**
The course will be designed according to specific students' needs and thesis/ project. Students will be directed to have some courses that will enrich their final project/ thesis. It is a tailored course that can be taken inside or outside Qatar depending on the program recommendation. Examples are: Statistical analysis, Pharmaceutical delivery

**MATS 597**
**Applied Materials Project**
**Credit Hours: 6**
Research project should include the background, methods, results and discussion as well as the conclusion of the work. It should be approved by the program. The project should deal with up to date research activities in the field of Materials Science and technology.

**MATS 599**
**Thesis**
**Credit Hours: 9**
Research thesis should include the background, methods, results and discussion as well as the conclusion of the work. It should be approved by the program. The project should deal with up to date research activities in the field of Materials Science and technology.

**MECH 564**
**Finite Element Analysis**
**Credit Hours: 3**
Typical engineering problems discussed on a physical basis. Setup and solution of problems by means of the existing mathematical tools. The objective is to teach in a unified manner the fundamentals of finite element analysis of solids, structures, and fluids. This includes the theoretical foundations and appropriate use of finite element methods, nonlinear finite element, bending of beams, verification and validation.

**MECH 565**
**Advanced Thermodynamics**
**Credit Hours: 3**
Axiomatic presentation of fundamentals of classical thermodynamics. First law, equilibrium, Euler and Gibbs-Duhem relations. Entropy production, thermodynamic cycles. Legendre transformations and extremum principle. Maxwell relations and thermodynamic derivatives. Stability. Phase transitions. Nernst postulate. Chemical equilibrium. Applications.

**MECH 569**
**Solar Energy Utilization**
**Credit Hours: 3**
Design consideration of various concentrating collectors for thermal and photovoltaic applications. Solar thermal/ electric power conservation. Solar thermal energy storage. Solar thermal design methods: f-chart utilizability. Solar space conditioning design and computer simulation models such as TRNSYS. Economic considerations. Solar desalination and other applications. Design projects in selected areas.

**MECH 582**
**Math Analysis of Mech. Eng Sys**
**Credit Hours: 3**
Application of mathematical methods to the description and analysis of mechanical engineering systems including computational techniques and analogies. Various solution

methods including vectors, matrices, linear algebra, ordinary differential equations, and partial differential equations are introduced and studied.

**MECH 583**
**Robotics and Automation Tech.**
**Credit Hours: 3**
This course covers advanced kinematics topics and their application to more complex robotic systems such as redundant manipulators and parallel mechanisms. Topics covered will include: point, direction, line, and screw motion descriptions; homogeneous transformations; line and screw coordinates; quaternion representations; inverse displacement solutions by analytic, root finding, hybrid, and numerical methods; appropriate frames of reference; screw systems and transforms; local and globally optimum solutions of redundant rates; over-determined and near degenerate solutions; singularity analysis; and parallel manipulator kinematics

**MECH 584**
**Computational Fluid Dynamics**
**Credit Hours: 3**
This course enhances student knowledge and skills on problem solving capability by using software-based computational techniques. It will deliver more systematic study on modern computational fluid dynamics knowledge in further detail, including: flow governing equations; numerical scheme and stability analysis; boundary condition definition in relation to flow characteristics; and flow results analysis and presentation for the understanding of in-depth flow physics. Students will use the commercial CFD suit ANSYS-Multiphysics/FLUENT with in-class theoretical studies.

**MECH 585**
**Advanced Heat Transfer**
**Credit Hours: 3**
This course covers conservation equations and gas kinetics. Unidirectional steady conduction. Multidirectional steady conduction, time-dependent conduction, external forced convection, internal forced convection, natural convection, convection with change of phase, heat exchangers, radiation, and mass transfer principles. The course utilizes Computational Fluid Dynamics (CFD) to investigate complex thermal systems.

**MECH 586**
**Advanced Fluid Mechanics**
**Credit Hours: 3**
This course covers control volume forms of balance laws governing fluid motion and applies to problems involving pumps, sprinklers. Derives and studies differential forms of governing equations for incompressible viscous flows. It covers qualitative aspects of lift and drag, loss of stability of laminar flows, turbulence, and vortex shedding. Also, it covers computational fluid dynamics that include flow governing equations; numerical scheme and stability analysis; boundary condition definition in relation to flow characteristics; and flow results analysis.

**MECH 587**
**Combustion and Emission**
**Credit Hours: 3**
Combustion modes. Chemical thermodynamics and chemical kinetics. Conservation equations of reacting flows. Multi-species transport. Ignition, flammability, and extinction. Premixed and Nonpremixed flames. Combustion instabilities. Turbulent combustion. Liquid and solid burning. Pollutant Emissions.

**MECH 588**
**Energy Conversion**
**Credit Hours: 3**
Energy sources and their classification. Conventional energy conservation: Power plant and vapor cycles. Renewable energy: Solar energy with emphasis on solar cells, and wind energy, OTEC systems, geothermal energy. Nuclear fission and types of fission reactors. Fuel Cells.

**MECH 589**
**Renewable Energy Utilization**
**Credit Hours: 3**
This aims of this course are to assesses current and potential future energy systems, covers resources, extraction, conversion, and end-use, and emphasizes meeting regional and global energy needs in the 21st century in a sustainable manner. Different conventional and renewable energy technologies will be presented including fossil fuels, nuclear power, solar energy, biomass energy, and wind power. The students will learn the fundamental and quantitative principles of the renewable energy options, as well as their potential economic and societal impact. After taking the course, the students will be will be able to contribute to the selection and design of renewable energy systems.

**MECH 590**
**Materials Selection**
**Credit Hours: 3**
Selecting materials for engineering applications. The major families of materials, their properties, and how their properties are controlled; case studies and design projects emphasizing materials selection

**MECH 591**
**Conserv. & Recyc. of Mater.**
**Credit Hours: 3**
This course covers the importance of modern materials in advanced manufacturing processes; methods for materials recycling is the emphasis. Topics include the recycling of materials for steel, aluminum, automobile, foundry, glass, plastics, energy, construction, and other industries. Topics emphasized also include lifecycle assessment, de-manufacturing systems, design for environment, reengineered materials, and environmental risk management and product stewardship. Considers the elements of multi-lifecycle engineering from a systems perspective forming a framework for industrial ecology and a pathway towards sustainable development.

**MECH 592**
**Product Design**
**Credit Hours: 3**
This course covers the basics of design philosophy, methodology, principles, and theory as a foundation for surveying current research areas in the product development process. A brief introduction to concurrent design and life cycle design is followed by addressing the application of the design process to problem solving. The relationship between creativity and the design process is explored by using tools for solving engineering system design and synthesis problems. Computer, mathematical, and/or physical modeling of the problem and solution, the axiomatic design approach, Taguchi robust design, design of experiments, and prototyping are strongly emphasized topics.

**MECH 593**
**Advanced Corrosion Engineering**
**Credit Hours: 3**
This course describes the importance of corrosion problems in relation to material cost, reduced performance, reliability, and impact on the environment. The course covers the basics of what makes environments corrosive, with an introduction to corrosion chemistry, to corrosion thermodynamics, and to the electrochemical theory that relates corrosion current with mass and thickness loss rates of various materials. Forms of corrosion are described in relation to environmental accidents and to methods commonly used to control corrosion. Design for corrosion prevention. Testing, monitoring and inspection. Materials selection for corrosion resistance

**MECH 594**
**Failure Analysis**
**Credit Hours: 3**
Function of failure analysis. Techniques of failure analysis (investigation procedure). Testing used in failure analysis (Mechanical, Metallurgical, and NDT). Types of failure. Designing against failure. Failure due to excessive elastic deformation. Failure due to distortion. Brittle fracture (Fast fracture). Fatigue failure. Failure due to creep. Wear. Corrosion and oxidation. Practical: Case study from industry. Laboratory experiments

**MECH 595**
**Advanced Physical Metallurgy**
**Credit Hours: 3**
The course cover structure of metals, analytical techniques, dislocation and plastic deformations, diffusion, solidification of metals, nucleation and growth kinetics, phase diagrams, thermally activated plastic deformations, fracture and fracture mechanics that includes cleavage, ductile fracture, fatigue, creep-fatigue and environmental cracking phenomena.

**MECH 596**
**Fatigue & Fracture Eng. Mat.**
**Credit Hours: 3**
Stress/Strain controlled Fatigue-Life prediction laws. Continuum fracture mechanics. Fracture modes. Fracture mechanics and microscopic plastic deformation/fracture mechanics combined approach. Cleavage, ductile fracture, fatigue, creep-fatigue and environmental cracking phenomena

**MECH 597**
**Coatings and Surface Eng.**
**Credit Hours: 3**
Advanced coatings; metallic, ceramic & and polymeric coatings, high temperature corrosion, basic of chemical thermodynamics, thermodynamic stability And Ellingham diagrams Thin film Technology and Microelectronic

**MECH 598**
**Nanotechnology**
**Credit Hours: 3**
The course covers synthesis, properties, characterization of nanoscience and recent technological advances in renewable energy, biotechnology, and nanodevices. Topics also include detail fundamental properties, fabrication and measuring methods of nanostructured materials, applications, and societal implication of nanoscale materials. Manufacturing of bulk nanostructured materials and nanocoatings, reactivity and handling of nanoparticles.

**MECH 599**
**Mechanics of composites**
**Credit Hours: 3**
Analysis, design and applications of laminated and chopped fiber reinforced composites. Microand macro-

mechanical analysis of elastic constants, failure and environmental degradation. Design project.

**MECH 600**
**Advanced Finite element Ana.**
**Credit Hours: 3**
The objective is to teach in a unified manner the fundamentals of finite element analysis of solids, structures, and fluids. This includes the theoretical foundations and appropriate use of finite element methods, nonlinear finite element, bending of beams, verification and validation.

**MECH 651**
**Advanced Special Topics I**
**Credit Hours: 3**
This course will introduce you to a special topic in engineering that is outside of the regular curriculum of your program. The course enables external or internal lecturers with specialist knowledge to offer a special elective course in their area of expertise. The course is dedicated to allow for advance topics / latest findings / knowledge to be shared and taught to graduate students. It is a specific – focus course to cater for industrial and academia needs in Qatar

**MECH 652**
**Advanced Special Topics II**
**Credit Hours: 3**
This course will introduce you to a special topic in engineering that is outside of the regular curriculum of your program. The course enables external or internal lecturers with specialist knowledge to offer a special elective course in their area of expertise. The course is dedicated to allow for advance topics / latest findings / knowledge to be shared and taught to graduate students. It is a specific – focus course to cater for industrial and academia needs in Qatar .

**MIST 606**
**Mgmt Information Systems**
**Credit Hours: 3**
This course provides an introductory theoretical and managerial overview of the area of information systems. Students are exposed to various information technologies, the methods and tools for developing and managing information systems, and the impact of information systems on organizations and on society at large. Case-studies, in-class discussions, or projects are used to also steer the student's ability to communicate effectively to information systems professionals.

**MIST 613**
**Information Security**
**Credit Hours: 3**
This course covers the analysis, design, development, implementation, and maintenance of information security systems. Topics include: legal, ethical, professional, personnel issues; risk management; technology; and physical security.

**MIST 616**
**Enterprise Resource Planning**
**Credit Hours: 3**
This course introduces the use of technology in all aspects of a business. It explores the use of technology in customer relations management, accounting and financial applications, purchasing and production tools, sales and marketing functions, and human resources management. Students gain a heightened awareness of emerging technologies and trends in e-business.

**MSCE 591**
**Corrosion Engineering**
**Credit Hours: 3**
This course covers the principles of electrochemistry as well as the essential elements of electrochemical corrosion. The aim is to provide an understanding of corrosion, the mechanisms of corrosion, the thermodynamics and electrochemistry behind corrosion, electrochemical methods to study and measure corrosion, and the principles and methods leading to mitigation of corrosion problems that might occur in engineering practice. On the basis of the knowledge of corrosion phenomena, the methods are introduced how one can protect metals and alloys against corrosion.

**MSCE 592**
**Failure Analysis and Prevention**
**Credit Hours: 3**
The aim of the course is to discuss the tools that can be used to select the appropriate material for a given engineering application. Various failure modes will be studied to identify failure mechanism in real life examples and how to prevent failure. Reviews of available materials, manufacturing processes and mechanical behaviour of materials including fracture, fatigue, creep, corrosion and wear are also included in this course.

**MSCE 651**
**Special Topics I**
**Credit Hours: 3**
This course will introduce you to a special topic in materials engineering that is outside of the regular curriculum of your program. The course enables external or internal lecturers with specialist knowledge to offer a special elective course in their area of expertise. The course is dedicated to allow for advance topics / latest

findings / knowledge to be shared and taught to graduate students. It is a specific – focus course to cater for industrial and academia needs in Qatar.

**MSCE 652**
**Special Topics II**
**Credit Hours: 3**
This course will introduce you to a special topic in materials engineering that is outside of the regular curriculum of your program. The course enables external or internal lecturers with specialist knowledge to offer a special elective course in their area of expertise. The course is dedicated to allow for advance topics / latest findings / knowledge to be shared and taught to graduate students. It is a specific – focus course to cater for industrial and academia needs in Qatar.

**MUPD 600**
**Planning Theory**
**Credit Hours: 3**
This course introduces issues that pertain to history and definition of planning, determinants, goals and objectives of spatial planning, role, legitimacy and authority of planning, general and specific theories, such as Descriptive, Prescriptive and Normative theories also in the context of developing countries.

**MUPD 601**
**Resrch & Stat Analysis in Plng**
**Credit Hours: 3**
The course offers an overview of research methods in planning and management, probability, statistics, and decision theory and their applications in city planning, basic probability concepts, data classification and summarization, statistical sampling, hypothesis testing, goodness of fit, regression analysis, analysis of variance, contingency tables, and elementary Bayesian decision making. Computer statistical packages are utilized in different assignments delivered and practiced throughout the semester.

Prerequisite
MUPD 620

**MUPD 610**
**Urban Planning Legislation**
**Credit Hours: 3**
This course is an overview of planning legislations and a short history of planning process in Qatar and the Gulf Region. It covers methods, techniques and instruments for implementing plans through decrees and administrative acts, the basis for urban and regional planning and its relation to Shariah Law as well as the structure and organization of Qatari public planning administration, discussion of zoning procedures, subdivision review practices and budget preparation and execution.

**MUPD 611**
**Urban Economics**
**Credit Hours: 3**
This course covers issues of distribution of population and economic activities in urban areas, microeconomic principles to understand the economic nature of the urban system. The economic aspects and models of urban growth and city size, land-use pattern, housing, transportation, environmental problems, unemployment, and public policy are discussed.

**MUPD 620**
**Urban and Regional Land Use**
**Credit Hours: 3**
This course introduces aspects that pertain to history and definition of land use planning, the concept of policy, programming and planning, determinants and systems guiding land use development, socio-economic development and Land use, space requirements, spatial distribution and localization concepts, land use planning models, procedures for formal land use plans.

**MUPD 621**
**Computer Aided Planning**
**Credit Hours: 3**
Information and experience with the rapidly growing field of Computer-Aided Planning. Management Information Systems (MIS), Geographic Information Systems (GIS), Decision Support Systems (DSS), Knowledge Based Expert Systems and Automated Mapping and Graphing are introduced. Basic principles are emphasized that are common to the design and use of software in this area.

Prerequisite
MUPD 620

**MUPD 650**
**Cltrl & Phscl Aspct of Isl Cty**
**Credit Hours: 3**
This course involves aspects related to historical development of the traditional Muslim towns, determinants of “Islamic” urban spatial structure, the physical aspects of the urban form and the role of the socio-cultural factors and legal system in the structure of Muslim towns, urban design principles of traditional Arab and Muslim towns, discussion of the problems of contemporary Islamic cities and the relevance of the traditional design principles to build future cities in the Islamic world.

**MUPD 651**
**Urban Renewal Planning**
**Credit Hours: 3**
This course discusses the changes in urban land use and the socio-economic structures of urban settings. Emphasis is on historical districts revitalization and regeneration. Goals, plans and operations of adaptive re-use and regeneration of local traditional as well as modern districts are discussed and presented. Case studies from historic Middle Eastern and European cities are discussed and analyzed.

**MUPD 652**
**Theory on Urban Form & Design**
**Credit Hours: 3**
This course is a review of architecture and urban design history, theories and concepts of urban spatial design, elements and analysis of the concept of urban space, major theoretical and critical responses to the crises of the modern urban environment, discussion of urban design concepts through analysis of urban settings in the region.

**MUPD 653**
**Design and Regeneration**
**Credit Hours: 3**
This course provides a theoretical basis for the understanding of design in the built environment, and an appreciation of the evolving integration of aspects of design and regeneration in both urban and rural environments. The theoretical material includes consideration of aesthetics, urban morphology, rural settlement, design method and sustainable development, and encourages multi-disciplinary and critical perspectives on these aspects of the subject. The multi-disciplinary approach and the critical perspectives also embraces the components of integrated regeneration.

**MUPD 654**
**Urban Transportation Systems**
**Credit Hours: 3**
This course involves discussion and analysis of planning and management of urban transportation systems, functional description, planning, and analysis of transportation systems, characteristics of major transportation modes in Qatar and neighboring countries. Current research, technology, and policy issues are stressed.

**MUPD 655**
**City&Regional Plan.in Arid Zon**
**Credit Hours: 3**
This course involves discussion of problems and planning aspects specific to arid zones; different factors influencing the built environment in the arid regions including climate, water, vegetation, and soil; emphasis on basic considerations on problems of urban sites; economically related aspects of urbanized regions; specific problems of construction and site selection; the design of specific urban physical city-scape and landscape in arid zones forms; physical planning for sustainable resources.

**MUPD 656**
**Environmental Planning & Magt**
**Credit Hours: 3**
This course provides discussion of major aspects of environmental analysis, planning and management; problems and principles of site analysis, land use methods, and geologic hazard planning; natural resource, pollution and residuals management; economics of renewable and non-renewable resources, and the economic cost of environmental controls; environmental impact assessment and local case studies of environmental management.

**MUPD 657**
**Techniques of Envir.Impact.Ass**
**Credit Hours: 3**
This course introduces concepts, legal frameworks, public policies, approaches, and methodologies utilized in determining environmental impacts of proposed urban and costal projects. Processes of environmental impact assessment and implementation are emphasized. A focus on the nature and consequences of the impact from different perspectives is undertaken including economic development, social equity, and the environment.

**MUPD 700**
**Local& Regional Sustainability**
**Credit Hours: 3**
This course covers the relationship between local and regional regeneration within a context of integrated sustainable development. The first section examines policy issues such as compact development; smart growth; local development frameworks, polycentric development, and the new urbanism. This is undertaken in a comparative perspective, addressing particularly the experience in Europe and the US with highlights on some regional practices. The second section considers planning responses to this policy agenda in terms of building sustainable communities, and the links within a planning hierarchy between local and regional dimensions.

Prerequisite
MUPD 600 AND MUPD 610 AND MUPD 620

**MUPD 701**
**Urban Infrastructure Planning**

**Credit Hours: 3**
This course covers planning for and management of urban infrastructure projects. Identification of physical infrastructure systems such as water and sewage systems, urban transportation networks, .etc.; management, finance and budgeting, and operation and maintenance of infrastructure projects. Case studies of local and regional urban infrastructure systems are discussed.

Prerequisite
MUPD 600 AND MUPD 610 AND MUPD 620

**MUPD 702**
**Housing Policies and Planning**
**Credit Hours: 3**
This course in an overview of the housing stocks and its function as a commodity, the private housing development process versus the public one, the user and housing design, housing rehabilitation and conservation as a community development strategy, adaptive reuse and urban revitalization and manufactured housing, the overall evaluation of housing supply and demand versus housing need based on local demographic developments and general housing strategies at the local, regional, and national levels.
Prerequisite
MUPD 600 AND MUPD 610 AND MUPD 620

**MUPD 710**
**Sustainable Urban &Land Design**
**Credit Hours: 3**
This course provides a theoretical basis for the understanding of design in the built environment, and an appreciation of the evolving integration of aspects of design and regeneration in urban, rural, and desert environments. The theoretical material includes consideration of aesthetics, urban morphology, rural and desert settlement, design method and sustainable development, and encourages multi-disciplinary and critical perspectives on these aspects.

Prerequisite
MUPD 600 AND MUPD 610 AND MUPD 620

**MUPD 711**
**Urban Design in Practice**
**Credit Hours: 3**
The focus of this project-based course is the integration of theories and principles of urban design with practice applications in a real-world context. Lectures and workshops build on the theoretical foundations and background knowledge students already have. The course is designed to equip students with relevant skills in topics such as site appraisal, urban design analysis, the design of urban infill and physical aspects of the public realm. Students are expected to think creatively and rationally in working with a 'live' design challenge. The project component of the course is introduced early and runs parallel with and complementary to the lectures/workshops. It focuses on the theme of sensitive change and innovative intervention in dynamic urban environments.

Prerequisite
MUPD 600 AND MUPD 610 AND MUPD 620

**MUPD 712**
**Evol of Built Form &Townscapes**
**Credit Hours: 3**
The course focuses on the settlement evolution, the townscape qualities and the distinctive architectural features of the Middle Eastern towns. The first section covers the history of settlement desert environments, the second section locates the Arab and Islamic city in a wider regional context, the third section considers the development of built form and architectural style with particular reference to the middle east and north Africa, and the fourth and final section relates settlement and architectural development to their policy context, with particular focus on sustainability and conservation policies.
Prerequisite
MUPD 600 AND MUPD 610 AND MUPD 620

**MUPD 750**
**Thesis focuses on Urban Plan.**
**Credit Hours: 9**
Thesis students are asked to consider potential topics for either a thesis or a work-based project, preferably related to the core research themes in the department. If students decide to complete a thesis, it is to be a substantial research thesis, and meet the normal standards for this level of academic study.

**MUPD 760**
**Thesis focuses on Urban Design**
**Credit Hours: 9**
Thesis students are asked to consider potential topics for either a thesis or a work-based project, preferably related to the core research themes in the department. If students decide to complete a thesis, it is to be a substantial research thesis, and meet the normal standards for this level of academic study.

**PHAP 701**
**Participatory Design and Planning**
**Credit Hours: 3**
This course familiarizes students with the most common methods and skills used in this field, the pitfalls and potential of public engagement processes, ways to

integrate public input into planning and policy-making, and the areas of innovation in participatory planning practice. The course is based on the fact that engaging the public through interactive participatory methods has become standard practice in the planning and design professions.

**PHAP 702**
**Architecture and Urbanism of Globalized Cities**
**Credit Hours: 3**
This course introduces the city and challenges of contemporary globalization. It introduces Globalization as one of the most defining, and fraught, phenomena of modern times. It involves discussions and seminars on problems, questions, and arguments relevant to the built environment in a global world. It seeks to understand the rapid development of architecture and urbanism and changes in the global economy that affects the lives of people around the world.

**PHAP 710**
**Building Performance Assessments and Measurements**
**Credit Hours: 3**
This course focuses on the complex issue of assessing existing buildings for their overall performance, particularly energy use, environmental impact and occupant satisfaction to identify potentials for improvement. This is key to ensure that sustainable buildings perform to their potential. Post-occupancy building evaluations will be used and outputs compared to performance benchmarks on which buildings can be rated and compared.

**PHAP 711**
**History, Theory, and Criticism in Architecture**
**Credit Hours: 3**
This course introduces critical consideration and special topics in architectural history, theory and criticism which students construct their own informed and reasoned ideas about what the topic means from their perspective. The course offers overviews on the role of criticism in building theories and investigates the chronological evolution of architectural criticism. Types and methods of critical writing and criticism are also investigated. Students will have the opportunities to engage in critical discussions and develop critiques of building or urban settings.

**PHAP 712**
**Energy and Buildings**
**Credit Hours: 3**
This course introduces emerging green building concepts, energy systems, and cost benefit analysis. Topics include net zero design, green building, alternative energies, energy conservation, micro-generation technologies, dual use of energy, passive cooling, occupant behavior in relation to environmental conditions, retrofitting, and related considerations. The course offers an overview on the identification of the optimal energy performance achievable with various types of buildings and service systems; reduction of infiltration; control systems and strategies to achieve optimal energy performance; and other topics.

**PHAP 751**
**Advanced Special Topics in Architecture I**
**Credit Hours: 3**
Selected academic topics initiated by students, student teams, or faculty and directed by faculty member in the area of architecture and urban design. Topics are selected to reflect issues relevant to regional and local trends, historical and contemporary and would help students focus on the key issues involved in the shaping of the built environment.

**PHAP 752**
**Advanced Special Topics in Architecture II**
**Credit Hours: 3**
Selected academic topics initiated by students, student teams, or faculty and directed by faculty member in the area of architecture and urban design. Topics are selected to reflect issues relevant to regional and local trends, historical and contemporary and would help students focus on the key issues involved in the shaping of the built environment.

**PHAR 306**
**Research Eval & Pres Skills II**
**Credit Hours: 1**
Pharmacy Research, Evaluation and Presentation Skills II (PHAR306) is the second of six (PHAR305, PHAR306, PHAR405, PHAR406, PHAR505, PHAR506) courses designed to introduce the students to the detailed aspects of optimizing research design for clinical and basic research. The material presented builds on the content covered in previous non-pharmacy statistics and research design courses. Design strategies for varying types of health care-related research, as well as skills for critical evaluation of research studies and literature are a primary focus. In addition, skills for research findings dissemination through oral presentation and poster writing will be developed.

**PHAR 341**
**Professional Skills IV**
**Credit Hours: 0 OR 2**
Pharmacy Professional Skills IV (PHAR341) is the fourth of a series of six (PHAR240, PHAR241, PHAR340, PHAR341, PHAR440, PHAR441) courses. PHAR341 continues with the development of knowledge and skills

related to pharmaceutical care, medication prescribing and dispensing processes, and drug information resource retrieval and application in pharmacy practice. This course continues exercising interpersonal communication and development of the skills needed to interact with patients, families and other health care professionals.

Prerequisite
PHAR 340

**PHAR 359**
**Interpretation of Lab Data I**
**Credit Hours: 1**
Interpretation of Lab Data I (PHAR359) is designed to focus on the clinical interpretation of the various tests performed in clinical chemistry, hematology, microbiology and imaging (e.g. x-ray, ultrasound). The course will focus on the physiological basis for the test, the basic principles and procedures for the test, and the clinical significance of the test results, including quality control and normal values. The course is integrated with the physical assessment course and is delivered in anatomical system-based approach to health management. The systems that will be covered include the nervous system, head and neck systems, respiratory system, gastrointestinal system, genitourinary system, cardiovascular system, peripheral vascular system, musculoskeletal and the dermatologic systems.

**PHAR 360**
**Interpretation of Lab Data II**
**Credit Hours: 1**
Interpretation of Lab Data II (PHAR360) is designed to focus on the clinical interpretation of the various tests performed in clinical chemistry, hematology, microbiology and radiology. The course will focus on the physiological basis for the test, the basic principles and procedures for the test, and the clinical significance of the test results, including quality control and normal values. The course is integrated with the physical assessment course, and is delivered in an anatomical system-based approach to health management. The systems that will covered include the nervous system, head and neck systems, respiratory system, gastrointestinal system, genitourinary system, cardiovascular system, peripheral vascular system, musculoskeletal and the dermatologic systems.

**PHAR 361**
**Patient Assessment Lab I**
**Credit Hours: 1**
Patient Assessment Laboratory I (PHAR361) is designed to introduce the pharmacy students to the various techniques and tools necessary to conduct physical examinations and to monitor changes caused by common disease states and drug therapy. In addition this course helps the students in interpreting physical findings and evaluating patient information in order to make appropriate decisions regarding the health of the patient, and his or her drug therapy needs and problems and to intervene in order to resolve the identified drug related problems and to ensure outcomes of drug therapy are met. This course will be delivered in an anatomical system-based approach to health management. The systems that will covered include the nervous system, head and neck systems, respiratory system, gastrointestinal system, genitourinary system, cardiovascular system, peripheral vascular system, musculoskeletal and the dermatologic systems.

**PHAR 362**
**Patient Assessment Lab II**
**Credit Hours: 1**
Patient Assessment Laboratory II (PHAR362) is designed to introduce the pharmacy students to the various techniques and tools necessary to conduct physical examinations and to monitor changes caused by common disease states and drug therapy. In addition, this course helps the students in interpreting physical findings and evaluating patient information in order to make appropriate decisions regarding the health of the patient, and his or her drug therapy needs and problems and to intervene in order to resolve the identified drug-related problems and to ensure outcomes of drug therapy are met. This course will be delivered in an anatomical system-based approach to health management. The systems that will covered include the nervous system, head and neck systems, respiratory system, gastrointestinal system, genitourinary system, cardiovascular system, peripheral vascular system, musculoskeletal and the dermatologic systems.

**PHAR 371**
**Pathophysiology II**
**Credit Hours: 1**
Pathophysiology II (PHAR371) describes the incidence, etiology and clinical manifestations of local and systemic body responses which reflect adaption and course of a disease process. PHAR371 is integrated with the courses in pharmacology and pharmacotherapy and is delivered in anatomical system-based approach to health management. The systems that will covered include the nervous system, head and neck systems, respiratory system, gastrointestinal system, genitourinary system, cardiovascular system, peripheral vascular system, musculoskeletal and the dermatologic systems.

**PHAR 381**
**Pharmacotherapy II**
**Credit Hours: 3**
Pharmacotherapy II (PHAR381) is the second of a series

of four (PHAR380, PHAR381, PHAR480, PHAR481) courses dealing with drug-based therapeutics. The course is integrated with the pathophysiology and pharmacology course series and is delivered in a disease-based approach to health management. For this course, this will include a review of the therapeutics for cardiovascular, renal, dermatologic, bone and joint disorders. For each system, topics to be covered include epidemiology and etiology, clinical presentation, investigations, diagnosis, goals of therapy, therapeutic choices, treatment algorithms (including clinical practice guidelines), dosing and pharmacoeconomic considerations. Students will also become familiar with relevant patient management issues. These topics will complement content taught in the balance of integrated courses.

**PHAR 405**
**Research Eval-Pres Skills II**
**Credit Hours: 1**
Pharmacy Research, Evaluation and Presentation Skills III (PHAR405) is third of six (PHAR305, PHAR306, PHAR405, PHAR406, PHAR505, PHAR506) courses designed to introduce the students to the detailed aspects of optimizing research design for clinical and basic research. The material presented builds on the content covered in previous non-pharmacy statistics and research design courses. Design strategies for varying types of health care-related research, as well as skills for critical evaluation of research studies and literature will be a primary focus. In addition, oral presentation and debating skills will be developed.

Prerequisite
PHAR 305

**PHAR 406**
**Research Eval-Pres Skills III**
**Credit Hours: 1**
Pharmacy Research, Evaluation and Presentation Skills IV (PHAR406) is fourth of six (PHAR305, PHAR306, PHAR405, PHAR406, PHAR505, PHAR506) courses designed to introduce the students to the detailed aspects of optimizing research design for clinical and basic research. The material presented builds on the content covered in previous non-pharmacy statistics and research design courses. Design strategies for varying types of health care-related research, as well as skills for critical evaluation of research studies and literature will be a primary focus. In addition, oral presentation and debating skills will be developed.

Prerequisite
PHAR 405

**PHAR 440**
**Professional Skills V**
**Credit Hours: 0 OR 2**
Pharmacy Professional Skills V (PHAR440) is the fifth of a series of six (PHAR240, PHAR241, PHAR340, PHAR341, PHAR440, PHAR441) courses. PHAR440 continues with the development of knowledge and skills related to pharmaceutical care, medication prescribing and dispensing processes, and drug information resource retrieval and application in pharmacy practice. This course continues exercising interpersonal communication and development of the skills needed to interact with patients, families and other health care professionals.

Prerequisite
PHAR 341

**PHAR 441**
**Professional Skills VI**
**Credit Hours: 0 OR 2**
Pharmacy Professional Skills VI (PHAR441) is the final course in the series of six (PHAR240, PHAR241, PHAR340, PHAR341, PHAR440, PHAR441) courses. PHAR441 continues with the development of knowledge and skills related to pharmaceutical care, medication prescribing and dispensing processes, and drug information resource retrieval and application in pharmacy practice. This course continues exercising interpersonal communication and development of the skills needed to interact with patients, families and other health care professionals.

Prerequisite
PHAR 440

**PHAR 480**
**Pharmacotherapy III**
**Credit Hours: 3**
Pharmacotherapy III (PHAR480) is the third of a series of four (PHAR380, PHAR381, PHAR480, PHAR481) courses dealing with drug-based therapeutics. The course is integrated with the pathophysiology and pharmacology course series and is delivered in a disease-based approach to health management. For this course, this will include a review of the therapeutics for oncologic/haematologic, immunologic, and endocrinologic disorders. For each system, topics to be covered include epidemiology and etiology, clinical presentation, investigations, diagnosis, goals of therapy, therapeutic choices, treatment algorithms (including clinical practice guidelines), dosing and pharmacoeconomic considerations. Students will also become familiar with relevant patient management issues. These topics will complement content taught in the balance of integrated courses.

Prerequisite
PHAR 381

**PHAR 481**
**Pharmacotherapy IV**
**Credit Hours: 3**
Pharmacotherapy IV (PHAR481) is the fourth of a series of four (PHAR380, PHAR381, PHAR480, PHAR481) courses dealing with drug-based therapeutics. The course is integrated with the pathophysiology and pharmacology course series and is delivered in a disease-based approach to health management. For this course, this will include a review of the therapeutics for obstetric and gynecologic disorders and infectious diseases. For each system, topics to be covered include epidemiology and etiology, clinical presentation, investigations, diagnosis, goals of therapy, therapeutic choices, treatment algorithms (including clinical practice guidelines), dosing and pharmacoeconomic considerations. Students will also become familiar with relevant patient management issues. These topics will complement content taught in the balance of integrated courses.

Prerequisite
PHAR 480

**PHAR 500**
**Medicinal Chemistry**
**Credit Hours: 2**
Medicinal Chemistry (PHAR500) is a bridging course designed for graduate students from a non-pharmacy background. The course is serves to introduce students to concepts required to understand drugs as organic molecules whose biological activities are derived from their chemical structures and physicochemical properties. This will be achieved by reviewing fundamental principles of organic chemistry, which will allow students to make clear connections between physical, organic and biological chemistry, and ultimately the general principles of medicinal chemistry such as absorption, distribution, metabolism, elimination and structure-activity relationships. The course also covers examples of drug classes used to treat different diseases, including sedatives, hypnotics, NSAIDs, antimicrobial agents and other drug classes.

**PHAR 520**
**Pharmacology & Pharmacotherapy**
**Credit Hours: 2**
Pharmacology & Pharmacotherapy (PHAR520) is a bridging course designed to provide graduate students from a non-pharmacy background, with an overview of the basic pharmacologic and pharmacotherapeutic principles and concepts. A discussion of the pharmacologic properties of selected common drug classes is also included. This course will provide students with the fundamental concepts and theoretical background in pharmacology and pharmacotherapy and help them move smoothly to advanced concepts in other relevant graduate level courses in the MSc. program.

**PHAR 605**
**Adv Phar Res Eval&Pre Skills I**
**Credit Hours: 2**
PHAR605 is the first of a series of two courses designed to advance the PharmD student's knowledge, comprehension, application, analysis, synthesis, evaluation and communication skills pertaining to health care research. This course builds on knowledge, skills, attitudes and values previously developed in a BSc (Pharm) program, and is designed to comply with CCAPP accreditation standards and guidelines for an advanced degree program in pharmacy.

**PHAR 606**
**Adv Phar Res Eval&Pre Skil. II**
**Credit Hours: 2**
PHAR606 is the second of a series of two courses designed to advance the PharmD student's knowledge, comprehension, application, analysis, synthesis, evaluation and communication skills pertaining to health care research. This course builds on knowledge, skills, attitudes and values previously developed in a BSc (Pharm) program, and is designed to comply with CCAPP accreditation standards and guidelines for an advanced degree program in pharmacy.

**PHAR 620**
**Res.Des.Ethics & Stat. Meth. I**
**Credit Hours: 2**
This graduate course aims to expand upon principles, application and controversies pertaining to bench and clinical research design and statistical methodology delivered at the undergraduate level. Topics also include issues such as grantsmanship, research ethics, data management, coauthorship, intellectual property and associated topics. This is a team taught course involving faculty within the college and invited faculty from other departments and/or institutions.

**PHAR 621**
**Res.Des.Ethics & Stat. Meth.II**
**Credit Hours: 2**
This graduate course aims to expand upon principles, application and controversies pertaining to bench and clinical research design and statistical methodology delivered at the undergraduate level. Topics also include issues such as grantsmanship, research ethics, data

management, coauthorship, intellectual property and associated topics. This is a team taught course involving faculty within the college and invited faculty from other departments and/or institutions.

**PHAR 625**
**Life Cycle of a Medication**
**Credit Hours: 2**
This graduate course aims to provide students with an understanding of the process of drug discovery and development from the identification of novel drug targets to the introduction of new drugs into clinical practice and eventual withdrawal. To promote an interdisciplinary approach to the topics, this is a team taught course involving faculty within the college and invited faculty from other departments and/or institutions.

**PHAR 630**
**Adv Prof Prac Internships I**
**Credit Hours: 4**
PHAR630 is the first of a series of eight advanced professional practice internships designed to provide PharmD students with a variety of practice-based opportunities to integrate, reinforce and advance the knowledge, skills, attitudes and values developed in a BSc (Pharm) program. These internships are undertaken in select health care delivery (e.g. hospital, clinic, community) and related sites and are structured to include a set of formalized activities which are designed to achieve specific learning objectives. Select pharmacy practitioners serve as mentors, role models, trainers and assessors of student learning. This course is designed to comply with CCAPP accreditation standards and guidelines for an advanced degree program in pharmacy.

**PHAR 631**
**Adv Prof Prac Internships II**
**Credit Hours: 4**
PHAR631 is the second of a series of eight advanced professional practice internships designed to provide PharmD students with a variety of practice-based opportunities to integrate, reinforce and advance the knowledge, skills, attitudes and values developed in a BSc (Pharm) program and previous PharmD internships. These internships are undertaken in select health care delivery (e.g. hospital, clinic, community) and related sites and are structured to include a set of formalized activities which are designed to achieve specific learning objectives. Select pharmacy practitioners serve as mentors, role models, trainers and assessors of student learning. This course is designed to comply with CCAPP accreditation standards and guidelines for an advanced degree in pharmacy.

**PHAR 632**
**Adv Prof Prac Internships III**
**Credit Hours: 4**
PHAR632 is the third of a series of eight advanced professional practice internships designed to provide PharmD students with a variety of practice-based opportunities to integrate, reinforce and advance the knowledge, skills, attitudes and values developed in a BSc (Pharm) program and previous PharmD internships. These internships are undertaken in select health care delivery (e.g. hospital, clinic, community) and related sites and are structured to include a set of formalized activities which are designed to achieve specific learning objectives. Select pharmacy practitioners serve as mentors, role models, trainers and assessors of student learning. This course is designed to comply with CCAPP accreditation standards and guidelines for an advanced degree program in pharmacy.

**PHAR 633**
**Adv Prof Prac Internships IV**
**Credit Hours: 4**
PHAR633 is the fourth of a series of eight advanced professional practice internships designed to provide PharmD students with a variety of practice-based opportunities to integrate, reinforce and advance the knowledge, skills, attitudes and values developed in a BSc (Pharm) program and previous PharmD internships. These internships are undertaken in select health care delivery (e.g. hospital, clinic, community) and related sites and are structured to include a set of formalized activities which are designed to achieve specific learning objectives. Select pharmacy practitioners serve as mentors, role models, trainers and assessors of student learning. This course is designed to comply with CCAPP accreditation standards and guidelines for an advanced degree program in pharmacy.

**PHAR 634**
**Adv Prof Prac Internships V**
**Credit Hours: 4**
PHAR634 is the fifth of a series of eight advanced professional practice internships designed to provide PharmD students with a variety of practice-based opportunities to integrate, reinforce and advance the knowledge, skills, attitudes and values developed in a BSc (Pharm) program. These internships are undertaken in select health care delivery (e.g. hospital, clinic, community) and related sites and are structured to include a set of formalized activities which are designed to achieve specific learning objectives. Select pharmacy practitioners serve as mentors, role models, trainers and assessors of student learning. This course is designed to comply with CCAPP

accreditation standards and guidelines for an advanced degree program in pharmacy.

**PHAR 635**
**Adv Prof Prac Internships VI**
**Credit Hours: 4**
PHAR635 is the sixth of a series of eight advanced professional practice internships designed to provide PharmD students with a variety of practice-based opportunities to integrate, reinforce and advance the knowledge, skills, attitudes and values developed in a BSc (Pharm) program and previous PharmD internships. These internships are undertaken in select health care delivery (e.g. hospital, clinic, community) and related sites and are structured to include a set of formalized activities which are designed to achieve specific learning objectives. Select pharmacy practitioners serve as mentors, role models, trainers and assessors of student learning. This course is designed to comply with CCAPP accreditation standards and guidelines for an advanced degree program in pharmacy.

**PHAR 636**
**Adv Prof Prac Internships VII**
**Credit Hours: 4**
PHAR636 is the seventh of a series of eight advanced professional practice internships designed to provide PharmD students with a variety of practice-based opportunities to integrate, reinforce and advance the knowledge, skills, attitudes and values developed in a BSc (Pharm) program and previous PharmD internships. These internships are undertaken in select health care delivery (e.g. hospital, clinic, community) and related sites and are structured to include a set of formalized activities which are designed to achieve specific learning objectives. Select pharmacy practitioners serve as mentors, role models, trainers and assessors of student learning. This course is designed to comply with CCAPP accreditation standards and guidelines for an advanced degree program in pharmacy.

**PHAR 637**
**Adv Prof Prac Internships VIII**
**Credit Hours: 4**
PHAR637 is the eigth of a series of eight advanced professional practice internships designed to provide PharmD students with a variety of practice-based opportunities to integrate, reinforce and advance the knowledge, skills, attitudes and values developed in a BSc (Pharm) program and previous PharmD internships. These internships are undertaken in select health care delivery (e.g. hospital, clinic, community) and related sites and are structured to include a set of formalized activities which are designed to achieve specific learning objectives. Select pharmacy practitioners serve as mentors, role models, trainers and assessors of student learning. This course is designed to comply with CCAPP accreditation standards and guidelines for an advanced degree program in pharmacy.

**PHAR 640**
**Graduate Seminar I**
**Credit Hours: 1**
This graduate course aims to provide students with the opportunity to participate in the formal discussion of research topics in an interdisciplinary, formal presentation environment involving other students, faculty and guests external to the college and campus. The existing biweekly faculty research seminars are expanded to include graduate student involvement as presenters and attendees. Graduate students are expected to deliver a minimum of one formal presentation each academic year.

**PHAR 641**
**Graduate Seminar II**
**Credit Hours: 1**
This graduate course aims to provide students with the opportunity to participate in the formal discussion of research topics in an interdisciplinary, formal presentation environment involving other students, faculty and guests external to the college and campus. The existing biweekly faculty research seminars are expanded to include graduate student involvement as presenters and attendees. Graduate students are expected to deliver a minimum of one formal presentation each academic year.

Prerequisite
PHAR 640

**PHAR 642**
**Graduate Seminar III**
**Credit Hours: 1**
This graduate course aims to provide students with the opportunity to participate in the formal discussion of research topics in an interdisciplinary, formal presentation environment involving other students, faculty and guests external to the college and campus. The existing biweekly faculty research seminars are expanded to include graduate student involvement as presenters and attendees. Graduate students are expected to deliver a minimum of one formal presentation each academic year.

Prerequisite
PHAR 641

**PHAR 643**
**Graduate Seminar IV**
**Credit Hours: 1**

This graduate course aims to provide students with the opportunity to participate in the formal discussion of research topics in an interdisciplinary, formal presentation environment involving other students, faculty and guests external to the college and campus. The existing biweekly faculty research seminars are expanded to include graduate student involvement as presenters and attendees. Graduate students are expected to deliver a minimum of one formal presentation each academic year.

Prerequisite
PHAR 642

**PHAR 650**
**Eng-based Comm. for Grad. Stu.**
**Credit Hours: 2**
This graduate course aims to provide students with the opportunity to further enhance their oral and written English communication skills to prepare these students for employment in an academic and/or research environment. This includes the writing skills for a research paper and a thesis/dissertation, responding to journal reviewers, grant writing and related topics. In addition to theory, students are given opportunities to practice their communication skills and they receive extensive feedback from both the instructors and colleagues.

**PHAR 660**
**Directed Studies in Pharm. Sci**
**Credit Hours: 2**
This graduate course aims to provide students with a closely supervised research experience and involves the completion of a project under the supervision of the primary faculty supervisor or a designated faculty member. Projects could include experiences in an external laboratory for the purpose of gaining knowledge and skills pertaining to experimental techniques not available on the QU campus.

**PHAR 670**
**Adv. Top. in Pharm. Sci I**
**Credit Hours: 3**
This graduate course aims to provide intensive instruction in the intended areas of specialization within the board scope of pharmaceutical sciences. The modules will cover contemporary and advance topics in different disciplines in pharmaceutical sciences

**PHAR 671**
**Adv. Top. in Pharm. Sci II**
**Credit Hours: 3**
This graduate course aims to provide intensive individualized instruction in the intended area of specialization (pharmacognosy, medicinal chemistry, pharmacology, pharmacokinetics, pharmaceutics, pharmacogenomics) across two semesters. The specific topics are determined by the Primary Faculty Supervisor with approval by the Graduate Student Supervisory Committee. Whenever applicable, graduate students in two or more specialties (e.g. medicinal chemistry and pharmacognosy) undertake combined course work.

**PHAR 680**
**Electives in Pharm. Sci.**
**Credit Hours: 3**
These graduate elective courses focus on either of the following areas: Principles of Drug Design, Biotransformation of Drugs, Pharmaceutical Biotechnology, or another area within pharmaceutical sciences. Other electives are added according to demand and availability.

**PHAR 690**
**MSc (Pharm) Thesis**
**Credit Hours: 5**
This course consists of a major research project which has been approved by the graduate student supervisory committee, the creation of a formal structured document to describe background, hypothesis, methods, results, conclusions, limitations, future research requirements and bibliography associated with the research project, and finally the thesis defense. The thesis is defended by the student in a formal oral examination process in the final semester.

**PHAR 691**
**MSc (Pharm) Thesis**
**Credit Hours: 5**
This course consists of a major research project which has been approved by the graduate student supervisory committee, the creation of a formal structured document to describe background, hypothesis, methods, results, conclusions, limitations, future research requirements and bibliography associated with the research project, and finally the thesis defense. The thesis is defended by the student in a formal oral examination process in the final semester.

**PHUP 751**
**Advanced Special Topics in Urban Planning I**
**Credit Hours: 3**
Selected academic topics initiated by students, student teams, or faculty and directed by faculty member in the area of urban and regional planning. Topics are selected to reflect issues relevant to regional and local trends, historical and contemporary and would help students focus on the key issues involved in the shaping of the built environment.

**PHUP 752**
**Advanced Special Topics in Urban Planning II**
**Credit Hours: 3**
Selected academic topics initiated by students, student teams, or faculty and directed by faculty member in the area of urban and regional planning. Topics are selected to reflect issues relevant to regional and local trends, historical and contemporary and would help students focus on the key issues involved in the shaping of the built environment.

**PSYC 501**
**Human Development and Learning**
**Credit Hours: 2**
Human Development and Learning is an applied field of psychology that relies on a number of psychological principles and theories in order to offer a scientific explanation to the process of the teaching and learning. Among the topics that this course covers are cognitive development, language development, personal development theories, intelligence, individual differences, learning theories, motivation, classroom management, and measurement and evaluation in the school. The focus of this course is on how learning occurs and strategies that support learning (pedagogy). This course has a field-based component.

**PSYC 606**
**Educational Res Meth**
**Credit Hours: 3**
This course provides an overview of research methods, designs, and techniques. Course content includes applying public information and research-based knowledge of issues and trends and the use of appropriate assessment strategies and research methodologies to address authentic issues in education. Students also explore the use of action research as a means to improve teaching and learning.

**SPED 503**
**Introduction to Special Edu**
**Credit Hours: 2**
This course provides broad knowledge and skills in special education for candidates in all teacher education programs. It mainly covers: models, theories, etiology, philosophies, legal provisions, ethical and professional commitment, assessment and identification procedures and instructional strategies for students with exceptional learning needs. It also provides knowledge of different characteristics of learners with special needs and their educational implications. This course stresses on adapting teaching strategies and differentiating instructions to meet the needs of individuals with exceptional learning needs. This course has a field-based component.

**SPED 520**
**Assess Stu Learning Difficult**
**Credit Hours: 3**
Formal and informal assessment strategies used in the identification and service of students with disabilities are described in this course. Technical and operational aspects of standardized testing, curriculum based assessment, and informal strategies are also described.

**SPED 521**
**Mthds & Matrl in Spec Edu**
**Credit Hours: 3**
This course focuses on the instructional skills necessary for teaching students with high incidence disabilities (LD, E/BD, and ID) who receive special education services. Topics of primary emphasis include: developing effective individualized education plans; preparing and delivering exemplary lesson plans; and identifying instructional strategies that promote effective classroom learning. Research-based methodology is emphasized.

**SPED 522**
**Applied Behavior Analysis**
**Credit Hours: 3**
This course focuses on the basic principles and procedures of applied behavior analysis; on identification of factors that contribute to behavioral problems and improved performance; and on procedures that can be used to minimize behavioral problems, improve performance, teach new behaviors, and increase probability of behaviors occurring under appropriate circumstances.

**SPED 580**
**Internship**
**Credit Hours: 6**
This field based course provides an opportunity for students to assume the role of a Special Education teacher, while being jointly supervised by a mentor teacher and a university faculty member. Students spend four weeks working with their university instructors, preparing for their internships, and 10 weeks in the field, in a center for students with disability or a school that includes students with disabilities under the joint supervision of the university instructor and a mentor teacher. Students are also required to participate in a seminar with their university instructor; topics for the seminar include student concerns as well as instructor and mentor teacher suggestions for teaching improvements. This course requires a minimum of 400 hours in the field.

**SPED 601**
**Issues, Policy and Practice ****
**Credit Hours: 3**
This course aims at examining current trends and issues related to mild/moderate disabilities. It covers philosophies, theories, legislation, and perspectives from other fields of knowledge that influence the practice in the field of special education. It emphasizes educational programs and behavioral management issues in mild/moderate disabilities.

**SPED 602**
**Inclus Edu for Stud with Disab**
**Credit Hours: 3**
This course is designed to prepare the educator to effectively teach a range of students found in the typical general education classroom. Various disabilities are addressed in terms of their characteristics, assessment procedures, and intervention techniques that are research proven. The course prepares candidates to serve in a pre-referral process as well as during the child's eligibility for special education. Practical strategies, accommodations and modifications for students with disabilities in the general education classroom are also explored.

**SPED 603**
**Adv Applied Behavior Analysis**
**Credit Hours: 3**
An overview of applied behavior analysis, which is based on the discipline devoted to the understanding and improvement of human behavior, is presented. Emphasis is placed on designing procedures to systematically change socially important behaviors using single-subject research designs. This course provides the student with procedures for selecting, defining, and measuring applied behavior. Behavioral and cognitive-behavioral intervention procedures are reviewed and discussed using graphic displays and detailed descriptions of experimental procedures from published articles and the textbook. Replicating and evaluating analyses of behavior using single-subject research designs are also addressed.

**SPED 604**
**Assess of Stu with Disabil**
**Credit Hours: 3**
This course aims at providing the candidates with essential procedures of assessment for individuals with exceptional learning needs. It covers topics such as types of educational assessment, issues in assessing children with special needs, and skills needed to undertake assessment. Emphasis is placed on analysis of evaluation of learners work in order to prepare and apply individualized programs and activities.

**SPED 605**
**Collab with Fam with Disabil**
**Credit Hours: 3**
This course provides candidates with knowledge of legal, social and educational aspects and their effects on children with disabilities and their families. Among topics covered are historical and current roles of parents, family characteristics, communication and consultations skills, and resources in special education. The course emphasizes school visitation, family interview, and developing skills necessary to pinpoint problems facing special needs persons and families when interacting with schools and community resources

**SPED 607**
**Char of Mild-Mod. Disabilities**
**Credit Hours: 3**
This course focuses on the characteristics of learners with high-incident disabilities including learning disabilities, emotional behavioral disorders, mild and moderate intellectual disabilities. The purpose of this course is to study the nature of these learners including the traditional categorical perspective and then move to the perspective of alternative, non-categorical frameworks. Topics include definition/ eligibility, assessment, causal factors, characteristics of various disorders, and current issues facing the field.

**SPED 608**
**Char of Sever-Profound Disabil**
**Credit Hours: 3**
This course aims at helping prospective teachers in special education to understand definitions, identification, etiology, characteristics and impact of severe disabilities on developmental skills. It also covers legislations, rules, regulations and ethical responsibilities for teachers of those students. Major emphasis is placed on characteristics, education and medical complications as well as effective collaboration activities with other professionals and community resources.

**SPED 609**
**Mthds Teach Mild-Mod Disabil**
**Credit Hours: 3**
This course focuses on methods and materials for teaching learners with mild and moderate disabilities including behavior disorders, learning disabilities, and mild intellectual disabilities. Students learn how to plan lessons, accommodate their academic needs, and make decisions based on assessment. Students also learn how to choose service delivery models, use related services, and work effectively with families and other professionals.

**SPED 610**
**Mthds Teach Sev-Pro Disabil**
**Credit Hours: 3**
This course helps candidates to gain knowledge and skills related to teaching children with severe disabilities. It covers the use of assistive devices and technological equipment appropriate for individuals with severe disabilities among other topics. It stresses coordination efforts with professionals and parents to design and implement instructional as well as behavioral management strategies to improve developmental and social skills of these students.

**SPED 611**
**Literacy Assess & Remediation**
**Credit Hours: 3**
This course explores the nature and causes of reading disabilities, and investigates general and specific principles and approaches to diagnosis and correctional intervention. The student conducts assessment and intervention and submit actual case studies using both group and individual tests in diagnosis and correction

**SPED 612**
**Motor Development & Learning**
**Credit Hours: 3**
This course focuses on motoric, educational, and vocational supports during the lifespan of individuals with learning differences practiced in the field by professionals. Typical and atypical patterns of development influence the acquisition of skills and the mastery of necessary tasks throughout one's lifespan. Atypical patterns of motor development impact on the functional and independent skills necessary to achieve educational, vocational, and adaptive goals for students with disabilities. This course reviews fine and gross motor development of children with known or suspected disabilities and relates the differences to the acquisition and mastery of skills throughout the lifespan. Special emphasis is placed on children of school-going ages with known or suspected motor disabilities.

**SPED 621**
**Intern:Mild-Moderate Disabil**
**Credit Hours: 6**
The Internship in Special Education is designed to provide the opportunity for graduate students to practice and demonstrate those planning, teaching, assessment, management, and collaboration skills that have been identified by the program as essential components of being an effective special educator. It is during this internship that candidates confirm that they have mastered those skills needed to work with learners who are in special education programs.

**SPED 622**
**Internship:Sever-Profo Disabil**
**Credit Hours: 6**
The Internship in Special Education is designed to provide the opportunity for graduate students to practice and demonstrate those planning, teaching, assessment, management, and collaboration skills that have been identified by the program as essential components of being an effective special educator. It is during this internship that candidates confirm that they have mastered those skills needed to work with learners who are in special education programs.

**STAT 502**
**Business Statistics**
**Credit Hours: 3**
In this course, the students focus on the tools and methods for effective use of data in problem solving and making management decision. It emphasizes data management and proper ways to communicate the findings in an executive manner. This course covers probability, decision analysis, continuous distributions, hypothesis testing, forecasting, and regression. Exercises and examples are drawn from marketing, finance, and operations management. In addition, computer software is used to demonstrate the use of the concepts and presentation techniques.