2021-2022 UNIVERSITY CATALOG

Spring 2022

جامعة
حمد بن خليفة
HAMAD BIN KHALIFA
UNIVERSITY

عضو في مؤسسة قطر
Member of Qatar Foundation

Contents

About the University

Hamad Bin Khalifa University (HBKU), a member of Qatar Foundation for Education, Science, and Community Development (QF), was founded in 2010 to continue fulfilling QF's vision of unlocking human potential. HBKU is a homegrown research and graduate studies university that acts as a catalyst for positive transformation in Qatar and the region while having a global impact.

Located within Education City, HBKU seeks to provide unparalleled opportunities, where inquiry and discovery are integral to teaching and learning at all levels, utilizing a multidisciplinary approach across all focus areas.

HBKU is committed to actively to achieving the Qatar National Vision 2030 by building and cultivating human capacity through an enriching academic experience and an innovative research ecosystem. Through applying creativity to knowledge, students will have the opportunity to discover innovative solutions that are locally relevant and have a global impact.

At Hamad Bin Khalifa University – our students, faculty, staff, partners, and leadership – all share a common belief in the power of higher education and research – to make a positive impact in the development of nations.

For more information, **CLICK HERE**

Academic Calendar

The 2021-2022 approved academic calendar

*** Summer semesters will be listed based on approval of the Provost.*

Date	Action
Tuesday, February 16, 2021	Open information sessions for Spring Graduates
Sunday, August 1, 2021	Deadline for colleges to make scholarship offer to new students
Wednesday, August 11, 2021	Deadline to assign advisors to new students
Sunday, August 15, 2021	New student Registration for Fall 2021 starts
	New Student Orientation (Mandatory)
	Start of advising week for new students
Thursday, August 19, 2021	First Low Enrolment Report sent to colleges
Sunday, August 22, 2021	Fall 2021 semester begins
	Course add/drop period starts
Sunday, August 29, 2021	Low enrolment courses canceled
Thursday, September 2, 2021	Last day to add a regular class on-line
	Deadline to drop courses without financial penalty
	Last day to drop a course without it appearing on record and No Financial Penalty
Thursday, September 9, 2021	Last day to update N grades before an (F) is applied for late Spring grades
	Last day to add a regular class at the Registrar Office with instructor, program coordinator and Dean's approval
	Last day to apply for Leave of Absence for Fall 2021
Sunday, September 12, 2021	Admission terminated for non-registered new admits
Tuesday, September 14, 2021	Deadline to declare financial commitment
Thursday, September 16, 2021	Deadline to drop or withdraw courses with a 25% tuition penalty
	University Census issued
Sunday, September 19, 2021	Fall Graduation Application Open online
Sunday, September 26, 2021	Deadline to submit approved "Transfer Credit Requests" to the Registrar's Office - Fall
	Second Low Enrolment Report sent to colleges

Date	Action
Sunday, September 26, 2021	Registrar's Office to run degree audits for Fall graduates
	Schedule template available Spring
Thursday, September 30, 2021	Deadline to drop or withdraw courses with a 50% tuition penalty
Sunday, October 3, 2021	Review Degree Audits with colleges
	New Programs preliminary proposal
Monday, October 4, 2021	Online application opens to the public
Sunday, October 10, 2021	Fall break – no classes
Sunday, October 17, 2021	New Programs preliminary proposal UAPSC Review
	Fall Classes resume
Tuesday, October 19, 2021	Open information sessions for Fall Graduates
Thursday, October 21, 2021	Last day to drop a course with a grade of (W)
Sunday, October 31, 2021	New Programs preliminary proposal Provost Review
	Spring Class Schedule template due to the Registrar's Office
Thursday, November 4, 2021	Deadline to drop or withdraw courses with a 75% tuition penalty
Friday, November 5, 2021	Start of 100% penalty for Dropped courses
Sunday, November 7, 2021	Deadline to complete graduation application for Fall graduates
	Deadline to submit the approved dissertation, thesis or industrial project text to the committee for Fall graduates
Thursday, November 11, 2021	Spring Classroom assignments communicated to colleges
Sunday, November 14, 2021	New Programs preliminary proposal Recommendations
	Course Evaluations Live for Fall semester
Monday, November 15, 2021	Financial holds to be placed on student records for outstanding payments (Fall 2020)
	Last Day for Spring Schedule Changes (Cancellations, Day/Time)

The 2021-2022 approved academic calendar

*** Summer semesters will be listed based on approval of the Provost.*

Date	Action
Thursday, November 18, 2021	Official Spring 2022 Class Schedule Available online
	Publish the Spring 2022 Catalog
	Deadline to defend thesis for Fall Graduates
Sunday, November 21, 2021	Early submission of Thesis on Pro-quest for format pre-review (Fall)
	Last day for college to validate the list of Fall graduates
	Early Registration for Spring 2022
Sunday, November 28, 2021	Deadline to complete Pro-Quest and Similarity Index for Fall Graduates
	New Programs Full proposal
Wednesday, December 1, 2021	Deadline for colleges to inform Enrollment Office about new programs
	Deadline to submit Change of Major Forms to The Registrar's Office (to be applicable the following semester)
Thursday, December 2, 2021	Deadline to complete Fall course evaluations
	Last day of teaching
Sunday, December 5, 2021	Final exam week
	Deadline to complete University Clearance for Fall Graduates
	New Programs Internal Review
Thursday, December 9, 2021	Deadline For Pending Incomplete Grades to Become Failing Grades (Grades for courses taken in Spring 2020)
Monday, December 13, 2021	Final grades submission
Thursday, December 16, 2021	Final grades available online
Saturday, December 18, 2021	Qatar National Day
Wednesday, December 29, 2021	Deadline to assign advisors to new students
Sunday, January 2, 2022	New Programs External Review
Thursday, January 6, 2022	Award student degrees on Banner and update student status
Thursday, December 30, 2021	First Low Enrolment Report sent to colleges
Sunday, January 2, 2022	Spring Semester Classes Begin
	Add/drop period starts

Date	Action
Thursday, January 6, 2022	Fall Diplomas and Graduation Statements available
	Deadline to submit approved "Transfer Credit Requests" to the Registrar's Office - Spring
	Second Low Enrolment Report sent to colleges
	Award student degrees on Banner and update student status
Sunday, January 16, 2022	Enrollment Office to send 1st round of applicants files to the colleges
Sunday, January 9, 2022	New Programs Provost Recommendation
	Low enrolment courses canceled
Thursday, January 13, 2022	Last day to add a regular class on-line
	Deadline to drop courses without financial penalty
	Last day to drop a course without it appearing on record and No Financial Penalty
Thursday, January 20, 2022	Last day to update N grades before an (F) is applied for late Fall grades
	Last day to add a regular class at the Registrar Office with instructor, program coordinator and Dean's approval
	Last day to apply for Leave of Absence for Spring 2022
Sunday, January 23, 2022	New Programs President Recommendation
	Admission terminated for approved deferred students not registered (Spring)
Thursday, January 27, 2022	Deadline to drop or withdraw courses with a 25% tuition penalty
Sunday, January 30, 2022	Spring Graduation Application Open online
	Registrar's Office to run degree audits for Spring Graduates
Tuesday, February 1, 2022	Admission Application Deadline for International students
Tuesday, February 8, 2022	Qatar National Sports Day – no classes
Thursday, February 10, 2022	Deadline to drop or withdraw courses with a 50% tuition penalty
Sunday, February 13, 2022	Deadline to complete graduation application for Spring graduates
Wednesday, February 16, 2022	Review Degree Audits with colleges

The 2021-2022 approved academic calendar

*** Summer semesters will be listed based on approval of the Provost.*

Date	Action
Thursday, February 24, 2022	Last day to drop a course with a grade of (W)
Sunday, February 27, 2022	Spring Break – no classes
	Schedule template available for Fall
Tuesday, March 1, 2022	Enrollment Office to send 2nd round of applicant files to the colleges
Sunday, March 6, 2022	Classes resume
Tuesday, March 15, 2022	Admission Application deadline for Local applications
Thursday, March 17, 2022	Deadline to drop or withdraw courses with a 75% tuition penalty
Friday, March 18, 2022	Start of 100% penalty for Dropped courses
Sunday, March 20, 2022	Deadline to submit the approved dissertation, thesis or industrial project text to the committee for Spring graduates
Monday, March 21, 2022	Colleges to send final admission decisions to Office of Enrollment for 1st and 2nd round of files
Sunday, March 27, 2022	Enrollment Office to send 3rd round of applicant files to the colleges
	Course Evaluations Live for Spring semester
Thursday, March 24, 2022	Fall Class Schedule template due to the Registrar's Office
Thursday, March 31, 2022	Deadline to defend thesis for Spring Graduates
Friday, April 1, 2022	Ramadan 1st (Tentative)
Sunday, April 3, 2022	Early submission of Thesis on Pro-quest for format pre-review (Spring)
	Last day for submission of missing or pending documents from international applicants
	Last day for college to validate the list of Spring graduates
	Last Day for Fall Schedule Changes (Cancellations, Day/Time)
Monday, April 4, 2022	Financial holds to be placed on student records for outstanding payments (Spring 2022)
Wednesday, April 6, 2022	Fall Classroom assignments communicated to colleges
Thursday, April 7, 2022	Schedule appointment with ministry to attest diplomas
	Official Fall 2021 Class Schedule Available online
	Publish the Fall 2021 Catalog
Sunday, April 17, 2022	Enrollment Office to send fourth round of applicant files to the colleges
Monday, April 11, 2022	Deadline to complete Pro-Quest and Similarity Index for Spring Graduates
Sunday, April 10, 2022	Registration for Fall 2021 starts
Wednesday, April 13, 2022	Deadline to submit "Change of Major Form" to The Registrar's Office (to be applicable the following semester)
Thursday, April 14, 2022	Registrar's Office to start printing Diplomas
	Deadline to complete Spring course evaluations
	Last day of teaching
Sunday, April 17, 2022	Final exam week
	Deadline to complete University Clearance for Spring Graduates
Thursday, April 21, 2022	Deadline For Pending Incomplete Grades to Become Failing Grades
Sunday, April 24, 2022	Final grades submission
Thursday, April 28, 2022	Deadlines to receive exams results (Qualifying & Candidacy)
	Final grades available online
Sunday, May 8, 2022	Colleges to send admission decisions to Office of Enrollment for 3rd and 4th round of files
Monday, May 16, 2022	HBKU Graduation
Monday, May 30, 2022	Colleges to send admission decisions to Office of Enrollment for applicants from the waitlist
Wednesday, June 1, 2022	Spring Diplomas and Graduation Statements available
Monday, June 6, 2022	Award student degrees on Banner and update student status
Sunday, July 3, 2022	Office of Enrollment to share final list of admits with other departments (Student Affairs, Registrar)
Saturday, July 9, 2022	Eid Al Adha
Monday, August 1, 2022	Cut-off date for visa applications
same day as enrolment deadline	Confirmation of gov sponsorships sent to university

Admission

At Hamad Bin Khalifa University, our people are our greatest strength, and when you enroll on an academic program at HBKU, you become part of a thriving community that is committed to excellence and innovation.

To learn about the admission requirements for each of our programs, **CLICK HERE**

Registration

The Registrar's Office is part of the Office of the Provost. The office provides students, faculty, advisors, and administrators with services pertaining to registration, scheduling courses, maintenance of the university catalog and management of student records as well as issuing official student documents.

The Registrar's Office provides these instructions every semester to cover the updates and new instructions for registration process.

For information on the functions offered by the Registrar's Office, **CLICK HERE**

Tuition and Fees

The tuition at HBKU is assessed on a credit hour basis.

For detailed information on cost of each academic program, **CLICK HERE**

Academic Policies

The university Academic Policies govern processes related to students, faculty, and various functions of the university.

For the full listing of the Academic policies relevant to this catalog, **CLICK HERE**

Academic Degrees

Undergraduate Degrees

- Bachelor of Science in Computer Engineering

Master Degrees

- LLM in International Economic and Business Law
- LLM in International Law and Foreign Affairs
- Master of Arts in Translation Studies
- Master of Arts in Audiovisual Translation
- Master of Arts in Digital Humanities & Societies
- Master of Arts in Women, Society & Development
- Master of Arts in Islam and Global Affairs
- Master of Arts in Contemporary Islamic Studies
- Master of Arts in Applied Islamic Ethics
- Master of Science in Islamic Art, Architecture and Urbanism
- Master of Science in Islamic Finance
- Master of Science in Cybersecurity
- Master of Science in Data Science and Engineering
- Master of Data Analytics in Health Management
- Master of Information Systems in Health Management
- Master of Science in Logistics and Supply Chain Management
- Master of Science in Sport and Entertainment Management
- Master of Science in Sustainable Energy
- Master of Science in Sustainable Environment
- Master of Public Policy
- Master of Science in Exercise Science
- Master of Science in Biological and Biomedical Sciences
- Master of Science in Genomics and Precision Medicine

Doctoral Degrees

- Juris Doctor in Law
- Doctor of Juridical Science
- PhD in Humanities and Social Sciences
- PhD in Islamic Finance and Economy
- PhD in Computer Science & Engineering
- PhD in Logistics and Supply Chain Management
- PhD in Sustainable Energy
- PhD in Sustainable Environment
- PhD in Biological and Biomedical Sciences
- PhD in Genomics and Precision Medicine

Certificate Programs

- Certificate in Law in Practice in Qatar

COLLEGE OF HEALTH AND LIFE SCIENCES

The College of Health and Life Sciences (CHLS) provides essential educational and research training to future leaders in the fields of biomedical sciences, genomics, and precision medicine. The college embodies a multidisciplinary learning approach to research and discovery, and aims to become a dedicated hub of knowledge-sharing in the area of health and life sciences. Its programs integrate scientific expertise by combining a seasoned collective of research partners within the university with esteemed external clinical and health science partners.

For more information, **CLICK HERE**

Academic Programs

Master of Science in Biological and Biomedical Sciences

The Master of Science in Biological and Biomedical Sciences (BBS) is a multidisciplinary graduate program that aims to train the next generation of leaders in biomedical sciences.

The Master's offer students an education that provides them with an advanced level of knowledge – particularly in applied areas of biological and biomedical sciences – and helps them develop critical and independent reasoning skills.

For more information, **CLICK HERE**

Master of Science in Genomics and Precision Medicine

HBKU's Genomics and Precision Medicine (GPM) programs are multidisciplinary graduate courses that have been designed to prepare the next generation of professionals and leaders, who will help implement the use of precision and personalized medicine in the healthcare system.

The Master of Science and PhD degree paths in GPM offer students advanced knowledge and training in state-of-the-art information gathering and analysis technologies in order to integrate "omics" – the branch of biology that deals with data on global changes at the molecular level in patients – with clinical data.

For more information, **CLICK HERE**

Master of Science in Exercise Science

The Master of Science (MS) in Exercise Science is offered by CHLS, working toward a joint degree with the number 1 ranked graduate Exercise Science program in the United States of America, offered by the Arnold School of Public Health at the University of South Carolina (USC).

Capitalizing on the recognized strengths of the USC program, the MS in Exercise Science will establish within Qatar and the MENA region a top-ranked educational and research degree program in exercise science. The program aligns with the objectives of the Qatar National Vision 2030 and the National Health Strategy 2018-2022, aiming to promote healthy lifestyles and enhance the health and welfare of the people of Qatar.

The MS in Exercise Science program is the only graduate program in exercise science in Qatar and prepares students for a spectrum of health- related specialties and professions within the field of Exercise Science.

For more information, **CLICK HERE**

PhD in Biological and Biomedical Sciences

The Master of Science and PhD programs in Biological and Biomedical Sciences (BBS) are multidisciplinary graduate programs that aim to train the next generation of leaders in biomedical sciences.

The Master's and PhD degree paths offer students an education that provides them with an advanced level of knowledge – particularly in applied areas of biological and biomedical sciences – and helps them develop critical and independent reasoning skills.

For more information, **CLICK HERE**

PhD in Genomics and Precision Medicine

HBKU's Genomics and Precision Medicine (GPM) programs are multidisciplinary graduate courses that have been designed to prepare the next generation of professionals and leaders, who will help implement the use of precision and personalized medicine in the healthcare system.

The Master of Science and PhD degree paths in GPM offer students advanced knowledge and training in state-of-the-art information gathering and analysis technologies in order to integrate "omics" – the branch of biology that deals with data on global changes at the molecular level in patients – with clinical data.

For more information, **CLICK HERE**

Study Plans

Master of Science in Biological and Biomedical Sciences

Minimum hours required to complete program **33 CH**

Core Courses		**15 CH**
LS 601	Research Methods and Ethics	3
LS 603	Advanced Molecular Biology	3
LS 605	Advanced Cell Biology	3
LS 607	Advanced Human Physiology	3
CLS 625	Applied Biostatistics	3
Elective Courses		**9 CH**
Option 1: 3 electives		
Option 2: 2 courses from electives + 1 Free Elective		
LS 705	Oral Presentation and Critical Thinking	3
LS 708	Advanced Neurosciences	3
LS 709	Molecular and Cellular Biology of Neurodegenerative Diseases	3
LS 710	Cancer Biology	3
LS 712	Cancer Immunology	3
LS 713	Behavior, Learning and Memory	3
LS 714	Scientific Communication and Professional Development	3
LS 715	Physiopathological Mechanisms of Neurogenetic Diseases	3
LS 740	Stem Cell Biology	3
LS 741	Signal Transduction in Health and Diseases	3
LS 742	Advances in Human Metabolism and Disease	3
LS 751	Immunology and Immunogenomics	3
GPM 604	Advanced Genetics	3
CLS 600	Techniques in Biochemistry	3
CLS 661	Special Topics in Biosensors	3
CLS 711	Development and Diseases of The Nervous System	3
CLS 706	Independent Studies	3

Free Electives		
AIE 633	Islamic Bioethics	3
CLS 726	Proteomics in Precision Medicine	3
CLS 751	Molecular Mechanisms of Cancer and Their Applications	3
CSE 785	Innovation Entrepreneurship and Leadership I	3
EPID 700	Introduction to Epidemiology	3
EXSC 710	Behavioral Aspects of Physical Activity	3
EXSC 731	Mechanisms of Motor Skill Performance	3
EXSC 780	Physiology of Exercise	3
GPM 602	Clinical Applications in Genomics and Precision Medicine	3
GPM 607	Molecular Pathology	3
GPM 720	Pharmacogenomics	3
GPM 721	Bioinformatics	3
GPM 733	Epigenetics	3
Seminar		**0 CH**
Must pass twice		
LS 701	Research Seminar	0
Thesis		**9 CH**
LS 695	Master's Thesis Hours	0-6
Non-Course Requirements		**0 CH**
699	Thesis Defense	0

Master of Science in Genomics and Precision Medicine

Minimum hours required to complete program **33 CH**

Core Courses		**15 CH**
GPM 601	Research Methods and Ethics in Health and Genomics	3
GPM 602	Clinical Applications in Genomics and Precision Medicine	3
GPM 607	Molecular Pathology	3
GPM 604	Advanced Genetics	3
CLS 625	Applied Biostatistics	3
Elective Courses		**9 CH**
Option 1: 3 electives		
Option 2: 2 courses from electives + 1 Free Elective		
AIE 633	Islamic Bioethics	3
CLS 600	Techniques in Biochemistry	3
CLS 726	Proteomics in Precision Medicine	3
CLS 751	Molecular Mechanisms of Cancer and Their Applications	3
DSEG 660	Applied Deep Learning	3
DSEG 760	Machine Learning	3
GPM 720	Pharmacogenomics	3
GPM 721	Bioinformatics	3
GPM 733	Epigenetics	3
ICT 665	Artificial Intelligence and Machine Learning in Healthcare	3
ICT 666	Computational Bioinformatics	3
ICT 716	Data Science Tools and Applications	3
LAW 753	Healthcare Law	3
LS 603	Advanced Molecular Biology	3
LS 607	Advanced Human Physiology	3
LS 705	Oral Presentation and Critical Thinking	3
LS 714	Scientific Communication and Professional Development	3
CLS 706	Independent Studies	3

Free Electives		
CLS 661	Special Topics in Biosensor	3
CLS 711	Development and Diseases of The Nervous System	3
CSE 785	Innovation Entrepreneurship and Leadership I	3
EPID 700	Introduction to Epidemiology	3
EXSC 710	Behavioral Aspects of Physical Activity	3
EXSC 780	Physiology of Exercise	3
LS 605	Advanced Cell Biology	3
LS 708	Advanced Neurosciences	3
LS 709	Molecular and Cellular Biology of Neurodegenerative Diseases	3
LS 710	Cancer Biology	3
LS 712	Cancer Immunology	3
LS 713	Behavior, Learning and Memory	3
LS 715	Physiopathological Mechanisms of Neurogenetic Diseases	3
LS 740	Stem Cell Biology	3
LS 741	Signal Transduction in Health and Diseases	3
LS 742	Advances in Human Metabolism and Disease	3
LS 751	Immunology and Immunogenomics	3
Seminar		**0 CH**
Must pass twice		
LS 701	Research Seminar	0
Thesis		**9 CH**
GPM 695	Master's Thesis Hours	0-6
Non-Course Requirements		**0 CH**
699	Thesis Defense	0

Master of Science in Exercise Science

Minimum hours required to complete program **33 CH**

Core Courses		**15 CH**
BIOS 700*	Introduction to Biostatistics	3
EXSC 780	Physiology of Exercise	3
EXSC 787	Research Methods and Design for Exercise Science	3
PUBH 700*	Perspectives in Public Health	3
Take one from below		
EXSC 700	Physical Activity and Health: Epidemiology, Research and Practice	3
EXSC 710	Behavioral Aspects of Physical Activity	3
EXSC 731	Mechanisms of Motor Skill Performance	3
EXSC 777*	Endocrinology of Exercise and Health	3

Elective Courses		**12 CH**
Students may take up to 6 credits from CHLS courses in addition to courses below		
EPID 700	Introduction to Epidemiology	3
EXSC 700	Physical Activity and Health: Epidemiology, Research, and Practice	3
EXSC 710	Behavioral Aspects of Physical Activity	3
EXSC 731	Mechanisms of Motor Skill Performance	3
EXSC 742	Clinical Exercise Testing	1
EXSC 743	Lab Measurements for Exercise Testing	1
EXSC 777*	Endocrinology of Exercise and Health	3
EXSC 781	Physiology, Exercise and Disease	3
EXSC 784	Cardiopulmonary Exercise and Prescription	3
EXSC 732	Applied Biomechanics	3

Thesis		**6 CH**
EXSC 695	Master's Thesis Hours	0-6
Non-Course Requirements		**0 CH**
699	Thesis Defense	0

** Courses offered by the University of South Carolina*

PhD in Biological and Biomedical Sciences

Minimum hours required to complete program **54 CH**

Core Courses		**9 CH**
CLS 625	Applied Biostatistics	3
LS 601	Research Methods and Ethics	3
LS 705	Oral Presentation and Critical Thinking	3
Elective Courses		**9 CH**
CLS 600	Techniques in Biochemistry	3
CLS 661	Special Topics in Biosensors	3
CLS 711	Development and diseases of the nervous system	3
GPM 604	Advanced Genetics	3
LS 603	Advanced Molecular Biology	3
LS 605	Advanced Cell Biology	3
LS 607	Advanced Human Physiology	3
LS 708	Advanced Neuroscience	3
LS 709	Molecular and Cellular Biology of Neurodegenerative Diseases	3
LS 710	Cancer Biology	3
LS 712	Cancer Immunology	3
LS 713	Behavior, Learning and Memory	3
LS 714	Scientific Communication and Professional Development	3
LS 715	Physiopathological Mechanisms of Neurogenetic Diseases	3
LS 740	Stem Cell Biology	3
LS 741	Signal Transduction in Health and Diseases	3
LS 742	Advances in Human Metabolism and Disease	3
LS 751	Immunology and Immunogenomics	3
CLS 706	Independent Studies	3

Free Electives		
Can choose maximum 1 from this list		
AIE 633	Islamic Bioethics	3
CLS 726	Proteomics in Precision Medicine	3
CLS 751	Molecular Mechanisms of Cancer and their Applications	3
CSE 785	Innovation Entrepreneurship and Leadership I	3
EPID 700	Introduction to Epidemiology	3
EXSC 710	Behavioral Aspects of Physical Activity	3
EXSC 731	Mechanisms of Motor Skill Performance	3
EXSC 780	Physiology of Exercise	3
GPM 602	Clinical Applications in Genomics and Precision Medicine	3
GPM 607	Molecular Pathology	3
GPM 720	Pharmacogenomics	3
GPM 721	Bioinformatics	3
GPM 733	Epigenetics	3
Seminar		
Must pass twice		
LS 701	Research Seminar	0
Thesis		**36 CH**
LS 890	Dissertation Hours	0-9
Non-Course Requirements		**0 CH**
899	Thesis Defense	0
799	Candidacy Exam	0
790	Qualifying Exam	0

PhD in Genomics and Precision Medicine

Minimum hours required to complete program **54 CH**

Core Courses		**3 CH**
GPM 705	Introduction to Data Science	3
Elective Courses		**15 CH**
AIE 633	Islamic Bioethics	3
CLS 600	Techniques in Biochemistry	3
CLS 625	Applied Biostatistics	3
CLS 726	Proteomics in Precision Medicine	3
CLS 751	Molecular Mechanisms of Cancer and their Applications	3
DSEG 660	Applied Deep Learning	3
DSEG 760	Machine Learning	3
GPM 601	Research Methods and Ethics in Health and Genomics	3
GPM 602	Clinical Applications in Genomics and Precision Medicine	3
GPM 604	Advanced Genetics	3
GPM 607	Molecular Pathology	3
GPM 720	Pharmacogenomics	3
GPM 721	Bioinformatics	3
GPM 733	Epigenetics	3
ICT 665	Artificial Intelligence and Machine Learning in Healthcare	3
ICT 666	Computational Bioinformatics	3
ICT 716	Data Science Tools and Applications	3
LAW 753	Healthcare Law	3
LS 603	Advanced Molecular Biology	3
LS 607	Advanced Human Physiology	3
LS 705	Oral Presentation and Critical Thinking	3
LS 714	Scientific Communication and Professional Development	3
CLS 706	Independent Studies	3

Free Electives		
Can choose maximum 1 from this list		
CLS 661	Special Topics in Biosensors	3
CLS 711	Development and diseases of the nervous system	3
CSE 785	Innovation Entrepreneurship and Leadership I	3
EPID 700	Introduction to Epidemiology	3
EXSC 710	Behavioral Aspects of Physical Activity	3
EXSC 780	Physiology of Exercise	3
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LS 710	Cancer Biology	3
LS 712	Cancer Immunology	3
LS 713	Behavior, Learning and Memory	3
LS 715	Physiopathological Mechanisms of Neurogenetic Diseases	3
LS 740	Stem Cell Biology	3
LS 741	Signal Transduction in Health and Diseases	3
LS 742	Advances in Human Metabolism and Disease	3
LS 751	Immunology and Immunogenomics	3
Seminar		**0 CH**
Must pass twice		
LS 701	Research Seminar	0
Thesis		**36 CH**
GPM 890	Dissertation Hours	0-9
Non-Course Requirements		**0 CH**
899	Thesis Defense	0
799	Candidacy Exam	0
790	Qualifying Exam	0

Course Descriptions

CLS 600 **Techniques in Biochemistry** **3 credits**

This course is designed to train students in a range of standard biochemical and cellular biology techniques that are in routine use in a functioning biochemistry laboratory. The course combines lectures illustrating the scientific principles underlying a particular technique with hands-on experience of the methodology in the laboratory. Techniques include protein expression, purification, gel analysis, protein structure and cell culture.

CLS 625 **Applied Biostatistics** **3 credits**

The aim of this course is to introduce the fundamental biostatistical concepts to life science students. It aims to give an overview of the statistical and computational ideas required for analysis methods in biological sciences, and provide hands-on experience in analysis. This course does not assume that the student has a background in mathematics and computer science, but introduces all necessary background during the course. The course is appropriate for graduate students and researchers in health and life sciences.

CLS 661 **Special Topics in Biosensors** **3 credits**

Over the past 20 years, the field of bio-sensing technology has had a profound impact on both laboratory research as well as commercial activities. With the advance of semiconductor and nanofabrication technologies, bio-technological application-specific integrated circuits (ASICs) have become a major trend in research as well as industry. Examples include DNA sensing, microelectrode measurement array systems for in-vitro and in-vivo physiological research at the cellular level. Bio-sensing has had a major impact on different fields including, E-health systems, genome research and drug development.

CLS 706 **Independent Studies** **3 credits**

Independent Studies allow students to examine a variety of timely, cutting-edge research areas in life sciences. Taught by our faculty, research scientists from our research institutes or associated industries, this course allows students to keep up with novel trends and topics in the field.

CLS 711 **Development and Diseases of the Nervous System** **3 credits**

The aim of the course is to unfold the processes that underlie the formation and disorders the nervous system at the molecular, cellular and circuitry levels. The course will focus on genes/proteins and signaling pathways involved in neural induction, neural tube closure, patterning of the nervous system, neurogenesis, neuronal migration, axon pathfinding, as well as formation and refinement of synapses. Both physiological and pathological conditions will be addressed.

CLS 726 **Proteomics in Precision Medicine** **3 credits**

Personalized medicine has revolutionized the medical practice, and to achieve its goals today we are not only dependent on genomics but also on the proteomics for accurate diagnosis and efficient treatments. Thus, there is a growing demand for proteomics-based learning and applications in the field of basic and clinical research. The course Proteomics in precision medicine will bridge this knowledge gap in the GPM program by teaching the students key concepts of proteomics and the overall applications and limitations.

CLS 751 **Molecular Mechanisms of Cancer and their Applications** **3 credits**

This course will engage students in a detailed exploration of the most important neurological disorders, including Alzheimer's disease (AD), Parkinson's disease (PD), Huntington's disease (HD) and prion diseases. With an initial focus on clinical descriptions for each condition, an in-depth discussion on current hypotheses about the mechanisms underlying these diseases will constitute the bulk of this course.

EPID 700 **Introduction to Epidemiology** **3 credits**

The major purpose of this core course is to introduce students to the discipline of epidemiology and its application to public health issues and practice.

EXSC 695 **Master's Thesis Hours** **0-6 credits**

EXSC 700 **Physical Activity and Health: Epidemiology, Research and Practice** **3 credits**

An introduction to physical activity epidemiology with an emphasis on the relationships between exercise and health for promotion of physical activity in clinical and public health settings.

EXSC 710 **Behavioral Aspects of Physical Activity** **3 credits**

The major goal of this course is to increase your understanding of the role that behavioral factors play in physical activity and exercise. The first part of the course covers major behavioral and psychological theories that have been applied to exercise and physical activity.
The second part of the course covers behaviorally oriented interventions to promote physical activity and exercise. Issues unique to children, older adults, women, and people of color will be highlighted. The final part of the course covers the impact of physical activity and exercise on mental health outcomes. This section includes an overview of the role that depression plays in morbidity and mortality.

EXSC 731 **Mechanisms of Motor Skill Performance** **3 credits**

A study of theories and mechanisms in human movement. Focus is on analysis of principles and systems of gross motor control and learning.

EXSC 732 **Applied Biomechanics** **3 credits**

The focus of this course is to apply general principles of mechanics and physics to analyze human movement. Students will develop an understanding of forces within muscles, the strength properties of bones, the variety of joint designs and resulting different degrees of freedom, and how these initiate and control human movement. Basic mechanics (statics, kinematics, and kinetics) will be studied in two and three dimensions. The biomechanics of human walking and running gait will be investigated.

EXSC 742 **Clinical Exercise Testing** **1 credit**

EXSC 742 is a clinical exercise laboratory course intended for the student with little or no exercise science laboratory experience. In this course students will acquire the basic knowledge of clinical exercise testing with an overall emphasis on physiological measurement and interpretation of data.

EXSC 743 **Lab Measurements for Exercise Testing** **1 credit**

This course expands the student's knowledge of exercise testing through the biochemical determination of plasma variables and how these variables may change during or following exercise. The course emphasizes the importance of matching a biochemical response to the physiological measurements during exercise testing.

EXSC 780 **Physiology of Exercise** **3 credits**

Physiological responses to exercise: skeletal muscle structure and function, cardiorespiratory function, physiological determinants of exercise performance, and training adaptations.

EXSC 781 **Physiology, Exercise and Disease** **3 credits**

EXSC 781 is designed to provide students with the basic understanding of physiological adaptations to exercise and disease as it relates to the study of the nervous system, the skeletal muscular system, the cardiovascular system and the gastrointestinal system.

EXSC 784 **Cardiopulmonary Exercise Testing and Prescription** **3 credits**

This course will instruct the students in the physiological background and theory underlying cardiopulmonary exercise testing, and provide hands on practical experience in laboratory methods of cardiopulmonary exercise testing, lung function and ECG. General principles of exercise prescription and programming will also be covered.

EXSC 787 **Research Methods and Design for Exercise Science** **3 credits**

The major goal of this course is to provide an in-depth examination of research concepts, terminology, experimental, non-experimental, and epidemiological designs, internal and external validity, methods for establishing causality and investigating associations, and application of designs to test hypotheses in research of exercise science-related outcomes. Examples will be drawn from numerous disciplines, with the primary emphasis placed on those dealing with topics directly related to exercise science. Students will be required to read, critically evaluate, and discuss research articles and conceptual papers. Issues unique to different research designs will be highlighted. Students should have a basic understanding of statistics (e.g., variance, correlation). While statistics will not be discussed in this class, the overlay of statistics and research design cannot be separated.

GPM 601 **Research Methods and Ethics in Health and Genomics** **3 credits**

This course aims to provide a comprehensive overview on research ethics, scientific thinking, and academic writing as well as guidelines for study design and good research practice. The course will also offer state-of-the-art knowledge relating to novel methods in genomics, precision medicine, and health analytics.

GPM 602 **Clinical Applications in Genomics and Precision Medicine** **3 credits**

This course covers fundamental concepts in the application of genomic and precision medicine in a clinical context. Included are modules on relevant technologies with emphasis on data interpretation for clinical outcome, drug design, as well as problem based learning components in clinical genomics and precision medicine.

GPM 604 **Advanced Genetics** **3 credits**

This course covers important concepts and principles in genetics such as inheritance, developmental processes, genetic mapping and diseases as well as genetic testing, DNA sequencing technologies, and treatment approaches to genetically inherited diseases.

GPM 607 **Molecular Pathology** **3 credits**

This course covers current concepts in molecular pathology and their application in translational research and diagnostics, with particular emphasis on the molecular pathology of cancer, cardiovascular, neurological and infectious disease.

GPM 695 **Master's Thesis Hours** **0-6 credits**

GPM 705 **Introduction to Data Science**

Genomics and precision medicine require handling, exploring and understanding large data sets. This course aims to introduce students to basic concepts from probability, statistical inference, linear regression and machine learning using R. No previous knowledge of programming is required, as the course will introduce basic programming concepts and through examples will enable students to ask the right questions, perform their own analyses and visualize the results effectively. The course will provide the students with hands-on programming experience.

GPM 720 **Pharmacogenomics** **3 credits**

This course covers fundamental concepts in the field of Pharmacogenomics and how it will help in the realization of personalized medicine. It will include the basic principles of drug discovery and design, pharmacology, pharmacogenetics and pharmacogenomics applied to several disease conditions.

GPM 721 **Bioinformatics** **3 credits**

The course will convey the fundamentals of bioinformatics methods for genomics data analysis to life science students. It aims to communicate the computational ideas behind key analysis methods in genomics and to provide practical training in using web-based tools and bioinformatics software packages in R. It will enable students to perform basic analysis steps for sequencing data. This course does not assume that the student has a background in mathematics and computer science, but rather introduces mathematical concepts and/or programming languages, as they are needed.

GPM 733 **Epigenetics** **3 credits**

GPM 733 is an elective epigenetic course. The course will provide an introduction to various epigenetic mechanisms and explain how they determine chromatin architecture and control gene expression. This is important to understand transcriptional regulation particularly during development, as well as during stem cell (re)programming. In addition, the course will cover how epigenetic alterations can cause aberrant silencing or activation of genes that can have an influence on health and disease. An acquaintance with the field of epigenetics is essential for a major in Genomics and Precision Medicine.

GPM 890 **Dissertation Hours** **0-9 credits**

LS 601 **Research Methods and Ethics** **3 credits**

This course is a foundational course for graduate students who will be engaged in research with a focus on health sciences and precision medicine. It provides students with advanced discussions on ethics and ethical misconduct, intellectual property and environmental health and safety as well as scientific thought and design of experiments.
A focus of the course is to transition students from textbooks to primary literature as their main source of information.

LS 603 **Advanced Molecular Biology** **3 credits**

This course covers the important principles in Molecular Biology, including the replication of DNA, how DNA is converted to RNA, how RNA is modified, transported and regulated, and finally how it is converted to protein. Through the use of primary literature papers, students will gain a current understanding of these subjects.

LS 605 **Advanced Cell Biology** **3 credits**

This course builds on the knowledge students acquired in Advanced Molecular Biology and covers the important principles of Cell Biology, the study of the basic unit of life. By relying heavily on recently published seminal scientific papers, students will acquire an accurate understanding of the current research progress in key areas in cell biology.

LS 607 **Advanced Human Physiology** **3 credits**

This course focuses on how the human body functions as an integrated system in which cells, tissues, and organs interact to maintain a healthy body. It covers the anatomy and physiology of cardiovascular, respiratory, muscle, renal, gut and endocrine systems. The course also highlights the pathophysiology of some disease conditions.

LS 695 **Master's Thesis Hours** **0-6 credits**

LS 701 **Research Seminar** **0 credits**

The Life Science Seminar is a weekly lecture that is organized jointly by CHLS, aiming to engage students and scientists to catalyze information exchange and networking for the advancement of life science research in Qatar.

LS 705 **Oral Presentation and Critical Thinking** **3 credits**

The HBKU Life Science Seminar Series is a weekly lecture series that is organized jointly by the HBKU College of Health and Life Sciences, the Qatar Biomedical Research Institute, Carnegie Mellon University-Qatar, and Weill Cornell Medicine-Qatar, aiming to engage students, local researchers, and scientists to catalyze information exchange and networking among researchers for the advancement of life science research in Qatar. Associated with the Life Science Seminar Series PhD students in their 4th or 5th semesters present their work and actively participate through questions to the presenter.

LS 708 **Advanced Neurosciences** **3 credits**

This graduate course will provide knowledge on fundamental principles that encompass the multidisciplinary field of neuroscience. This will include basic principles of membrane excitability, neuronal information transfer and storage, neuropharmacology, neurodevelopment, sensory systems physiology, behavior and clinical manifestations. Focus on each of these topic areas will include interactive lectures together with development of critical thinking via review and discussion of recent scientific articles that are advancing the field. The course material encompasses molecular, cellular tissue and systems level physiology in each of the sub-discipline areas. Emphasis will be on providing a solid foundation in basic principles to prepare those conducting research in neuroscience to implement the transdisciplinary information in innovative ways.

LS 709 **Molecular and Cellular Biology of Neurodegenerative Diseases** **3 credits**

This course will engage students in a detailed exploration of the most important neurological disorders, including Alzheimer's disease (AD), Parkinson's disease (PD), Huntington's disease (HD) and prion diseases. With an initial focus on clinical descriptions for each condition, an in-depth discussion on current hypotheses about the mechanisms underlying these diseases will constitute the bulk of this course.

LS 710 **Cancer Biology** **3 credits**

During this course, students will be exposed to the latest findings in the molecular mechanisms that underlie the genesis and progression of human cancers. Lectures and discussions will be based entirely upon the current scientific literature. These papers will highlight how perturbation of the cell cycle, DNA damage checkpoints, and repair machinery can both promote cancer and be capitalized upon for cancer treatment.

LS 712 **Cancer Immunology** **3 credits**

Cancer Immunotherapy was selected by Science journal as the breakthrough of the year for 2013, which placed it in the company of the first cloned mammal and the complete sequencing of the human genome. Cancer immunology is now one of the most active areas of cancer research and has prompted the development of several important novel therapies currently in use, including cytokine-based therapies, vaccine therapies, and monoclonal antibody therapies. It aims to understand the interaction between immune system and cancer cells, and to discover innovative cancer immunotherapies to treat and retard progression of the disease. This course covers the important aspects of cancer immunology including immune surveillance/editing theory, immune evasion, immunopathogenesis of cancer and tumor antigens. In addition, the different immunotherapeutic approaches of cancer, including T-cell therapy, antibody-based therapies and cancer vaccines will be covered.

LS 713 **Behavior, Learning and Memory** **3 credits**

This course will provide the knowledge on multidisciplinary field of neuroscience and build the foundation for understanding the biological basis of behavior, learning and memory. This course will cover the perspectives, questions, and techniques related to neural and molecular systems responsible for behavior, learning, memory, emotions, consciousness and neurodevelopmental basis of behaviors like addiction, fear and anxiety and Alzheimer's disease. Students will learn neuroanatomy, and how the activity of few neurons can yield simple motor action and complex behavioral/psychological functions such as learning and memory.

LS 714 **Scientific Communication and Professional Development** **3 credits**

This course will cover key concepts in effective scientific communication, both written and oral. It will also address aspects of CV and cover letter preparation for academia and industry. In addition, it will provide the skills needed in mentoring, establishing collaborations and getting funded in academia.

LS 715 **Physiopathological Mechanisms of Neurogenetic Diseases** **3 credits**

This course is intended for graduate students interested in gaining a detailed understanding of molecular mechanisms underlying physiopathological mechanism of genetic diseases related to synapses and muscles. Throughout the course, the focus will be on understanding the experimental approaches that produced current knowledge. Students will be assigned recent research papers as their primary reading materials. About 2/3 of the classes will be lectures by the instructor and 1/3 will be student led discussions of papers.

LS 740 **Stem Cell Biology** **3 credits**

This course is intended as an introduction and in-depth discussion focused on the biology of stem cells. The course will introduce the features of stem cells and basic mechanisms regulating their self-renewal and pluripotency. In addition, the course will focus on selected examples of adult stem cells with an introduction to translational medicine approaches involving stem cell biology. Major emphasis will be placed on how advances in stem cell biology and tissue engineering can be applied to the use of embryonic and adult stem cells in regenerative medicine. In addition to these topics, students will be introduced to the ethical, regulatory, and legal issues related to stem cell research.

LS 741 **Signal Transduction in Health and Diseases** **3 credits**

The course will engage students in the concepts of signal transduction, and how the signaling pathways drive different physiological as well as pathological conditions such as diabetes, cancer, and neurological disorders.

LS 742 **Advances in Human Metabolism and Disease** **3 credits**

The course will provide an in-depth analysis of the relationships between metabolism and important human diseases. It will focus on the pathways of intermediary metabolism by which all cells synthesize and degrade carbohydrates, lipids (fats) and proteins; and discuss how these pathways are regulated by effector molecules and by hormones in living systems. Much of the emphasis will be on how several human disorders such as obesity, diabetes, cardiovascular disease, the metabolic syndrome and cancer arise from defects in metabolic pathways.

LS 751 **Immunology and Immunogenomics** **3 credits**

This course addresses important concepts in immunology and gives students a broad knowledge base from which they can continue to learn advanced concepts and pursue research in any aspect within the field. The course also covers concepts in immunogenetics including how genetic defects affect immune responses, resulting in diverse phenotypes or consequences. The course will start with lectures 2 hours a week to teach fundamental concepts, then continue starting week 9 with 5 hours/week of hands-on training/practical on experimental methods/tools in immunology as well as student journal club presentations. Lastly, the course will conclude with a workshop on immunogenetics and inborn errors of immunity by guest lecturers from IMAGINE Institute, Paris, France. The course assumes basic knowledge of cell and molecular biology.

LS 890 **Dissertation Hours** **0-9 credits**

COLLEGE OF HUMANITIES AND SOCIAL SCIENCES

The College of Humanities and Social Sciences (CHSS) was established with a vision to enrich society in Qatar and across the wider world with transformative educational experiences that bridge disciplinary boundaries, and offer the academic community opportunities to engage in innovative research and collaboration. The college aspires to nurture a diverse body of academically grounded and socially responsible global citizens, whose versatility will enable them to navigate the complexities of today's world and become tomorrow's leaders.

For more information, **CLICK HERE**

Academic Programs

Master of Arts in Translation Studies
A two-year program designed to train highly skilled translators.

The MA in Translation Studies (MATS) delivered by TII is designed to train highly skilled translators in the areas of business and commerce, science and technology, literary translation, legal and medical translation, and translation of media texts, as well as translation for international organizations.

For more information, **CLICK HERE**

Master of Arts in Audiovisual Translation
A two-year full-time (or three-year part-time) specialist program designed to train specialists in the mediation of audiovisual texts.

The MA in Audiovisual Translation (MAAT) delivered by TII is designed to train specialists in the mediation of audiovisual texts, both for foreign language viewers and sensory-impaired audiences.

For more information, **CLICK HERE**

Master of Arts in Digital Humanities and Societies
A two-year program focusing on the study of digital technologies and their effect on aspects of human culture, with an emphasis on digital methods and trends and practices in digital culture.

The MA in Digital Humanities and Societies is a two-year program that allows participants to study the Middle East's digital culture from a scholarly and digital research perspective.

For more information, **CLICK HERE**

Master of Arts in Women, Society and Development
A two-year program focusing on women's studies in general and Arab women in particular. It draws from a variety of disciplines, including economic and social theory; development and policy studies; and law and communication studies.

For more information, **CLICK HERE**

PhD in Humanities and Social Sciences
PhD in Humanities and Social Sciences. The Doctor of Philosophy (PhD) in Humanities and Social Sciences is the first degree of its kind in Qatar, and one of the few in the world providing students with the philosophical and technical grounding to design and tailor their own interdisciplinary program while being able to specialize through a dissertation.

For more information, **CLICK HERE**

Study Plans

Master of Arts in Translation Studies

Minimum hours required to complete program **39 CH**

Core Courses		**21 CH**
TR 611	Introduction to Translation Studies	3
TR 612	Pragmatic Translation	3
TR 613	Arabic Stylistics for Translators	3
TSD 621	Current Trends in Translation Studies	3
TSD 623	Specialized Translation	3
TSD 624	Translation Technologies	3
TSD 645	Research Methods in Translation Studies	3
Elective Courses		**9 CH**
AVT 624	Subtitling	3
AVT 627	Voicing	3
AVT 636	Intersensory Translation for Access	3
AVT 658	Special Topics in Audiovisual Translation	3
AVT 659	Introduction to Audiovisual Translation	3
DHS 660	Digital Disinformation and Propaganda in the Middle East and North Africa	3
DHS 661	Digital Writing	3
SS 600	Thinking and Practicing Interdisciplinarity in the Humanities and the Social Sciences	3
TSD 628	Terminology	3
TSD 652	Commercial Translation	3
TSD 653	Media Translation	3
TSD 655	Literary Translation	3
TSD 656	Intercultural Translation	3
TSD 657	Legal Translation	3
TSD 658	Special Topics in Translation Studies	3
WSD 662	Women and Gender in the Literature and Cinema of the Middle East and North Africa	3
Internship		**3 CH**
TSD 691	Internship	3
Thesis		**6 CH**
TSD 695	Master's Thesis Hours	0-6
Non-Course Requirements		**0 CH**
699	Thesis Defense	0

Master of Arts in Audiovisual Translation

Minimum hours required to complete program **39 CH**

Core Courses		**24 CH**
AVT 621	Current Trends in Audiovisual Translation	3
AVT 624	Subtitling	3
AVT 627	Voicing	3
AVT 636	Intersensory Translation for Access	3
AVT 645	Research Methods in Audiovisual Translation	3
TR 611	Introduction to Translation Studies	3
TR 612	Pragmatic Translation	3
TR 613	Arabic Stylistics for Translators	3

Elective Courses		**6 CH**
AVT 654	Advanced Subtitling	3
AVT 655	Advanced Dubbing	3
AVT 658	Special Topics in Audiovisual Translation	3
AVT 659	Introduction to Audiovisual Translation	3
DHS 660	Digital Disinformation and Propaganda in the Middle East and North Africa	3
DHS 661	Digital Writing	3
SS 600	Thinking and Practicing Interdisciplinarity in the Humanities and the Social Sciences	3
TSD 624	Translation Technologies	3
TSD 628	Terminology	3
TSD 652	Commercial Translation	3
TSD 653	Media Translation	3
TSD 655	Literary Translation	3
TSD 656	Intercultural Translation	3
TSD 657	Legal Translation	3
TSD 658	Special Topics in Translation Studies	3
WSD 662	Women and Gender in the Literature and Cinema of the Middle East and North Africa	3
Internship		**3 CH**
AVT 691	Internship	3
Thesis		**6 CH**
AVT 695	Master's Thesis Hours	0-6
Non-Course Requirements		
699	Thesis Defense	

Master of Arts in Digital Humanities and Societies

Minimum hours required to complete program **39 CH**

Core Courses		**18 CH**
DHS 621	Approaches to Digital Humanities	3
DHS 622	Digital Communication and Media	3
DHS 623	Methods in Digital Humanities	3
ME 611	History, Politics and Cultures of the Middle East	3
ME 613	Social, Economic and Development Theory	3
SS 612	Research Methods	3
Elective Courses		**9 CH**
DHS 651	Emerging Technologies and Applications	3
DHS 652	Digital Publishing and Design	3
DHS 654	Civil Society and Digital Activism	3
DHS 655	Exploring Digital Heritage Methods	3
DHS 656	Introduction to Human Language Technologies	3
DHS 657	Coding for Humanities	3
DHS 658	Digital Resources in the Humanities	3
DHS 659	Digital Innovation and Transformation	3
DHS 660	Digital Disinformation and Propaganda in the Middle East and North Africa	3
DHS 661	Digital Writing	3
SS 600	Thinking and Practicing Interdisciplinarity in the Humanities and the Social Sciences	3
TSD 628	Terminology	3
WSD 653	Gender and Digital Cultures	3
WSD 662	Women and Gender in the Literature and Cinema of the Middle East and North Africa	3
Internship or Project		**3 CH**
DHS 691	Internship	3
Or		
DHS 669	Independent Research Project	3
Thesis		**9 CH**
DHS 695	Master's Thesis Hours	0-6
Non-Course Requirements		**0 CH**
699	Thesis Defense	0

Master of Arts in Women, Society and Development

Minimum hours required to complete program **39 CH**

Core Courses		**18 CH**
ME 611	History, Politics and Cultures of the Middle East	3
ME 613	Social, Economic and Development Theory	3
SS 612	Research Methods	3
WSD 621	Introduction to Women and Gender Studies	3
WSD 622	Women, Work and Economic Development in the Middle East	3
WSD 623	Research Methods in Women's and Gender Studies	3
Elective Courses		**9 CH**
DHS 623	Methods in Digital Humanities	3
DHS 660	Digital Disinformation and Propaganda in the Middle East and North Africa	3
DHS 661	Digital Writing	3
SS 600	Thinking and Practicing Interdisciplinarity in the Humanities and the Social Sciences	3
SS 662	The Gulf States and the International Order	3
TSD 628	Terminology	3
WSD 651	The Anthropology of Gender in the Middle East	3
WSD 652	Women, Law and Citizenship	3
WSD 653	Gender and Digital Cultures	3
WSD 655	Women, State and Modernity in the Arab World	3
WSD 656	Family and Kinship in the Middle East	3
WSD 657	Women, Media and Communication	3
WSD 658	Special Topics in Women Studies	3
WSD 660	Women in Comparative World Religions	3
WSD 661	Women in World History	3
WSD 662	Women and Gender in the Literature and Cinema of the Middle East and North Africa	3

Internship or Project		**3 CH**
WSD 691	Internship	3
Or		
WSD 659	Independent Research Project	
Thesis		**9 CH**
WSD 695	Master's Thesis Hours	0-6
Non-Course Requirements		**0 CH**
699	Thesis Defense	0

PhD in Humanities and Social Sciences

Minimum hours required to complete program **54 CH**

Core Courses		**9 CH**
HSS 700	Explorations in Global Humanities	3
HSS 706	Doctoral Independent Study	3
HSS 720	Explorations in Interdisciplinarity	3
Free Electives		**9 CH**
Take 3 courses from any College at HBKU		
	Free Elective 1	3
	Free Elective 2	3
	Free Elective 3	3
Dissertation		**36 CH**
HSS 890	Dissertation Hours	0-9
Non-Course Requirements		**0 CH**
899	Dissertation Defense	
790	Doctoral Qualifying Exam	
799	Candidacy Exam	

Course Descriptions

AVT 621 **Current Trends in Audiovisual Translation** **3 credits**

This course introduces students to more recent scholarly approaches to the study of translation. The course follows a thematic and chronological development of the major theories in the field of TS in relation to other disciplines of the humanities and social sciences, including literary, philosophical, historical, political and sociological approaches. Through discriminating, critical engagement with theory and its scholarly and practical applications, this course invites students to think critically and reflectively about the complexity and implications of the choices they have to make as translators and scholars.

AVT 624 **Subtitling** **3 credits**

This is a practical course which introduces students to subtitling (interlingual and SDH). Students are introduced to norms and conventions of both subtitling types: tempo-spatial constraints, timing, condensation, verbal and non-verbal cues, punctuation, positioning and segmentation. Students see how subtitles are a form of inter-semiotic mediation and learn how to apply appropriate strategies in view of the source text and intended audience (hearers or deaf viewers). Students also learn how to handle culture-specific difficulties in subtitling.

AVT 627 **Voicing** **3 credits**

This course introduces students to the transadaptation of filmic visual content and dialogue for non-lip-synched dubbing, voice over or audio description. The language of instruction and of activities is both Arabic and English. Students learn to create scripts and to deal with a range of linguistic, cultural, semiotic and technical issues when producing voicing scripts; e.g. re-segmentation and the use of standard dubbing/voicing symbols. Students will work with a variety of genres: documentaries, interviews, cartoons, movies.

AVT 636 **Intersensory Translation for Access** **3 credits**

In this course, students will refine their understanding of international norms in SDH and AD to consider their applicability to the Arab context. Students will also address AVT for access as transadaptation, in which multimodal communication strategies and multiformat materials are used to reinforce multisensory engagement with knowledge and culture. Students will also interact with local stakeholders in cultural settings, as well as in organizations working with people with special needs towards the development of collaborative projects.

AVT 645 **Research Methods in Audiovisual Translation** **3 credits**

This course prepares students to write their thesis, whether research- or practice-oriented. It builds on all they have learned in previous courses and leads them through the main areas of research in Audiovisual Translation, the principles of designing research projects, reviewing the literature and writing research proposals. They will also learn the skills and requirements for writing translation commentaries for the purposes of writing a practice-oriented thesis that consists of a translation accompanied by a theoretically-informed and evidence-based analysis.

AVT 654 **Advanced Subtitling** **3 credits**

This course extends the essential skills acquired previously to a more professional level, with experience in a wider range of genres, as well as serious cultural and linguistic challenges. Students will develop their professional practice further and learn to work with the specific standards and practices that are current in the Arabic-speaking world. Students will also be encouraged to reflect critically on prevailing standards and consider ways in which the market can be induced to value greater quality more highly.

AVT 655 **Advanced Dubbing** **3 credits**

This unit follows on from AVT 627 and extends the skills acquired to a more professional level while also introducing students to the actual recording and production of lip-synchronized revoiced AV products. Students will tackle more complex translation and adaptation tasks, learning to deal with a variety of cross-cultural issues, such as the rendering of dialect, slang, taboo language. Students will also learn to adapt for closely lip-synched dubbing.

AVT 658 **Special Topics in Audiovisual Translation** **3 credits**

This course will take on new topics with specific aims as required by the program.

AVT 659 **Introduction to Audiovisual Translation** **3 credits**

This is a largely practical course which introduces students to the techniques of various modes of audiovisual translation, including subtitling, dubbing and accessibility. Students will be introduced to the formal and discursive features of these modes: the temporal and spatial constraints, synchronization, verbal and non-verbal cues, etc. Students will be encouraged to analyze how these branches of audiovisual translation function as a form of inter-semiotic communication and inter-linguistic mediation and reflect on the implications of choosing the most appropriate strategies.

AVT 691 **Internship** **3 credits**

The Internship aims to help develop HSS MA student's professional competence and understanding of the translation industry in a structured period of practical-work based learning.

AVT 695 **Master's Thesis Hours** **0-6 credits**

CHN 211 **Chinese Beginner 1** **3 credits**

There are two main pillars of this beginner 1 course: the pinyin system for pronunciation and the basic radicals for recognizing the most frequently used Chinese characters. Students are to practice pinyin until they can record what they hear in Chinese and turn them into characters in a machine-assisted application for recognition. In this regard, mastering basic radicals help students choose right words. The main goal of the course is to lay a solid foundation for further Chinese learning.

CHN 212 **Chinese Beginner 2** **3 credits**

In this course, students will expand vocabulary, acquire basic sentence structures and patterns, and learn new expressions and grammatical points through repeating the key words in the texts and applying them to communicative situations. The course is designed for students to recognize more Chinese characters and their related vocabulary. Social media such as WeChat and WhatsApp are used to input pinyin and then choose targeted words, in order to increase student's recognition speed and accuracy of Chinese characters.

DHS 621 **Approaches to Digital Humanities** **3 credits**

This course prepares students to develop a broad understanding of the theories, concepts, debates and impacts of digital culture. The course reflects the emerging discourses of digital humanities (incl. heritage). Students will be introduced to key debates and contemporary issues. The course will also expand the theory to the exploration of the concrete impact of the digitization onto different dimensions and sectors of society such as, but not limited to: women, e-health, online media and music, data, literature, etc.

DHS 622 **Digital Communication and Media** **3 credits**

Digital communication has transformed many aspects of representation and broadcasting, challenging existing roles, methodologies and practices of the media industry. This course will examine both theoretical and practical aspects of digital media and communication. Through real-life examples and case studies focusing on the Middle East, students will explore the impact of user-generated content and social media, the role of digital cultures in political transformations, the effect of mass digitization, and challenges in digital publishing.

DHS 623 **Methods in Digital Humanities** **3 credits**

Designed like an independent study, this course supports students in their endeavor to conduct research in the field of Digital Humanities. Students can produce a research-based thesis or a project-based thesis of up to 15,000 words or equivalent. The thesis should showcase the student's ability to collect/assess data, build an argument; and critically apply the main theories in their area of study. The thesis is an opportunity for students to gain the requisite skills necessary for writing a publishable article.

DHS 651 **Emerging Technologies and Applications** **3 credits**

There is now widespread recognition that digital technologies have profoundly changed the way we produce content, share information, interact with each other's, develop and commercialize products and services, create knowledge or financial value, while defining new environments for these functions to flourish. The course discovers how political, social, economic, financial powers and knowledge are reshaped in our contemporary digital era. The course introduces students to the need of digitalization, continuously developing platforms and the fundamental knowledge of emerging new realities.

DHS 652 **Digital Publishing and Design** **3 credits**

This course provides students with a comprehensive foundation of layout and design principles to integrate digital media essential for effective print-based and web based business publications. The students will learn the graphic terminology, type specification, and evolution of the printed piece from concept to final printed project. An overview of the industry standard software will be introduced to understand the basics of web pages creation, page layout and design and various methods of reproduction for print and electronic delivery.

DHS 654 **Civil Society and Digital Activism** **3 credits**

This course aims to study how the cyberspace theory and new media have empowered societies to impose change and development on regional or global scales in a variety of domains. The course introduces the students to the effective role of social media ranging from websites, social networking apps, and collaborative platforms to promote and state positions toward theoretical fields, such as: empowerment of minorities, racism, feminism, global crises, climate and environmental change, emerging industries, peer-to-peer production, urbanism, and self-development.

DHS 655 **Exploring Digital Heritage Methods** **3 credits**

This course addresses the needs of a growing cultural heritage industry; it provides opportunities to develop skills in which the material or tangible objects and digital culture relate. The course focuses on a wide spectrum of topics, starting with archaeology, arts, museum collections, historical data archiving, and built heritage. This course explores the techniques of how the tangible heritage is represented, transmitted and perceived in the digital world.

DHS 656 **Introduction to Human Language Technologies** **3 credits**

This course is an introduction to the most important problems involved in Human Language Technologies (HLT) with a focus on the Arabic language. We will present the techniques and resources used and the theories they are based on. The course includes an overview of Natural Language applications. We will also explore the relationship between language and technology including language learning and speech technologies. Topics include machine translation, automatic speech recognition and generation, dialog systems as well as language technologies.

DHS 657 **Coding for Humanities** **3 credits**

This course will provide students the technical skills necessary to conduct quantitative research in digital humanities and societies. In particular, this course will introduce students to the basic coding skills needed to be considered in any professional career nowadays. As an introductory programming course, we will introduce common practices to extract and collect raw data from a variety of digital sources, to organize, clean, explore, analyze, visualize and interpret such data, and to infer sensible information and draw conclusions.

DHS 658 **Digital Resources in the Humanities** **3 credits**

This course explores a broad spectrum of perspectives on the digital humanities engage with a variety of digital humanities tools in order to choose the most appropriate technology to facilitate different work in different situations in order to develop familiarity with a range of digital humanities projects, as well as the ability to evaluate the tools and methods involved in creating those projects and become more thoughtful.

DHS 659 **Digital Innovation and Transformation** **3 credits**

This course provides analytical tools and frameworks to help students gaining a sound understanding of the potential and place of new developments and knowledge production in social media and digital industries. Students will appreciate the importance of innovation as a target and the way knowledge management will contribute to this innovation. Students will see knowledge as a commodity and how this commodity can be managed.

DHS 660 **Digital Disinformation and Propaganda in the Middle East and North Africa** **3 credits**

This module combines practical and academic skills for students with no prior knowledge of the region to engage with contemporary debate on the ideas of digital propaganda, PR, and surveillance. It is designed for those interested in being able to tackle concerns about fake news, media distortions, and information hegemony in both the Middle East and the wider global context. The course consists of lectures, class discussions/seminars and student presentations. The module is suitable for interdisciplinary pathways, and incorporate current debates in both media and politics.

DHS 661 **Digital Writing** **3 credits**

The course is called Digital Writing because it will employ state of the art technology that allows students to investigate their writing patterns in terms of topical structure and the various textural gestures (stance, sentiment, emotion, mood, register cues, genres cues) writers can use to embellish the topical structure.

DHS 669 **Independent Research Project** **3 credits**

The Digital Humanities and Societies program requires students to either undertake an internship or an independent research project. This course allows students to explore their specific research interests within a relative field through a research agenda. The student will work closely with academic advisor and supervisor to implement this project within a given time period. The project may be capitalized on for the purposes of the thesis.

DHS 691 **Internship** **3 credits**

The Digital Humanities and Societies program requires students to either undertake an internship or an independent research project. This course allows students to explore their specific research interests within a relative field through a research agenda. The student will work closely with academic advisor and supervisor to implement this project within a given time period. The project may be capitalized on for the purposes of the thesis.

DHS 695 **Master's Thesis Hours** **0-6 credits**

FREN 211 **French Beginner 1** **3 credits**

The French Beginner 1 course is designed to provide learners with sufficient linguistic competencies to understand and use daily expressions frequently used in any part of the French-speaking world with the goal of satisfying immediate needs. This course corresponds to A1.1 of the Common European Framework of Reference for Languages (CEFR) and Novice Low-Mid on the scale of the American Council of Teaching Foreign Languages.

FREN 212 **French Beginner 2** **3 credits**

This French Beginner 2 course continues the Beginner series and builds upon French Beginner 1. It is designed to provide learners with the linguistic competencies to understand and use a wider range of daily expressions frequently used in any part of the French-speaking world with the goal of satisfying immediate needs. This course corresponds to A1.2 of the Common European Framework of Reference for Languages (CEFR) and to Novice High on the scale of the American Council of Teaching Foreign Languages (ACTFL).

HSS 700 **Explorations in Global Humanities** **3 credits**

This course examines the humanities from the standpoint of global interconnections. Using historical, literary, linguistic, and philosophical approaches to cultural criticism, reception and production, we study the major traditions of critical theory, including semiology, deconstruction, feminism, psychoanalysis, phenomenology, the Annals School and the Frankfurt School. Concerned with how the world gives itself to appearances, these epistemological methods allow us to tease out the critical charge embedded in the notion of culture itself.

HSS 706 **Doctoral Independent Study** **3 credits**

This course focuses on the student's research proposal and an initial exploration of the literature review. Under the supervision of their supervisor, Students are expected to finalize the writing of an extended thesis proposal of 8000 words (excluding the references) that will include the following sections: The background of the research, the rationale and motivation for their proposed research, the proposed theoretical framework and an initial literature review section.

HSS 720 **Explorations in Interdisciplinarity** **3 credits**

This course examines the ways in which interdisciplinarity is practiced in the Humanities and Social Sciences. Students will be exposed to research projects undertaken across contemporary fields of knowledge including but not limited to the digital humanities, intercultural communication, translation and interpreting, cultural heritage, women and gender studies, sciences and technology studies and yet inheriting from traditional disciplines that have founded the Humanities and Social Sciences (philosophy, literature, linguistics, law, sociology, political science, etc.). Class discussion will be tailored towards mapping the different types of knowledge integration and their tension with knowledge specialization (mono-, anti-, multi-, inter-, trans-disciplinarity). Exposure and discussion, the two pillars of this course, will equip students to critically reflect on the potentials and limitations of interdisciplinarity in the endeavor to bridge the gap between Society and the Humanities and Social Sciences.

HSS 890 **Dissertation** **0-9 credits**

ME 611 **History, Politics and Cultures of the Middle East** **3 credits**

This course takes a cultural and historical approach to politics of the Middle East; it investigates the nature of political authority and the complex relationship between religion, traditions, social movements, class structures, and the challenges Middle East societies faced from colonialism and globalization. The course provides a critical appraisal of normative paradigms and approaches through which the Middle East has been studied, the narratives covering its history, how knowledge has been organized, and the repercussions of particular approaches and theories.

ME 613 **Social, Economic and Development Theory** **3 credits**

This course examines the major theoretical paradigms in critical social theory and economic development. It gives focus to assumptions made on social and economic development, and examines the evolution of different schools of thought and theoretical constructs. The approach of the course is interdisciplinary, combining insights from sociology, economics, political science and history. It applies models and methodologies through which historical processes can be conceptualized with respect to the ideological frameworks that guide social power and development policy.

SPAN 211 **Spanish Beginner 1** **3 credits**

The Beginner 1 Spanish course is designed for the beginner students with no previous experience in Spanish. The main objectives of this course are to help students develop effective communication skills in Spanish through the elementary development of the four basic language skills (listening, speaking, reading and writing), while focusing on and critically examining cultural aspects, values and other aspects of everyday life in Spanish-speaking nations. Spanish will be the language of instruction.

SPAN 212 **Spanish Beginner 2** **3 credits**

This course continues the Beginner series and builds upon Spanish Beginner 1. The main objectives of this course are to help students develop effective communication skills in Spanish through the elementary development of the four basic language skills (listening, speaking, reading and writing. During the course, students learn to give instructions about how to get somewhere and describe places; ask for and tell the time and talk about schedules; talk about daily routines and how often they do something; talk about tastes and preferences, and talk about recently past actions.

SS 600 **Thinking and Practicing Interdisciplinarity in the Humanities and the Social Sciences** **3 credits**

This course will introduce students to the hackneyed and complex notion of interdisciplinarity and to the ways in which it has been theorized in Interdisciplinarity Studies and practiced in Women, Digital and Translation Studies. It will invite students to develop their interdisciplinary skills in critical and reflexive ways.

SS 612 **Research Methods** **3 credits**

This course prepares students embarking on social science research with the necessary research methods and techniques to conduct, evaluate and communicate research. The course examines the epistemological foundations of qualitative and quantitative research, in addition to ethical and political factors in research. It familiarizes students with research design, research methods and data collection. It also introduces linkages between broader theoretical and conceptual issues and alternative hypothesis through which to organize knowledge, construct ideas and present various arguments.

SS 662 **The Gulf States and the International Order** **3 credits**

This course analyses the contemporary Gulf States from the perspectives of politics, political sociology, economics and international relations. It seeks to locate the states in an international context in order to identify and evaluate the manner in which their policies have evolved. This course will seek to achieve this through an interdisciplinary analysis of the subject manner. It gives focus to the challenges faced and policy responses. The course will conclude with an examination of the challenges of economic, political and security reform in the Gulf States.

TR 611 **Introduction to Translation Studies** **3 credits**

This course introduces students to the main approaches that have developed in the field of Translation Studies. Beginning with an overview of pre-20thC translation theory, the course follows a chronological trajectory of the development of the major theories in the field, including theories of equivalence, translation products and processes, functionalist approaches, discourse and register analysis, systems theories, norm theory and descriptive translation studies. Through discriminating, critical engagement with theory and its scholarly and practical applications, this course invites students to think critically and reflectively about the complexity and implications of the choices they have to make as translators and scholars.

TR 612 **Pragmatic Translation** **3 credits**

Pragmatic Translation is a foundation practice-oriented course designed for students with little or no background in translation. It aims at developing in students the basic skills and knowledge to perform translation tasks to the required standard in this class, in classes running in parallel and later in other more advanced classes. Translation practical work focuses on four text types: technical, financial, literary and media (audiovisual) texts. Both Arabic and English are used as languages of instruction, as appropriate. Analyzing and discussing Arabic texts requires the use of Arabic, and the same holds for English.

TR 613 **Arabic Stylistics for Translators** **3 credits**

This course engages students in examining and applying the grammar and stylistics of Arabic discourse in written and oral forms. It will enhance student's competence in manipulating various grammatical, stylistic and rhetorical features of Modern Standard Arabic (MSA). Students are taught to compose and comprehend prose in MSA. Through practical exercises, students will learn to apply relevant analytical tools and use relevant textual conventions in their own writing. Oral communication is also practiced in informal class discussion and formal presentations.

TSD 621 **Current Trends in Translation Studies** **3 credits**

This course introduces scholarly approaches to the study of translation that have been developed over the last two decades. Students will think critically and reflectively about the community of translators and interpreters. They will engage with the complexity and implications of the choices that translators have to make on a daily basis.

TSD 623 **Specialized Translation** **3 credits**

This is a practice-oriented course intended to prepare students for a professional career in the translation market, either as in-house or freelance translators, working with various IGO's and NGO's. The course deals with various types of institutional texts produced by multilingual organizations. Using their linguistic skills and applying theoretical insights gained from other courses, students will be trained to research institutional translation topics, prepare appropriate terminology glossaries and produce professional translations of real source texts generated by IGOs and NGOs.

TSD 624 **Translation Technologies** **3 credits**

This is a practical course that introduces students to a selection of language technology tools with a focus on their professional practice. These will range from widely-used open access tools to the industry standard SDL TRADOS (Getting Started level). Students will create and manage translation memories and terminological databases. They will integrate the use of corpora into their translation practice. They will also reflect on the role of machine translation and its application.

TSD 628 **Terminology** **3 credits**

This course explains the basic principles of terminology and the use of term bases. The theoretical part discusses terminology theory, concepts, definitions, the structure of terminological records, ISO standards and the major international term base formats that are publicly available. It treats concept models and state-of-the-art software and it describes the way in which large translation services make use of term bases. The practical part consists of terminology software exercises (development and maintenance of term bases).

TSD 645 **Research Methods in Translation Studies** **3 credits**

This course builds on previous methodological and theoretical courses and equips you with the necessary knowledge to carry out your thesis in the second year, whether research- or practice-oriented. Through a review of the main areas of research and inquiry in Translation Studies (TS) and you will learn the principles of designing research projects, reviewing the literature and writing research proposals.

TSD 652 **Commercial Translation** **3 credits**

This course equips students with the necessary skills for translating texts used in the commercial and business environment. Students will be introduced to styles, formats and functions of commercial texts and will develop methods for dealing with them. Special emphasis will be placed on the difficulties encountered in translating business texts, requiring specific skills and techniques. Contrastive features of commercial texts are examined and related to the translation process. The course also explores the importance of culture in commercial translation.

TSD 653 **Media Translation** **3 credits**

This is a practice-oriented course prepares students for a professional career in media translation. It deals with different forms, modes and genres of media texts, focusing in particular on political and economic texts. Students analyze and critically assess various media texts, including hard news reports, investigative reports, interviews, editorialized commentaries, editorials and TV news scripts. Using linguistic skills and applying theoretical and practical insights, students will be trained to produce professional translations of texts generated by media outlets.

TSD 655 **Literary Translation** **3 credits**

This course will cover the following aspects of literary translation: Features of literary texts: analysis & translation approaches; style in literary translation; approaches to translating literary genres: poetry, theater, fiction, speeches; translating titles; translating metaphors and figures of speech; culture, politics, ideology; the problem of linguistic variety: register, dialect, slang; using footnotes; the working translator: tools & resources, publication. Class discussion is conducted in both Arabic and English.

TSD 656 **Intercultural Translation** **3 credits**

This course examines intercultural issues central to translation studies today. Studying translation in different cultures and historical contexts, the course highlights the significant role that translators have played in enriching national languages, spreading religious creeds, and framing intellectual and political encounters across linguistic communities. Students are introduced to the current theoretical debates on translation and intercultural communication. Special emphasis is placed on the role of translation in the construction of the foreign as a primary tool of representing/misrepresenting cultural others.

TSD 657 **Legal Translation** **3 credits**

This course aims at providing students with extensive experience in translating legal texts from English into Arabic and vice versa. It introduces students to the textual and rhetorical standards adopted in various legal texts in Arabic and English. It develops in students the critical thinking and research skills needed to successfully deal with legal translation quality assessment (revision), including the importance of legal terminology, text function, and intercultural contexts (since law is part of culture).

TSD 658 **Special Topics in Translation Studies** **3 credits**

This course will take on new topics with specific aims as required by the program.

TSD 691 **Internship** **3 credits**

The Internship aims to help develop HSS MA student's professional competence and understanding of the translation industry in a structured period of practical-work based learning.

TSD 695 **Master's Thesis Hours** **0-6 credits**

WSD 621 **Introduction to Women and Gender Studies** **3 credits**

Providing an overview of core concepts, debates and developments in the field of women and gender studies, this course underscores shifting paradigms (e.g. from women to gender studies) in our theoretical understanding of the subject. Themes, such as intersectionality, the social construction of gender, transnationalism, solidarity, patriarchy, discrimination, empowerment, embodiment, performativity etc., are highlighted through an interdisciplinary framework that positions gender within various power structures institutionalized in the media, political sphere, labor market and/or field of cultural production.

WSD 622 **Women, Work and Economic Development in the Middle East** **3 credits**

This course evaluates economic development theories from a gender perspective focused on the role of women in the MENA region. Providing a critical overview of women in the workforce, the course questions the institutional context in which gender is articulated in the household sphere and in the labor market. The persistent gender gaps in labor force participation rates (against rising educational outcomes for women) is also considered from a perspective which contrasts the modern discourse with its regional, historical antecedents.

WSD 623 **Research Methods in Women's and Gender Studies** **3 credits**

This course will familiarize and equip students with research methods and skills relevant to women and gender studies. It focuses on qualitative methods, and draws from feminist approaches to science, epistemology and knowledge production. Students will receive training in re-search design, concepts, methods (interviews, participant observation, etc.), ethical requirements, critical writing skills. The course will enable students to evaluate different methods and assess their relevance to their own research projects. The course aims at developing a well-designed research proposal.

WSD 651 **The Anthropology of Gender in the Middle East** **3 credits**

Students are expected to analyze core themes characterizing the field, such as the honor and shame complex, Islamic feminism, relational selves, patriarchal bargains, kinship, etc. While focused on gender and women's issues in the Middle East, the subject will also be linked to the core developments in the field of anthropology, such as the shift from neo-positivist to interpretive and reflex Feminist Perspective stances.

WSD 652 **Women, Law and Citizenship** **3 credits**

Designed to study the connection between society, culture, and law, this course examines citizenship, women, gender and family law. It asks whether laws pertaining to women and gender can be universalized. It also questions whether gendered law is a product of cultural, economic or political forces. What are the differences between positive, natural and customary laws? What is full legal equality and what role does context play in determining legal priorities? Do theories of liberation, equality and citizenship meet practice?

WSD 653 **Gender and Digital Cultures** **3 credits**

This course investigates innovative gender theory perspectives pertaining to the digital realm. Studying social media, digital activism, digital human relationship platforms and sexuality, we consider the impact of the latter on gender narratives, representation and embodiment in real-life urban and rural social environments. Students will learn how digital technologies challenge current understandings of gender theories, provoke new forms of knowledge in the digital realm and work to transform systems of gender oppression.

WSD 655 **Women, State and Modernity in the Arab World** **3 credits**

Exploring the interrelations between women, the state and modernity, this course critically appraises the tensions surrounding the transformation in the status of Arab women. Modernity and nationhood are given special consideration as the driving ideologies framing gender relations in the region today. Engaging with the issues requires zooming in on the gendered legacies of colonialism, nation-state building; state feminism; the debate on authenticity; religious and secular movements; patriarchal bargains; and gendered violence and war.

WSD 656 **Family and Kinship in the Middle East** **3 credits**

This course traces the history of the family in the Middle East, from pre-modern to modern times. A comparative lens is cast on dominant forms of kinship (tribes and clans) in their urban, rural and Bedouin settings. The impact of modernization, globalization and modern economies on kinship institutions is also examined in terms of the rise of the individual and the nuclear family. The concomitant discourse provoked on gendered identities, reproduction and sexuality is the focus of research and discussion.

WSD 657 **Women, Media and Communication** **3 credits**

This course explores the intersection of media and feminist theory by investigating the portrayal of Arab women in both Middle Eastern and global media. Coverage of such topics as sex trafficking, rape, domestic violence, religion, and local/regional politics is analyzed alongside claims of the marginalization of feminine voices and narratives. Lastly, students will consider the role of women in producing media and the barriers they continue to face when entering media.

WSD 658 **Special Topics in Women Studies** **3 credits**

Introducing students to timely, innovative and cutting-edge topics, methods and theories in the field of Arab Women's Studies, this course is research-led. As such, its precise content will depend on the expertise of faculty and the research interests of students. The scope of research is thus wide, ranging from topical subjects, such as women's participation in the Arab revolutions, to pioneering feminist research methods, such as auto-ethnography, to state-of-the-art theoretical developments in the field of women and gender studies.

WSD 659 **Independent Research Project** **3 credits**

The Women, Society and Development program requires students to either undertake an internship or an independent research project. This course allows students to explore their specific research interests within a relative field through a research agenda. The student will work closely with academic advisor and supervisor to implement this project within a given time period. The project may be capitalized on for the purposes of the thesis.

WSD 660 **Women in Comparative World Religions** **3 credits**

Providing an introduction to the academic and comparative study of the world's religious traditions through gendered analysis, this course engages in a thematic examination of the beliefs, practices, institutions, and cultural expressions of the World major Religions. It will address how sacred power, sacred story, ritual, sacred space and time, religious experience, religious ethics and morality shape women's lives. What is the relationship between gender, religion, politics, and social conflict across and between religious traditions?

WSD 661 **Women in World History** **3 credits**

This course provides an overarching survey of world history, from the ancient to the early-modern eras, exploring several key themes in the fields of gender and identity studies. The goal of the course is to assist students in understanding the critical significance of gender, sexuality, and identity to historical world events and to the ways in which they continue to impinge on the contemporary world.

WSD 662 **Women and Gender in the Literature and Cinema of the Middle East and North Africa** **3 credits**

This course explores various strands of feminist conceptual frameworks with a focus on Women's Studies and Feminist Studies in the MENA region. The aim is to integrate feminist theory with a selection of literary and cinematic works produced mainly by women writers and filmmakers in this region (including a few films made by male filmmakers), in order to investigate the cultural, social and political significance of their creative expressions, and the extent to which these works address issues at stake in their societies.

WSD 691 **Internship** **3 credits**

The Women, Society and Development program requires students to either undertake an internship of do an independent research project. This internship course is the opportunity to skills within a workplace setting, and also to gain experience in an organization, which is focused on issues relating to the degree program's scope.

WSD 695 **Master's Thesis Hours** **0-6 credits**

COLLEGE OF LAW

The College of Law (CL) is a world-class provider of legal education with an international reputation for quality and innovation in teaching and research.

Owing to its position at a global crossroads in terms of culture, business and geopolitics, Qatar is at the heart of a region that requires leaders who can manage multi-faceted relationships that span different legal systems and who have a command of a wide range of skills. CL addresses this need by offering training to graduate students from a range of disciplines in the skills needed to understand the diverse legal systems – civil, common, and Sharia – that inform Qatari law and that govern complex events and transactions, both in the region and throughout the globe. The CL Juris Doctor (JD) program is the first graduate law degree program of its kind in the MENA region.

For more information **CLICK HERE**

Academic Programs

Juris Doctor

The Juris Doctor (JD) degree is a unique model of graduate legal education designed to meet the needs of Qatar and the Middle East. The JD is the first-of-its-kind graduate law degree in the MENA region; courses are taught in English, so that graduates are prepared to work in the international legal market.

A JD differs from the undergraduate law degree in that it targets individuals who already hold an undergraduate degree, which can be in any subject, including law. The JD education builds on the student's previous expertise and experience. JD students may pursue expertise in law that is aligned with their previous degree or move in a completely different direction.

For more information, **CLICK HERE**

LLM in International Economic and Business Law

The LLM in International Economic and Business Law is a one-year program designed for recent or established university graduates in law. It is ideal for lawyers working or aspiring to work in international business, private practice, academia, government, and the judiciary.

For more information, **CLICK HERE**

LLM in International Law and Foreign Affairs

The LLM in International Law and Foreign Affairs is a one-year program that offers world-class academic and professional training in international law and foreign policy decision-making on pressing global challenges facing today's world. Owing to its position at a crossroads in terms of culture, business, and geopolitics, Qatar is at the heart of a region that requires leaders who can manage multi-faceted relationships that span different legal systems and who have a command of a wide range of skills.

For more information, **CLICK HERE**

Doctor of Juridical Science

The Doctor of Juridical Science (SJD) is the College of Law's most advanced law degree. The program is one of the first full-fledged research-intensive doctorate degrees in law in the MENA region, and one of the few of its kind outside of the United States. Dedicated to scholarship and teaching, the program aspires to create a vibrant community of legal scholars, who will assume teaching positions in universities and government positions in institutions in Qatar, the MENA region, and beyond.

For more information, **CLICK HERE**

Study Plans

Juris Doctor

Minimum hours required to complete program

85 CH

Core Courses		**82 CH**
LAW 601	Cornerstone: Global Legal Systems	2
LAW 652	Injury Law/ Torts	4
LAW 651	Contract Law	4
LAW 667	Legal Analysis, Writing, and Research I	2
LAW 655	Business Associations	4
LAW 653	Constitutional Law	4
LAW 654	International Law	4
LAW 668	Legal Analysis, Writing, and Research II	2
LAW 650	Property Law	4
LAW 659	Commercial Law	4
LAW 665	Administrative Law	4
LAW 669	Legal Analysis, Writing, and Research III	2
LAW 658	Civil Procedure	2
LAW 675	Ethics & Professional Responsibility	2
LAW 678	Dispute Resolution (Negotiation and Trial Advocacy)	3
LAW 666	Criminal Law & Procedure	4
LAW 676	Introduction to the Legal Foundations of the Global Economy	3
LAW 679	Entrepreneurship Law	4
LAW 752	Construction & Infrastructure Development	3
LAW 750	Energy Law	3
LAW 753	Healthcare Law	3
LAW 756	Advanced Dispute Resolution	3
LAW 751	Global Economic Law and Governance	3
LAW 754	Advanced Human Rights	3
LAW 757	Environmental Law	3
LAW 761	Law, Technology and Intellectual Property I	3
or		
LAW 763	Law, Technology and Intellectual Property I	2
LAW 764	Law, Technology and Intellectual Property II	1
Elective Courses		**3 CH**
LAW 765	Media and Cultural Law	3
LAW 760	Sports Law	3
Additional Offerings		**2 CH**
LAW 706	Independent Study	2

LLM in International Economic and Business Law

Minimum hours required to complete program **32 CH**

Core Courses		**14 CH**
LAW 603	Global Legal Ethics	3
LAW 605	Research Methods in Law	3
LAW 651	Contract Law	4
LAW 679	Entrepreneurship Law	4
Elective Courses		**12 CH**
LAW 659	Commercial Law	4
LAW 750	Energy Law	3
LAW 752	Construction & Infrastructure Development	3
LAW 756	Advanced Dispute Resolution	3
LAW 751	Global Economic Law and Governance	3
Or		
LAW 676	Introduction to the Legal Foundations of the Global Economy	2
IFI 605	Islamic Financial Contracts	3
Thesis		**6 CH**
LAW 695	LLM Thesis	0-6
Non-Course Requirements		**0 CH**
699	Thesis Defense	0

LLM in International Law and Foreign Affairs

Minimum hours required to complete program **31 CH**

Core Courses		**19 CH**
LAW 601	Cornerstone: Global Legal Systems	2
LAW 603	Global Legal Ethics	3
LAW 605	Research Methods in Law	3
LAW 654	International Law	4
LAW 665	Administrative Law	4
LAW 754	Advanced Human Rights	3
Elective Courses		**6 CH**
LAW 750	Energy Law	3
LAW 751	Global Economic Law and Governance	3
LAW 752	Construction & Infrastructure Development	3
LAW 753	Healthcare Law	3
LAW 756	Advanced Dispute Resolution	3
LAW 765	Media and Cultural Law	3
LAW 760	Sports Law	3
LAW 762	International Criminal Law	3
LAW 757	Environmental Law	3
LAW 761	Law, Technology, & Intellectual Property	3
or		
LAW 763	Law, Technology and Intellectual Property I	2
LAW 764	Law, Technology and Intellectual Property II	1
Thesis		**6 CH**
LAW 695	LLM Thesis	0-6
Non-Course Requirements		**0 CH**
699	Thesis Defense	0

Doctor of Juridical Science

Minimum hours required to complete program **54 CH**

Core Courses		**10 CH**
LAW 800	S.J.D. Colloquium (Taken Twice)	2
LAW 805	Advanced Research Methods in Law	3
LAW 810	Advanced Global Legal Ethics	3
Thesis		**44 CH**
LAW 890	Dissertation Hours	44
Non-Course Requirements		**0 CH**
790	Doctoral Qualifying Exam	0
799	Candidacy Exam	0
899	Dissertation Defense	0

Course Descriptions

LAW 600 **Colloquium** **0 Credits**

Outreach initiative, where influential guest speakers come to speak to our students and a larger Education City audience.

LAW 601 **Cornerstone: Global Legal Systems** **2 Credits**

This course provides students with the intellectual equipment allowing them to approach the interaction with foreign law in a meaningful way. The course addresses key aspects of the common-law, civil-law and shari'a traditions. Specifically, the course focuses on these three legal traditions' history, epistemology and contemporary impact on the law of Qatar. Operating from an interdisciplinary standpoint, the course also offers an introduction to hermeneutics and to translation studies with reference to legal interactions on the international scene.

LAW 603 **Global Legal Ethics** **3 Credits**

This course introduces students to ethical issues in the global practice of law. The course starts with a general introduction to different ethical theories and then situates these theories in different fields of legal practice to illustrate the dilemmas faced by legal practitioners, the approaches that may be adopted and their implications. The fields of legal practice covered will include international commerce, trade and investment, international development, international diplomacy, international human rights and humanitarianism, international dispute resolution and academia.

LAW 605 **Research Methods in Law** **3 Credits**

The course is designed to provide students with the research skills required for graduate studies in law. The course serves three main functions: (a) help LL.M. students develop skills in legal writing as well as research and methodology; (b) expose students to the diversity of and intellectual challenges involved in good legal scholarship, with a focus on the relationship between law and the other social sciences; (c) serve as a forum of peers in which LL.M. students can discuss the methodological challenges involved in their own research.

LAW 650 **Property Law** **4 Credits**

This course addresses the law of real property. Students will assess the historical and theoretical basis for protecting ownership rights and analyze problems relating to division of ownership interests, landlord/ tenant relations, sale of land, recordation of property interests, and governmental regulation of land use.

LAW 651 **Contract Law** **4 Credits**

This course examines key issues in contract formation, interpretation, legal capacity, formalities, good faith, gap filling, defect of consent, prohibited contracts, damages and other forms remedies, termination, rights of third parties, as well as elements of private international law of contracts. All topics are explored from the perspective of key civil law jurisdictions, English common law and Qatari law. In addition, contract law is viewed from its transnational lens, particularly the Convention on the International Sale of Goods and the UNIDROIT Principles on International Commercial Contracts.

LAW 652 **Injury Law/ Torts** **4 Credits**

This course provides an introduction to the way common law jurisdictions deal with injuries to persons and property due to civil wrongs. The principal focus is on intentional torts, the tort of negligence, strict liability and vicarious liability. You will identify the remedies available to those who have been harmed and the defences available to those accused.

LAW 653 **Constitutional Law** **4 Credits**

Constitutional Design addresses the foundations of the state. The course discusses different constitutional models and the role of the different actors within those different constitutional designs. After a general introduction into constitutional theory the theories are tested and cemented by exploring the role of human rights in different constitutional settings.

LAW 654 **International Law** **4 Credits**

This course provides students with an introduction to law in its global context in this age of trans-national and inter-jurisdictional practice, with particular focus on public international law and its significance to Qatar. It will cover areas such as the use of force, international legal personality, the formation of states, the law of international organizations, the relationship between domestic and international law, the law of immunities, state responsibility and other areas of fundamental importance in the relationship between international actors.

LAW 655 **Business Associations** **4 Credits**

This course introduces students to the different forms of business entities, including general and limited partnerships, limited liability partnerships, limited liability companies, and corporations. It examines both the common law and select regulatory codes regarding these forms of business entities, with a special focus on corporate governance and fiduciary duties of care and loyalty, as well as the important issues of policy that surround the regulation of business entities.

LAW 658 **Civil Procedure** **2 Credits**

The course will examine law regulating civil litigation in common law and civil law systems. Students will assess the jurisdiction of courts, selection of venue, and choice of law.

LAW 659 **Commercial Law** **4 Credits**

This course addresses advanced topics in business law. It will cover the comparative law of corporate control transactions including mergers and acquisitions, hostile takeovers, and leveraged buyouts. The course also introduces students to issues in commercial law and transactions that business entities utilize.

LAW 665 **Administrative Law** **4 Credits**

This course addresses the function of law within the administrative process by taking a comparative perspective on the administrative state within civil and common law systems. The course will assess the goals of the administrative process, rule-making, and the structure of the regulatory state. Particular attention will be given to administrative agencies, judicial review, public inquiries and commissions, and the role of an ombudsman accountability.

LAW 666 **Criminal Law & Procedure** **4 Credits**

The course will introduce students to the fundamental concepts defining criminal law and procedure. All topics will be covered from a comparative perspective, examining wherever possible common, civil, and sharia law. The course will be divided into three units:

- the general theory of crime and punishment;
- the causes of permissibility, such as the legitimate defense, the use of authority and the right of exercising some activities; the general theory of punishment.

The course concludes with discussions on the general theory of criminal preventive measures.

LAW 667 **Legal Analysis, Writing and Research I** **2 Credits**

This course introduces the skill of predictive writing: dividing a broad legal question into its component parts, and analyzing it. The course will introduce students to interpreting judicial decisions and carrying out legal research. It is the foundational course for learning about legal analysis and research and helps students synthesize what they are learning in all of the first-year courses.

LAW 668 **Legal Analysis, Writing and Research II** **3 Credits**

This course introduces the skill of transactional drafting: how to evaluate client needs and goals while preparing to negotiate transactions. Introducing students to the types of issues that can arise in these transactions, in order to avoid the potential for litigation. It builds on the predictive methodologies developed in LAWR I.

LAW 669 **Legal Analysis, Writing and Research III** **2 Credits**

This course introduces the skill of persuasive writing and oral advocacy: turning a dispute record or predictive analysis of a client's case into an argumentative/ persuasive document likely to persuade the court to rule in the client's favour. It builds on the analytical and evaluative methodologies developed in LAWR I and II, and it introduces more complex legal research skills.

LAW 675 **Ethics and Professional Responsibility** **2 Credits**

This course seeks to strengthen the ability of students to anticipate, analyze and appropriately respond to some of the critical ethical and social challenges that confront managers in a global economy, with a particular emphasis on the context of science and technology enterprises. It also will introduce students to the ethical framework that is particular to lawyers. Among the topics we will explore are ethical leadership and organizational culture, corporate social responsibility, conflicts of interest and confidentiality, and corruption.

LAW 676 **Introduction to the Legal Foundations of the Global Economy** **3 Credits**

The course offers an overview of the legal foundations of the global economy from an international public and private law perspective. The course examines the key aspects of the international community's regulation of foreign business transactions, trade, and investment as well as the resolution of the disputes arising out of cross-border trade and investment activity. It moreover delves into questions of international taxation, and how it can be used as a tool for international development.

LAW 678 **Dispute Resolution** **3 Credits**

The course introduces students to approaches to resolving conflict both inside and outside of civil litigation, giving particular attention to trial advocacy, mediation, and negotiation. Introducing students to the skills required to carry out a negotiation, mediation or litigation.

LAW 679 **Entrepreneurship Law** **4 Credits**

The course addresses the range of transactional legal issues encountered during the startup and growth phases of a business organization. The course considers aspects of the transactional process, from initial stages of advising clients on financing, to negotiating agreements, to drafting documents that memorialize agreements, to assessing the implications for conflict resolution where agreements break down.

LAW 695 **LL.M. Thesis** **0-6 Credits**

The LL.M. Thesis is a cornerstone of the LL.M. programs. The students, in consultation with a faculty advisor, will be required to write a research paper within the specialization of the relevant LL.M. program. The aim is for the thesis to be up to 30,000 words and of publishable quality. A final requirement is the successful oral defense of the thesis before the Thesis Evaluation Committee (TEC).

LAW 706 **Independent Study** **2 Credits**

Independent Study is an opportunity for students to research problems in any field of law. Students enrolled in this course must prepare a research paper of minimum 10,000 words under the supervision of a permanent or visiting faculty member sponsoring their research. The final product must be embodied in a paper involving a substantial independent effort on the part of the student and resulting in a meaningful and substantial scholarly contribution. Work must be completed within one semester.

LAW 750 **Energy Law** **3 Credits**

This course will examine the exploitation of a wide range of energy sources, as well as the national, regional, and international approaches to their regulation and to assessing and managing their environmental impact. An additional focus will be on the public-private relationships that are formed in the energy sector, with attention to international project finance of energy transactions and the use of international arbitration to address investor/state relations.

LAW 751 **Global Economic Law and Governance** **3 Credits**

This is an advanced course in international economic law. It covers the traditional areas of international economic law (trade, investment and finance); it goes beyond that to explore the foundations of the global economy and global governance, as well as new and emerging areas at the intersection between international and domestic law such as sovereign financial law.

LAW 752 **Construction & Infrastructure Development** **3 Credits**

The course explores issues of infrastructure development from a law and public policy perspective. It provides students with an opportunity to understand how public policies and the subsequent legal rules adopted in the field of infrastructure development may diverge despite common inputs and underpinnings, or converge despite different political, social and cultural settings. The course is divided into 5 blocks: law and infrastructure development; infrastructure finance; building and construction law; international infrastructure development law; infrastructure regulation.

LAW 753 **Healthcare Law** **3 Credits**

This is a comparative course examining healthcare laws in the United Kingdom and Qatar. The purpose of the course is to give you a strong foundation in the major legal issues affecting the health sector. We will examine the structure of the healthcare systems, the influence of lobbyists on healthcare policies, ethics, consent, malpractice, confidentiality, abortion, pregnancy, reproduction, medical research, organ donations, mental health, artificial intelligence, genetics and end-of-life care.

LAW 754 **Advanced Human Rights** **3 Credits**

This course examines the basic concepts and theories of international human rights law, and discusses topical human rights issues in light of international standards. Drawing from the jurisprudence of human rights bodies, it addresses the indivisibility and interdependence of civil, political, social, economic and cultural rights, and focuses on challenges related to their implementation, including in the GCC. It examines topics such as forced disappearances; women's rights; freedom of speech; minority and indigenous people's rights; and refugee rights.

LAW 756 **Advanced Dispute Resolution** **3 Credits**

This course focuses on alternative dispute resolution mechanisms, with an emphasis on mediation, international commercial arbitration and investment arbitration. Key issues include formation of the arbitration agreement, party autonomy, sources and rules, the arbitral tribunal and its powers, the relationship of the tribunal to domestic courts, procedural rules, the nature of arbitral awards, enforcement of awards. Similar issues will be explored in investment arbitration. Qatari arbitration law and practice is an important component of the course.

LAW 757 **Environmental Law** **3 Credits**

This course examines the values, assumptions, and guiding principles, which underlie environmental protection and how the Qatari model of environmental protection compares to other comparative global models. This course will examine the robust values, assumptions, and guiding principles, that underlie global environmental protection; and how specific global problems such as climate change, stratospheric depletion of the ozone layer, transboundary movement of hazardous wastes, biodiversity, deforestation amongst others are addressed under domestic and international law.

LAW 760 **Sports Law** **3 Credits**

This course addresses topics in the legal regulation of sports from the perspective of international institutions and select legal regimes including the European Union and the United States. Students will apply principles from such fields as contract law, intellectual property law, business law, administrative law and, and international law to the sport law context. Particular attention is given to issues in Qatari law that impact that development of sports infrastructure.

LAW 761 **Law, Technology and Intellectual Property** **3 Credits**

The course is designed to provide students with advanced knowledge on topics of law and technology in a globalized world. We will analyze aspects of intellectual property law, copyright, data protection, cross-border online speech regulation in the context of platforms and first attempts at reigning in artificial intelligence. The course aims at 1) familiarizing students with legal developments in the United States, the European Union and emerging international standards, and 2) discussing the repercussions of these legal frameworks for Qatar and the region.

LAW 762 **International Criminal Law** **3 Credits**

This course examines both substantive and procedural international criminal law with an emphasis on core crimes, such as genocide and crimes against humanity. The procedural part will focus on enforcement, particularly through the work of international criminal tribunals.

LAW 763 **Law, Technology and Intellectual Property I** **2 Credits**

This course examines the relationship between law and technology as well as focuses on Intellectual Property (IP) law. As technology continues to transform society, economy and professions, the course is designed to help students understand the implications of new technologies in policymaking, courts and the legal profession. It provides students with advanced knowledge on topics of law and technology from an international and comparative perspective, covering a broad range of new technologies such as digital platforms, artificial intelligence, blockchain and autonomous weapons.

LAW 764 **Law, Technology and Intellectual Property II** **1 Credits**

This course examines the relationship between law and technology as well as focuses on Intellectual Property (IP) law. As technology continues to transform society, economy and professions, the course is designed to help students understand the implications of new technologies in policymaking, courts and the legal profession. It provides students with advanced knowledge on topics of law and technology from an international and comparative perspective, covering a broad range of new technologies such as digital platforms, artificial intelligence, blockchain and autonomous weapons.

Law 765 **Media and Cultural Law** **3 Credits**

This course examines the legal framework that governs media and the cultural/ creative sector, including the press & broadcasting; social media; entertainment media and the audiovisual. It further examines legal principles related to cultural heritage and applies them to museums and cultural institutions. It combines different areas of legal knowledge to address questions related to media, creativity and cultural heritage.

LAW 800 **SJD Colloquium** **2 Credits**

The SJD Colloquium aims to provide S.J.D. candidates with an opportunity to present their research projects to their peers, as well as other colleagues and scholars who possess professional expertise in the specific area of law; each S.J.D. candidate has the obligation to present his or her work at least twice per semester. It moreover gives the opportunity to the S.J.D. candidates to be exposed to and discuss seminal scholarship among themselves, other peers and invited faculty members. Twice per semester, the SJD Colloquium convenes as the "Graduate Seminar" with the participation of all graduate students at HBKU College of Law.

LAW 805 **Advanced Research Methods in Law** **3 Credits**

The main objective of this course is to equip S.J.D. candidates with the necessary set of skills required to carry out independent research at the highest academic level. Participants will be supported to design the theoretical framework of a research project, and a variety of methodological approaches to law and their practical application in individual research projects. Moreover, the aim of the course is to assist S.J.D. candidates to improve their academic writing skills.

LAW 810 **Advanced Global Legal Ethics** **3 Credits**

The course provides an in-depth introduction to different ethical theories and their relevance to legal thinking. The ethical theories covered will include utilitarian ethics, deontological ethics, virtue ethics, pragmatist ethics, ethics of care, existentialist ethics, religious ethics, among others. S.J.D. candidates are encouraged to draw on insights from these ethical theories and integrate them into their research.

LAW 890 **Dissertation Hours** **0-9 Credits**

The S.J.D. Dissertation is the cornerstone of the S.J.D. program. The S.J.D. Candidates, in consultation with their supervisor, will be required to write a dissertation of publishable quality. S.J.D. Candidates are required to complete an S.J.D. Dissertation up to 100,000 words that makes a substantial and original contribution to legal scholarship. Successful oral defense of the S.J.D. Dissertation is also a compulsory requirement for graduation.

COLLEGE OF PUBLIC POLICY

The College of Public Policy (CPP) is the newest college to be launched by Hamad bin Khalifa University, and reflects the priority that the university places on supporting and contributing to effective policy development and implementation for the Qatar National Vision 2030.

For more information, **CLICK HERE**

Academic Programs

Master of Public Policy

The Master of Public Policy (MPP) is a full-time two-year degree offered by HBKU's new college, CPP. The program features a distinctive combination of interdisciplinarity, strong ethical foundations, entrepreneurship in public management, and innovation in policy making and design.

Qatar has a strategic geographical position at the global crossroads of culture, business, and geopolitics. The country is located at the center of a region that requires leaders who can manage multi-faceted relationships that span different public policy making dynamics and command a wide range of skills.

The MPP provides training to graduate students from a range of disciplines in the skills needed to understand and enrich policy making in Qatar and the region. The program will offer world-class academic and professional training in public policy analysis, design, implementation, evaluation, and management; as well as specializations in social policy, and in energy and the environment.

For more information, **CLICK HERE**

Study Plans

Master of Public Policy

Minimum hours required to complete program **39 CH**

Core Courses		**24 CH**
PPO 601	Research Methods for Public Policy	3
PPO 602	Ethics, law and Public Policy	3
PPO 611	Policy Analysis and Design	3
PPO 621	Economics for Public Policy	3
PPO 650	Public Management: Innovations and Challenges	3
PPO 651	Global Political Economy	3
PPO 652	Comparative Public Policy	3
PPO 653	Analytical Methods for Policy Evaluation	3
Advanced Seminar and Specialization Labs		**6 CH**
PPO 703	Advanced Seminar in Social Policy	3
PPO 720	Specialization Lab in Social Policy	3
Or		
PPO 704	Advanced Seminar in Energy and Environmental Policy	3
PPO 721	Specialization Lab in Energy and Environmental Policy	3
Elective Courses		**3 CH**
PPO 705	Special Topics in Public Policy	3
Or		
Take a free elective from any HBKU college		
Capstone Project		**6 CH**
PPO 690	Capstone Project	6

Course Descriptions

PPO 601 **Research Methods for Public Policy** **3 Credits**

This course introduces the logic of quantitative and qualitive research methods, basic statistical techniques, research problems, research design, data collection, data analysis, and results interpretation. Emphasis is put on the application of research methods in a real-world policy environment and on various techniques for collecting, managing and presenting evidence to enable students to critically evaluate the effectiveness of policy decisions. Individual training is blended with collaborative, group-based in-class labs to enhance the practical relevance of the course.

PPO 602 **Ethics, law and Public Policy** **3 Credits**

This course introduces the ethical foundations of public policy and law, and the forms of ethical reasoning that underpin policy choices. A distinctive focus will be placed on the role of culture and religion. Experiential case studies will show the different ethical positions taken on existing and emerging policy issues, and how these positions influence outcomes. The relationship between ethics and law, particularly rights, and public policy will also be explored.

PPO 611 **Policy Analysis and Design** **3 Credits**

This course provides the foundation for understanding the policy process and its stages, including problem definition, the selection of options and choices, implementation, and evaluation. Analytical tools are demonstrated to provide students with evidence-based, leading-edge and innovative approaches. The design focus encourages students to consider policy from the user's perspective, as well as in terms of delivery challenges and opportunities.

PPO 621 **Economics for Public Policy** **3 Credits**

This course equips students to understand the key concepts in microeconomic as well as macroeconomic theory and their application to public policy. Microeconomic topics may include rational choice theory, market structures and market failure, green economy, welfare economics, and Behavioral economics. Macroeconomic topics may include development economics and social choice, monetary and international trade policy.

PPO 650 **Public Management: Innovations and Challenges** **3 Credits**

This course examines the principles, processes, and structures of public sector management both in general terms, and in a comparative context, exploring different public administration traditions and systems. It also examines current debates and examples of public sector innovation, and the complex challenges of public management in the 21st century.

PPO 651 **Global Political Economy** **3 Credits**

This course provides an understanding of the genesis, current issues, and future scenarios of the global political economy (GPE). In a globalized and interdependent world, politics and economics permanently interact and intersect with one another, creating power dynamics that affect public policy across sectors and levels. Major theoretical frameworks of GPE and their application for public policy design and analysis will be complemented with selected case studies. The roles of institutions, knowledge and learning, justice and sustainability issues, and ethical policy choices will be core themes of the course.

PPO 652 **Comparative Public Policy** **3 Credits**

This course compares public policy along several dimensions cross-sectoral comparisons (e.g., social policy compared to economic policy), cross-country and regional comparisons (e.g., the same policy field as it is addressed in Europe or North American or the MENA region), and cross-system comparisons (e.g., developed versus developing states, federal versus unitary). Students will analyze and understand the way in which context shapes policy dynamics and outcomes in a complex and globalized policy environment.

PPO 653 **Analytical Methods for Policy Evaluation** **3 Credits**

This course provides an introduction to evidence-based techniques of assessing and evaluating public policy across sectors. Topics may include needs assessment, cost-benefit analysis, cost effectiveness, impact evaluation, logic models, user surveys, program profiling, policy cycle evaluation, participative and community-based evaluation, critical theory informed approaches, data visualization and reporting, and experiments.

PPO 690 **Capstone Project** **6 Credits**

In consultation with a faculty advisor and a client organization, students (working in small teams) will be required to develop a capstone project within one of the two designated specializations. Students will work in small teams, with a designated client, to produce an analytical paper on a real policy problem/issue in one of the two specializations in the program (Social Policy, or Energy and the Environmental Policy). The chosen case will be relevant for Qatar, the Middle East, and the world. The capstone project concludes with presentations and a policy brief.

PPO 703 **Advanced Seminar in Social Policy** **3 Credits**

This course provides a foundation for understanding social policy in the broadest sense, in terms of the modern welfare state and its future, in a comparative and multi-level governance context. Established theoretical frameworks, such as social choice theory and the capabilities approach are discussed. Topics may include family policy, employment and labour protection, migration, youth, aging and pensions, human development, education and health.

PPO 704 **Advanced Seminar in Energy and Environmental Policy** **3 Credits**

This course provides an integrated understanding of major issues, challenges and opportunities in energy and environmental policy, with special attention to the complex and sometimes conflicting interactions with other policy fields (e.g., commercial, legal, and technological). The course is nested within the frames of sustainable development, resilience, and energy transitions. National, regional, and global perspectives on these issues will be explored, as will the connections to climate change.

PPO 705 **Special Topics in Public Policy** **3 Credits**

This course addresses a variety of specialized and timely areas in public policy and/or public management. Topics may include techniques and approaches in policy analysis and evaluation, specific policy sub-fields, governance challenges, institutions and leadership.

PPO 720 **Specialization Lab in Social Policy** **3 Credits**

The lab focuses on experiential learning through site visits, community-based engagement, challenge assignments, and micro-projects. Students will work with institutions and agencies in Qatar to understand their organization and the challenges they face. Class time will be devoted to case studies, skills development, and preparation for the MPP Capstone Project.

PPO 721 **Specialization Lab in Energy and Environmental Policy** **3 Credits**

The lab focuses on experiential learning through site visits, community-based engagement, challenge assignments, and micro-projects. Students will work with institutions and agencies in Qatar to understand their organization and the challenges they face. Class time will be devoted to case studies, skills development, and preparation for the MPP Capstone Project.

COLLEGE OF ISLAMIC STUDIES

The College of Islamic Studies (CIS) was established as a home for contemporary Islamic studies and to provide a unique platform for faculty and students to contribute to intellectual debates on Islam in a global context.

For more information, **CLICK HERE**

Academic Programs

Master of Arts in Applied Islamic Ethics

The first program of its kind worldwide, the MA in Applied Islamic Ethics addresses how Islam, as a world religion with a rich moral heritage, engages with and contributes to global moral discourses. Its strong interdisciplinary character combines in-depth knowledge of both theoretical and applied ethics rooted in the Islamic tradition. The program is consistent with the Qatar National Vision 2030 by enhancing a knowledge-based society and with HBKU's mission to develop world-class interdisciplinary academic programs.

For more information, **CLICK HERE**

Master of Arts in Islam and Global Affairs

The MA in Islam and Global Affairs (IGA) is a one-of-a-kind program that provides an opportunity to analyze the place of Islam in the context of global affairs, and the interconnected challenges facing global Muslim communities from an interdisciplinary perspective.
Through research and integrative lab assignments, students are able to explore complex, interconnected global issues in collaboration with local and international organizations.

For more information, **CLICK HERE**

Master of Arts in Contemporary Islamic Studies

The MA in Contemporary Islamic Studies offers students a unique opportunity to enjoy a strong multidisciplinary and interdisciplinary graduate education across a range of core subjects, while also enabling them to pursue a specialization in one important area within the field of modern Islamic scholarship. The program is tailored to examine traditional Islamic knowledge and place such knowledge in the context of the challenges faced by modern society.

For more information, **CLICK HERE**

Master of Science in Islamic Art, Architecture and Urbanism

The MSc in Islamic Art, Architecture and Urbanism is a multidisciplinary program that produces and transfer knowledge in the fields of Islamic Art, Architecture and Urbanism with a strong relevance toward the contemporary world of Muslim societies. The program is conducted in collaboration with the University of Oxford in the UK, it aims to equip the next generation of curators, historians, and designers with a critical and informed understanding of Islamic art and architecture. This program encourages research towards safeguarding Islamic cultural heritage by examining the contextual history of Islamic art, architecture, and urbanism.

For more information, **CLICK HERE**

Master of Science in Islamic Finance

The MSc in Islamic Finance is a specialized program that teaches qualitative and quantitative methods of analysis in both Islamic and conventional finance. The mixed philosophy of the program enables graduates to attain the skills needed to understand the global financial system, and proposes viable alternatives to existing models, by blending guidance from Shari'a with modern scientific knowledge and the techniques of economics and finance.

For more information, **CLICK HERE**

PhD in Islamic Finance and Economy

The PhD in Islamic Finance and Economy is an innovative multidisciplinary program that provides students with the required analytical and research skills to understand, analyze, and interpret the workings of the rapidly expanding Islamic financial services and market sectors, and to tackle their emerging challenges and opportunities.
The program is centered on the national priorities as set out in the Qatar National Vision 2030, on the local aspirations as enshrined in the objectives of the Shari'a, and on global targets such as the UN Sustainable Development Goals.

For more information, **CLICK HERE**

Study Plans

Master of Arts in Applied Islamic Ethics

Minimum hours required to complete program **36 CH**

Foundation Courses		**6 CH**
AIE 610	Islamic Ethics: Mapping the Field	3
AIE 611	Research Methods and Sources on Ethics	3
Core Courses		**6 CH**
AIE 630	Scriptural Ethics: Ethics in Quran and Sunna	3
AIE 631	Theological and Philosophical Ethics	3
AIE 632	Ethical Reasoning and Moral Decision-Making	3
Elective Courses		**15 CH**
AIE 633	Islamic Bioethics	3
AIE 634	Ethics of Migration and Human Rights	3
AIE 635	Business Ethics	3
AIE 636	Peace, War and Political Ethics	3
AIE 637	Gender and Islamic Ethics	3
AIE 640	Islamic Ethics of Pandemics	3
AIE 641	Islamic Ethics and Artificial Intelligence	3
Student can choose Tutorial or Internship as a replacement of one of the elective courses		
AIE 660	Tutorial	3
AIE 661	Internship	3
Thesis		**9 CH**
AIE 695	Master's Thesis Hours	0-6
Non-Course Requirements		**0 CH**
699	Thesis Defense	0

Master of Arts in Islam and Global Affairs

Minimum hours required to complete program **36 CH**

Foundation Courses		**9 CH**
IGA 600	Islamic Worldview	3
IGA 605	Research Methods	3
IGA 611	Introduction to Islam & Global Affairs	3
Core Courses		**9 CH**
IGA 612	Global Inequalities	3
IGA 613	Islam, Conflict Transformation and Peacebuilding	3
IGA 628	Globalization & Faith Based Development	3
Specialization Courses		**6 CH**
IGA 627	Special Topics in Islam and Global Affairs	3
Select one of the following courses		
IGA 622	Islam and Global Governance	3
IGA 629	Humanitarian Action in the Muslim World	3
Lab		**3 CH**
IGA 689	Integrative Lab	3
Thesis		**9 CH**
IGA 695	Master's Thesis Hours	0-6
Non-Course Requirements		**0 CH**
699	Thesis Defense	0

Master of Arts in Contemporary Islamic Studies

Minimum hours required to complete program **36 CH**

Core Courses		**9 CH**
CIS 600	Foundations of Islamic Thought	3
CIS 601	Contemporary Quran and Hadith Studies	3
CIS 602	Applied Research Methodologies in Islamic Studies	3
Specialization 1: Contemporary Islamic Thought		
Required Courses		**9 CH**
CIS 607	Islamic Thought and Postcolonial Studies	3
CIS 705	Islam and Modernity	3
CIS 706	Islamic Law and Society	3
Elective Courses		**9 CH**
CIS 608	The Media and Muslim Societies	3
CIS 609	Islam and Politics in the Muslim World	3
CIS 611	Scientific Thought in Muslim Societies	3
CIS 612	Muslim Societies in Diaspora	3
CIS 613	Modern History of the Muslim World	3
CIS 710	Muslim Encounters with Other Societies	3
Specialization 2: Fiqh and Society		
Required Courses		**9 CH**
CIS 615	Non-textual Legal Sources	3
CIS 616	Fatwa, Family and Society	3
CIS 617	Islamic Jurisprudence, Politics and the State	3
Elective Courses		**9 CH**
CIS 618	The Higher Objectives of Shari'a and Public Interest	3
CIS 619	Text and Context: Comparative Textual Readings	3
CIS 620	Nawazil and Novel Legal Issues	3
CIS 621	Personal Earnings and Economics	3
CIS 622	Social Justice, Community Welfare and Sustainable Development	3
CIS 623	Muslim Social and Political Systems and Institutions	3
Thesis		**9 CH**
CIS 695	Master's Thesis Hours	0-6
Non-Course Requirements		**0 CH**
699	Thesis Defense	0

Master of Science in Islamic Art, Architecture and Urbanism

Minimum hours required to complete program **36 CH**

Foundation Courses		**3 CH**
IST 636	Quranic Civilizations, Geography and Archaeology	3
Core Courses		**18 CH**
IAA 600	Independent Project Modelling	3
IAA 610	Research and Design Methods	3
IAA 611	History of Islamic Art and Architecture I (650-1250)	3
IAA 623	History of Islamic Art and Architecture II (1250-1900)	3
IAA 625	Survey of Architectural Typologies of the Islamic World	3
IST 621	Sustainable Islamic Urbanism: Past and Present	3
Specialization *(Choose one of the specializations)*		**6 CH**
SPECIALIZATION A: History and Cultural Display		
IAA 631	Islamic Objects and Manuscripts	3
IAA 632	Museum and Exhibition Studies	3
SPECIALIZATION B: Contemporary Mosque Architecture		
IAA 633	Mosque Architecture Design	3
IAA 634	Islamic Architecture and Urbanism in the 20th & 21st Centuries	3
SPECIALIZATION C: Sustainable Cities of Muslim Societies		
IAA 635	Contemporary Cities for Muslim Societies	3
IAA 636	Globalization, Cities and Urban Policies	3
Electives		**3 CH**
IAA 641	Urban Interventions in Historic Islamic Cities	3
IAA 642	Physical Spaces and Spatial Humanities in Digital Societies	3
IAA 643	Types and Typologies of Domestic Architecture	3
Thesis		**6 CH**
IAA 695	Master's Thesis Hours	0-6
Non-Course Requirements		**0 CH**
699	Thesis Defense	0

Master of Science in Islamic Finance

Minimum hours required to complete program **36 CH**

Common Core Courses		**12 CH**
ISF 605	Research Methods	3
IFI 605	Islamic Financial Contracts	3
IFI 607	Islamic Banking and Financial Markets	3
IFI 615	Islamic Corporate Finance and Financial Engineering	3
Concentration 1: Sustainable Finance		
Concentration Core Courses		**6 CH**
IFI 702	Sustainable Finance and Impact Investing	3
IFI 703	Islamic Economics and Sustainable Development	3
Concentration 2: Islamic Finance		
Concentration Core Courses		**6 CH**
IFI 707	Islamic Asset, Funds & Portfolio Management	3
IFI 701	Analysis of Financial Statements with Applications to IBs	3
Electives		**9 CH**
ISF 602	Principles and Objectives of Islamic Law	3
IFI 606	Islamic Economics and Development in Theory and Practice	3
IFI 608	Strategic Management in Islamic Finance	3
IFI 691	Internship	3
IFI 704	Applied Quantitative Methods in Islamic Finance	3
IFI 705	Legal, Regulatory and Institutional Aspects of Islamic Finance	3
IFI 706	Independent Studies	3
IFI 709	Behavioural Islamic Economics & Finance	3
IFI 710	Fintech and Its Islamic Finance Applications	3
Or		
Take any 700 or 800 level courses as electives. Courses available in current catalog are listed below		
IFI 800	Circular Economy and Comprehensive Development:	3
	An Islamic Perspective	3
IFI 801	Entrepreneurship, Ethics and Sustainability	3
IFI 803	Islamic Financial Structuring: Strategies and Contracts	3
IFI 810	Advanced Corporate Finance and Investment	3
IFI 811	Advanced Topics in Micro and Macro Economics: Islamic Perspectives	3
IFI 812	International Islamic Economic and Financial Relations	3
IFI 813	Islamic Social Finance and Empowerment	3
IFI 814	Islamic Economic History and Thought	3
IFI 815	Governance Legal and Regulatory Issues of Islamic Financial Institutions	3
IFI 816	Advanced Risk Management of Islamic Financial Institutions	3
IFI 817	Financial Analysis and Portfolio Modelling	3
IFI 840	Islamic Finance Independent Studies	3
IFI 841	Sustainable Economy Independent Studies	3
Thesis		**9 CH**
IFI 695	Master's Thesis Hours	0-6
Non-Course Requirements		
699	Thesis Defense	0

PhD in Islamic Finance and Economy

Minimum hours required to complete program **54 CH**

Core Courses		**12 CH**
IFI 802	Applied Econometrics	0
IFI 804	Applied Topics in Usul al Fiqh and Maqasid Al Sharia	3
IFI 821	Advanced Topics in Islamic and Sustainable Economy	3
IFI 822	Advanced Topics in Islamic and Sustainable Finance	3
IFI 823	Advanced Research Methods	3
Elective Courses		**6 CH**
IFI 711	Selected Topics in Applied Econometrics	3
IFI 702	Sustainable Finance and Impact Investing	3
IFI 704	Applied Quantitative Methods in Islamic Finance	3
IFI 606	Islamic Economics and Development in Theory and Practice	3
IFI 608	Strategic Management in Islamic Finance	3
IFI 709	Behavioural Economics in Islamic Finance	3
IFI 710	Fintech and Its Islamic Finance Applications	3
IFI 708	Selected Topics in Applied Econometrics	3
IFI 800	Circular Economy and Comprehensive Development:	3
	An Islamic Perspective	3
IFI 801	Entrepreneurship, Ethics and Sustainability	3
IFI 803	Islamic Financial Structuring: Strategies and Contracts	3
IFI 810	Advanced Corporate Finance and Investment	3
IFI 706	Independent Studies	3
IFI 811	Advanced Topics in Micro and Macro Economics: Islamic Perspectives	3
IFI 812	International Islamic Economic and Financial Relations	3
IFI 813	Islamic Social Finance and Empowerment	3
IFI 814	Islamic Economic History and Thought	3
IFI 815	Governance Legal and Regulatory Issues of Islamic Financial Institutions	3
IFI 816	Advanced Risk Management of Islamic Financial Institutions	3
IFI 817	Financial Analysis and Portfolio Modelling	3
IFI 840	Islamic Finance Independent Studies	3
IFI 841	Sustainable Economy Independent Studies	3
Thesis		**36 CH**
IFI 890	Dissertation Hours	0-9
Non-Course Requirements		
790	Doctoral Qualifying Exam	0
799	Candidacy Exam	0
899	Dissertation Defense	0

Course Descriptions

AIE 610 **Islamic Ethics: Mapping the Field** **3 credits**

This course covers key concepts, theoretical principles, and doctrines of Islamic Ethics. The course examines how these principles and their applications can address contemporary issues related to various fields including finance and business, social and political affairs, inter-cultural issues, as well as biomedical sciences. By the end of the course, students will work on developing a framework for ethical reasoning around a specific ethical dilemma, as part of the training in problem-solving.

AIE 611 **Research Methods and Sources on Ethics** **3 credits**

The course teaches students how to work with the major sources and methodological approaches in ethics research. The particular focus is on research-based writing. After situating Islamic studies and ethics in the broader context of academic research, basic research skills will be reviewed and applied. The course provides an overview of methodological approaches and major sources on ethics and leads students to develop a research proposal on ethics.

AIE 630 **Scriptural Ethics: Ethics in Quran and Sunna** **3 credits**

This course provides a foundation in Scriptural ethics by examining various approaches to the two major scriptural sources in Islam, namely the “Qur’an” and the “Hadith”. In Quranic ethics, attention will be given to morality in Quranic discourse and commentaries. As for Sunna, morality in canonical collections of Hadith will be examined. The relationship between these two sources of ethics is analyzed through the lens of classical and modern scholarship.

AIE 631 **Theological and Philosophical Ethics** **3 credits**

This course presents a comprehensive survey of ethics in the Islamic theology and philosophy. The main focus here is to examine the anthological and epistemological questions related to ethics.
This course covers different theological approaches to the human action, obligation (taklīf) and ethical judging. In the philosophical part, the course covers the main Greek ethical themes and its effect on the classical Islamic philosophy and the later developments. In this course, students will get knowledge about the history, concepts, doctrines, and philosophers in the Islamic tradition. It not only discusses the classical period, but also on the modern and contemporary trends of moral philosophy.

AIE 632 **Ethical Reasoning and Moral Decision-Making** **3 credits**

This course covers reasoning in the Islamic tradition, covering shifts from discipline-centered reasoning to interdisciplinary reasoning. It examines the principles and priorities of ethical reasoning, the arguments for a goal-oriented or a value-oriented approach to ethics, the contemporary emphasis on the context of the ethicist and reconfiguring the sources of knowing good and bad. The course examines how to critically analyze argumentation in ethical judgments in applied case studies.

AIE 633 **Islamic Bioethics** **3 credits**

This course is a rigorous engagement with the nascent field of Islamic Bioethics. On the one hand, the attempt here is to do service to the field of Bioethics by maintaining the rich meaning of the term bioethics - an ethics concerned with bios (literally life). We examine biomedical sciences and the value systems that shape and guide the scientific enterprise within the larger context of planetary health, climate change and environmental concerns. On the other hand, this broad approach to Bioethics is linked with the richness of the Islamic tradition, according to which ethical questions and dilemmas should ideally be approached at their macro levels and through the prism of communitarian and responsibility-oriented, rather than individualistic, perspectives.

AIE 634 **Ethics of Migration and Human Rights** **3 credits**

This course analyzes the relationship between Islam and migration in an ethical and contemporary context. Two semi-autonomous areas will be explored, namely: 1) Forced Migration (displaced, asylum seekers and refugees) and 2) Voluntary Migration (economic migrants). Theoretically, the course will compare migration discourses in Islam with modern western theories of migration with particular focus on international human and labor rights conventions. Students will be given applied case studies to analyze and provide innovative solutions that include gender-based problems of migration.

AIE 635 **Business Ethics** **3 credits**

The course covers both theoretical and applied ethics in business, and a critical analysis comparing Western business ethics, Islamic tradition and contemporary field of Islamic economics. First, the general conceptual field asks: What is Islamic in Islamic finance, Islamic economics and Islamic banking? Second, the ethical foundations of business, based upon perspectives from Islamic law and the new field called business ethics. The third dimension will challenge students to apply the ethical principles to practical applications in individual and organizational behavior from the region.

AIE 636 **Peace, War and Political Ethics** **3 credits**

This course will introduce the multiple dimensions of Islamic ethics in politics, peace and war from a comparative perspective. It covers theoretical and applied aspects while addressing historical and contemporary political values. The first part discusses issues related to state and society, including the public good, political legitimacy and good governance. The second part locates Islamic political ethics within the broader global context, shedding light on the borders of the Muslim moral community with the challenge of consistency, humanism and ethical pluralism. The third part focuses on the ethics of peace and war in historical and contemporary discourses.

AIE 637 **Gender and Islamic Ethics** **3 credits**

This course will familiarize students with the principles of gender research. It contains four parts. 1. Feminist Theory: from liberal feminism to Marxist, post-structural and post-colonial feminism; feminist epistemology and its explanatory power. 2. Masculinity Theory: covering the theorization of hegemonic masculinity and subsequent critiques and modifications. Specific focus will be on masculinity in the Muslim world. 3. Islam & Gender as an ethical approach: the Islamic perception of gender and related concepts such as matrimony personal status and equality. 4. Contemporary Gender Issues in the Islamic world: ethics and feminism, a woman's right to her own body, gender bias in politics, law, media, and empowerment policies.

AIE 640 **Islamic Ethics of Pandemics** **3 credits**

This course provides the students interested in Islamic Ethics with the necessary knowledge and skills to critically engage with the global bioethical discourse on pandemic including covid-19.

It will be divided into five main parts: 1. historical overview of the ethical discussions on early plagues, 2. the types of ethical approaches and discourses on covid-19, 3. key ethical issues, 4. critical reading of relevant texts and 5. writing a research paper.

AIE 641 **Islamic Ethics and Artificial Intelligence** **3 credits**

This course focuses on the moral questions raised by Artificial Intelligence (AI). It will be of interest for a wide range of students who are curious to understand how the rich Islamic moral tradition engages with global ethical discussions on cutting-edge technologies.

It comprises five main parts: 1. Prelude: Artificial Intelligence (AI) & AI moral discourse, 2. Governing policies and principles, 3. Philosophical foundations & challenges, 4. Main issues, approaches and applied fields, and 5. Research Paper.

AIE 660 **Tutorial** **3 credits**

Tutorial students will have one-on-one in-depth supervised reading of key and impactful writings (classics) in the field of Islamic Ethics. The program will make use of the research output and publications of CILE, including the Journal of Islamic Ethics and the book series Studies in Islamic Ethics, giving students access to (and reviews of) the key publications in the field. The tutorial may be used as a remedial program to assist students who are having difficulties in keeping up with readings. It may also be used to assist students in thesis-related problems.

AIE 661 **Internship** **3 credits**

The Internship is a program tailored for the students' future work-plans. Students will benefit from existing approved institutions that may later provide them with employment opportunities after graduation.

AIE 695 **Master's Thesis Hours** **0-6 credits**

CIS 600 **Foundations of Islamic Thought** **3 credits**

The course provides an in-depth investigation of multiple intellectual traditions and debates within Islamic Civilization before the onset of modernity. The course is based on readings of key primary texts in philosophy, theology, law, Sufism and social thought. The course identifies major trends and directions of Islamic scholarship, demonstrates connections between fields of knowledge, highlights the changing cultural assumptions that have historically shaped the discourse of Muslim scholars, and explores the contemporary relevance of their works.

CIS 601 **Contemporary Quran and Hadith Studies** **3 credits**

This course provides a contemporary treatment of the major scriptural sources in Islam, the Quran and the Hadith, and the salient methodologies for working with them. The course examines competing epistemological approaches to the history, composition, and content of these sources, as well as the interplay between them. Contemporary methodologies for working with these sources and their function in modern Muslim societies are then analyzed.

CIS 602 **Applied Research Methodologies in Islamic Studies** **3 credits**

The course introduces students to the field of Islamic studies and teaches them how to design and prepare a research project which makes a meaningful contribution to this field and the particular focus of this course is on research-based paper writing. After situating Islamic studies in the broader context of academic disciplines, basic research skills will be reviewed and applied in the context of a self-identified research project. Major approaches in the field of Islamic studies will be surveyed taking the case of canonical prayer and significant contributions to the ongoing debates about Orientalism will be reviewed.

CIS 607 **Islamic Thought and Postcolonial Studies** **3 credits**

This course will focus on the development of decolonial and postcolonial studies and their applications to the study of Islamic Thought and society, including debates around orientalism and women's studies. Through the study and analysis of key texts, students will engage significant trends in traditional and modern scholarship, navigate critically through the relevant academic literature, and analyze methodological developments in Religious Studies and Islamic Studies.

CIS 608 **The Media and Muslim Societies** **3 credits**

This course explores the surprisingly close relationships between the forces of media and religion in what is arguably a "secular" age. It will closely examine the evolution of ubiquitous religious content and examine how it relates to Muslim society. The course also considers qualitative methods in analyzing major media narratives that that include such topics as the use of digital media by a variety of Muslim groups, reactions and counter-reactions to extremism and Western discourses appropriating Islam for political advantage.

CIS 609 **Islam and Politics in the Muslim World** **3 credits**

This course examines relations between Islam and politics in the contemporary Muslim world. The course surveys foundational texts, and classical theories of political order, as well as key notions of Western political thought. On this basis, the course provides a contextualized analysis of central debates about the political order, while situating them in the evolving structure of the Muslim world.

CIS 611 **Scientific Thought in Muslim Societies** **3 credits**

This course explores the scientific tradition that developed in Islamicate societies and the complex interaction between scriptural revelation and experimental discovery. It traces the development of scientific enquiry that occurred due to interactions with the ancient traditions of learning and consequently, how the innovations that resulted may have influenced European scientific thinking. The rise of modern science in Muslim societies will be discussed and the epistemological challenges it presents will be explored through a series of subjects such as evolution and cosmology.

CIS 612 **Muslim Societies in Diaspora** **3 credits**

Diasporic Muslim communities have existed throughout history and while diasporic communities are integral part of Islam, they have often been considered a case apart. In the context of globalization, their specificity appears more limited than before. Taking diverse cases from the past and present, this course examines the formation of diasporas and their role in the spread of Islam, changing relations to the ˜homeland" and the broader Muslim community, legal problematics relating to the minority condition, and the interplay of culture and religion in the formation of their identity.

CIS 613 **Modern History of the Muslim World** **3 credits**

The course offers an introduction into the history of the modern Muslim world with a focus on the Middle East and the Gulf region in particular. It surveys the emergence of the contemporary state-system since the early 19th century in relation to broader processes of social and cultural transformation. It retraces changes on the levels of identity and spatial organization and examines the competing visions of legitimate political order which continue to structure Muslim polities today. Looking at various nationalist and Islamic movements, the course examines the interplay between modernization policies, social change and intellectual developments, introducing students to key analytical concepts for their study.

CIS 615 **Non-Textual Legal Sources** **3 credits**

This course provides a comprehensive treatment of the sources of Islamic law that are disputed with Islamic legal theory and clarifies their significance in contemporary ijtihad. The course clarifies the need for such sources as a criterion for deducing legal rulings in a way that counters the evident errors of literalism that characterize religious extremism. Thus, the course discusses the following non-textual legal sources: the action of the Prophetic Companions, public interest and its categories, juristic preference and its types customary practice preemptive prohibition, Madinan practice and the presumption of continuance.

CIS 616 **Fatwa, Family and Society** **3 credits**

This course discusses the fatwas related to the most significant contemporary issues concerning the family and society. It focuses on a methodological study of fatwa issuance, including the principles and modality of assessing such fatwas, while also considering the higher objectives of the shari'a and the changing practices of both families and societies. The course discusses issues such as the financial excesses of marriage expenses, divorce and spinsterhood, female employment, and the wife's rights to the family assets, from the perspective of Islamic jurisprudence and contemporary social studies.

CIS 617 **Islamic Jurisprudence, Politics and the State** **3 credits**

This course concerns the relationship between Islamic jurisprudence, politics and the state and covers three main debates: Islamic jurisprudence and political authority; politics and the law, and Islamic jurisprudence and the state. The first debate examines jurisprudential theories regarding society, the rulings related to political authority and the ruler, the effect of political change of the jurist and his understanding of his relationship with the state. It also discusses contemporary attempts to synthesize the political discourse that existed before the notion of the modern, nation state, and those that were produced consequently. The second debate concerns the difference between politics and Islamic political theory, the ethical principles that guide politics, and the application of public interest to politics. The third debate is related to differing manifestations of political authority such as the state and the caliphate, and how such concepts impact on subsequent Islamic legal rulings, whether they be in theory or in practice.

CIS 618 **The Higher Objectives of Sharia and Public Interest** **3 credits**

This course discusses the historical development, the most important writings and the theoretical methodologies, developed regarding higher objectives of the shari'a. It also sheds light on the importance of the higher objectives and their role in facilitating ijtihad as a tool to determine the scope and range of public interest. The course highlights the prerequisites required for the application of the higher objectives and elaborates how contemporary thinkers have applied these concepts. The course also discusses how the higher objectives may be applied in contemporary Muslim societies to address a range of critical issues such as: human rights, social justice, security and the preservation of human dignity.

CIS 619 **Text and Context: Comparative Textual Readings** **3 credits**

This course discusses the relationship between text and context through a variety of jurisprudential texts that display multifarious perspectives and views. The course focusses on the methodological tools required to critically analyze the intent of the authors, engage with their thinking, and place them in their historical, social and political context. Through selected texts, the course navigates a number of legal cases disputed across the ages, elaborates the Islamic legal perspective regarding them and compares them to prior systems such as Roman law and pre-Islamic norms.

CIS 620 **Nawazil and Novel Legal Issues** **3 credits**

This course discusses the most significant contemporary social issues that affect both the family and society such as smoking, sexual harassment, domestic violence and suicide. The course highlights the social dimension of such issues and proposes how they may be resolved using a variety of jurisprudential methodologies. The course emphasizes a practical approach and combines current sociological studies with innovative legal applications.

CIS 621 **Personal Earnings and Economics** **3 credits**

This course discusses various categories of financial transactions in Islamic law and demonstrates how jurists historically dealt with such issues. The course also links the higher objectives of the sharia to these financial cases and shows how they have been applied in a contemporary context, particularly in the financial sector and in Islamic banking. The course distinguishes the objectives and reasons for such legal rulings from the financial perspective, and provides actual examples from the contemporary context, to suggest novel solutions to innovative financial transactions that are common in the modern age.

CIS 622 **Social Justice, Community Welfare and Sustainable Development** **3 credits**

In a global context marked by growing inequality and precariousness, social justice has emerged as a major policy concern and popular demand around the world. This course highlights the resources available in the Islamic tradition to advance issues of social justice. The course shows how concerns about social justice were integral to classical Islamic legal scholarship, explores how Islamic concepts might improve on current practices of development and humanitarianism, and examines the challenges that modern structures (capitalism, the modern state, and globalization) pose to innovative solutions.

CIS 623 **Muslim Social and Political Systems and Institutions** **3 credits**

This course discusses Muslim social and political systems and institutions both in their historical contexts and in contemporary society. Such institutions have laid a heavy emphasis on both religious ethics and social values and this course engages with how they have had a positive effect on both the public sphere and social development. Islamic legal theory may be viewed as being at the core of Muslim social and political systems and institutions and the course evaluates the intrinsic relationship between this legal framework and social development in Muslim societies.

CIS 695 **Master's Thesis Hours** **0-6 credits**

CIS 705 **Islam and Modernity** **3 credits**

This course introduces students to institutions, concepts and processes centrally associated with modernity. Focusing on the fields of knowledge, government and economy, the course investigates what is new and distinctive about modern societal contexts. It will examine fields of conflict which have emerged in these contexts. Trajectories of modernity will be investigated in a comparative perspective.

CIS 706 **Islamic Law and Society** **3 credits**

The course provides an interdisciplinary exploration of law and society in the Muslim world from medieval to modern times. It presents the main figures and institutions of Islamic legal authority, showing how they have adapted to changing configurations of power. The course discusses various approaches to the study of law in society through case-studies ranging from crime and punishment, marriage and divorce, and economic practice. Particular attention is paid to the study of law and society in the contemporary Muslim world.

CIS 710 **Muslim Encounters with Other Societies** **3 credits**

This course proposes to introduce students to the overarching principles that have generally governed Muslim interaction with various non-Muslim societies and how diverse Muslims communities have traditionally interpreted these principles under similar and varying circumstances. The course will highlight some of the best practices that Muslims were able to develop in their interaction with other societies which might be taken into consideration by non-Muslim communities in their encounter with others. Furthermore, contemporary models of successful interaction between religious communities would be examined to see what challenges they pose to Muslim communities and to what extent Muslims can benefit from such models.

IAA 600 **Independent Project Modelling** **3 credits**

This is an advanced-level course promoting practice-based learning and the development of problem-solving techniques, critical thinking skills and innovative practices to serve cultural institutions, governmental organizations or businesses. It offers the students an opportunity to work autonomously on a project of their choosing related to their chosen specialization. Students may choose a topic, art object, or a theme of relevance to cultural issues and societal needs, to be devised with the approval of their supervisor. This may involve engagement with industry or cultural organizations to deliver a small-scale tailored projects to suit their needs; the detailed investigation of a single object at the Museum of Islamic Art, using knowledge acquired in other parts of the program; or the creation of a display based on object replicas or images in the atrium of the College of Islamic Studies with a view to disseminating their knowledge to the broader HBKU community.

IAA 610 **Research and Design Methods** **3 credits**

This course offers a comprehensive understanding of basic principles of research techniques and writing in architecture. Emphasis is placed on methodological and presentational aspects of architectural and built environment research. Fundamental aspects of communicating research are introduced, including writing and presenting research findings and concluding statements. It also involves knowledge of differentiating between research, reports, articles and critical essays; an investigation of various methods for descriptive, analytical, explanatory, and critical research. Research projects focus on applying research techniques and tools in visual, social and technical terms. An integral component of the course involves the development of a thesis proposal where students utilize selected research tools and techniques in shaping their research proposals.

IAA 611 **History of Islamic Art and Architecture I (650-1250)** **3 credits**

This course is an introduction to the art and architecture of the Islamic world from the emergence of Islam in the 7th century until the Mongol invasion of Iraq and Iran in the mid-13th century. It focuses on major monuments and developments in the arts, such as calligraphy, mosaics and ceramics, under the Umayyad Empire, the Abbasids, and their successor states in the vast regions between North Africa and the Iranian world. In each context, objects and buildings will be studied both in relation to each other and as witnesses of the social life and cultural sensitivities of their time, using insights from textual sources. Issues of interpretation will be critically considered.

IAA 623 **History of Islamic Art and Architecture II (1250-1900)** **3 credits**

This course is an introduction to the art and architecture of the Islamic world from the Mongol invasion of Iraq and Iran in the mid-13th century until the fall of the Ottoman and Qajar empires in the early 20th century. It investigates such topics as the emergence of a new synthesis under the Ilkhanid and Timurid dynasties in Iran and Central Asia; the art and architecture of the Mamluk Sultanate in Egypt and Syria; and the three early modern empires of the Ottomans in the Mediterranean world, the Safavids in Iran and the Mughals in India. In each context, objects and buildings will be studied both in relation to each other and as witnesses of the social life and cultural sensitivities of their time, using insights from textual sources. Issues of interpretation will be critically considered.

IAA 625 **Survey of Architectural Typologies of the Islamic World** **3 credits**

This course aims to instill in the student a broad awareness of the diversity and the main achievements of Islamic architecture and the various typologies developed from the beginnings of Islam. It offers a chronological development of art and architecture in selected notable regions, the wide surveys will highlight the development of architectural designs of the Islamic world from the 7th through the 19th centuries, utilizing a wide spectrum of materials and production. The course examines the built form, functions, and activities relevant to the social, historical and cultural contexts, patterns of use, and evolving meanings attributed to buildings by their communities.

IAA 631 **Islamic Objects and Manuscripts** **3 credits**

This course offers students an opportunity to build up skills specific to key media in Islamic art, such as manuscripts, textiles and carpets, mosaics, woodwork, ceramics, metalwork and glasswork. It will involve hands-on sessions with objects at the Museum of Islamic Arts in Doha. Students will thus gain direct exposure to these different types of object and knowledge of published resources to aid their rigorous analysis.

IAA 632 **Museum and Exhibition Studies** **3 credits**

This course equips students with critical and practical skills to approach the display of Islamic in the context of museums. Issues related to the politics and socio-cultural context of display will be combined with aspects of exhibition planning, management and public interaction. This course provides an academic exposure toward the mechanisms of objects and art display in museums and exhibitions. The aim of the course is to explore and synthesize aspects of exhibition planning, management and public interaction either for physical and virtual museums. The course will cover systems and techniques of critical writing for exhibitions and displays for Islamic arts and objects. Students will gain the methods of organizing galleries and teaching spaces; this will include mounting displays and organization plus techniques and requirements for evaluating museum events and visits.

IAA 633 **Mosque Architecture Design** **3 credits**

This course introduces the architecture of mosques in different regions from the Andalusia, North Africa, Middle East, Fareast, and contemporary mosques in western cultures. Different aspects of old and contemporary mosques are introduced highlighting the mosque as a building type that became a symbol that functions as a point of reference, and provides an umbrella under which people of a common belief may unite and interact for legitimate human activities. This course develops design propositions from a close and critical engagement with significant built and un-built architectural and mosques exemplars. Working with changing and enduring values and associated questions of style, longevity and contemporaneity, students design a mosque project that anticipate future needs and respond to existing built fabric. Reflective and analytical drawings of precedents inform the production of projects that engage with cultural and disciplinary histories. Constraints for designing mosques are discussed with supporting cases that address typological issues, detailed design, ornamentation, and the impact on the surrounding community.

IAA 634 **Islamic Architecture and Urbanism in the 20th & 21st Centuries** **3 credits**

Connecting the architecture of the Arab world to various interrelated issues such as Westernization, modernization, and the relationship between the architect and the state. This course discusses the evolution of architecture in the eastern Arab world during the 20th and 21st centuries. Its geographic scope emphasizes Egypt, the Arabian Peninsula, and the Fertile Crescent. The course examines the production of certain works of architecture in the region as creative undertakings that address specific functional programs and physical givens ranging from technological conditions to climatic factors. It also presents the architecture of the region within the context of prevailing social, cultural, economic, and political forces while taking into account the urban transformations that took place in the 19 century worldwide and in many Islamic cities as well as issues of East-West interactions, modernity, tradition and heritage. The course links that architecture to the volatile conditions that have defined the evolution of the region during the period under consideration, and that have given the region considerable (and some would argue disproportionate) weight within the context of international politics.

IAA 635 **Contemporary Cities for Muslim Societies** **3 credits**

This course offers a series of positional interpretations and discussions of contemporary architecture in Muslim communities. It addresses the irony of identity, tradition, and modernity by critically outlining a number of aspects related to the status of architecture in selected Muslim cities including Aleppo, Cairo, Doha, Dubai, and other cities. Through a reading of trends that emerged over the three decades, students will be introduced to the concepts of Pan-Arabism, Mediterranean-ism and middle eastern-ism, post traditionalism, post colonialism, globalization, post-globalization, and the space of flows and their implications on the shaping of architectural identity in Muslim communities.

IAA 636 **Globalization, Cities and Urban Policies** **3 credits**

Middle Eastern and Gulf cities currently seem to be heavily under construction and rapidly globalizing. Some Gulf cities have been at the forefront of developing into a postmodern city, and other cities in the region have been presenting themselves as attractive locations and global hubs. While some are considered as Port cities, they are outstanding examples of integration into global networks. Evidently, economic ambitions-from fostering trade and production to stimulating tourism, sports and leisure industries-are important factors behind this. However, this brave new world is not without new ruptures, deepening fractures and increasing inequalities. Thus, this course will deal with manifold dimensions of contemporary urban development in the Middle East, with specific focus on the cities of the Arabian Gulf, including economic aspects and social consequences. To situate and interpret these case studies, the course will also engage in understanding and debating theoretical and conceptual approaches and recent interdisciplinary findings from comparative perspectives.

IAA 641 **Urban Interventions in Historic Islamic Cities** **3 credits**

This course provides a comprehensive discussion of the changes in urban land use and the socio-economic structure of urban settings in Muslim countries. Goals, plans and operations of adaptive reuse and regeneration of traditional as well as modern districts are discussed. Case studies from historic Middle Eastern and European cities are analytically presented. The course involves 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 different types of environments. The theoretical material will include consideration of aesthetics, urban morphology, rural settlement, design methods and sustainable development, and will encourage multidisciplinary and critical perspectives on these aspects.

IAA 642 **Physical Spaces and Spatial Humanities in Digital Societies** **3 credits**

Since the development of various digital gazetteers, physical environments and spaces have been involved in the digital humanities studies to examine the people's interaction and viability of spaces in digital forms. This module will explore this new phenomenon from a dual standpoint: (1) attention will be paid to the way our perception of physical and digital spaces evolved over the last years following the massive adoption of digital tools and platforms in our daily life and (2) the course will study how digital technologies interact with a spatially enabled database to retrieve and display results, and how they can add map-based interactive elements to various digital platforms. In this course, students will study how geographic information from history, archaeology and Cultural Heritage is organized using the appropriate digital tools in relation to place making and consumption. By using spatial data, students will elucidate people's behavior and interactions toward the physical environments and help in reshaping liable places to suit the societal needs and traditions. In order to reach successful and reliable results, the course will look at the basics of digital imaging, Geographic Information System (GIS), Space Syntax Analysis, and 'Volunteered Geographic Information' which underpins the maps on our tablets and smartphones, and consider how geography features in digital literary and textual analysis.

IAA 643 **Types and Typologies of Domestic Architecture** **3 credits**

This course explores the domestic sphere in an Islamic context. It aims to familiarize students with the history, structure, and social use of residential forms in areas that are now a part of Arabia, North Africa and Egypt, Greater Syria, Iran, Iraq, Turkey and the Ottoman Balkans. The course involves an overview of the ways these spaces have been imaged and imagined in art, literature, films, and scholarly texts. This course starts with the development of an aspirational design brief that accurately registers the culture and needs of existing and /or potential users. Skills are developed in the respectful apprehension of cultural and physical diversity and in the effective deployment of domestic architecture. Methods of communication that are accessible to lay audiences and which convey experiential qualities are employed at all stages of the design process in order to know how domestic architecture in Islamic societies contributed to the understanding of typological processes, urban fabric, and organisms.

IAA 695 **Master's Thesis Hours** **0-6 credits**

IFI 605 **Islamic Financial Contracts** **3 credits**

The course provides a rigorous introduction to applied corporate finance from the perspective of financial managers who are responsible for making significant investment and financing decisions. Students will also be exposed to critical views of corporate finance from an Islamic finance perspective. Major topics covered include capital budgeting, capital structure, corporate valuation, corporate restructuring, merger and acquisitions, dividend policies, and application of real options in corporate finance.

IFI 606 **Islamic Economics and Development in Theory and Practice** **3 credits**

This course provides students with an opportunity to use the tools of analysis they have learned in mainstream economics to analyze behavior in an economy where Shariah and Islamic Ethics run supreme. The course prepares the student to critically examine the theoretical development in Islamic economics. This course provides students skills and knowledge in order to analyze existing economic and development policies within an Islamic framework.

IFI 607 **Islamic Banking and Financial Markets** **3 credits**

This course provides a comprehensive orientation on the foundational principles of Islamic banking and financial markets. The course compares the Islamic financial markets with conventional mechanisms with specific reference to liquidity instruments, money and capital 'markets in theory and practice. This course exposes students to the fundamental principles underlying modern Islamic finance, as well as modern practices prevailing in this industry.

IFI 608 **Strategic Management in Islamic Finance** **3 credits**

This course introduces a strategic management perspective to Islamic finance in a holistic way by integrating various specialized functions such as marketing, finance, accounting, economic, management information systems, and human resource management. Some of the topics include competitive strategy, industry analysis, global competitiveness, international management, strategies for adjusting to the social, political, and economic environment, approaches for developing and implementing strategic plans in organizations, managerial values and ethics, and social issues in business.

IFI 615 **Islamic Corporate Finance** **3 credits**

The course provides a rigorous introduction to applied corporate finance from the perspective of financial managers who are responsible for making significant investment and financing decisions. Students will also be exposed to critical views of corporate finance from an Islamic finance perspective. Major topics covered include capital budgeting, capital structure, corporate valuation, corporate restructuring, merger and acquisitions, dividend policies, and application of real options in corporate finance.

IFI 617 **Islamic Asset and Fund Management** **3 credits**

The course aims to introduce the students to the concept of Mergers and Acquisitions, motives behind them and how to finance them. In addition to the views of Shariah regarding these subjects. The course also attempts to answer two questions: What is the difference between conventional feasibility studies and project evaluations when the principals of Shariah are applied. The second question is how Islamic financiers should deal with such difference.

IFI 691 **Internship** **3 credits**

This course helps students willing to pursue a career in the industry to work on an industry related project. This elective also supports the collaboration initiatives with the industry whereby industry-related research projects could be sourced from the industry. Students complete an individual project with external clients whereby they are able to put together what has previously been learnt in the study program.

IFI 695 **Master's Thesis Hours** **0-6 credits**

IFI 701 **Analysis of Financial Statements with Applications to Islamic Banks** **3 credits**

This course teaches the tools for assessing the past performance and future prospects of Islamic banks, conventional banks, and other nonfinancial firms using financial statements. The course covers techniques that are often used by financiers for evaluating credit and investment decisions; by corporate managers for assessing efficiency, performance and new opportunities; and by industry analysts, observers and regulators. Prior knowledge of accounting and finance is helpful but not necessary. Topics include: financial ratios; profitability analysis; risk analysis; forecasting financial statements; valuation models.

IFI 702 **Sustainable Finance and Impact Investing** **3 credits**

The course provides a rigorous introduction to sustainable Finance and impact Investing from the perspective of financial managers who are responsible for making significant investment and financing decisions. Students will also be exposed to critical views of sustainable Finance and impact Investing from an Islamic finance perspective. Major topics covered include green finance, sustainable and responsible investing, green and SRI sukuk, blended finance and venture philanthropy.

IFI 703 **Islamic Economics and Sustainable Development** **3 credits**

This course provides students with an opportunity to use the tools of analysis they have learned in mainstream economics to analyze behavior in an economy where Shari'ah and Islamic Ethics run supreme. The course prepares the student to critically examine the theoretical development in Islamic economics and sustainable development. This course provides students with skills and knowledge to analyze existing economic and development policies within an Islamic framework.

IFI 704 **Applied Quantitative Methods** **3 credits**

The course focuses on applied quantitative and econometric techniques for finance using financial calculators and computer software. Topics include: Net Present Value; Amortization Schedules; Descriptive Statistics; Probability; Inferential Statistics; Hypothesis Testing; Classical Linear Regression; Time-Series Modeling; Volatility Modeling; Panel Data; Empirical Research; Excel-based Financial Modeling.

IFI 705 **Legal, Regulatory and Institutional Aspects of Islamic Finance** **3 credits**

This course helps students analyze legal, institutional, regulatory, and supervisory issues related to Islamic financial institutions (IFIs). Topics include financial stability, risks in IFIs, legal and regulatory contextualization of the development of Islamic financial services, corporate governance, Shari'ah governance, financial inclusion, SDGs and IFIs, national and international financial regulatory and supervisory frameworks and institutions, and country experiences.

IFI 706 **Independent Studies** **3 credits**

Independent Studies course enables a more personalized study plan and allow more space for more research which is tailored toward student's career and research aspirations and is more linked to their field and background. This course comprises a supervised research project supported and complemented by class and supervisory discussions. It is designed for students to undertake original research in a selected area of Islamic finance and economics.

IFI 707 **Islamic asset, Funds & Portfolio Management** **3 credits**

The course introduces students to recent and emerging developments in the Islamic and responsible asset and mutual fund management universe. It applies the modern technique to build, implement, and assess optimal Sharia-compliant portfolios in the equity, Sukuk, and equity-Sukuk hybrid markets. Contemporary and emerging trends in responsible investments such as ESG concerns and technological revolution such as Fintechs. The course is a companion of Islamic Corporate Finance but can also be beneficial as a standalone elective course.

IFI 708 **Selected Topics in Applied Econometrics** **3 credits**

This course builds on the quantitative techniques in Islamic Finance by extending students quantitative research skills to an advanced level and to expose them to the various databases in Islamic Finance. This course will also present an advanced treatment of econometric principles for cross sectional, time series and panel data sets. The theoretical skills of measurement will be accompanied with the functional skills of software packages and combined with the practical knowledge to be able to make precise policy implication.

IFI 709 **Behavioural Islamic Economics and Finance** **3 credits**

This course exposes students to behavioural economics and its applications in the Islamic Finance. Behavioural Economics helps understanding how psychological aspects like emotions and group dynamics influence economic decisions. The course has two main objectives: 1) Reviewing main evidence provided by psychological and experimental economics on violations of classical economic assumptions such as perfect rationality, self-interest, time consistency, etc.; 2) Providing behavioural insights in explaining anomalies in different fields of economics such as Industrial Organization, Labour Markets, and Finance.

IFI 710 **Fintech and its Islamic Finance Applications** **3 credits**

IT-enabled innovations have reshaped the finance industry, leading to the emergence of Fintech. Big data analytics have changed how financial information is disseminated, processed and analysed. Individuals and institutions which are able to leverage the new IT to analyse the big financial data will have a leading edge in academia and in practice. It seeks to equip students with these highly coveted skills in the market with the applications to Islamic and sustainable finance instruments like P2P lending and Blockchain.

IFI 711 **Selected Topics in Applied Econometrics** **3 credits**

This course builds on the quantitative techniques in Islamic Finance by extending students quantitative research skills to an advanced level and to expose them to the various databases in Islamic Finance. This course will also present an advanced treatment of econometric principles for cross sectional, time series and panel data sets. The theoretical skills of measurement will be accompanied with the functional skills of software packages and combined with the practical knowledge to be able to make precise policy implication.

IFI 800 **Circular Economy and Comprehensive Development: An Islamic Perspective** **3 credits**

This course aims to strengthen the student's analytical ability when dealing with theoretical and empirical issues in the areas of Islamic comprehensive development and other related Islamic economic growth topics. The course prepares the student to participate effectively in the theoretical progress of development theories and economic paradigms in general and to propose innovative economic and development policies within an Islamic perspective. In the light of Maqasid Al Sharia, Qatar National Vision and UN Sustainable Development Goals the course prepares students in understanding the modalities, challenges and opportunities of transforming economies from linear to circular.

IFI 801 **Entrepreneurship, Ethics and Sustainability** **3 credits**

The course aims at equipping the student with a deep understanding of the pivotal role played by the entrepreneurs in developing businesses and promoting inclusive and sustainable economic growth and wealth. Entrepreneurship is a vision combined with abilities and skills to put together economic resources in such a manner that create benefit for the society. The course is designed to embed entrepreneurship with ethics and love of fellow human beings and other species to achieve the vision of "being mercy" for all. The course uses Islamic social finance as a support and enabling institutional mechanism in developing social enterprises.

IFI 802 **Applied Econometrics** **0 credits**

This course aims to present and discuss the most important statistical methods in applied economics and finance relevant for emerging economies cantered on local aspirations. In the course students are expected to learn and be able to apply the different types of appropriate and relevant econometric techniques in their research.

IFI 803 **Islamic Financial Structuring: Strategies and Contracts** **3 credits**

This course aims at equipping the students with tools of engineering and structuring Islamic finance contracts for different needs of economies transforming from linear to circular and in the rapidly changing market, technological and regulatory environment. Students will be able to link the design of financial contracts with the needs of a circular economy. Students will learn structure green, social and sustainable financial products meeting the needs for liquidity management, personal finance, SME finance, bridge finance, and long-term finance etc. The course also elaborates on alternative Sukuk structures and the choices of different bases for designing Sukuk such as contract combination.

IFI 804 **Applied Topics in Usul al Fiqh and Maqasid Al Sharia** **3 credits**

This course introduces students to the methodology of Ijtihad in Islamic law so that they will know the bases of Sharia financial rules and the way these are derived from the sources. The course intents to help students to understand the bases of differences in Islamic Fiqh schools, the reasons why jurists differ and the weight of different legal opinions. This course also aims to equip students with the necessary knowledge of the most important concepts in Maqasid al Sharia and their applications in Islamic finance and policy implication for economic transformation from linear to circular economies.

IFI 810 **Advanced Corporate Finance and Investment** **3 credits**

This course will provide the students with sound theoretical and empirical knowledge and techniques of corporate finance with applications to Islamic finance and circular economy. The aim is to increase the student's curiosity for research topics in this field and sharpen their critical perspective with respect to corporate finance issues. Upon successful completion of the course, the students will be able to both understand and analyze terminologies and explore the frontiers of modern corporate finance and corporate governance.

IFI 811 **Advanced Topics in Micro and Macro Economics: Islamic Perspectives** **3 credits**

This course will focus on the analytical tools of modern Microeconomics and Macroeconomics and analyze strategic behavior of rational decision making in situations of conflict and other interactions. It also attempts to equip students with the macroeconomic frontier issues relevant for their research in area of policies on Islamic banking and finance and Islamic economics.

IFI 812 **International Islamic Economic and Financial Relations** **3 credits**

The aim of this course is to enable the student to understand contemporary development in the theories and practices of international economics, economics of international giants and international institution, international financial relations and their interactions with domestic policies and developments

IFI 813 **Islamic Social Finance and Empowerment** **3 credits**

The third sector translated into social finance plays a very important role in the economies of many countries and the Islamic system gives it a very prominent role in correcting the inequalities that result from the functional distribution of wealth and income. This course aims at putting forward deep understanding of the economics of Islamic philanthropy as it includes ethical and application issues in addition to Islamic human rights of the vulnerable and deprived in the society. The course builds on the venture philanthropy concept to develop socially responsible micro and medium businesses in the circular economy.

IFI 814 **Islamic Economic History and Thought** **3 credits**

This course aims at developing critical thinking for developing innovative solutions and approaches by looking at history of thought and institutions in an objective way. Students shall raise critical questions and try linking these with current practices and offer guided solutions.

IFI 815 **Governance Legal and Regulatory Issues of Islamic Financial Institutions** **3 credits**

This course aims to prepare the students to understand the institutional building blocks and the architectural foundations as well as financial infrastructures that are needed for the working of a sound and resilient Islamic financial services industry. It aims to enable the students to understand why and how Islamic financial services are regulated and the legal environment under which Islamic financial services are being offered all over the world. The students will be able to critically assess the Sharia governance process for a circular economy. Students are expected to undertake case studies about the state of integrated reporting.

IFI 816 **Advanced Risk Management of Islamic Financial Institutions** **3 credits**

This course aims to provide better understanding of various types of risks that are embedded with the banking business in general and relate these to the risks underlying the Islamic banks and financial institutions; understand the importance of risk management in the banking industry in general and in the Islamic banking industry in particular.

IFI 817 **Financial Analysis and Portfolio Modelling** **3 credits**

This course aims to enable the students to analyze financial statements of companies, NGOs (for example, Waqf) and financial institutions, especially banks from various perspectives including that of investor or potential investor, lender (bank credit analysis), manager (to improve performance) and donor (to ensure effectiveness of charitable programs). The course also aims to give a thorough grounding in portfolio management and evaluation/assessment. While there are different topics that must be analyzed or studied on investment companies, the course focuses on the most recent innovations in asset allocation with a special view on the practical implementation of asset allocation models and their evaluation from the perspectives of Islamic finance.

IFI 821 **Advanced Topics in Islamic and Sustainable Economy** **3 credits**

This course enables students to explore the theories, models, and constructs related to the study and practice in sustainability. The course introduces students to the current state of knowledge on various topics including theories and models of growth and sustainable development, analysis & application in traditional and Islamic perspective; comprehensive human development and linkages between QNV, SDGs and Maqasid Al-Sharia; environmental concerns, the linear production, and circular production models.

IFI 822 **Advanced Topics in Islamic and Sustainable Finance** **3 credits**

This course exposes our PhD student to the latest empirical research in Islamic and Sustainable Finance. This will help them to identify relevant gaps and new research questions in the literature which requires answers through further research. The course includes advanced readings in selected topics in Islamic and Sustainable Finance. The course will provide profound knowledge in Islamic and sustainable finance and enable students to navigate to navigate the research literature and develop their own research agenda.

IFI 823 **Advanced Research Methods** **3 credits**

The course is designed to aid graduate students to improve their writing and research skills and is specific to Islamic and Sustainable Finance. It includes an overview of the writing mechanics and process, how to properly conduct research, cite sources and guidelines for writing papers. This course is more suitable for students who want to conduct a dissertation using qualitative and quantitative research techniques and extend the basic knowledge students learned in the general research methods course.

IFI 840 **Islamic Finance Independent Studies** **3 credits**

Independent Studies course enables a more personalized study plan and allow more space for more research which is tailored toward students' career and research aspirations and is more linked to their field and background. This course comprises a supervised research project supported and complemented by class and supervisory discussions. It is designed for students to undertake original research in a selected area of Islamic finance and economics.

IFI 841 **Sustainable Economy Independent Studies** **3 credits**

Independent Studies course enables a more personalized study plan and allow more space for more research which is tailored toward students' career and research aspirations and is more linked to their field and background. This course comprises a supervised research project supported and complemented by class and supervisory discussions. It is designed for students to undertake original research in a selected area of Islamic finance and economics.

IFI 890 **Dissertation** **0-9 credits**

IGA 600 **Islamic Worldview** **3 credits**

The onset of modernity shook the Muslim world reigniting debates and sparking renewed commitments and conceptualizations on the meaning and essence of an Islamic worldview. This course provides a foundation for understanding the Islamic worldview in comparison to other competing ideologies, such as liberalism, secularism and human rights. It examines some of the contemporary challenges, obstacles and opportunities for the Islamic worldview in the context of terrorism, globalization and universalism. Furthermore, it explores the real and perceived contestations between the modern and the Islamic worldview and the tangible impact this has on global affairs.

IGA 605 **Research Methods** **3 credits**

This course provides training in research methods from the perspective of the social sciences and Islamic studies. It aims to equip students with an understanding of the foundations of social scientific research. Students will be introduced to a range of core research skills that are necessary to undertaking research and designing research projects in various settings.

IGA 611 **Introduction to Islam and Global Affairs** **3 credits**

This course introduces the fundamental theories and concepts in understanding the nexus of Islam and global affairs. The course presents fun framework for understanding, practicing, and evaluating development, peacebuilding, human rights, governance and institutional reform, sustainability, global health, and related areas. It will begin by examining both the Western and Islamic theories and conceptual frameworks and provide a cross-disciplinary examination of issues central to global affairs, with a particular grounding in theories of international relations.

IGA 612 **Global Inequalities** **3 credits**

The course examines various manifestations of global inequalities such as poverty, access to employment, basic human services, etc. The course sheds light on the state of Muslim economies and their performance in meeting United Nation Sustainable Development Goals and other globally accepted indicators of development. Furthermore, the course looks into the role of Islamic beliefs, values and ethics in addressing the challenges brought by global inequalities.

IGA 613 **Islam, Conflict Transformation and Peacebuilding** **3 credits**

This course is introduces the students to the theories and practices of peace studies. It examines various theoretical and conceptual frameworks that shape the field and assesses their applicability within different contexts. The course also highlights critical issues that are directly related to the practices of peacebuilding and conflict transformation.

IGA 622 **Islam and Global Governance** **3 credits**

The course introduces students to the structures and actors of international Muslim organizational work against the background of the emergence of world polity structures since the early 20th century. It surveys the development of multilateral cooperation structures such as the United Nation and its affiliates and the range of Muslim organizational work ranging from international cooperation in different fields to educational and relief organizations.

IGA 627 **Special Topics in Islam and Global Affairs** **3 credits**

This course addresses a wide spectrum of topics which may vary based on the time it is offered. Depending on the specific interests of the cohort, global trends and Integrative Lab Projects in partnership with global organizations affiliated with the IGA program, the course intends to equip students with pressing challenges, issues and areas that are of critical importance for Islam and Global Affairs.

IGA 628 **Globalization & Faith Based Development** **3 credits**

This course examines the locus of faith-based development as a form of protecting and promoting human security as a concept distinct from national security. Faith based development and the role religious organizations have been playing through transnational actors—from global elites to NGOs, intergovernmental organizations to supranational bodies—work together to promote human wellbeing fostered by faith based mechanisms, agenda and tools. The course emphasizes particular attention to integral human development and community building that promotes alternative forms of security in a transforming global order.

IGA 629 **Humanitarian Actions in the Muslim World** **3 credits**

The course aims to provide students with an interdisciplinary introduction to the processes, events and policy debates shaping responses to war-related humanitarian crises, including emergency interventions in situations of ongoing-armed conflict, and post-conflict recovery in the Muslim world. It enables students to make independent, critical and constructive contributions to humanitarian policies and the implementation of humanitarian activities. The course will analyze humanitarian responses with a particular focus on the Muslim World offering insights into the complexity of local realities in afflicted regions.

IGA 689 **Integrative Lab** **3 credits**

Under the supervision of a faculty member, student is assigned to work in collaboration with a local or an international organization or a similar entity and conduct research that is useful for the thesis project undertaken.

IGA 695 **Master's Thesis Hours** **0-6 credits**

ISF 602 **Principles and Objectives of Islamic Law** **3 credits**

This course introduces the students to the methodology of Ijtihad in Islamic law through the study of principles and objectives of Islamic law. The course introduces the students to the various Sharia sources and explains to them how Sharia financial rules are derived from the sources. The course is also designed to help students understand the bases of differences in Islamic Fiqh schools, the reasons why jurists differ, and the weight of different legal opinions. This course also aims to equip students with the necessary knowledge of the most important concepts in Maqasid al Sharia and their applications in Islamic finance.

ISF 605 **Research Methods** **3 credits**

The course is designed to aid graduate students to improve their writing and research skills and is specific to Islamic and Sustainable Finance. It includes an overview of the writing mechanics and process, how to properly conduct research, cite sources and guidelines for writing papers. This course is more suitable for students who want to conduct a dissertation using qualitative and quantitative research techniques and extend the basic knowledge students learned in the general research methods course.

IST 621 **Sustainable Islamic Urbanism: Past and Present** **3 credits**

This course offers a contemporary understanding of the Muslim city. It draws heavily on the writings of key scholars and the way in which each has developed his/her thoughts on the role of Islam in shaping the urban form, and the overall built environment. The course covers issues that pertain to Islamic perspectives to urban spatial structures, the physical aspects of the urban form, and the role of the socio-cultural factors and legal system in the formation of Muslim cities.

This course is the equivalent of UDA 620.

IST 636 **Quranic Civilizations, Geography and Archeology** **3 credits**

This course provides an in-depth study of the different human civilizations relevant to the Quran in different contexts, including the historical, geographical, and environmental. It compares the content of the Quran with modern archaeological discoveries and prepares students to investigate the archaeological records mentioned in the Quran to understand the history of mankind and the evolution of cultures and civilizations.

ARA 501 **Arabic Language and Culture Learning - Beginner level** **0 credits**

Learners will be guided to understand the elements of the language, the exposure between them and the language will be through writing, by comprehending written symbols or images of letters and their sounds. To distinguish between vocabularies in the context used initially and then linking them in sentences and paragraphs. Aiming to understand the logic of the syntax and understand the grammar in a functional manner; to reach the desired competence in the skills of listening, speaking, reading and writing.

ARA 502 **Arabic Language and Culture Learning - Intermediate level** **0 credits**

Students acquire a higher level of vocabulary and grammar through more advanced contexts and sets of cognitively and culturally rich texts. Texts on Arab history, contemporary issues, famous Arab personalities and landmarks, will be presented to provide a rich and varied dictionary. Students study fragmented press texts from newspapers published in Arabic on various topics such as: environment, politics, economics, community affairs and topics that suit the potential of students in order to help them to produce their own texts.

ARA 503 **Arabic Language and Culture - Advanced level** **0 credits**

Students receive a wide range of high-level texts representing the Arab civilization and Arab thought, texts that address the current state of affairs in the world. All of this is invested in the service of conversation and writing, so that students take the greatest role in creating their texts and ˜adopting™ the language in dialogues derived from Arab societies, and then presenting them orally or in writing. Students will speak on important topics of diverse economic, social and political dimensions.

COLLEGE OF SCIENCE AND ENGINEERING

The College of Science and Engineering (CSE) aims to be a world-class multidisciplinary college with significant positive impact on Qatar, the region, and globally, in the fields of science, engineering, and technology. To accomplish this, we are advancing knowledge and nurturing technically grounded leaders and innovators through teaching and research across a range of carefully targeted programs. The college aims to serve societal needs, with a focus on an integrated multi-disciplinary curriculum and multi-disciplinary research in science and engineering.

For more information, **CLICK HERE**

Academic Programs

Bachelor of Science in Computer Engineering

The aim of HBKU's Bachelor of Science in Computer Engineering program is to produce globally competitive computer engineering professionals for Qatar, the region, and the wider world.

The program is built on HBKU's unique model of developing interdisciplinary programs that draw on the expert knowledge of its partner institutions alongside its own faculty. This means that students are able to take courses provided by Texas A&M University at Qatar and Carnegie Mellon University in Qatar in addition to the comprehensive range of course offerings from HBKU.

For more information, **CLICK HERE**

Master of Data Analytics in Health Management

The Master of Data Analytics in Health Management (MDA-HM) program is the first of its kind in the world and aims to train talented scientists and researchers to effectively contribute to the design and implementation of data analytic tools in health care systems in Qatar and beyond.

The HBKU MDA-HM program aims to equip students with knowledge of the latest advances in the tools and principles of big data handling and analysis and their application in managing the ever-growing health data.

For more information, **CLICK HERE**

Master of Information Systems in Health Management

The Master of Information Systems in Health Management is a unique program designed to prepare students for professional roles in the design and management of information systems and services in healthcare organizations.

While Qatar has already started the digitization of health records and implementation of digital-based data collection and storage systems, there is limited access to expertise in implementation and management of such health information systems.

For more information, **CLICK HERE**

Master of Science in Cybersecurity

Cybersecurity is a multidisciplinary field addressing issues that ensure secure and reliable operations at all levels of interconnected computing and networking systems. The Master of Science in Cybersecurity is designed to train graduate scholars, professionals, entrepreneurs, leaders, and researchers in the advanced knowledge and skills required to fully understand and implement the technologies, tools, management methods, and policy issues related to cybersecurity.

This Master of Science program not only covers multidisciplinary fields related to cybersecurity technology but also examines policy, ethics, and management related to IT security and cyber threats. The program leverages strong partnerships and collaborations both within HBKU and beyond the university. Delivery of the program involves collaborations with HBKU's research institutes, most notably with QCRI.

For more information, **CLICK HERE**

Master of Science in Data Science and Engineering

The Master of Science program in Data Science and Engineering aims to provide students with a strong foundation in data engineering, 'big data' science, and data analysis. The program integrates the knowledge, expertise and educational assets of HBKU and its research institutes in data collection, management and analytics, and scalable data-driven knowledge discovery, as well as the fundamental concepts behind these techniques.

For more information, **CLICK HERE**

Master of Science in Logistics and Supply Chain Management

The Master of Science (MS) and Doctor of Philosophy (PhD) programs in Logistics and Supply Chain Management (LSCM) offer innovative multidisciplinary curricula featuring a unique learning and research experience for students.

During the course of their academic studies at CSE's Division of Engineering Management and Decision Sciences, students will develop essential skills and a knowledge of engineering, management, and decision-making processes.

For more information, **CLICK HERE**

Master of Science in Sustainable Energy

CSE's Sustainable Energy Master's program provides students with extensive knowledge in topics related to sustainable energy and the impact of growth, urbanization, transportation and manufacturing on energy and overall sustainable development. The programs also look at the implications and drivers of sustainable policymaking on society, the economy, and the environment.

For more information, **CLICK HERE**

Master of Science in Sport and Entertainment Management

The Master of Science in Sport and Entertainment Management (MSEM) is offered by Hamad Bin Khalifa University's College of Science and Engineering (CSE), working toward a joint degree with the University of South Carolina (USC).

Identified as the first master's degree in sports and entertainment management in Qatar and one of a few in the MENA region, the program trains and prepares students for management and leadership roles in the sports and entertainment industries. In 2018, USC's MSEM program was ranked number 6 worldwide by Sport Business International.

For more information, **CLICK HERE**

Master of Science in Sustainable Environment

CSE's Sustainable Environment Master's program provides students with extensive knowledge in topics related to sustainable environment issues. These include the effect of human development on the environment; the causes, impact and control of pollution; and the demands of a growing global and regional population and economic development on natural resources and the environment.

For more information, **CLICK HERE**

PhD in Computer Science and Engineering

CSE's PhD program in Computer Science and Engineering provides students with a solid, fundamental and advanced education, as well as strong research experience and a broad understanding of aspects related to computer science and engineering that will translate into exciting, challenging, and well-compensated job opportunities in this high-demand field.

For more information, **CLICK HERE**

PhD in Logistics and Supply Chain Management

The Doctor of Philosophy (PhD) in Logistics and Supply Chain Management (LSCM) offers innovative multidisciplinary curricula featuring a unique learning and research experience for students. During the course of their academic studies at CSE's Division of Engineering Management and Decision Sciences, students will develop essential skills and a knowledge of engineering, management, and decision-making processes.

For more information, **CLICK HERE**

PhD in Sustainable Energy

CSE's Sustainable Energy PhD program provides students with extensive knowledge in topics related to sustainable energy and the impact of growth, urbanization, transportation and manufacturing on energy and overall sustainable development.

The programs also look at the implications and drivers of sustainable policymaking on society, the economy, and the environment.

For more information, **CLICK HERE**

PhD in Sustainable Environment

CSE's Sustainable Environment PhD program provides students with extensive knowledge in topics related to sustainable environment issues. These include the effect of human development on the environment; the causes, impact and control of pollution; and the demands of a growing global and regional population and economic development on natural resources and the environment.

For more information, **CLICK HERE**

Study Plans

Bachelor of Science in Computer Engineering

Minimum hours required to complete program **129 CH**

Core Courses		**96 CH**
CPEG 110	Principles of Computing	3
CPEG 111	Introduction to Computer Engineering	3
CPEG 127	Concepts of Mathematics	3
CPEG 151	Fundamentals of Programming and Computer Science	4
CPEG 152	Principles of Imperative Computing	3
CPEG 213	Introduction to Computer Systems	4
CPEG 214	Electrical Circuit Theory	4
CPEG 217	Probability Theory and Random Processes	3
CPEG 300	Embedded System Design	3
CPEG 330	Data Structures	3
CPEG 344	Digital Signal Processing	3
CPEG 410	Final Year Project I	4
CPEG 411	Final Year Project II	4
ECEN 248*	Introduction to Digital Systems Design	4
ECEN 314*	Signals and Systems	3
ECEN 325*	Electronics	4
ECEN 350*	Computer Arch & Design	4
ENGL 104*	Composition and Rhetoric	3
ENGL 210*	Scientific & Technical Writing	3
ENGR 216*	Experimental Physics and Engineering Lab II - Mechanics	2
ENGR 217*	Experimental Physics and Engineering Lab III - Electricity and Magnetism	2
ENGR 482*	Ethics & Engineering	3
MATH 151*	Engineering Mathematics I	4
MATH 152*	Engineering Mathematics II	4
MATH 251*	Engineering Mathematics III	3
MATH 308*	Differential Equations	3
MATH 311*	Topics in Applied Mathematics	3
PHYS 206*	Newtonian Mechanics for Engineering and Science	3
PHYS 207*	Electricity and Magnetism for Engineering and Science	3
UCC Electives	**6 Courses**	**18 CH**
Creative Arts		
CRAF 491*	Topics: Jewelry	3
ENGL 212*	Introduction to Drama	4
ENGL 219*	Literature & the Other Arts	3
ENGL 388*	Professional, Scientific & Technical Writing	3
GDES 491*	Rapid Prototyping	3
LANG 216*	Literature of Arabic Speaking	3
MUSC 201*	Music and the Human Experience	3
Humanities, Social and Political Science		
ANTH 201*	Intro to Anthropology	3
ARTF 115*	Art History Survey	3
COMM 335*	Intercultural Communication	3
COMM 365*	International Communication	3
HIST 105*	History of the U.S.	3
HIST 106*	History of the U.S.	3
HIST 115	History & Theory of Architecture - Islamic/Arab Civilizations	3
HIST 230*	American Military History	3
HIST 367*	Disastrous Encounters	3
HUSI 491*	College Topics	3
INST 222*	Foundations of Education in a Multicultural Society	3
INTE 242*	Introduction to Science and Technology Studies	4
POLS 206*	American National Government	3
POLS 207*	State and Local Government	3
POLS 242	Islamism & Politics in ME	4

Bachelor of Science in Computer Engineering

Minimum hours required to complete program **129 CH**

PSYC 211*	Cognitive Psychology	3
PSYC 241*	Social Psychology	3
Business		
BUS 110*	Business Computing	3
BUS 122*	Intro to Accounting	3
BUS 381*	Marketing I	3
BUS 482*	Pricing Strategy	3
ECON 242	Principles of Economics	4
FIN 101	Ethical Finance	3
Engineering Electives	**5 Courses**	**15 CH**
CPEG 418	Introduction to Scientific Visualization	3
CPEG 460	Computer Networks	3
CPEG 462	Cybersecurity Fundamentals	3
CS 440	Distributed Systems	4
CS 487*	Introduction to Comp Security	4
ECEN 420*	Linear Control Systems	3
ECEN 449*	Microprocessor Systems Design	3
ECEN 455*	Digital Communications	4
ECEN 489*	Special Topics	3
MATH 414*	Fourier Series and Wavelets	3
CPEG 453	Information and Communication Technology Accessibility	3
RO 311*	Introduction to Robotics	3
CS 282*	AI for Medicine	3
ECEN 446*	Information Theory, Inference and Learning Algorithms	3
ECEN 438*	Power electronics	3

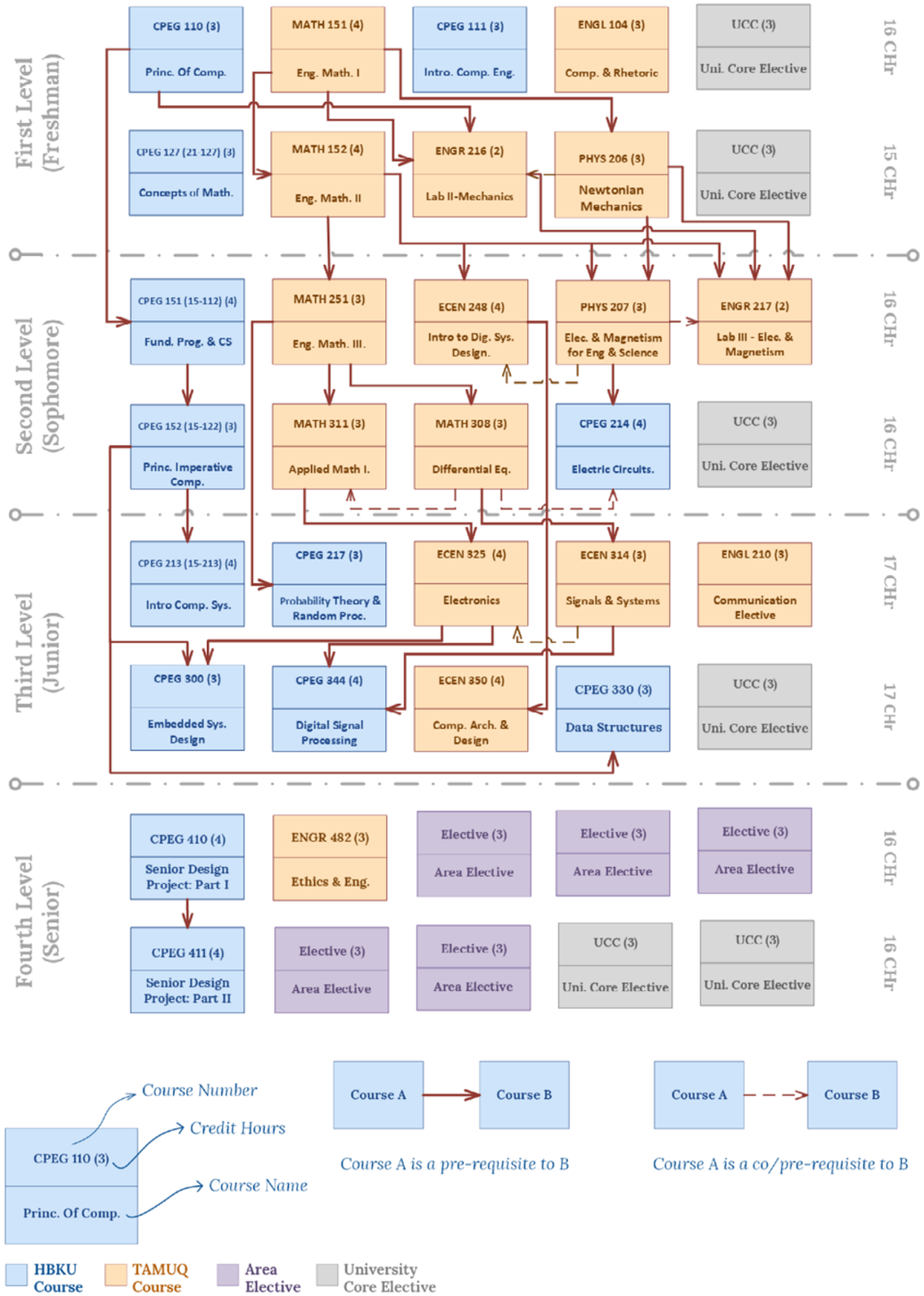
**Courses Offered by a Partner University*

Texas A&M University Qatar	
ECEN 248	Introduction to Digital Systems Design
ECEN 314	Signals and Systems
ECEN 325	Electronics
ECEN 350	Computer Arch & Design
ENGL 104	Composition and Rhetoric
ENGL 210	Scientific & Technical Writing
ENGR 216	Experimental Physics and Engineering Lab II - Mechanics
ENGR 217	Experimental Physics and Engineering Lab III - Electricity and Magnetism
ENGR 482	Ethics & Engineering
MATH 151	Engineering Mathematics I
MATH 152	Engineering Mathematics II
MATH 251	Engineering Mathematics III
MATH 308	Differential Equations
MATH 311	Topics in Applied Mathematics
PHYS 206	Newtonian Mechanics for Engineering and Science
PHYS 207	Electricity and Magnetism for Engineering and Science
ENGL 219	Literature & the Other Arts
MUSC 201	Music and the Human Experience
ANTH 201	Intro to Anthropology
COMM 335	Intercultural Communication
COMM 365	International Communication
HIST 105	History of the U.S.
HIST 106	History of the U.S.
HIST 230	American Military History

Bachelor of Science in Computer Engineering

Minimum hours required to complete program **129 CH**

INST 222	Foundations of Education in a Multicultural Society
POLS 206	American National Government
POLS 207	State and Local Government
ECEN 420	Linear Control Systems
ECEN 449	Microprocessor Systems Design
ECEN 455	Digital Communications
ECEN 489	Special Topics
MATH 414	Fourier Series and Wavelets
Virginia Commonwealth University Qatar	
CRAF 491	Topics: Jewelry
GDES 491	Rapid Prototyping
ARTF 115	Art History Survey
HUSI 491	College Topics
Northwestern University Qatar	
ENGL 212	Introduction to Drama
INTE 242	Introduction to Science and Technology Studies
Carnegie Mellon University Qatar	
LANG 216	Literature of Arabic Speaking
HIST 367	Disastrous Encounters
PSYC 211	Cognitive Psychology
PSYC 241	Social Psychology
BUS 110	Business Computing
BUS 122	Introduction to Accounting
BUS 381	Marketing I
BUS 482	Pricing Strategy
CS 487	Introduction to Comp Security



Master of Data Analytics in Health Management

Minimum hours required to complete program **33 CH**

Core Courses		**12 CH**
ICT 660	Principles of Health Informatics	3
ICT 665	Artificial Intelligence & Machine Learning in Healthcare	3
ICT 666	Computational Bioinformatics	3
GPM 601	Research Methods and Ethics in Health and Genomics	3
Elective Courses		**12 CH**
Free elective: Students can take one course from any HBKU program		
CSE 602	Statistics for Science and Engineering	3
CSEG 710	Advanced Algorithms and Data Structures	3
DSEG 660	Applied Deep Learning	3
DSEG 733	Advanced Data Management Systems	3
DSEG 735	Learning from Data	3
DSEG 760	Machine Learning	3
ICT 620	Computer Graphics	3
ICT 632	Advanced Applications of the Web and Internet	3
ICT 668	Medical Image Processing	3
ICT 671	Information Systems Management	3
ICT 675	Healthcare Information Systems	3
ICT 676	Information Systems Analysis and Design	3
ICT 690	Special Topics	3
ICT 705	Applied Data Analytics	3
ICT 706	Independent Studies	3
ICT 716	Data Science Tools and Applications	3
ICT 736	Interactive Design for Health care	3
GPM 604	Advanced Genetics	3
GPM 720	Pharmacogenomics	3
CLS 726	Proteomics in Precision Medicine	3
EPID 700	Introduction to Epidemiology	3
Seminar		**0 CH**
Must pass one time		
ICT 701	Graduate Research Seminars	0
Thesis or Project		**9 CH**
ICT 695	Master's Thesis Hours	0-6
Or		
ICT 698	Industrial Project	6
	One elective from list above	3
Non-Course Requirements		**0 CH**
699	Thesis Defense	0

Master of Information Systems in Health Management

Minimum hours required to complete program **33 CH**

Core Courses		**12 CH**
ICT 670	Information Technology Project Management	3
ICT 671	Information Systems Management	3
ICT 675	Healthcare Information Systems	3
ICT 676	Information Systems Analysis and Design	3
Electives Courses		**15 CH**
Free elective: Students can take one course from any HBKU program		
CSE 602	Statistics for Science and Engineering	3
CSEG 710	Advanced Algorithms and Data Structures	3
CYSE 630	Computer and Network Security	3
CYSE 640	Security Risk Analysis	3
CYSE 720	Data Privacy	3
DSEG 733	Advanced Data Management Systems	3
DSEG 735	Learning from Data	3
ICT 632	Advanced Applications of the Web and Internet	3
ICT 660	Principles of Health Informatics	3
ICT 665	Artificial Intelligence & Machine Learning in Healthcare	3
ICT 666	Computational Bioinformatics	3
ICT 668	Medical Image Processing	3
ICT 690	Special Topics	3
ICT 705	Applied Data Analytics	3
ICT 706	Independent Studies	3
ICT 716	Data Science Tools and Applications	3
ICT 736	Interactive Design for Health care	3

Seminar		**0 CH**
Must pass one time		
ICT 701	Graduate Research Seminars	0
Project		**6 CH**
ICT 698	Industrial Project	6

Master of Science in Cybersecurity

Minimum hours required to complete program **33 CH**

Core Courses		**12 CH**
CYSE 610	Applied Cryptography	3
CYSE 630	Computer and Network Security	3
CYSE 640	Security Risk Analysis	3
ICT 601	Research Methods and Ethics	3
Elective Courses		**12 CH**
Free elective: Students can take one course from any HBKU program		
CSE 602	Statistics for Science and Engineering	3
CSEG 605	Convex Optimization for Large-Scale and Distributed Systems	3
CSEG 710	Advanced Algorithms and Data Structures	3
CSEG 780	Principles of Computer System Design	3
CYSE 720	Data Privacy	3
CYSE 727	Wireless Networks & Security	3
CYSE 728	Distributed Systems Security	3
CYSE 729	Multimedia Security	3
CYSE 744	Network Forensics	3
CYSE 745	Computational Forensics	3
DSEG 733	Advanced Data Management Systems	3
DSEG 735	Learning from Data	3
ICT 632	Advanced Applications of the Web and Internet	3
ICT 690	Special Topics	3
ICT 705	Applied Data Analytics	3
ICT 706	Independent Studies	3
ICT 716	Data Science Tools and Applications	3
ICT 720	Cloud Computing	3
ICT 725	Quantum Computing	3

Seminar		**0 CH**
Must pass one time		
ICT 701	Graduate Research Seminars	0
Thesis or Project		**9 CH**
ICT 695	Master's Thesis Hours	0-6
Or		
ICT 698	Industrial Project	6
	One elective from list above	3
Non-Course Requirements		**0 CH**
699	Thesis Defense	0

Master of Science in Data Science and Engineering

Minimum hours required to complete program **33 CH**

Core Courses		**12CH**
CSE 602	Statistics for Science and Engineering	3
DSEG 733	Advanced Data Management Systems	3
ICT 601	Research Methods and Ethics	3
ICT 705	Applied Data Analytics	3
Elective Courses		**12 CH**
Free elective: Students can take one course from any HBKU program		
CSEG 605	Convex Optimization for Large-Scale and Distributed Systems	3
CSEG 710	Advanced Algorithms and Data Structures	3
CSEG 780	Principles of Computer System Design	3
CYSE 727	Wireless Networks & Security	3
DSEG 660	Applied Deep Learning	3
DSEG 682	Special Topics in Data Science and Engineering	3
DSEG 735	Learning from Data	3
DSEG 760	Machine Learning	3
ICT 632	Advanced Applications of the Web and Internet	3
ICT 660	Principles of Health Informatics	3
ICT 665	Artificial Intelligence & Machine Learning in Healthcare	3
ICT 666	Computational Bioinformatics	3
ICT 668	Medical Image Processing	3
ICT 690	Special Topics	3
ICT 706	Independent Studies	3
ICT 716	Data Science Tools and Applications	3
ICT 736	Interactive Design for Health care	3
ICT 720	Cloud Computing	3
ICT 620	Computer Graphics	3
ICT 615	AI for Social Media and Multimedia Applications	3

Seminar		**0 CH**
Must pass one time		
ICT 701	Graduate Research Seminars	0
Thesis or Project		**9 CH**
ICT 695	Master's Thesis Hours	0-6
Or		
ICT 698	Industrial Project	6
	One elective from list above	3
Non-Course Requirements		**0 CH**
699	Thesis Defense	0

Master of Science in Logistics and Supply Chain Management

Minimum hours required to complete program **33 CH**

Core Courses		**9 CH**
LSCM 601	Research Ethics and Methods	3
LSCM 611	Supply Chain Management	3
LSCM 607	Optimization Models and Methods	3
Elective Courses		**15 CH**
Free elective: Students can take one course from any HBKU program		
LSCM 605	The Pricing of Financial Contracts	3
LSCM 617	Production and Operations Management	3
LSCM 621	Project Management in Logistics	3
LSCM 625	Behavioral Logistics Management	3
LSCM 627	Simulation Optimization Methods	3
LSCM 631	Port Management and Maritime Logistics	3
LSCM 635	Business Performance Management	3
LSCM 641	Facility and Transportation Management	3
LSCM 651	Financial Techniques for Investment Appraisal	3
LSCM 671	Principles of Reinforcement Learning for Engineering Management	3
LSCM 706	Independent studies	3
LSCM 711	Supply Chain Modeling and Optimization	3
LSCM 721	Advanced Topics in Supply Chain Management	3
LSCM 731	Industry 4.0 in Manufacturing and Supply Chain	3
SPTE 777	Sports and Events Logistics	3

Seminar		**0 CH**
Must pass once		
LSCM 701	Research Seminar	0
Thesis or Project		**9 CH**
LSCM 695	Master's Thesis Hours	0-6
Or		
LSCM 690	Applied Project	6
	One elective from list above	3
Non-Course Requirements		**0 CH**
699	Thesis Defense	0

Master of Science in Sport and Entertainment Management

Minimum hours required to complete program **36 CH**

Core Courses		**21 CH**
SPTE 640	Venue Management: Principles and Practices	3
SPTE 701	Management in the Sport and Entertainment Industry	3
HRSM 700	Quantitative Methods in Hospitality, Retail and Sport Management	3
HRSM 788	Business Analytics in Hospitality, Retail and Sport Management	3
Law 760	Sports Law	3
SPTE 760	Principles of Sport and Entertainment Marketing	3
SPTE 790	Sport and Entertainment Finance	3
Elective Courses		**9 CH**
Optional: students may take electives from outside of Sport and Entertainment Management		
SPTE 590	Special Topics in Sport and Entertainment	3
SPTE 736	Sport Event Entrepreneurship	3
SPTE 670	Special Topics in Global Sport	3
SPTE 777	Sports and Events Logistics	3
SPTE 781	Seminar on the Olympic Games	3
SPTE 798	Directed Study in Sports and Entertainment Management	3
HRSM 650	Field Project in Hospitality, Retail and Sport Management	3
Thesis or Two Electives		**6 CH**
SPTE 799	Thesis Preparation	6
Or		
	Elective 1	3
	Elective 2	3
Non-Course Requirements		**0 CH**
699	Thesis Defense	0

Master of Science in Sustainable Energy

Minimum hours required to complete program **33 CH**

Core Courses		**9 CH**
SENS 611	Sustainability Fundamentals and Tools	3
SENS 601	Research Methods and Ethics	3
Take one of the following		
CSE 602	Statistics for Science and Engineering	3
CSE 603	Advanced Mathematics	3
CSE 605	Computational Data Analytics	3
CSE 606	Numerical Methods for Scientists and Engineers	3
CSE 607	Advanced Systems Optimization	3
Elective Courses		**15 CH**
Free elective: Students can take one course from any HBKU program		
CSE 770	Nano-Bio-Technology	3
CSE 785	Innovation Entrepreneurship Leadership I	3
CSE 786	Innovation Entrepreneurship Leadership II	3
SENR 615	Oil and Gas Geopolitics	3
SENR 727	Science and Engineering of Thin Films and Interfaces	3
SENR 740	Energy Resources, Generation, Science and Technology	3
SENR 741	Oil and Gas Technology and Economics	3
SENR 742	The Life Cycle of Oil and Gas Fields	3
SENR 743	Photovoltaic Solar Technology	3
SENR 744	Renewable Energy Systems	3
SENR 750	Energy Storage Devices and Systems	3
SENR 754	Smart Power Grids	3
SENR 755	Micro-grids: Operation, Management and Planning	3
SENS 681	Integrated Sustainable Design for the Built Environment	3
SENS 706	Independent Studies	3
SENS 712	Environmental Quality and Health	3
SENS 714	Sustainability: Energy, Environment and Economics	3
SENS 715	Life Cycle Assessment - LCA	3
SENS 716	Efficiency: Resource Use and Behavioral Analysis	3
SENS 718	Sustainable Cities and Urban Mobility	3
SENS 719	Energy Water Food (EWF) Nexus	3
SENS 721	Advanced Materials Synthesis and Characterization	3
SENS 722	Sustainable Chemical Industry - A Green Approach	3
SENS 728	Electrochemistry and Environmental Corrosion	3
SENS 729	Electrochemistry and Electrochemical Processing	3
SENS 780	Green Building: Design, Construction and Operation	3
SENS 785	Innovation Entrepreneurship Leadership I	3
SENS 786	Innovation Entrepreneurship Leadership II	3
SENS 791	Geospatial Information Systems	3
SENV 713	Environmental Impact and Management Systems	3
SENV 745	Energy Nano-Technology	3
SENV 760	Air Quality and Climate Change	3
SENV 761	Atmospheric Chemistry and Climate Change	3
SENV 770	Desalination Technologies	3
SENV 772	Water and Wastewater Treatment	3
SENV 773	Water Resources Management	3
SENV 774	Water Treatment and Reuse	3
SENV 776	Solid and Hazardous Waste Management	3
SENV 778	Principles of Hydrogeology	3
Seminar		**0 CH**
Must pass twice		
SENS 701	Research Seminars	0
Thesis or Project		**9 CH**
SENS 695	Master's Thesis Hours	0-6
Or		
SENS 698	Industrial/Applied Project	6
	Elective 1	3
Non-Course Requirements		**0 CH**
699	Thesis Defense	0

Master of Science in Sustainable Environment

Minimum hours required to complete program **33 CH**

Core Courses		**9 CH**
SENS 601	Research Methods and Ethics	3
SENS 611	Sustainability Fundamentals and Tools	3
Take one of the following		
CSE 602	Statistics for Science and Engineering	3
CSE 603	Advanced Mathematics	3
CSE 605	Computational Data Analytics	3
CSE 606	Numerical Methods for Scientists and Engineers	3
CSE 607	Advanced Systems Optimization	3
Elective Courses		**15 CH**
Free elective: Students can take one course from any HBKU program		
CSE 770	Nano-Bio-Technology	3
CSE 785	Innovation Entrepreneurship Leadership I	3
CSE 786	Innovation Entrepreneurship Leadership II	3
SENR 615	Oil and Gas Geopolitics	3
SENR 727	Science and Engineering of Thin Films and Interfaces	3
SENR 740	Energy Resources, Generation, Science and Technology	3
SENR 741	Oil and Gas Technology and Economics	3
SENR 742	The life cycle of oil and gas fields	3
SENR 743	Photovoltaic Solar Technology	3
SENR 744	Renewable Energy Systems	3
SENR 750	Energy Storage Devices and Systems	3
SENR 754	Smart Power Grids	3
SENR 755	Micro-grids: Operation, Management and Planning	3
SENS 681	Integrated Sustainable Design for the Built Environment	3
SENS 706	Independent Studies	3
SENS 712	Environmental Quality and Health	3
SENS 714	Sustainability: Energy, Environment and Economics	3
SENS 715	Life Cycle Assessment - LCA	3
SENS 716	Efficiency: Resource Use and Behavioral Analysis	3
SENS 718	Sustainable Cities and Urban Mobility	3
SENS 719	Energy Water Food (EWF) Nexus	3
SENS 721	Advanced Materials Synthesis and Characterization	3
SENS 722	Sustainable Chemical Industry - A Green Approach	3
SENS 728	Electrochemistry and Environmental Corrosion	3
SENS 729	Electrochemistry and Electrochemical Processing	3
SENS 780	Green Building: Design, Construction and Operation	3
SENS 785	Innovation Entrepreneurship Leadership I	3
SENS 786	Innovation Entrepreneurship Leadership II	3
SENS 791	Geospatial Information Systems	3
SENV 713	Environmental Impact and Management Systems	3
SENV 745	Energy Nano-Technology	3
SENV 760	Air Quality and Climate Change	3
SENV 761	Atmospheric Chemistry and Climate Change	3
SENV 770	Desalination Technologies	3
SENV 772	Water and Wastewater Treatment	3
SENV 773	Water Resources Management	3
SENV 774	Water Treatment and Reuse	3
SENV 776	Solid and Hazardous Waste Management	3
SENV 778	Principles of Hydrogeology	3
Seminar		**0 CH**
Must pass twice		
SENS 701	Research Seminars	0
Thesis or Project		**9 CH**
SENS 695	Master's Thesis Hours	0-6
Or		
SENS 698	Industrial/Applied Project	6
	Elective 1	3
Non-Course Requirements		**0 CH**
699	Thesis Defense	0

PhD in Computer Science and Engineering

Minimum hours required to complete program **54 CH**

Core Courses		**9 CH**
ICT 601	Research Methods and Ethics	3
ICT 705	Applied Data Analytics	3
CSEG 710	Advanced Algorithms and Data Structures	3
Or		
CSEG 780	Principles of Computer System Design	3
Elective Courses	**9 CH**	
Free elective: Students can take one course from any HBKU program		
CSE 602	Statistics for Science and Engineering	3
CSEG 605	Convex Optimization for Large-Scale and Distributed Systems	3
CYSE 610	Applied Cryptography	3
CYSE 630	Computer and Network Security	3
CYSE 640	Security Risk Analysis	3
CYSE 720	Data Privacy	3
CYSE 727	Wireless Networks & Security	3
CYSE 728	Distributed Systems Security	3
CYSE 729	Multimedia Security	3
CYSE 744	Network Forensics	3
CYSE 745	Computational Forensics	3
DSEG 660	Applied Deep Learning	3
DSEG 682	Special topics in Data Science and Engineering	3
DSEG 733	Advanced Data Management Systems	3
DSEG 735	Learning from Data	3
DSEG 760	Machine Learning	3
ICT 632	Advanced Applications of the Web and Internet	3
ICT 660	Principles of Health Informatics	3
ICT 665	Artificial Intelligence & Machine Learning in Healthcare	3
ICT 666	Computational Bioinformatics	3
ICT 668	Medical Image Processing	3
ICT 670	Information Technology Project Management	3
ICT 671	Information Systems Management	3
ICT 675	Healthcare Information Systems	3
ICT 676	Information Systems Analysis and Design	3
ICT 690	Special Topics	3
ICT 706	Independent Studies	3
ICT 716	Data Science Tools and Applications	3
ICT 736	Interactive Design for Healthcare	3
ICT 720	Cloud Computing	3
ICT 725	Quantum Computing	3
ICT 620	Computer Graphics	3
ICT 615	AI for Social Media and Multimedia Applications	3
Seminar		**0 CH**
Must pass twice		
ICT 701	Graduate Research Seminars	0
Dissertation		**36 CH**
ICT 890	Dissertation Hours	0-9
Non-Course Requirements		**0 CH**
899	Dissertation Defense	0
790	Doctoral Qualifying Exam	0
799	Candidacy Exam	0

PhD in Logistics and Supply Chain Management

Minimum hours required to complete program **54 CH**

Core Courses		**9 CH**
LSCM 601	Research Ethics and Methods	3
LSCM 611	Supply Chain Management	3
LSCM 607	Optimization Models and Methods	3
Elective Courses		**9 CH**
Free elective: Students can take one course from any HBKU Program		
LSCM 605	The Pricing of Financial Contracts	3
LSCM 617	Production and Operations Management	3
LSCM 621	Project Management in Logistics	3
LSCM 625	Behavioral Logistics Management	3
LSCM 627	Simulation Optimization Methods	3
LSCM 631	Port Management and Maritime Logistics	3
LSCM 635	Business Performance Management	3
LSCM 641	Facility and Transportation Management	3
LSCM 651	Financial Techniques for Investment Appraisal	3
LSCM 671	Principles of Reinforcement Learning for Engineering Management	3
LSCM 706	Independent studies	3
LSCM 711	Supply Chain Modeling and Optimization	3
LSCM 721	Advanced Topics in Supply Chain Management	3
LSCM 731	Industry 4.0 in Manufacturing and Supply Chain	3
SPTE 777	Sports and Events Logistics	3

Seminar		**0 CH**
Must pass Twice		
LSCM 701	Research Seminar	0
Dissertation		**36 CH**
LSCM 890	Dissertation Hours	0-9
Non-Course Requirements		**0 CH**
899	Dissertation Defense	0
790	Doctoral Qualifying Exam	0
799	Candidacy Exam	0

PhD in Sustainable Energy

Minimum hours required to complete program **54 CH**

Core Courses		**9 CH**
SENS 601	Research Methods and Ethics	3
SENS 611	Sustainability Fundamentals and Tools	3
Take one of the following		
CSE 602	Statistics for Science and Engineering	3
CSE 603	Advanced Mathematics	3
CSE 605	Computational Data Analytics	3
CSE 606	Numerical Methods for Scientists and Engineers	3
CSE 607	Advanced Systems Optimization	3
Elective Courses		**9 CH**
Free elective: Students can take one course from any HBKU program		
CSE 770	Nano-Bio-Technology	3
CSE 785	Innovation Entrepreneurship Leadership I	3
CSE 786	Innovation Entrepreneurship Leadership II	3
SENR 615	Oil and Gas Geopolitics	3
SENR 727	Science and Engineering of Thin Films and Interfaces	3
SENR 740	Energy Resources, Generation, Science and Technology	3
SENR 741	Oil and Gas Technology and Economics	3
SENR 742	The life cycle of oil and gas fields	3
SENR 743	Photovoltaic Solar Technology	3
SENR 744	Renewable Energy Systems	3
SENR 750	Energy Storage Devices and Systems	3
SENR 754	Smart Power Grids	3
SENR 755	Micro-grids: Operation, Management and Planning	3
SENS 681	Integrated Sustainable Design for the Built Environment	3
SENS 706	Independent Studies	3
SENS 712	Environmental Quality and Health	3
SENS 714	Sustainability: Energy, Environment and Economics	3
SENS 715	Life Cycle Assessment - LCA	3
SENS 716	Efficiency: Resource Use and Behavioral Analysis	3
SENS 718	Sustainable Cities and Urban Mobility	3
SENS 719	Energy Water Food (EWF) Nexus	3
SENS 721	Advanced Materials Synthesis and Characterization	3
SENS 722	Sustainable Chemical Industry - A Green Approach	3
SENS 728	Electrochemistry and Environmental Corrosion	3
SENS 729	Electrochemistry and Electrochemical Processing	3
SENS 780	Green Building: Design, Construction and Operation	3
SENS 785	Innovation Entrepreneurship Leadership I	3
SENS 786	Innovation Entrepreneurship Leadership II	3
SENS 791	Geospatial Information Systems	3
SENV 713	Environmental Impact and Management Systems	3
SENV 745	Energy Nano-Technology	3
SENV 760	Air Quality and Climate Change	3
SENV 761	Atmospheric Chemistry and Climate Change	3
SENV 770	Desalination Technologies	3
SENV 772	Water and Wastewater Treatment	3
SENV 773	Water Resources Management	3
SENV 774	Water Treatment and Reuse	3
SENV 778	Principles of Hydrogeology	3
SENV 776	Solid and Hazardous Waste Management	3
Seminar		**0 CH**
Must pass thrice		
SENS 701	Research Seminars	0
Dissertation		**36 CH**
SENS 890	Dissertation Hours	0-9
Non-Course Requirements		**0 CH**
899	Dissertation Defense	0
790	Doctoral Qualifying Exam	0
799	Candidacy Exam	0

PhD in Sustainable Environment

Minimum hours required to complete program **54 CH**

Core Courses		**9 CH**
SENS 601	Research Methods and Ethics	3
SENS 611	Sustainability Fundamentals and Tools	3
Take one of the following		
CSE 602	Statistics for Science and Engineering	3
CSE 603	Advanced Mathematics	3
CSE 605	Computational Data Analytics	3
CSE 606	Numerical Methods for Scientists and Engineers	3
CSE 607	Advanced Systems Optimization	3
Elective Courses		**9 CH**
Free elective: Students can take one course from any HBKU program		
CSE 770	Nano-Bio-Technology	3
CSE 785	Innovation Entrepreneurship Leadership I	3
CSE 786	Innovation Entrepreneurship Leadership II	3
SENR 615	Oil and Gas Geopolitics	3
SENR 727	Science and Engineering of Thin Films and Interfaces	3
SENR 740	Energy Resources, Generation, Science and Technology	3
SENR 741	Oil and Gas Technology and Economics	3
SENR 742	The life cycle of oil and gas fields	3
SENR 743	Photovoltaic Solar Technology	3
SENR 744	Renewable Energy Systems	3
SENR 750	Energy Storage Devices and Systems	3
SENR 754	Smart Power Grids	3
SENR 755	Micro-grids: Operation, Management and Planning	3
SENS 681	Integrated Sustainable Design for the Built Environment	3
SENS 706	Independent Studies	3
SENS 712	Environmental Quality and Health	3
SENS 714	Sustainability: Energy, Environment and Economics	3
SENS 715	Life Cycle Assessment - LCA	3
SENS 716	Efficiency: Resource Use and Behavioral Analysis	3
SENS 718	Sustainable Cities and Urban Mobility	3
SENS 719	Energy Water Food (EWF) Nexus	3
SENS 721	Advanced Materials Synthesis and Characterization	3
SENS 722	Sustainable Chemical Industry - A Green Approach	3
SENS 728	Electrochemistry and Environmental Corrosion	3
SENS 729	Electrochemistry and Electrochemical Processing	3
SENS 780	Green Building: Design, Construction and Operation	3
SENS 785	Innovation Entrepreneurship Leadership I	3
SENS 786	Innovation Entrepreneurship Leadership II	3
SENS 791	Geospatial Information Systems	3
SENV 713	Environmental Impact and Management Systems	3
SENV 745	Energy Nano-Technology	3
SENV 760	Air Quality and Climate Change	3
SENV 761	Atmospheric Chemistry and Climate Change	3
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SENV 773	Water Resources Management	3
SENV 774	Water Treatment and Reuse	3
SENV 776	Solid and Hazardous Waste Management	3
SENV 778	Principles of Hydrogeology	3
Seminar		**0 CH**
Must pass thrice		
SENS 701	Research Seminars	0
Dissertation		**36 CH**
SENS 890	Dissertation Hours	0-9
Non-Course Requirements		**0 CH**
899	Dissertation Defense	0
790	Doctoral Qualifying Exam	0
799	Candidacy Exam	0

Course Descriptions

CPEG 110 **Principles of Computing** **3 Credits**

Through this course, students will explore major issues related to the "big ideas" of computational thinking and solve the problem by using Python, which emphasizes principles of computing, software development, style, and testing.

Topics include representation of ideas with bits, basic Boolean logic, and devices to implement logic functions as the first part. The second part includes procedures and functions, iteration, recursion, arrays and vectors, strings, algorithms, exceptions, and object-oriented programming. Weekly labs provide guided practice on the computer.

CPEG 111 **Introduction to Computer Engineering** **3 Credits**

For CE students, this course is designed to provide foundation knowledge on basic digital system, computer architecture, programming, microelectronics, and electrical engineering. Students will learn concepts from both the hardware and the software perspective. Students can apply the knowledge and principles learnt to design and build a functional hardware-software co-designed system such as a robot.

CPEG 127 **Concepts of Mathematics** **3 Credits**

The course covers two important aspects, how to write rigorous mathematical proofs and how to use abstract concepts of mathematics in many areas of computer science. It will introduce the basic concepts for mathematical proofs and link them to different areas of mathematics and computer science. Other topics will be introduced, such as number theory, counting, algebra of sets, and graph theory.

CPEG 151 **Fundamentals of Programming and Computer Science** **4 Credits**

This course is designed to provide students with the main concepts and fundamentals of programming and computer science. Python is used as the programming language of this course. During class, students are taught syntax and semantics of Python, algorithmic design, and fundamentals of modern von Neumann architectures.

Prerequisites: *CPEG 110 Principles of Computing*

CPEG 152 **Principles of Imperative Computing** **3 Credits**

This course teaches imperative programming in a C-like language and methods for ensuring the correctness of imperative programs. It is intended for students who are familiar with elementary programming concepts such as variables, expressions, loops, arrays, and functions. Students will learn techniques needed to go from high-level descriptions of algorithms to correct imperative implementations, with specific applications to basic data structures. Much of the course will be conducted in a subset of C, with a transition to full C in the final part.

Prerequisites: *CPEG 151 Fundamentals of Programming and Computer Science or equivalent*

CPEG 213 **Introduction to Computer Systems** **4 Credits**

The course aims to help students become better programmers by teaching them the basic concepts underlying all computer systems. Students will learn what really happens when a computer program is run, so that they will have the intellectual tools to solve any potential problems that may arise. Topics include data representation, assembly language, memory hierarchy, exceptions, interrupts, Unix signals, system level I/O, process management, virtual memory and memory management, and network and concurrent programming.

Prerequisites: *CPEG 152 Principles of Imperative Computing or equivalent*

CPEG 214 **Electrical Circuit Theory** **3 Credits**

This course focuses on the principles of Resistive circuits: circuit laws, Network reduction, nodal analysis, mash analysis; energy storage elements; sinusoidal steady state; AC energy systems; magnetically coupled circuits; the ideal transformer; resonance; and introduction to computer applications in circuit analysis.

Prerequisites: *Prerequisites: PHYS 207 Electricity and Magnetism for Engineering and Science*

Corequisites: *MATH 308 Differential Equations*

CPEG 217 **Probability Theory and Random Processes** **3 Credits**

This course covers important concepts and problem solving skills related to probability theory. Topics include elementary probability theory, conditional probability and independence, random variables, distribution functions, joint and conditional distributions, limit theorems, random processes spectral analysis and information theory.

Prerequisites: *MATH 251 Engineering Mathematics III*

CPEG 300 **Embedded System Design** **3 Credits**

In this class, the fundamentals of embedded system hardware and program design will be explored. Issues such as embedded processor selection, system architecture, instruction set, assembly programming, circuit debugging, and development will be discussed. The architecture and instruction set of the microcontroller will be discussed, and two 8051 MCU boards will be used by the student during the lab to implement some basic embedded systems. Advanced AVR, STM microcontroller series will also be introduced in terms of their architecture optimization and instruction set optimization.

Prerequisites: *CPEG 152 Principles of Imperative Computing and ECEN 325 Electronics*

CPEG 330 **Data Structures** **3 Credits**

This course focuses on the design of data structures (e.g., linked lists, stacks, queues, trees, and graphs), and an introduction to the analysis of algorithms that operate on those data structures. Students will learn how to implement learned data structures, their advantages/ disadvantages, practical uses, alternatives, and time & space concerns.

Prerequisites: *CPEG 152 Principles of Imperative Computing*

CPEG 344 **Digital Signal Processing** **3 Credits**

This course covers discrete-time signals and linear time-invariant systems; digital processing of continuous-time signals; introduction to random signals, correlation and matched filtering; FIR and IIR digital filters and their analysis in the z and in frequency domains; the DFT (discrete Fourier transform) and its applications; FFT algorithms; FIR and IIR digital filter design and implementation techniques; spectrum analysis and estimation using windows; and practical applications of DSP algorithms.

Prerequisites: *ECEN314 Signals and Systems and ECEN 325 Electronics*

CPEG 410 **Final Year Project I** **4 Credits**

This course covers the first half of the Senior Design Project. Participants are expected to form teams of 2—3 students per project. Each project requires the development of a larger prototype involving both hardware and software. Furthermore, two potential stake holders from industry, academia, and/or research lab shall be interviewed to solicit feedback on the project. Each participant has to successfully complete an research ethics and intellectual property module (lecture plus homework) before filing a mid-term report.

CPEG 411 **Final Year Project II** **4 Credits**

This pair of courses (CPEG 410 and 411) culminate in a major design experience based on knowledge and skills acquired in earlier course work. Students select their preferred projects and perform a 1-year long project development, including literature review, due diligence and familiarization with relevant standards. Students shall then propose solutions, write a technical report, as well as conduct a final defense in front of the curriculum committee. The course also focuses on documenting and presenting the project's outcome in a professional manner.

Prerequisites: *CPEG 410 Final Year Project I*

CPEG 418 **Introduction to Scientific Visualization** **3 Credits**

The field of Scientific and Data Visualization is highly interdisciplinary, bringing together visualization experts and domain scientists seeking to gain visual insight into their data. Visualization is highly diverse, including applications coming from virtually every scientific discipline such as medicine, biology, mechanical and electrical engineering. This course provides a broad overview of the fundamentals of Scientific and Data Visualization. Selected fundamental algorithms will be discussed in depth and their inner workings will be studied in programming and reading assignments.

Prerequisites: *CPEG152 Principles of Imperative Computing*

CPEG 453 **Information and Communication Technology Accessibility** **3 Credits**

The course focuses on enhancing capabilities in the domain of ICT accessibility. When designing technology, developers need to consider people with functional limitations – persons with disabilities and the elderly. These vulnerable groups face obstacles and challenges when it comes to the use of digital platforms. The course provides a comprehensive review by covering diverse topics that advance the skills needed to develop, review and evaluate the accessible digital platforms according to the international best practices and ICT accessibility standards.

Prerequisites: *CPEG 152 Principles of Imperative Computing*

CPEG 460 **Computer Networks** **3 Credits**

This course focuses on the principles of computer networking protocols and architectures with emphasis of the Internet. Students will learn about the technologies and protocols used in local and wide area networks. Special emphasis will be given to study the TCP/IP protocol suite and its underlying protocols and concepts including: HTTP, SMTP, POP, IMAP, DNS, P2P, UDP, TCP, error control, flow control, congestion control, network routing (static and dynamic), packet delays, Local Area Networks (Ethernet, Wi-Fi), confidentiality, integrity, authentication. Students will experiment with protocol analyzers (packet sniffers) to understand and analyze the operations of the different TCP/IP protocols. Also, they will experiment with network emulation and virtualization using Mininet.

Prerequisites: *CPEG 152 Principles of Imperative Computing*

CPEG 462 **Cybersecurity Fundamentals** **3 Credits**

This course exposes students to the fundamental concepts of cybersecurity. Issues considered include topics such as cryptographic tools, user authentication, access control, software vulnerabilities, intrusion detection, firewalls, and operating systems security. Students will gain insight into the importance of cybersecurity through a series of practical and hands-on exercises. They will be exposed to real life cybersecurity operations, involving both attack and defense strategies.

Prerequisites: *CPEG 152 Principles of Imperative Computing*

CS 440 **Distributed System** **3 credits**

The goals of this course are twofold: First, for students to gain an understanding of the principles and techniques behind the design of distributed systems, such as locking, concurrency, scheduling, and communication across the network. Second, for students to gain practical experience designing, implementing, and debugging real distributed systems. The major themes this course will teach include scarcity, scheduling, concurrency and concurrent programming, naming, abstraction and modularity, imperfect communication and other types of failure, protection from accidental and malicious harm, optimism, and the use of instrumentation and monitoring and debugging tools in problem solving. As the creation and management of software systems is a fundamental goal of any undergraduate systems course, students will design, implement, and debug large programming projects. As a consequence, competency in both the C and Java programming languages is required.

FIN 101 **Ethical Finance** **3 credits**

The course aims is to discuss and analyze the ethical approaches related to finance and economics. These include Corporate Responsibility and Responsible Investment, Islamic finance and economy, financial inclusion, Investor ethics and impact investing, environmental, social and governance (ESG) factors as well as the ethics of fintech.

HIST 115 **History & Theory of Architecture - Islamic/Arab Civilizations** **3 credits**

This course covers the methods and theories of Islamic civilizations that stretched from Spain to India. This course focusses on the architecture and decoration of the societies across this vast area, from the early centuries of Islam in the seventh century to present. It covers major architectural masterpieces and how they differed and changed with regards to their geographic locations, traditions, and how they developed. The course covers major monuments of the Umayyad, Abbasid, Tulunid, Fatimid, Samanid, Seljuk, Ghaznavids, Ayyubid, Mamluk, Ilkanid, Timurid, Ottoman, Safavid, Mughal and Modern periods.

CSE 602 **Statistics for Science and Engineering** **3 credits**

This course covers probability and statistical methods for data analysis and experimental design. The course emphasizes on fundamental principles of statistics and their applications in science and engineering. Topics include: probability distributions and probability models; hypothesis testing based on single and multiple samples; single and multi-factor ANOVA; linear, logistic, and nonlinear regression; design, analysis, validation of experiments; nonparametric techniques; advanced statistical methods in scientific research.

CSE 603 **Advanced Mathematics** **3 credits**

This course introduces advanced math topics such as differential equations and their applications in energy and other engineering domains.

CSE 605 **Computational Data Analytics** **3 credits**

It gains common computational tools for rapid analysis of several energy, environment and sustainability data sets.

CSE 606 **Numerical Methods for Scientists and Engineers** **3 credits**

Numerical Methods for Scientists and Engineers.

CSE 607 **Advanced Systems Optimization** **3 credits**

This course focuses on introducing selected optimization tools for energy, environment and sustainability applications.

CSE 770 **Nano-Bio-Technology** **3 credits**

Introduction to nanoscale bio-systems and the application of nano-bio-technology. Topics covered include nanomaterials synthesis and characterization, surface and interfaces properties, biohazard risk assessment, toxicity, drug deliver, diagnostics, lab-on-chip systems, hyperthermia, antimicrobials.

CSE 785 **Innovation Entrepreneurship and Leadership I** **3 credits**

This course first provides introductory discussions on theories of design innovation, entrepreneurship and leadership. Then, it focuses on experiential learning for design and development of products, processes, systems and business models. Topics include design thinking, system thinking, design process; understanding and developing user/stakeholder needs/input for a sustainable solution; generating technical and marketing specifications; and prototyping methods to reduce development time.

CSE 786 **Innovation Entrepreneurship and Leadership II** **3 credits**

This course first provides introductory discussions on theories of design innovation, entrepreneurship and leadership. Then, it focuses on experiential learning for design and development of products, processes, systems and business models. Topics include design thinking, system thinking, design process; understanding and developing user/stakeholder needs/input for a sustainable solution; generating technical and marketing specifications; and prototyping methods to reduce development time.

CSEG 605 **Convex Optimization for Large-Scale and Distributed Systems** **3 credits**

This course concentrates on solving convex optimization problems that arise in large-scale and distributed systems with applications to big data. It covers convex sets and functions, basics of convex analysis, least-squares, linear and quadratic programs, semidefinite programming, unconstrained and constrained optimization, duality theory, interior-point methods, sub-gradient and proximal gradient methods, splitting and alternating direction method of multipliers (ADMM).

CSEG 710 **Advanced Algorithms and Data Structures** **3 credits**

The course covers general computational problems, with a focus on the principles used to design those algorithms. Efficient data structures will be discussed to support these algorithmic concepts. Topics are: run time analysis, divide-and-conquer algorithms, dynamic programming algorithms, network flow algorithms, linear and integer programming, large-scale search algorithms and heuristics, efficient data storage and query, and NP-completeness. This course will focus on the design and analysis of algorithms for general classes of problems.

CSEG 780 **Principles of Computer System Design** **3 credits**

The course covers computer architecture, organization and design with an emphasis on the processor structure and functionality as well as memory hierarchy and IO devices. Topics include: Boolean algebra and digital logic; Combinatorial and sequential circuits; Processor data path and control path; Memory hierarchy; IO devices; Static and dynamic CMOS circuits; low power techniques, design tools and methodologies. The course also contains several case-studies that explore recent real-world designs from the recent research literature. Students will design and verify small test circuits using commercial CAD tools.

CYSE 610 **Applied Cryptography** **3 credits**

The course covers cryptographic primitives such as one-way, collision-resistant hash functions, as well as the relevant number theory and discusses public-key encryption and basic key-exchange coupled with real-life applications. In a nutshell, the course studies how two parties who have a shared secret key can communicate securely when a powerful adversary eavesdrops and tampers with traffic. The course will also cover popular secure protocols such as zero-knowledge proofs. Throughout the course students will be exposed to a variety of open problems in the field.

CYSE 630 **Computer and Network Security** **3 credits**

This course covers the concepts of assets, vulnerabilities, controls, threats and attacks, security measures and mechanisms. The course will introduce the fundamental concepts of security technology for computer networks, and the applications of these technologies. Topics include an overview of fundamental cryptography, authentication, encryption, digital signatures, digital certificates, and network security protocols such as IP Sec, SSL, etc. Students will also obtain the fundamental knowledge on network security mechanisms such as firewall and network intrusion detection systems.

CYSE 640 **Security Risk Analysis** **3 credits**

This course explores the basic elements of risk and to introduce security risk assessment methodologies and related tools used by many of the world's major corporations. The choice of the tools and methods in this course are based on its popularity in practice and enables the course to address cybersecurity issues related compliance with security policies, external standards and with appropriate legislation.

CYSE 720 **Data Privacy** **3 credits**

This course covers the concepts, technologies, practices and challenges associated with Information Security and Privacy, and a broad view of the subject, which includes looking at relevant business, organizational, human, legal and policy issues. The course combines technical discussions with a wealth of examples from enterprise and government systems, social networking, mobile and pervasive computing, privacy standards like HIPAA or GLBA, and much more. The course combines formal lectures with discussion of recent, hot topics and how they relate to data privacy and the multi-facet challenges in practice and real world.

CYSE 727 **Wireless Networks & Security** **3 credits**

The course explores the fundamentals of wireless networks as well as its security techniques and challenges. Students will learn a general overview of wireless networking standards, security issues and challenges in wireless networks, and security mechanisms in wireless technologies. Students will also learn security techniques in existing networks such as mobile ad-hoc networks, sensor networks, and wireless mesh networks as well as emerging networks such as smart grids, internet of things, and vehicular networks. Finally, the course will cover a general overview of physical layer security that exploits wireless channels for improving security of wireless networks.

CYSE 728 **Distributed Systems Security** **3 credits**

This course focuses on fundamental and advanced concepts in Distributed Systems, addressing their foundations, current technologies, and security aspects. Topics include, but are not limited to, distributed hash tables (peer-to-peer systems), failure detectors, synchronization, election, distributed agreement, consensus, gossiping, replication, key-value stores, NoSQL, blockchain technology. These topics are discussed in the context of real-life and deployed systems such as clouds and datacenters, databases, peer to peer systems, clusters, cryptocurrencies.

CYSE 729 **Multimedia Security** **3 credits**

This course has several objectives: (i) delivering fundamental and advanced concepts about multimedia content representation, (ii) highlighting the trade-offs between quality and multimedia channel capacity, (iii) designing and implementing security tools to protect multimedia content.

CYSE 744 **Network Forensics** **3 credits**

This course exposes students to practical issues involving the monitoring and investigation of private data communications. Issues considered include such topics as network monitoring, network data collection, network flows, and visual security analysis. Students will learn how to perform forensic investigations of network-based attacks, through a series of lab exercises, hands-on assignments, and a term project.

CYSE 745 **Computational Forensics** **3 credits**

This course builds the necessary awareness required to assess physical and digital crimes at local, regional and global levels. Assessment, in this context, includes the evaluation of the nature of the crime, handling and tracking physical and digital evidence connected to the crime in a manner consistent with legal requirements for presenting forensic evidence. Students will learn about various state-of-art computational tools used in forensic analysis of different types of evidence. The course also builds awareness of intelligence practices across the globe that have bearing on crime investigation, especially of organized crime.

DSEG 660 **Applied Deep Learning** **3 credits**

This course covers intermediate-level topics in deep learning, including: deep neural network (DNN) components and architectures, DNN training and optimization, convolutional neural networks, recurrent neural networks, attention mechanism, reinforcement learning, and applications of deep learning in computer vision, speech recognition and natural language processing.

DSEG 682 **Special Topics in Data Science and Engineering** **3 credits**

This course covers a variety of timely, cutting-edge areas in Data Science and Engineering. Taught by our faculty research scientists from our research institutes or industrials, this course allows students to keep up with critical trends and topics in the field of Data Science and Engineering.

DSEG 733 **Advanced Data Management System** **3 credits**

This course covers several advanced data management systems that are commonly used in practice. These include data warehouses, graph databases, column-oriented databases, distributed databases, cloud-based databases, and spatial databases. Topics include storage, indexing, query processing, protocol design, transactions processing and system architecture.

DSEG 735 **Learning from Data** **3 credits**

This course covers the theory, algorithms, and applications of computational learning. The technical topics covered include linear models, theory of generalization, regularization and validation, neural networks, support vector machines, as well as specialized techniques and a term-long project with big datasets.

DSEG 760 **Machine Learning** **3 credits**

This course deals with intermediate and advanced topics in machine learning. Topics to be covered include: linear regression, logistic regression, support vector machines, Bayesian networks, Markov network, conditional random fields, inference methods based on graphical models, learning methods for graphical models, and recent applications of machine learning methods.

HSRM 650 **Field Project in Hospitality, Retail, and Sport Management** **3 credits**

This course aims to equip students with knowledge and understanding of quantitative methods used in the fields of hospitality, tourism, and sport management. The course covers basic statistical concepts, principles, and methods required for scientific investigation of research problems in HRSM. The primary topics will include descriptive statistics, confidence interval, hypothesis testing, bivariate correlation, simple linear regression and multiple linear regression analyses. Students will learn how to analyze research data and utilize statistical output for reporting research findings.

HSRM 700 **Quantitative Methods in Hospitality, Retail, and Sport Management** **3 credits**

This course even though intended to provide a student with practical work experience, the field project is also an academic course with corresponding assignments and projects. These assignments and projects should stimulate the student to maximize his or her experience and integrate classroom learning with real world application.

ICT 601 **Research Methods and Ethics** **3 credits**

This course is a foundational course for graduate students who will be engaged in research. It provides students with an introduction to ethics and ethical misconduct, intellectual property and environmental health and safety as well as scientific thought and design of experiments.
A focus of the course is to transition students from textbooks to primary literature as their main source of information.

ICT 615 **AI for Social Media and Multimedia Applications** **3 credits**

This course covers fundamental and novel artificial intelligence (AI) technologies for social media and multimedia applications. The students will read and present selected references about AI for social and multimedia computing, and learn the hands-on skills to implement or modify existing AI algorithms. Beside these technical understanding of involved AI technologies, the students will propose and implement creative social media or multimedia applications using AI technologies. The student will complete assignments, class-activities and projects individually or in groups.

ICT 620 **Computer Graphics** **3 credits**

This course is at the core of visual computing. It provides an overview over the fundamentals of computer graphics such as digital representations for 3D models, GPU-accelerated OpenGL, rasterization, ray-tracing, shading, lighting, texturing, etc. Selected advanced and hot topics will also be covered. The course will be complemented by practical assignments using WebGL, running in any modern web browser and providing students with immediate visual feedback.

ICT 632 **Advanced Applications of the Web and Internet** **3 credits**

This course covers advanced techniques for building and maintaining practical applications of the Web and Internet. Main topics include web services, search engines, mobile web, practical aspects of the backbone techniques of the web, solutions for dealing with the rapidly growing and evolving web, and algorithms for handling the uncertainties in web data. The course will also cover selected topics of the state-of-the-art applications of the web techniques. The course is interdisciplinary in nature and has a wide breadth.

ICT 660 **Principles of Health Informatics** **3 credits**

The objective of this graduate level course is to provide data science students with an overview of the Health Informatics domain and introduce them to major concepts, areas, and ideas evolving within the discipline of Health Informatics. Key challenges and opportunities for the health data scientist will be highlighted. Students will gain insights and develop a solid base in understanding, analyzing and evaluating health information systems to support data science research and projects.

ICT 665 **Artificial Intelligence and Machine Learning in Healthcare** **3 credits**

This course covers both mathematical concepts and tools related to artificial intelligence (AI), with their application in real-world healthcare problems. Topics will cover concepts on uncertainty, searching algorithms, classification techniques, clustering techniques and application of AI in solving different healthcare related problems. This course will concentrate on building machine learning models to solve different open research problems in the field of genomics, bioinformatics, cheminformatics, drug discovery, healthcare etc.

ICT 666 **Computational Bioinformatics** **3 credits**

The aim of this course is to introduce the fundamental of bioinformatics algorithms and different bioinformatics methods for health management and life science students and researchers. It aims to give an overview of genomic and epidemiologic questions and to communicate the statistical and computational ideas behind the key analysis methods in these fields. This course does not assume that the student has a background in molecular biology, but rather introduces both the biological and mathematical concepts.

ICT 668 **Medical Image Processing** **3 credits**

The first part of this course introduces medical imaging, with a focus on magnetic resonance imaging, x-ray computer tomography, ultrasound, and nuclear medicine. The second half of the course introduces students to basic concepts in digital image and signal processing. After an introduction to the area of image processing and a brief mathematical review, we will cover the fundamental techniques of image processing, including image enhancement in spatial and frequency domains, image restoration, image segmentation, image description, and mathematical morphology.

ICT 670 **Information Technology Project Management** **3 credits**

The course addresses the growing need for better management of information technology projects. It covers the key elements of the project management framework, including project stakeholders, the project management knowledge areas, common tools and techniques, and project success. It covers planning methods and techniques required for defining, planning, integrating and implementing information technology projects consistent with the organizational strategic plan and mission. On successful completion of the course, students will have a good understand of the relationship between project, program, and portfolio management and the contributions they each make to enterprise success. They should be able to explain what a project is, provide examples of information technology projects, list various attributes of projects, and describe the triple constraint of projects.

ICT 671 **Information Systems Management** **3 credits**

The course focuses on issues managers face in the selection, procurement, use, and management of information technology assets. It presents a detailed study of the issues, principles, techniques and best practices in managing information systems and enterprise knowledge as organizational resources. Topics include IT operations, information technology and strategy, information technology and organization, assets management, performance evaluation and benchmarking, hardware and software acquisition, physical environments and security issues, outsourcing and partnerships.

ICT 675 **Healthcare Information Systems** **3 credits**

The course provides the basic foundations and tools needed to understand, manage, and evaluate information systems effectively within a healthcare environment. The course will review health information system related regulations and standards and explore relevant issues pertaining to middle and senior level management working within the health care information system domain.

ICT 676 **Information Systems Analysis and Design** **3 credits**

The course develops comprehensive theoretical knowledge as well as practical skills related to the development process of information systems. This course deals with the concepts, skills, methodologies, techniques, tools, and perspectives essential for systems analysts. Upon successful completion of the course, students should be able to gather data, analyze and specify the requirements of a system, design system components and environments, build general and detailed models that assist in implementation and validation of the system and its compliance to the requirements, preferences and constraints of its social and organizational environment.

ICT 690 **Special Topics** **3 credits**

Special topics in ICT allow students to examine a variety of timely, cutting-edge areas in ICT. Taught by our faculty research scientists from our research institutes or industrials, this course allows students to keep up with critical trends and topics in the field.

ICT 695 **Master's Thesis Hours** **0-6 credits**

ICT 698 **Industrial/ Project** **6 credits**

ICT 701 **Graduate Research Seminars** **0 credits**

Research seminar to be presented by invited speakers as well as students. Satisfactory attendance and presentations lead to the grade Pass.

ICT 705 **Applied Data Analytics** **3 credits**

This course covers cutting-edge algorithms and software tools for data analysis, including the analysis of various types of data such as time series, texts and images. Main topics include data visualization, advanced regression and classification solutions, advanced data reduction techniques such as dimensionality reduction and kernel PCA, as well as application-specific tools and methods. In addition, the course also introduces common software tools and libraries which can be used as building blocks for designing and developing novel data analysis applications.

ICT 706 **Independent Studies** **3 credits**

Independent studies offers an opportunity for students to perform independent research work in any area related to Computer Science and Engineering under the supervision of a faculty member.

ICT 716 **Data Science Tools and Applications** **3 credits**

The course objectives are to equip the graduate students with intermediate-level concepts and tools of data science, their properties, and their applications to practical problems. Furthermore, knowledge of how to apply these data science concepts and tools to solve real-world problems in health, engineering, finance, transportation and energy will be important objectives.

ICT 720 **Cloud Computing** **3 credits**

The course focuses on the technologies associated with the cloud computing infrastructure and the usage of the cloud in different application domains. The first part of this course introduces core cloud computing architectures and basic concepts. The second part of the course delves into systems aspects such as fault tolerance, consistency, resource allocation, and quality of service in the context of particular cloud applications, such as distributed machine learning algorithms, real-time multimedia, or cloud-enabled Internet of Medical Things.

ICT 725 **Quantum Computing** **3 credits**

This course aims to provide a solid understanding of the fundamentals of Quantum Computing. In the first half, we give an overview of Quantum Mechanics and its mathematical treatment. We then introduce the building blocks of Quantum Computing and discuss how they work, how to build them, and their physical realization. In the second half, we introduce Quantum Cryptography and Quantum Machine Learning, as examples of Quantum Computing applications. Finally, we conclude with discussion on Quantum Information theory.

ICT 736 **Interactive Design for Healthcare** **3 credits**

This course exposes students to the healthcare domain at large, including being involved in existing project work within medical institutes in Qatar. The students will study a variety of cutting-edge user-centered interactive technologies that are currently being used and can potentially be used in the near future to support healthcare. The students will pair up in groups of 2 and explore the introduction of new interactive technology in one of the domains discussed in class.

ICT 890 **Dissertation Hours** **0-9 credits**

LSCM 601 **Research Ethics and Methods** **3 credits**

This LSCM core course prepares students for performing graduate level research. It introduces students to multi-disciplinary methods for critical exploration of research, locating and summarizing and critiquing relevant literature, developing a research problem, framing a problem with an appropriate research method, and constructing a coherent research design. One focus will be on an introduction to ethics and ethical misconduct. Throughout the course, students will be developing a causal model, will be acquainted with peer review, and will be developing a research proposal.

LSCM 605 **The Pricing of Financial Contracts** **3 credits**

This course serves as an introduction to financial markets, the models of risky assets and the theory of pricing contracts based on these assets. The course exhibits the basic features of financial derivatives. These instruments are defined, their payoffs and the markets in which they are traded are considered, and the importance of valuing these instruments in the absence of arbitrage is discussed. The course will provide students with a thorough understanding of the mechanics of financial markets.

LSCM 607 **Optimization Models and Methods** **3 credits**

This course covers a thorough understanding of optimization methods and models. On successful completion of the course, students will be able to: define and formulate linear programming problems and appreciate their limitations; solve linear programming problems using appropriate software and computer packages, and interpret the results obtained; conduct and interpret post-optimal and sensitivity analysis; and explain the primal-dual relationship. Moreover, students will be able to formulate and solve a wide range of traditional logistics and supply chain combinatorial problems. Students will also be exposed to some well-known advanced optimization techniques that might be covered in other electives.

LSCM 611 **Supply Chain Management** **3 credits**

This course aims at showing that any organization must be analyzed as a component of a Supply Chain in which the different actors (suppliers, manufacturers, retailers) as well as the different functions (marketing, production, finance) interact. Understanding and mastering the relationships between these different areas will improve the effectiveness (achieving the objectives) and the efficiency (achieving the results at least cost) of the system.

LSCM 617 **Production and Operations Management** **3 credits**

Production & Operations Management is defined as the set of processes which transform the inputs/resources of an organization into final goods /services through a set of defined, controlled and repeatable policies. This course covers a thorough understanding on managerial processes for effective operations in both goods-producing and service-rendering organization. Emphasis is on specific tools and strategies used to manage and enhance a firm's operations and production, such as Inventory management, Demand forecasting and Production Planning and Scheduling. The course will also introduce simulation modelling to solve complex operations management problems.

LSCM 621 **Project Management in Logistics** **3 credits**

This course prepares students for managing projects, with a special focus on large-scale projects for logistical infrastructures in aviation and shipping (i.e. airports and seaports). Part 1 will focus on managing large-scale projects. Here, essentials about the concept of project management will be presented and discussed from a business administration point of view. Part 2 will apply these methodological essentials to projects for logistical infrastructures in aviation and shipping.

LSCM 625 **Behavioral Logistics Management** **3 credits**

The course focuses the students on being able to explain, rather than to only describe, approaches to strategic challenges of logistics management. Here, there are no uniform solutions. Complexity and causality are two constructs to be dealt with in strategic logistics management. The conceptualization and analysis of cause-effect-cause systems is critical for decision-making. Therefore, quantitative approaches as well as qualitative approaches (i.e. focusing on the behavior) are elements of decision making for strategic challenges.

LSCM 627 **Simulation Optimization Methods** **3 credits**

The course introduces decision support systems based on simulation optimization methods to solve complex problems by finding better input values of continuous and discrete variables from among all possibilities without explicitly evaluating each possibility. Simulation optimization methods aims to minimize solving resources spent while maximizing the information obtained in a simulated or measured experiment. Major difficulties from lack of analytical formulation, presence of uncertainties, nonlinearities, non-differentiable functions, very expensive and time-consuming optimized solutions force the use of simulation-based optimization approaches when solving multi-scope, multi-scale and multi-scenario problems as those found in industrial manufacturing and supply chains.

LSCM 631 **Port Management and Maritime Logistics** **3 credits**

The course examines how ports are organized, managed and planned, and how ports interface with the logistics chain. The course provides necessary knowledge and understanding of the principles and evolution of container terminal management, port indicators, maritime supply chain management and environmental issues that arise from port operations and maritime transportation.

LSCM 635 **Business Performance Management** **3 credits**

This course focuses on interdisciplinary approaches to financial and operational performance measurement and management. The course emphasizes an exploratory- and explanatory-focused approach in that students develop case studies. In order to build these on a framework, the course introduces the conceptual approaches to performance management with an emphasis on logistical systems. The course highlights the current research in the management domain. Both, the theoretical and the research parts are aimed at building the framework for students to build their cases.

LSCM 641 **Facility and Transportation Management** **3 credits**

This course is emphasizing on applying industrial engineering principles and techniques to analyze, design and improve facility layout and transportation networks in industrial enterprises and services systems. In addition to bringing together the knowledge gained in many previous courses, the topics of this course include tools and methods for planning new facilities and transportation networks and to revise or expand existent ones.

LSCM 651 **Financial Techniques for Investment Appraisal** **3 credits**

The course introduces students to basic mathematical models for assessing investments and projects taking place over a period of time. The course explains how concepts of compound interest and discounting are used to value payments to be made in the future. Compound interest functions are introduced and formulae for regular or varying payments made for specified periods are derived. Practical applications are demonstrated by analyzing problems relating to investments such as bonds and ordinary shares.

LSCM 671 **Principles of Reinforcement Learning for Engineering Management** **3 credits**

The course will introduce the Principles of Reinforcement Learning (RL) for Engineering Management. Starting from the basics of Markov Decision Processes (MDP) the course will cover a broad set of techniques including Value Iteration, Policy Iteration, Q-Learning, Policy Gradient, Actor-Critic Methods. The use of function approximation techniques (including Neural Networks) to approximate the state-space will be elaborated. Applications from Traffic Management, Logistics and Supply Chains will be introduced to apply theory to practice.

LSCM 690 **Applied Project** **3 credits**

Fulfilling curriculum requirements in the form of an applied industrial project.

LSCM 695 **Master's Thesis Hours** **0-6 credits**

LSCM 701 **Research Seminar** **3 credits**

The LSCM research seminars will consist of industrial professionals and academics in the field of logistics and supply chain management. The objective of which is to expose participants to the latest trends in research and industrial practices within logistics and supply chain management.

LSCM 706 **Independent Studies** **3 credits**

This course offering is designed to enable independent studies by student in special topics.

LSCM 711 **Supply Chain Modeling and Optimization** **3 credits**

This course will review the major supply chain innovations developed over the last four decades. The course is specifically designed to address the issue the decision making processes of the dynamic complexities within supply chains using modeling and optimization approaches. These innovations have transformed tremendously supply chains especially through Information Technology and digitalization enablers. Most of the modeling will be performed using basic tools such as Excel Solver as well as learning about the evolving supply chain innovations.

LSCM 721 **Advanced Topics in Supply Chain Management** **3 credits**

This course extends the knowledge acquired in basic courses in order to learn advances tools to model and solve quantitative problems arising in supply chain management. The course will focus not only the deterministic context but will cover even the stochastic settings in which the input data are not known with certainty in advance but can be represented through a probability distribution. Specialized software packages will be also used in order to solve real-life logistics applications in reasonable amount of time.

LSCM 731 **Industry 4.0 in Manufacturing and Supply Chain** **3 credits**

The course introduces the fundaments related with the Industry 4.0 in manufacturing and its interface with the qualogistics chain considering both logistics and qualities aspects of the supply chain. The course provides necessary knowledge and understanding of the evolution of the industrial activities and supply chain management toward the so called smart production and high-performance qualogistics that arise from the technologies in this new industrial era.

LSCM 890 **Dissertation Hours** **0-9 credits**

POLS 242 **Islamism and Politics in ME** **3 credits**

SENR 615 **Oil and Gas Geopolitics** **3 credits**

This course focuses on geopolitical aspects of the oil and gas industry starting with an introduction of history of oil and gas and the geopolitics. It provides a global understanding of sources of crude oil and natural gas; current statistics of oil and gas reserve and production; economic analysis and environmental impacts of the oil and gas industry; finance and current market share; the future of this fossil fuel industry versus sustainable energy resources.

SENR 727 **Science and Engineering of Thin Films and Interfaces** **3 credits**

It introduces fundamentals of thin films and their applications in solar PV.

SENR 740 **Energy Resources, Generation, Science and Technology** **3 credits**

It introduces comparatively basic technology and economic aspects of various energy resource technologies.

SENR 741 **Oil and Gas Technology and Economics** **3 credits**

This course focuses on various aspects of the oil and gas industry; the history of oil and gas and the geopolitics of the industry; sources of crude oil and natural gas; current statistics of oil and gas reserve and production; the process from extraction to consumer delivery (Well to Wheel); natural gas in Qatar; natural gas processing, transport, and storage; economic analysis and environmental impacts of the oil and gas industry; petroleum finance and current market share; the future of this fossil fuel industry versus sustainable energy resources.

SENR 742 **The Life Cycle of Oil and Gas Fields** **3 credits**

This course focuses on the life cycle of an oil and gas fields; specifically, the upstream component. It discusses the technical, theoretical and operational aspects for this component. Drilling technologies and operations, formation evaluations, well testing, and production strategies will be studied. Moreover, it focuses on the recovery mechanisms, enhanced oil recovery, reservoir simulation and management, the life cycle of a well and the abandonment process. Finally, it discusses the environmental effects for this component of the oil and gas industry and how it has decreased over the past decades.

SENR 743 **Photovoltaic Solar Technology** **3 credits**

This course focuses on various aspects of the oil and gas industry; the history of oil and gas and the geopolitics of the industry; sources of crude oil and natural gas; current statistics of oil and gas reserve and production; the process from extraction to consumer delivery (Well to Wheel); natural gas in Qatar; natural gas processing, transport, and storage; economic analysis and environmental impacts of the oil and gas industry; petroleum finance and current market share; the future of this fossil fuel industry versus sustainable energy resources.

LSCM 711 **Supply Chain Modeling and Optimization** **3 credits**

This course will review the major supply chain innovations developed over the last four decades. The course is specifically designed to address the issue the decision making processes of the dynamic complexities within supply chains using modeling and optimization approaches. These innovations have transformed tremendously supply chains especially through Information Technology and digitalization enablers. Most of the modeling will be performed using basic tools such as Excel Solver as well as learning about the evolving supply chain innovations.

LSCM 721 **Advanced Topics in Supply Chain Management** **3 credits**

This course extends the knowledge acquired in basic courses in order to learn advances tools to model and solve quantitative problems arising in supply chain management. The course will focus not only the deterministic context but will cover even the stochastic settings in which the input data are not known with certainty in advance but can be represented through a probability distribution. Specialized software packages will be also used in order to solve real-life logistics applications in reasonable amount of time.

LSCM 731 **Industry 4.0 in Manufacturing and Supply Chain** **3 credits**

The course introduces the fundaments related with the Industry 4.0 in manufacturing and its interface with the qualogistics chain considering both logistics and qualities aspects of the supply chain. The course provides necessary knowledge and understanding of the evolution of the industrial activities and supply chain management toward the so called smart production and high-performance qualogistics that arise from the technologies in this new industrial era.

LSCM 890 **Dissertation Hours** **0-9 credits**

POLS 242 **Islamism and Politics in ME** **3 credits**

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SENR 744 **Renewable Energy Systems** **3 credits**

This course is about comparative discussions of renewable energy systems and implementing the knowledge gains in specific renewable energy projects.

SENR 750 **Energy Storage Devices and Systems** **3 credits**

This course is an introduction to the fundamentals and applications of lithium ion batteries, and the classifications of the different cathodes, electrolytes and anodes based on their physicochemical, structural and thermal properties. The course also reviews the electrochemical reactions, kinetics and transport mechanisms, and interfacial phenomena in batteries. Projects dealing with the application of lithium ion batteries for electric vehicles and solar energy will be included.

SENR 754 **Smart Power Grids** **3 credits**

Smart Power Grids course will provide fundamental insights into century long energy studies that aims to match the demand with the supply, as well as a decade long re- search and development efforts in Smart Energy Grids to improve the energy efficiency, reliability, and environmental aspects of the power grids. More specifically, the course will provide a rich introduction to the new multi-disciplinary field of smart grids and it will cover variety of special topics including demand response, advanced metering networks, communication and sensing technologies, distributed energy generation and storage, electric vehicles, wide-area power system monitoring, energy markets, and cyber-security.

SENR 755 **Micro-grids: Operation, Management and Planning** **3 credits**

It is about applications of smart grid technologies for small-scale applications.

SENS 601 **Research Methods and Ethics** **3 credits**

The course prepares students for performing graduate level research. It introduces students to quantitative and qualitative methods for critical exploration of research, locating and summarizing and critiquing relevant literature, developing a research problem, framing a problem with an appropriate research method, constructing a coherent research design. Introduction to ethics and ethical misconduct, intellectual property and environmental health and safety. Through the course students will be developing a research proposal.

SENS 611 **Sustainability Fundamentals and Tools** **3 credits**

This course gives a general introduction to sustainability and how this concept evolved from the environmental movement of the post-World Water 2 era to the present. It outlines the major global issues that sustainability confronts, the major stakeholders involved and the barriers that prevent the wide scale application of sustainability principles. Students will be introduced to the main methods of quantifying sustainability, assessing the strengths and limitations of each method.

SENS 681 **Integrated Sustainable Design for the Built Environment** **3 credits**

Students gain principles of sustainable design, and implement, demonstrate and debate them for specific built-environment projects in teams.

SENS 698 **Industrial/Applied Project** **6 credits**

The student formulates and undertakes an independent scientific research project under the supervision of their research adviser. A successful thesis defense leads to a Pass grade.

SENS 695 **Master's Thesis Hours** **0-6 credits**

SENS 701 **Research Seminars** **0 credits**

Research seminars are a regular slot for invited speakers and students to present scientific research and be listen to Sustainability related topics outside their main research focus.

SENS 706 **Independent Studies** **3 credits**

In this course, students conduct a special research or study a special topic under the direction and guidance of their advisers.

SENS 712 **Environmental Quality and Health** **3 credits**

The course will provide an overview on the relationship between Environmental Quality and health and the link to economic growth and sustainable development. Case studies will demonstrate the importance of growth, expansion of urban population and their impact on land, and water resources quantity and quality. In addition the course will cover the risks, transport and toxicity mechanisms associated with Chemicals of Emerging Concern in daily life, industry, and drinking water.

SENS 714 **Sustainability: Energy, Environment and Economics** **3 credits**

This course provides an introduction to the interactions between energy, environment, economics and society, and how these impact sustainable development. The course will explore the influence of society through population growth, changing consumption rates and a desire to grow GDP on the extraction and utilization of energy sources and related environmental impacts. In particular the course will focus on the economic and social impacts of renewable energy development and environmental resource management.

SENS 715 **Life Cycle Assessment – LCA** **3 credits**

The need for sustainable engineering is fueling the development of novel tools and techniques for studying the behavior of industrial systems and their relationship with the biosphere and society. Life Cycle Assessment (LCA) is an environmental modeling method that has become increasingly popular within business and academia for evaluating the environmental impacts of products or systems. LCA considers impacts along the entire life cycle, from production to consumption to disposal, and generally provides quantitative information for a range of different environmental issues to inform decisions. This course enables students to develop a practical understanding of the intellectual foundation and standards of LCA, common databases and software packages used, and their application to products and systems. Process-based analysis models, input-output and hybrid approaches are presented for LCA. This is a research-based course and is suitable for students interested in researching in depth a particular topic.

SENS 716 **Efficiency: Resource Use and Behavioral Analysis** **3 credits**

This course explores the various uses of energy and other resources in a variety of human activities, the relative magnitudes of resource consumption and waste and the technological, social and economic factors that impact energy and resource efficiency and conservation.

SENS 718 **Sustainable Cities and Urban Mobility** **3 credits**

This course provides students with a broad and multidisciplinary exploration of sustainable cities and transportation concepts and practices. The course will explore urban planning; mobility issues, their impacts on environment, local climate, air quality and life experiences; and the interdependencies between urban design and human/public health and wellness.

SENS 719 **Energy Water Food (EWF) Nexus** **3 credits**

This course investigates the nexus of energy, water and food (EWF) resources and the complex interaction with human behavior and natural systems, in addition to the inter-dependencies that exist between the EWF resources themselves. The social, technical and economic nature of these interdependencies is explored throughout the life cycle of various systems to determine optimal solutions for a sustainable future.

SENS 721 **Advanced Materials Synthesis and Characterization** **3 credits**

This course provides an overview and hands on experience on processing and characterization techniques of advanced materials used in energy, water, and electronics applications. Both chemical and physical processes to synthesize and deposit materials in various scales including nanostructures, thin films and bulk are tackled. The course also provides basic training in advanced characterization technics such as AFM, SEM, XPS, TOF-SIMS, XRD, Raman and FTIR. In addition, advanced tools related to PV characterization (e.g. TRPL, PL mapping and micro PCD) will be as well introduced in-depth

SENS 722 **Sustainable Chemical Industry - A Green Approach** **3 credits**

This course will introduce principles and practices of sustainable chemical process design to reduce industry's impact on the environment. Specific examples will cover the possibilities of running industrial chemical processes in a sustainable manner and provide an up-to-date insight into the main concerns for sustainable process optimization.

SENS 728 **Electrochemistry and Environmental Corrosion** **3 credits**

This course is designed for graduate students who are interested in learning by doing in the area of applied electrochemistry and environmental corrosion. The course specifically focuses on how to make electrode and cells (e.g., battery). Also, the course extends to study corrosion behavior of metallic substrates under a given condition that develop in our living environment. Furthermore, the course teaches advanced techniques used to understand electrode reactions in particular corrosion processes and estimate important parameters, such as corrosion potential and corrosion rates.

SENS 729 **Electrochemistry and Electrochemical Processing** **3 credits**

This course is about introducing fundamentals and applications of electrochemistry in energy storage.

SENS 780 **Green Building: Design, Construction and Operation** **3 credits**

The built environment is a major source of environmental impact. This course teaches all major aspects of green building design, construction and operation with life cycle thinking in order to reduce these impacts. All green building categories are covered: location & transportation, sustainable sites, energy and atmosphere, water efficiency, materials & resources, and indoor environmental quality. The United States Green Building Councils LEED rating system is used to demonstrate one possible green rating system.

SENS 785 **Design Innovation and Entrepreneurship I** **3 credits**

This course first provides introductory discussions on theories of design innovation, entrepreneurship and leadership. Then, it focuses on experiential learning for design and development of products, processes, systems and business models. Topics include design thinking, system thinking, design process; understanding and developing user/stakeholder needs/input for a sustainable solution; generating technical and marketing specifications; and prototyping methods to reduce development time.

SENS 786 **Design Innovation and Entrepreneurship II** **3 credits**

This course first provides introductory discussions on theories of design innovation, entrepreneurship and leadership. Then, it focuses on experiential learning for design and development of products, processes, systems and business models. Topics include design thinking, system thinking, design process; understanding and developing user/stakeholder needs/input for a sustainable solution; generating technical and marketing specifications; and prototyping methods to reduce development time.

SENS 791 **Geospatial Information Systems** **3 credits**

This course is about introducing information system fundamentals for geospatial applications.

SENS 890 **Dissertation Hours** **0-9 credits**

SENV 713 **Environmental Impact and Management Systems** **3 credits**

This course will review the main sources of pollution and present the methods for assessing their environmental impacts. Impact and management systems will be explored in the context of both local and international environmental legislation; the phases of an EIA; how emission and discharge limits are set; dispersion modelling; risk prioritization; and life cycle analysis. Actual case studies from the process industries will be discussed.

SENV 745 **Energy Nano-Technology** **3 credits**

This course introduces an overview of nanomaterials used for energy production, storage and conservation. The course provides an overview of the synthesis and characterization techniques for nanomaterial used in energy applications such as fuel cells, energy harvesters and energy storage devices.

SENV 760 **Air Quality and Climate Change** **3 credits**

This course introduces important aspects of air quality issues and its relevance to climate change.

SENV 761 **Atmospheric Chemistry and Climate Change** **3 credits**

This course provides an exploration of the chemical and physical processes occurring in the near-ground, troposphere and stratosphere including atmospheric composition, structure, transportation and the photochemically driven reactions. In turn students will gain an insight into the role of industrial emissions on smog, ozone depletion and climate change.

SENV 770 **Desalination Technologies** **3 credits**

This course provides an overview of water production in the Gulf Cooperation Council Countries (GCC) through Desalination Processes. The course will explore various technologies including thermal and membrane systems as well as power-cogeneration.

SENV 772 **Water and Wastewater Treatment** **3 credits**

This course introduces students to important physiochemical and biological processes in wastewater treatment and the sustainable developments that are occurring in this field. Topics include priority contaminants, water discharge standards and design of suitable treatment processes with a focus on biological treatment of municipal wastewater.

SENV 773 **Water Resources Management** **3 credits**

This course explores the water cycle with a particular focus on hydrology, water conservation, system efficiency, and issues of public health. A range of engineering and social science topics related to water use and management are covered.

SENV 774 **Water Treatment and Reuse** **3 credits**

The course develops graduate level concepts for the examination of drinking water quality and discussion of state of the art technologies for treating drinking water. Case studies will be introduced highlighting the inadequacy or susceptibility to failure of existing drinking water infrastructure to provide students with understanding of what challenges may come across in their professional practice, and how to avoid similar situations in future.

SENV 776 **Solid and Hazardous Waste Management** **3 credits**

This course introduces students to the characterization, separation, handling and disposal of various wastes from a variety of municipal, construction and industrial sources and explores management and societal issues, treatment/control technologies and resource recovery methods. Methods to eliminate, recover, recycle and re-use wastes are a major focus for this course.

SENV 778 **Principles of Hydrogeology** **3 credits**

This course introduces students to the fundamentals of hydrogeology and groundwater science. It covers the physical properties of the aquifers, groundwater flow, well hydraulics and groundwater developments, with emphasis on Qatar as a case study. The course also covers basics of groundwater modelling, protection and management.

SPTE 590 **Special Topics in Sport and Entertainment** **3 credits**

This course investigates special topics pertinent to the sport and entertainment management industry, and specifically examines in detail the concept of mega-event sport tourism. It examines mega-event sport tourism from both the sport and entertainment and hospitality and tourism sectors; including management of the Olympic Games, theories that may explain willingness to support the Olympic Games as a sport tourism mega-event and impacts of sport tourism mega-events in a geopolitical arena.

SPTE 640 **Venue Management: Principles and Practices** **3 credits**

The course examines the principles and practices associated with managing a public assembly venue (PAV) and the nature of the PAV business. The emphasis will be on assisting the student in understanding the concepts and related to this relatively new professional field. The course examines the types of issues that venue managers must consider, together with gaining some practice in applying concepts and principles to those issues.

SPTE 670 **Special Topics in Global Sport** **3 credits**

This course investigates special topics pertinent to the sport and entertainment management industry, and specifically examines the critical role of broadcasting in the economy of the sport and entertainment industry. The course explores the various models for broadcasting rights, the political economy of sport broadcasting, and its contemporary developments. The course addresses the complex interactions between competition at local, regional and transnational levels.

SPTE 760 **Principles of Sport and Entertainment Marketing** **3 credits**

This course examines the theoretical and practical aspects of sport and entertainment marketing including its dynamic nature and the importance of branding. It aims to provide an understanding of the importance of marketing and consumer behavior theory and fundamentals specific to the marketing of sport and entertainment. The course introduces students to marketing within the sport and entertainment industry, including the unique aspects of sport and entertainment as product, the sport and entertainment consumer market and the sport product market.

SPTE 777 **Sport and Events Logistics** **3 credits**

This course brings together the strategic, planning, and operational roles of logistics when applied to sport and entertainment management. The aim is the gain knowledge on how to apply logistics models and methods for the optimal management of personnel, facilities and flows involved in sport and entertainment events.

SPTE 781 **Seminar on the Olympic Games** **3 credits**

This course investigates special topics pertinent to the sport and entertainment management industry, and specifically examines in detail the concept of mega-event sport tourism. It examines mega-event sport tourism from both the sport and entertainment and hospitality and tourism sectors; including management of the Olympic Games, theories that may explain willingness to support the Olympic Games as a sport tourism mega-event and impacts of sport tourism mega-events in a geopolitical arena.

SPTE 790 **Sport and Entertainment Finance** **3 credits**

The course examines the concepts and principles of financial management, and its application within the sport and entertainment context. The course provides an understanding of the financial information necessary to perform the usual duties and responsibilities associated with sport facilities, programs and organizations.

SPTE 798 **Directed Study in Sport and Entertainment Management** **3 credits**

SPTE 799 **Thesis Preparation** **0-6 credits**

SPTE 798 is a course that focuses on a special project/ study and/or research undertaken Directedly by the student. Students are expected to embark on a project and/or study focusing on a particular aspect of sport and entertainment management, and is related to his or her special interest. Students are expected to undertake a set of activities, as agreed upon, based on the topic under study.

Subject Codes

College	Subject Code	Subject
Health and Life Sciences	BIOS	Biological Sciences
Health and Life Sciences	EPID	Epidemiology
Health and Life Sciences	EXSC	Exercise Science
Health and Life Sciences	GPM	Genomics & Precision Medicine
Health and Life Sciences	LS	Life Sciences
Health and Life Sciences	PUBH	Public Health
Humanities and Social Sciences	AT	Audiovisual Translation
Humanities and Social Sciences	AVT	Audiovisual Translation
Humanities and Social Sciences	CHN	Chinese
Humanities and Social Sciences	DHS	Digital Humanities
Humanities and Social Sciences	ENG	English
Humanities and Social Sciences	ENW	English Writing
Humanities and Social Sciences	HSS	Humanities and Social Sciences
Humanities and Social Sciences	ICC	Intercultural Communication
Humanities and Social Sciences	MAAT	Audio Visual Translation
Humanities and Social Sciences	MATS	Translation Studies
Humanities and Social Sciences	ME	Middle Eastern Studies
Humanities and Social Sciences	SPAN	Spanish
Humanities and Social Sciences	SS	Social Studies
Humanities and Social Sciences	TR	Translation Studies
Humanities and Social Sciences	TRD	Translation Studies
Humanities and Social Sciences	TS	Translation Studies
Humanities and Social Sciences	TSD	Translation Studies
Humanities and Social Sciences	WSD	Women Studies
Islamic Studies	AIE	Applied Islamic Ethics
Islamic Studies	CF	Contemporary Fiqh
Islamic Studies	CIS	Contemporary Islamic Studies

College	Subject Code	Subject
Islamic Studies	IAA	Islamic Art & Architecture
Islamic Studies	IF	Islamic Finance
Islamic Studies	IFI	Islamic Finance
Islamic Studies	IGA	Islamic Global Affairs
Islamic Studies	ISF	Islamic Studies Foundation
Islamic Studies	IST	Islamic Studies
Law	LAW	Law
Law	QL	Qatari Law
Public Policy	PPO	Public Policy
Science & Engineering	CPEG	Computer Engineering
Science & Engineering	CSE	Core Science & Engineering
Science & Engineering	CSEG	Computer Science & Engineering
Science & Engineering	CYSE	Cyber Security
Science & Engineering	DSEG	Data Science & Engineering
Science & Engineering	ER	Energy & Resources
Science & Engineering	FIN	Finance
Science & Engineering	HRSM	Hospitality, Retail & Sport Mgt
Science & Engineering	ICT	Information Comm & Tech
Science & Engineering	LSCM	logistics & Supply Chain Mangt
Science & Engineering	PHYS	Physics
Science & Engineering	POLS	Political Science
Science & Engineering	SENR	Sustainable Energy
Science & Engineering	SENS	Sustainability
Science & Engineering	SENV	Sustainable Environment
Science & Engineering	SPTE	Sports & Entertainment
Science & Engineering	STLC	Student Learning Center

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