

Graduate Programs 2017-2018

College of Business and Economics

Department of Accounting

Master of Professional Accounting

The MPA is the first AACSB-Accredited Accounting program in the GCC and MENA region. It caters to practicing accountants and managers who have chosen the professional path, and who would like to further their education with a post-graduate degree in accounting. The program covers much wider areas of accounting than any of the other professional accounting certifications that tend to be narrowly specialized. In addition, it develops personal and business competencies (technical and non-technical) of graduates and provides them with an excellent foundation for successful professional careers. The degree will also be a natural route to a Doctorate of Business Administration (DBA).

Program Objectives

- Communicate effectively in a professional context.
- Think critically in relation to the analysis and solution of advanced accounting problems.
- Work individually as well as contribute positively to the functioning of teams as members and leaders.
- Ethically and socially responsible when making accounting-related decisions.
- Demonstrate advanced specialized knowledge in accounting and cognate fields when appropriate.

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

- Demonstrate a highly developed professional oral presentation of information, criticizing substantively complex matters in accounting accompanied by appropriate technology.
- Demonstrate abilities to communicate effectively in writing, using information technology to the production of highly developed professional written materials on substantively complex matters in accounting.
- Apply advanced technologies and techniques (qualitative/quantitative) to the collection and analysis of financial and non-financial information and deriving appropriate decisions in various accounting fields.
- Critically interpret information, through accurate identification of accounting complex problems, and suggestion of accounting-based innovative solutions.
- Demonstrate autonomy, responsibility, and creativity in planning and executing major projects in their work.
- Demonstrate ability to work in teams, showing leadership and direction, appropriate to complex accounting environment settings.
- Apply professional standards and codes of conduct at national and international levels.
- Relate complex ethical issues consistently, reflecting social responsibility, and leading to informed, fair and valid accounting-related decisions.
- Demonstrate a comprehensive advanced knowledge of key concepts across the breadth of accounting topics.
- Assess contemporary issues in accounting through synthesizing knowledge from accounting and cognate fields when appropriate.

Degree Requirements

Required Credit Hours : minimum 36 hours

Professional Accounting

Required Courses (24 hours)	
ACCT600	<u>Advanced Financial Accounting</u>
ACCT615	<u>Advanced Management Accounting</u>
ACCT620	<u>Auditing, Accountability and Assurance Services</u>
ACCT625	<u>Corporate Governance, Business Ethics and Control</u>
ACCT630	<u>Financial Accounting Standards, Theory and Policy</u>
ACCT635	<u>Financial Statements Analysis</u>
ACCT640	<u>Management Control Systems</u>
ACCT645	<u>Seminar on Applied Research in Accounting</u>
Elective Courses (24 hours)	

ACCT661	<u>Accounting in Special Contexts</u>
ACCT662	<u>Internal Auditing and Risk-Based Auditing</u>
ACCT663	<u>Accounting for Islamic Financial Institutions</u>
ACCT664	<u>Legal Environment and Taxation</u>
ACCT665	<u>Strategic Management Accounting</u>
ACCT666	<u>Selected Topics in Financial Reporting</u>
FINC610	<u>Financial Management</u>

Bridge Courses

Students whose first degree is not accounting (12 hours)	
ACCT500	<u>Elements of Accounting and Finance</u>
ACCT505	<u>Financial and Corporate Reporting</u>

ACCT510	Management and Cost Accounting	
MGMT510	Business Environment	

Doctor of Business Administration

The DBA is a four-year blended part-time program and is structured in two stages. Stage One consists of two years of course work that covers research philosophies, qualitative and quantitative research methods, research in support of business functions, literature review & critique, and human factors and social responsibility. Stage Two lasts two years and comprises the DBA thesis. At this stage the formal teaching aspect of the program ends and students are expected to use the knowledge gained from Stage One to undertake a research investigation that represents an original contribution to professional thinking and practice and has high academic merit. DBA candidates often tackle issues of real importance to their own organizations, thus delivering high-utility outcomes and enjoying the rewards of seeing their solutions beneficially implemented. During this period, the student's work will be overseen by a Thesis Committee. The program is completed after successful submission and defense of the dissertation.

Program Objectives

- Enabling senior managers to enhance their professional practice and contribute state-of-the-art knowledge in their chosen area of study.
- Producing research oriented professionals with advanced capabilities in leadership and change management.
- Allowing graduates to take back to their organizations increased understanding and conceptual thinking in business management at the highest level.
- Enhancing competitive advantage for the executives and their organizations, by participating in discussions with academics and practitioners at the cutting edge of their fields.

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

- Develop oral presentations to communicate effectively and without guidance, using technologies to support the oral presentation of information where needed to academic and professional peers.
- Write effectively to communicate highly complex and diverse matters to expert audiences.
- Apply a range of mastered skills and techniques including synthesis, evaluation, planning and reflection, required to critically extend and redefine professional practice and knowledge.
- Apply advanced skills in developing innovative solutions to critical problems using expert skills, demonstrating intellectual independence.
- Act with authority, creativity, autonomy, independence, scholarly and professional integrity.
- Demonstrate abilities associated with professional leadership of peer groups and teams.
- Assess consistently and sensitively manage diverse ethical issues in highly complex contexts and make fair judgments.
- Examine the complex social and cultural contexts of leadership.
- Evaluate the state of research and practice in a business field and highlight possible ways to contribute to that field.
- Create new knowledge in the field, through independent research, innovative and creative practical solutions to a challenging business problem through conceptualizing, designing, implementing, and adapting research processes in complex contexts.

Degree Requirements

Required Credit Hours : minimum 48 hours

Program Courses

Required Courses (48 hours)	
DBA900	The Philosophy of Social Research
DBA901	Qualitative Research Methods
DBA902	Quantitative Research Methods
DBA903	Literature Review and Critique
DBA904	Research in Support Business Functions
DBA905	Introduction to Business Research
DBA906	Human Factors & Social Responsibility
DBA907	Research Elective
DBA908	Dissertation-Research Proposal

DBA909	Dissertation Research Part 1	
DBA910	Dissertation Research Part 2	

Master of Business Administration

The MBA experience at UAE University emphasizes leadership, innovation, and entrepreneurial creativity. During four semesters of courses, MBA students are guided through a progression of thoughts and shared experience that prepares them for confident, competent business leadership in and beyond the UAE business environment and provides the business community with high quality graduates who are capable of becoming the business leaders of the UAE and beyond.

Program Objectives

- Advanced specialized knowledge and critical understanding in business administration and at the interface between related fields.
- Highly developed communication skills, in a professional context, to explain and | or critique substantively complex matters.
- Apply critical thinking skills to the analysis and solution of complex business problems.
- Work effectively as individuals and contribute positively to complex groups as members and leaders.
- Ethical and social commitment at the local and global levels.

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

- Demonstrate an advanced comprehensive knowledge of conventional and innovative concepts and principles across the breadth of business administration issues.
- Demonstrate the ability to professionally apply business administration knowledge in practical settings.
- Communicate in writing, using the appropriate information technology where appropriate, and to produce highly developed professional quality business documents on substantively complex matters in business administration.
- Deliver a highly developed professional quality presentation, expressing a comprehensive internalized personal worldview on substantively complex matters in business administration accompanied by appropriate technology.

- Identify appropriate sources of information and use appropriate analytical techniques in a systematic way that leads to integrate knowledge from different business administration related fields and use highly developed cognitive skills to think critically and creatively.
- Demonstrate advanced problem solving skills by identifying a business complex problem, generating and comparing alternative strategic approaches to develop innovative solutions with intellectual independence.
- Demonstrate autonomy, responsibility and continuous self-development in planning and executing a major project at their work places.
- Demonstrate teamwork, coordination, and leadership abilities in a complex strategic business environment setting involving multiple groups and governance processes
- Lead, contribute and implement ethical standards in a consistent and sensitive way that leads to informed, fair and valid decisions.
- Analyze business administration issues, reflect ethical engagement, civic and social responsibility on socio cultural norms and relationships, and act to transform them.

Degree Requirements

Required Credit Hours : minimum 48 hours

Exploration Term Courses

Required Courses (9 hours)	
ACCT601	Accounting for Senior Managers
ECON605	UAE in the Global Business Environment
STAT640	Statistics & Quantitative Analysis

Elaboration Term Courses I

Required Courses (9 hours)	
MIST610	Information Systems in Business
MKTG605	Marketing Management in an E-Age
FINC610	Financial Management

Elaboration Term Courses II

Required Courses (9 hours)	
ECON651	Managerial Economics
MGMT650	Global Operations Management in the Service Environment
MGMT610	Strategic Human Resources Management

Application Term Courses

Required Courses (9 hours)	
MGMT620	Entrepreneurship & Innovation
MGMT630	Business Ethics & Corporate Governance
MGMT660	Strategic Management in a Dynamic Environment

Elective Courses

Choose one for each semester (12 hours)

ACCT610	Accounting Analysis & Governance
ACCT611	Accounting for Strategic Decisions
ECON610	HR & Personnel Economics
FINC640	Advanced Corporate Finance
FINC650	International Finance & Banking
FINC660	Investment & Portfolio Management
FINC670	Advanced Risk Management
FINC680	Islamic Finance & Financial Institutions
GBUS680	Business Research
MGMT621	Leadership & Organizational Behavior

MGMT622	Staffing Organizations	
MGMT623	Performance and Rewards Management	
MGMT624	HR Development in UAE Context	
MGMT691	Total Quality Management	
MGMT692	Organizational Excellence Modeling	
MGMT693	International Business Management	
MGMT694	Organizational PM & Benchmark	
MIST630	Strategic IS Management	
MIST640	Business Intelligence & BPM	
MIST650	E-Business: Technology, Strategies & Applications	
MIST660	Enterprise IS	
MKTG610	Contemporary Issues in Customer Behavior	

Doctor of Philosophy (PhD) Concentration: Arabic Literature and Criticism

The Ph.D. Program in Arabic Language and Literature aims at preparing students to be scholars and specialists in this field with an open mind and horizon to relative disciplines. The program will focus on scientific research, knowledge and modern new theories in its two tracks:1- language and syntax 2- literature and literary criticism. This will be in accordance with the UAE University's goal as a scientific research university

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

- Will demonstrate the breadth of knowledge in the discipline and advance, in-depth knowledge in the sub-discipline or area of specialization.
- Will have performed and defended an original work of research in their fields of specialization which contributed new human knowledge.
- Will be able to identify, analyze critically and explain open problems in their disciplines and apply relevant research methodology for finding a possible solution.
- Will be able to communicate the major tenets of their field of specialization and their work orally and in writing to the faculty, their peers, and the lay public.
- Will be able to identify areas where ethical issues may arise in their field, and articulate strategies to mitigate situations related to ethical issues in their profession.
- Will demonstrate an insight into the transferable nature of research skills to other work environments and the range of career opportunities available to them inside and outside academia.

Degree Requirements

Required Credit Hours : minimum 54 hours

Program Requirements:

Part 1: General Requirements (6 hours)	
CHSS700	Research Methods and Ethics
CHSS702	Critical Reading and Writing
Part 2: Concentration Requirements (12 hours)	
ARLT704	Trends in Classical Literature
ARLT706	Schools of Comparative Literature
ARLT708	Modern Issues in Literary Criticism
ARLT710	Seminar in Classical Arabic Criticism
Part 3: Elective Requirements (Any 6 credits of the following courses) (6 hours)	

ARAB602	Stylistic and Textual Analysis
ARAB604	Literature and Language Sources
ARAB606	Arabic Rhetoric Issues in the Text of the Holy Quran
ARAB608	Issues in Feminist Literature
ARAB614	Modern Trends in Arabic Poetry and Prose
ARAB720	Analysis of Literary Discourse
ARAB725	Theory of Arabic Syntax
ARAB730	Rhythm in Arabic Poetry

Part 4: Qualification Requirements (0 hours)

ARLT800	Comprehensive Examination
ARLT810	Research Proposal

Part 5: Research Requirements (30 hours)

ARLT900

[Dissertation Research](#)

ARLT910

[Dissertation Defense](#)

Doctor of Philosophy (PhD) Concentration: Arabic Language

The Ph.D. Program in Arabic Language and Literature aims at preparing students to be scholars and specialists in this field with an open mind and horizon to relative disciplines. The program will focus on scientific research, knowledge and modern new theories in its two tracks:1- language and syntax 2- literature and literary criticism. This will be in accordance with the UAE University's goal as a scientific research university.

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

- Will demonstrate the breadth of knowledge in the discipline and advance, in-depth knowledge in the sub-discipline or area of specialization.
- Will have performed and defended an original work of research in their fields of specialization which contributed new human knowledge.
- Will be able to identify, analyze critically and explain open problems in their disciplines and apply relevant research methodology for finding a possible solution.
- Will be able to communicate the major tenets of their field of specialization and their work orally and in writing to the faculty, their peers, and the lay public.
- Will be able to identify areas where ethical issues may arise in their field, and articulate strategies to mitigate situations related to ethical issues in their profession.
- Will demonstrate an insight into the transferable nature of research skills to other work environments and the range of career opportunities available to them inside and outside academia.

Degree Requirements

Required Credit Hours : minimum 54 hours

Program Requirements:

Part 1: General Requirements (6 hours)	
CHSS700	Research Methods and Ethics
CHSS702	Critical Reading and Writing
Part 2: Concentration Requirements (12 hours)	
ARLN712	Trends in Modern Language Studies
ARLN714	Issues in Syntax and Morphology
ARLN716	Avant-Garde Trends in Arabic Syntax
ARLN718	Seminar on Classical Arabic Language Studies
Part 3: Electives Requirements (Any 6 credits of the following courses:) (6 hours)	

ARAB602	Stylistic and Textual Analysis	
ARAB604	Literature and Language Sources	
ARAB606	Arabic Rhetoric Issues in the Text of the Holy Quran	
ARAB608	Issues in Feminist Literature	
ARAB616	Fundamentals of Syntactical Thought	
ARAB720	Analysis of Literary Discourse	
ARAB725	Theory of Arabic Syntax	
ARAB730	Rhythm in Arabic Poetry	

Part 4: Qualification Requirements (0 hours)

ARLN800	Comprehensive Examination	
ARLN810	Research Proposal	

Part 5: Research Requirements (30 hours)

ARLN900

[Dissertation Research](#)

ARLN910

[Dissertation Defense](#)

Department of English Literature

Doctor of Philosophy (PhD) Concentration: English Literature and Criticism

The Department of English offers a PhD program in English Literature and Criticism. This program offers students a variety of opportunities to study in all major areas of British and American literatures including prose, poetry, fiction, short story and drama starting from the Renaissance up to post-colonial / post-modern literature. The program also includes other areas of studies such as comparative literature, world literature in English translations and critical theories applied to award-winning literary texts. On the academic paradigm, the PhD program is designed to offer a comprehensive and intellectually challenging program for students who desire to be writers, proof-readers, critics, literary scholars, university professors, and professional leaders. Upon completion of the minimal course requirements, students are expected to receive a broad knowledge of English literature, Criticism, and Theory. Our faculty have been trained at premier research institutions throughout North America and Europe and are accomplished teachers and scholars. Doctoral students are supervised and supported from the beginning of the program, through thesis development, to dissertation defense and beyond.

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

- Will demonstrate the breadth of knowledge in the discipline and advance, in-depth knowledge in the sub-discipline or area of specialization.
- Will have performed and defended an original work of research in their fields of specialization which contributed new human knowledge.
- Will demonstrate an insight into the transferable nature of research skills to other work environments and the range of career opportunities available to them inside and outside academia.
- Will be able to identify, analyze critically and explain open problems in their disciplines and apply relevant research methodology for finding a possible solution.
- Will be able to communicate the major tenets of their field of specialization and their work orally and in writing to the faculty, their peers, and the lay public.
- Will demonstrate an insight into the transferable nature of research skills to other work environments and the range of career opportunities available to them inside and outside academia.

Degree Requirements

Required Credit Hours : minimum 54 hours

Program Requirements:

Part 1: General Requirements (6 hours)	
CHSS700	<u>Research Methods and Ethics</u>
CHSS702	<u>Critical Reading and Writing</u>

Part 2: Concentration Requirements (9 hours)	
ELIT710	<u>Classicism/s</u>
ELIT740	<u>Modernism/s</u>
ELIT790	<u>Literary Theory</u>

Part 3: Elective Requirements (Any 9 credits of the following courses:) (9 hours)	
ENGL620	<u>Romanticism/s</u>

ENGL621	Literary Renaissances
ENGL645	Poetry and Poetics
ENGL655	Fiction and Narrativity
ENGL665	Language and Performance
ENGL670	Cinema Studies
ENGL685	Literature and Culture
ENGL693	Women's Literacy Voices

Part 4: Qualification Requirements (0 hours)

ELIT800	Comprehensive Exam
ELIT810	Research Proposal

Part 5: Research Requirements (30 hours)

ELIT900	Dissertation Research	
ELIT910	Dissertation Defense	

Doctor of Philosophy (PhD) Concentration: English Language

The Department of English Literature offers a PhD program in English Language. This program offers students opportunities to critically examine the English Language as lingua franca exploring issues of multi-lingual and multi-cultural significance related to the historical context of the English Language as a global tongue . Students are also expected to study language theories separately or apply them to literary/cultural texts. The program aims to provide PhD candidates with a broad knowledge in the field of English language studies including writing / reading theories and stylistics emphasizing students' academic and professional potential. Students will be trained to conduct innovative scholarly and critical work in different language contexts in order to prepare them for future careers in a huge job market which requires distinction and excellence in language skills. Our faculty have been trained at premier research institutions throughout North America and Europe and are accomplished teachers and scholars. Doctoral students are supervised and supported from the beginning of the program, through thesis development, to dissertation defense and beyond.

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

- Will demonstrate the breadth of knowledge in the discipline and advance, in-depth knowledge in the sub-discipline or area of specialization.
- Will have performed and defended an original work of research in their fields of specialization which contributed new human knowledge.
- Will be able to identify, analyze critically and explain open problems in their disciplines and apply relevant research methodology for finding a possible solution.
- Will be able to communicate the major tenets of their field of specialization and their work orally and in writing to the faculty, their peers, and the lay public.
- Will be able to identify areas where ethical issues may arise in their field, and articulate strategies to mitigate situations related to ethical issues in their profession.
- Will demonstrate an insight into the transferable nature of research skills to other work environments and the range of career opportunities available to them inside and outside academia.

Degree Requirements

Required Credit Hours : minimum 54 hours

Program Requirements:

Part 1: General Requirements (6 hours)	
CHSS700	Research Methods and Ethics
CHSS702	Critical Reading and Writing

Part 2: Concentration Requirements (9 hours)	
ELAN750	Stylistics
ELAN782	World English
ELAN786	Roots of Modern English

Part 3: Elective Requirements (Any 9 credits of the following courses:) (9 hours)	
ENGL616	World Diasporic Literature

ENGL620	Romanticism/s
ENGL645	Poetry and Poetics
ENGL655	Fiction and Narrativity
ENGL665	Language and Performance
ENGL670	Cinema Studies
ENGL693	Women's Literacy Voices

Part 4: Qualification Requirements (0 hours)

ELAN800	Comprehensive Exam
ELAN810	Research Proposal

Part 5: Research Requirements (30 hours)

ELAN900	Dissertation Research
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ELAN910

[Dissertation Defense](#)

Master of Science in Remote Sensing and Geographic Information Systems

The Remote Sensing and Geographic Information Systems Master of Science Program at UAE University is the first of its kind in the region. It is designed to provide you with the theoretical background and practical skills to start or advance your career in remote sensing and GIS. Our curriculum has been specifically developed to suit students from diverse academic backgrounds and professional occupations. No prior remote sensing or GIS experience is required to excel in the program. (Total credit hours is 30 for theses and 34 for no-theses).

Program Objectives

- Discuss the theoretical background and practical skills for a career in Remote Sensing or GIS.
- Identify the recent advances in Remote Sensing, GIS and GNSS relating that with scientific research and its role in the society.
- Apply analytical and spatial thinking skills needed for successful use of remote sensing and GIS in solving spatial problems.

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

- Discuss the theoretical principles of remote sensing and GIS and their role in modeling and solving environmental, urban and social issues.
- Recognize advanced analysis and interpretation skills needed in remote sensing and GIS.
- Apply practical remote sensing and GIS procedures for assessing and solving environmental, urban, geologic and societal problems.
- Communicate remote sensing and GIS related ideas and results both orally and in writing.
- Develop remote sensing and GIS project management, team work and leadership skills.
- Produce scientific research related to the applications of remote sensing and GIS.

Degree Requirements

Required Credit Hours : minimum 30 hours

Remote Sensing and GIS

Required Courses (18 hours)	
RGIS601	Principles of Remote Sensing
RGIS602	Fundamentals of GIS
RGIS603	Digital Image Processing in RS
RGIS604	Spatial Analysis Using GIS
RGIS605	Local & Web Based Services GIS
RGIS606	Database Management Systems
RGIS607	Seminar on Management Issues in RS&GIS
STAT661	Geo-Statistics

Elective Courses - 6CH for Thesis option and 12CH for Non-Thesis option (12 hours)

BIOE625	Coastal Management	
RGIS610	Spatial Data Collection	
RGIS611	Advanced Remote Sensing	
RGIS612	Satellite Positioning	
RGIS613	Software Engineering for GIS	
RGIS614	Selected Topics	
RGIS615	Project Management	
RGIS616	Transport Applications of GIS	
RGIS617	Urban and Environmental Applications of Remote sensing and GIS	
RGIS618	Remote Sensing and GIS for Petroleum	

Thesis or Capstone

Required Courses (Min CH:4 and Max CH:6) (6 hours)

RGIS620

Capstone ¹

RGIS630

Thesis ²

1 : Required for Non-Thesis

2 : Required for Thesis

Doctor of Philosophy (PhD) Concentration: Geography and GIS

The PhD in Geography Concentration provides advanced knowledge about the latest theories in the field of GIS such as GIS modeling, internet/mobile GIS, and GIS & accuracy assessment. The concentration offers a chance for graduates to be equipped with knowledge and skills that are necessary in the vibrant GIS field. Upon completion of the concentration students will be able to debate complex geographical issues utilizing GIS tools, assess web-based GIS maps, and adopt Quality Assurance/ Quality Control (QA/QC) in GIS projects.

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

- Will demonstrate the breadth of knowledge in the discipline and advance, in-depth knowledge in the sub-discipline or area of specialization.
- Will have performed and defended an original work of research in their fields of specialization which contributed new human knowledge.
- Will be able to identify, analyze critically and explain open problems in their disciplines and apply relevant research methodology for finding a possible solution.
- Will be able to communicate the major tenets of their field of specialization and their work orally and in writing to the faculty, their peers, and the lay public.
- Will be able to identify areas where ethical issues may arise in their field, and articulate strategies to mitigate situations related to ethical issues in their profession.
- Will demonstrate an insight into the transferable nature of research skills to other work environments and the range of career opportunities available to them inside and outside academia.

Degree Requirements

Required Credit Hours : minimum 60 hours

Program Requirements:

Part 1: General Requirements (6 hours)	
CHSS700	Research Methods and Ethics
CHSS702	Critical Reading and Writing
Part 2: Concentration Requirements (12 hours)	
GEOG703	Geographic Information Systems
GEOG708	GIS Modeling
GEOG709	Internet and Mobile GIS
GEOG710	GIS & Accuracy Assessment
Part 3: Elective Requirements (Any 12 credits of the following courses:) (12 hours)	

GEOG601	Topics in Urban Geography	
GEOG602	Special Topics in Physical Geography	
GEOG603	Advanced Topics in Remote Sensing	
GEOG604	Advances in Environmental Change Studies	
GEOG605	Topics in Economic Geography	
GEOG606	Topics in Climatology	

Part 4: Qualification Requirements (0 hours)

GEOG800	Comprehensive Examination	
GEOG810	Research Proposal	

Part 5: Research Requirements (30 hours)

GEOG900	Dissertation Research	
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GEOG910

[Dissertation Defense](#)

Department of Mass Communication

Doctor of Philosophy (PhD) Concentration: Mass Communication

The field of mass communication is expansive as it evolves at a fast clip with communication technologies at the same time that it reflects a symbiotic relationship with older disciplines in the social sciences such as sociology, political science, psychology, history, and literature. This offers the Ph.D. student a broad spectrum of academic foci in which to pursue research interests. Accordingly, the coursework in the UAEU program provides opportunities to pursue study of the effects of new communication technologies on culture (especially in the Arab and/or Islamic region), the role of communication in development, comparative media systems, as well as regulatory frameworks for different media systems. Students must develop a strong grasp of research methodologies to pursue independent study in the field.

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

- Will demonstrate the breadth of knowledge in the discipline and advance, in-depth knowledge in the sub-discipline or area of specialization.
- Will have performed and defended an original work of research in their fields of specialization which contributed new human knowledge.
- Will be able to identify, analyze critically and explain open problems in their disciplines and apply relevant research methodology for finding a possible solution.
- Will be able to communicate the major tenets of their field of specialization and their work orally and in writing to the faculty, their peers, and the lay public.
- Will be able to identify areas where ethical issues may arise in their field, and articulate strategies to mitigate situations related to ethical issues in their profession.
- Will demonstrate an insight into the transferable nature of research skills to other work environments and the range of career opportunities available to them inside and outside academia.

Degree Requirements

Required Credit Hours : minimum 54 hours

Program Requirements:

Part 1: General Requirements (6 hours)	
CHSS700	Research Methods and Ethics
CHSS702	Critical Reading and Writing
Part 2: Concentration Requirements (9 hours)	
MASC712	Media Management
MASC720	Communication & Social Change
MASC743	Modern Communication Technologies in the Arab World
Part 3: Elective Requirements (Any 9 credits of the following courses:) (9 hours)	
MASC605	Quantitative Research Methods

MASC624	Comparative Media Systems
MASC640	Qualitative Research Methods
MASC715	Seminar in UAE Media
MASC718	Seminar in New Media Studies
MASC736	Media & National Development

Part 4: Qualification Requirements (0 hours)

MASC800	Comprehensive Examination
MASC888	Research Proposal

Part 5: Research Requirements (30 hours)

MASC900	Dissertation Research
MASC910	Dissertation Defense

Master of Governance and Public Policy

The Master of Governance and Public Policy (MGPP) degree aims to impart knowledge, skills, and analytic capability about the rational application of methods, practical tools and techniques in public governance including the formulation, implementation, and evaluation of public policy in the dynamic and complex era of globalization. The Program combines relevant contemporary theories, professional skills, practical knowledge, high level research skills and critical thinking to approach the questions of governance and policy management in the new millennium. The MGPP equips students with cutting-edge skills to undertake open, accountable, responsive, and inclusive leadership to address the administrative, ethical, financial, organizational, and political challenges in delivering superior governmental services and making effectual decisions.

Program Objectives

- To prepare professionals and public policy leaders to discuss, analyze, and evaluate public policies.
- To appreciate the complex and cross-sectorial nature of public policy, public policy challenges, and public policy solutions.
- To implement skills necessary to address important criteria of transparency, accountability, responsive, effectiveness, efficiency, and inclusive in all policy processes.
- To develop leadership skills necessary to lead national and local institutions and perform administrative, financial, organizational, and political activities.
- To exercise ethical and moral standards in public policy processes and leadership behaviors.
- To equip students with various analytical tools to effectively diagnose and proffer solutions to complex public policy issues .

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

- Comprehend selected theories and methods in public governance, policy analysis, market-government relations, macro and micro economics, public budgeting, leadership, and research in the analysis and formulation of public policy.
- Conduct governance and public policy research using appropriate research methods, ethics procedures, and statistical analysis
- Apply qualitative and quantitative skills in the formulation of public policy independently and in teams.
- Use different tools and techniques in policy analysis, stakeholder management, successful policy implementation, effective program evaluation, and financial management
- Communicate descriptive and analytical knowledge effectively in written and oral format to various audiences.
- Demonstrate preparedness for continued reflective practice and lifelong learning in public policy and governance.

Degree Requirements

Required Credit Hours : minimum 36 hours

Governance and Public Policy

Required Courses (24 hours)	
ECON541	Economics for Policy Analysis
ECON544	Financial Management and Public Budgeting
PSG501	Public Policy Analysis Theory & Practice
PSG504	New Public Man & Governments
PSG505	Research Methods for Political Analysis
PSG517	Government, Leadership, & Pubic Management
PSG518	Public Policy Design and Tools
PSG527	Seminar in Government & Public Policy in the UAE
Elective Courses (6 hours)	

PSG513	Globalization, International Agencies & Public Policy	
PSG521	Environmental Policy & Sustainable Development Management	
PSG522	Implementation, Evaluation & Monitoring of Strategic Issues	
PSG526	Comparative Political Institutions	

Thesis

Required Course (6 hours)		
PSG699	Master Degree Thesis	

Department of Psychology and Counselling

Master of Science in Clinical Psychology

The Department of Psychology & counseling offers a Master of Science degree in Clinical Psychology. The need for qualified clinicians and mental health professionals to serve the community necessitated the establishment of this program. The Master of Science program is designed to provide proper training for Masters level psychologists to work in a variety of clinical settings including hospitals, schools, public agencies, and private practice. It also provides a foundation for students interested in pursuing advanced doctoral studies. The program focuses on the field of clinical psychology. The curriculum is structured to enable students pursue a plan of study to assure increased professional competence and breadth of knowledge in the field of clinical psychology. This program requires 39 semester hours of study, including two practicum courses (600 clock hours) of supervised practicum experience in an approved mental health or rehabilitation setting.

Program Objectives

- To provide students with advanced knowledge of current developments in clinical psychology.
- To train students on the application of clinical knowledge to solve psychological problems.
- To train students to act independently in planning and implementing tasks at a professional level.
- To enable students to communicate clinical issues and conclusions clearly to all parties involved.
- To provide students with knowledge that enables them to conduct clinical research under minimal supervision.

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

- Demonstrate clinical knowledge that is culturally sound and relevant to professional and ethical practices in the field of mental health.
- Conduct proper psychological assessment.
- Diagnose successfully clients' clinical problems using DSM/ ICD.
- Create suitable treatment plans for diverse psychological disorders.
- Apply therapeutic skills to help clients (individuals and groups) overcome their psychological disorders.
- Communicate comprehensive and understandable psychological reports to all parties involved.
- Apply appropriate methodology to conduct research in clinical psychology.

Degree Requirements

Required Credit Hours : minimum 39 hours

Clinical Psychology

Required Courses (33 hours)	
PSY521	Advanced Clinical Psychology
PSY522	Cross-Cultural Issues
PSY523	Advanced Psychopathology
PSY524	Personality Self-report Measures
PSY526	Child & Family Therapy
PSY527	Intellectual Assessment
PSY528	Psychotherapy: Theories & Techniques
PSY529	Advanced Behavioral Statistics
PSY631	Internship I

PSY632	Health Psychology
PSY633	Scientific and Professional Ethics
PSY634	Internship II

Elective Courses (CH:6)

Group A (Students should select one course from this group) (3 hours)	
PSY621	Research Design and Methods
PSY623	Neuropsychology
PSY629	Individual Tests (Children)

Group B (Students should select one course from this group) (3 hours)	
PSY622	Seminar in Mental Health
PSY624	Personality Performance-based Measures

PSY626	Psychopharmacology	
PSY628	Master's Thesis	

Department of Social Work

Master of Social Work

Master of Social Work (MSW) programs prepare graduates for advanced professional practice in an area of concentration. The MSW program will prepare UAEU graduates to enter the job force as specialized practitioners, accepting leadership roles within the areas of health/mental health, criminal justice, applied research, policy analysis, community education, schools and in the planning and provision of social services in other areas. The Master of Social Work consists of 30 credit hours of specialized course-work and practicum for students with a Bachelor degree in Social Work (BSW). The MSW program also welcomes students with a bachelor degree in disciplines other than social work. However, for these students, the program of study will consist of foundation courses (30 credit hours) in year 1 and specialization courses (30 credit hours) in year 2 for a total of 60 credits hours.

Program Objectives

- Practice in accordance with social work values and ethics that acknowledge the history and laws of UAE society.
- Practice in a culturally competent manner that promotes quality of life and well-being, human rights and social and economic justice, with diverse Arab, Muslim and expatriate populations of the UAE and GCC.
- Use, produce and apply research knowledge to enhance their skills for practice with the diverse Arab/Muslim families, children, individuals, groups, organizations, communities, and societies of the UAE and GCC.

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

- Use communication/facilitation skills ethically in building empowering relationships with the diverse populations in the UAE, the Arab Gulf and internationally.
- Employ skills for influencing policy formulation and change in communities that advance social and economic justice.
- Apply knowledge and leadership skills in managing projects, and working with community groups and/or organizations to address populations at risk and engage in community resource development
- Demonstrate skills in quantitative/qualitative research design, data analysis, program evaluation, practice evaluation, community needs assessments, and knowledge dissemination.
- Apply the knowledge, values, ethical principles, and skills of a generalist social work perspective to practice with diverse social systems in the UAE, the Arab Gulf and internationally.
- Analyze social policies at a local, regional, national, and international level.
- Evaluate existing research studies and one's own practice interventions.
- Function within the structure of organizations and service delivery systems and seek necessary organizational change.

Degree Requirements

Required Credit Hours : minimum 30 hours

Social Work

Required Courses (21 hours)	
SWK640	Models and Methods of Social Work Practice
SWK642	Leadership & Supervision
SWK645	Intermediate Social Work Research
SWK695	Field Practicum II
SWK699	Directed Readings
Elective Courses - 9CH (3 courses) from a specialization track (9 hours)	
Health/Mental Health (9 hours)	
SWK671	Social Work Practice with At Risk Students

SWK690	<u>Social Work & Traditional Help Seeking Behavior</u>
SWK691	<u>Social Work in Behavioral Health Settings</u>

Criminal Justice/Substance Abuse (9 hours)

SWK680	<u>Social Work in Criminal Justice Settings</u>
SWK681	<u>Social Work & Addictions</u>
SWK682	<u>Techniques in Rehabilitation Counseling</u>

Bridge Program

For Students without the BSW degree (30 hours)

SWK500	<u>Social Welfare Policy and Services: A worldview</u>
SWK510	<u>Human Behavior and Social Environments I</u>
SWK511	<u>Human Behavior and Social Environments II</u>

SWK520	<u>Research Methods for Social Work Practice</u>	
SWK534	<u>Integrative Seminar</u>	
SWK540	<u>Social Work Practice with Individuals and Families</u>	
SWK541	<u>Social Work Practice with Groups</u>	
SWK542	<u>Social Work Practice with Communities and Organizations</u>	
SWK590	<u>Field Education I</u>	

College of Information Technology

Department of Information Systems and Security

Master of Science in Information Security

The Master of Science in Information Security program, offered by the College of Information Technology, is designed to develop expertise in leadership and operations in the area of information security. The program is geared towards meeting the growing need for information technology specialists in information security. The program provides graduates with depth courses designed to enhance their skill set and knowledge in information security as well as breadth information technology courses. The program provides the needed technical and managerial expertise to plan, acquire, operate, manage and evaluate an organization's information security system of operations. Students enrolled in this program are expected to pursue a plan of study to assure professional competence and breadth of knowledge in the field of information security. The emphasis of this specialization is on applying proven and innovative practices for building industry-standard secure systems, applications and networks. This program is for highly motivated groups of working professionals and recent Bachelor's degree graduates. The program is designed to impart knowledge and develop the skills needed to meet current and future information security needs of the government and corporate organizations, as well as preparing students to pursue a Ph.D. in information security or related areas.

Program Objectives

- Identify and effectively use techniques and tools necessary in information security practice;
- Develop project management and leadership skills to secure enterprise IT architectures;
- Apply security principles, legal and ethical responsibilities to the development, and deployment of information security policies;
- Improve skills and expand knowledge for life-long learning and professional growth;
- Comply with international information security standard and local regulatory policies.

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

- Apply information security knowledge and effective security strategies and standards.
- Design effective security solutions based on given requirements.
- Evaluate in depth enterprise security systems.
- Execute ethically project work or research that contributes significantly to the information security discipline.
- Demonstrate advanced oral and written communication skills individually and collectively.
- Analyze critically emerging information security concepts, models, techniques, and solutions.

Degree Requirements

Required Credit Hours : minimum 30 hours

College of Information Technology

Required Courses (9 hours)	
ITCO601	<u>Current Emerging Trends in Information Technology</u>
ITCO602	<u>Management and Leadership in Information Technology</u>
ITCO603	<u>System Analysis, Modeling & Design</u>

Information Security

Required Courses (12 hours)	
SECB621	<u>Information Security Fundamentals</u>
SECB622	<u>Advanced Network Security</u>
SECB623	<u>Cryptography and Secure Communications</u>
SECB624	<u>Software Security</u>

Elective Courses - 3CH for Thesis option and 6CH Non-Thesis option (6 hours)

ECBP614	Mobile Commerce
SECB626	Secure Electronic Commerce
SECB627	Ethics, Law and Policy in Cyberspace
SECB628	Computer Crimes and Forensics
ITPG698	Special Topics in Information Technology

Project or Thesis

Required Course (6 hours)

ITPG690	Practicum Project ¹
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1 : Required 6 CH for Thesis & 3 CH for Non--Thesis

Master of Science in Information Technology Management

The College of Information Technology offers the Master of Science in Information Technology Management program that produces graduates who have a thorough understanding of information systems and technologies along with relevant management, communication, and decision-making skills. Students learn how to integrate information systems technology expertise and management skills to effectively implement organizational solutions. This combination of advanced technical knowledge and management skills with organizational strategy put graduates of this program in a position to succeed as IT leaders and technical experts.

Program Objectives

- Develop in depth knowledge in information systems and technologies.
- Integrate information systems technology expertise and management skills to effectively implement organizational solutions.
- Lead IT projects and take a major role in building tomorrow's economy.
- Improve their skills and expand their knowledge for life-long learning and professional growth.

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

- Demonstrate advanced understandings of the complex body of knowledge that involve the different IT management approaches.
- Evaluate in depth enterprise architectures for developing and delivering products and services to the marketplace.
- Develop ethically project work or research that contributes significantly to the current business needs and compliant with cutting-edge technology.
- Develop enterprise-wide IT management skills and expand the knowledge for lifelong learning and professional development.
- Critically analyze, synthesize, and make use of management information to solve complex IT management problems
- Demonstrate advanced oral and written communication skills in a teamwork environment.

Degree Requirements

Required Credit Hours : minimum 30 hours

College of Information Technology

Required Courses (9 hours)	
ITCO601	<u>Current Emerging Trends in Information Technology</u>
ITCO602	<u>Management and Leadership in Information Technology</u>
ITCO603	<u>System Analysis, Modeling & Design</u>

Information Technology Management

Required Courses (12 hours)	
ISBP631	<u>Information Systems Management</u>
ISBP632	<u>Applied Data Mining</u>
ISBP634	<u>Enterprise Computing</u>

ISBP635	Knowledge Management
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Elective Courses - 3CH for Thesis option and 6CH for Non-Thesis option (6 hours)

ISBP633	Managing the IT Venture
ISBP636	IT Legislation
ISBP637	E-Governance
ITPG698	Special Topics in Information Technology

Project or Thesis

Required Course (6 hours)

ITPG690	Practicum Project ¹
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1 : Required 6 CH for Thesis & 3 CH for Non--Thesis

Doctor of Philosophy (PhD) Concentration: Information Technology

The PhD degree in IT is a research-oriented program fostering research contributions on the area of Information Technologies and related fields. Examples of these areas include: information management,

digital ecosystems, digital economy, enterprise systems, knowledge management, IT innovation, IT strategies, cloud computing, and emerging technologies. Students are expected to develop and gain a solid understanding of the underlying state of the art information technologies and their associated theoretical principles. Upon graduation, our students acquire a solid knowledge on IT, which make them capable of independent work and well prepared to be IT scholars.

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

- Will demonstrate the breadth of knowledge in the discipline and advance, in-depth knowledge in the sub-discipline or area of specialization.
- Will have performed and defended an original work of research in their fields of specialization which contributed new human knowledge.
- Will be able to identify, analyze critically and explain open problems in their disciplines and apply relevant research methodology for finding a possible solution.
- Will be able to communicate the major tenets of their field of specialization and their work orally and in writing to the faculty, their peers, and the lay public.
- Will be able to identify areas where ethical issues may arise in their field, and articulate strategies to mitigate situations related to ethical issues in their profession.
- Will demonstrate an insight into the transferable nature of research skills to other work environments and the range of career opportunities available to them inside and outside academia.

Degree Requirements

Required Credit Hours : minimum 54 hours

Program Requirements:

Part 1: General Requirements (12 hours)	
ITPG701	Advanced Design & Analysis of Algorithms
ITPG709	Modeling, Simulation & Performance Evaluation
ITPG713	Data Mining & Statistical Analysis
ITPG602	Research Methods in Information Technology

Part 2: Concentration Requirements (Any 9 credits of the following courses.) (9 hours)	
CEPG701	<u>Advanced Computer Architecture</u>
CEPG702	<u>Failure Mechanisms and Reliability</u>
NEBP701	<u>Advanced Networking</u>
NEBP704	<u>Design and Analysis of Networks</u>

SWEB701	<u>Complex Software systems</u>	
SWEB702	<u>Software Engineering</u>	
CSPG704	<u>Elements of Artificial Intelligence</u>	
CSPG705	<u>Intelligent Agents & Semantic</u>	
CSPG706	<u>Big Data Analytics and Cloud Computing</u>	
SECB701	<u>Policy Criteria and Evaluations of IT Systems</u>	
SECB703	<u>Privacy and Database Systems Security</u>	
ITPG797	Special Topics in IT	

Part 3: Elective Requirements Upon the approval of the student's Advisory Committee, the student may take any 3 CH 600 to 800 level course from any approved graduate program at UAEU, except for special topics and Master degree core courses offered by CIT. (3 hours)

Part 4: Qualification Requirements (0 hours)

ITPG800	Comprehensive Exam	
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ITPG810	Research Proposal
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Part 5: Research Requirements (30 hours)

ITPG900	Dissertation Research
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ITPG910	Dissertation Defense
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Doctor of Philosophy (PhD) Concentration: Information Security

The Doctor of Philosophy (Ph.D.) with Concentration in Information Security is available for high caliber individuals who are able to develop and implement their own research studies. The program provides students with the knowledge and ability to conduct applied and basic research towards the development of novel solutions to substantive information security research problems from academia, government and Industry. In addition to conducting rigorous research, students are expected to complete a set of course work and pass all required examinations.

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

- Will demonstrate the breadth of knowledge in the discipline and advance, in-depth knowledge in the sub-discipline or area of specialization.
- Will have performed and defended an original work of research in their fields of specialization which contributed new human knowledge.
- Will be able to identify, analyze critically and explain open problems in their disciplines and apply relevant research methodology for finding a possible solution.
- Will be able to communicate the major tenets of their field of specialization and their work orally and in writing to the faculty, their peers, and the lay public.

- Will be able to identify areas where ethical issues may arise in their field, and articulate strategies to mitigate situations related to ethical issues in their profession.
- Will demonstrate an insight into the transferable nature of research skills to other work environments and the range of career opportunities available to them inside and outside academia.

Degree Requirements

Required Credit Hours : minimum 54 hours

Program Requirements:

Part 1: General Requirements (12 hours)	
ITPG701	Advanced Design & Analysis of Algorithms
ITPG709	Modeling, Simulation & Performance Evaluation
ITPG713	Data Mining & Statistical Analysis
ITPG602	Research Methods in Information Technology

Part 2: Concentration Requirements (Any 9 credits of the following courses.) (9 hours)	
SECB701	<u>Policy Criteria and Evaluations of IT Systems</u>
SECB702	<u>Computer and Network Systems Security</u>

SECB703	Privacy and Database Systems Security
SECB704	Cybersecurity and Critical Infrastructure
SECB705	Advanced Topics in Software Security
SECB797	Special Topics in Information Security

Part 3: Elective Requirements (Upon the approval of the student's Advisory Committee, the student may take any 3 CH 600 to 800 level course from any approved graduate program at UAEU, except for special topics and Master degree core courses offered by CIT.) (3 hours)

Part 4: Qualification Requirements (0 hours)

ITPG800	Comprehensive Exam
ITPG810	Research Proposal

Part 5: Research Requirements (30 hours)

ITPG900	Dissertation Research
ITPG910	Dissertation Defense

Department of Computer and Network Engineering

Doctor of Philosophy (PhD) Concentration: Network Engineering

The Doctor of Philosophy (PhD) degree in Network Engineering enables students to engage in independent, high-quality research and academic teaching. It provides research-oriented graduate study and professional specialization in Network Engineering and emphasizes both scholarly and applied research. To earn a PhD degree, a student must demonstrate breadth of knowledge, mastery of a specialized field, pass a comprehensive examination, and completes original research culminating in the written dissertation, revealing high critical ability and powers of imagination and synthesis. In addition, the student must demonstrate his/her ability to do original research and superior scholarship, as demonstrated by a public dissertation defense and publication in established peer-reviewed academic conferences and/or journals

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

- Will demonstrate the breadth of knowledge in the discipline and advance, in-depth knowledge in the sub-discipline or area of specialization.
- Will have performed and defended an original work of research in their fields of specialization which contributed new human knowledge.
- Will be able to identify, analyze critically and explain open problems in their disciplines and apply relevant research methodology for finding a possible solution.
- Will be able to communicate the major tenets of their field of specialization and their work orally and in writing to the faculty, their peers, and the lay public.
- Will be able to identify areas where ethical issues may arise in their field, and articulate strategies to mitigate situations related to ethical issues in their profession.
- Will demonstrate an insight into the transferable nature of research skills to other work environments and the range of career opportunities available to them inside and outside academia.

Degree Requirements

Required Credit Hours : minimum 54 hours

Program Requirements:

Part 1: General Requirements (12 hours)	
ITPG701	Advanced Design & Analysis of Algorithms
ITPG709	Modeling, Simulation & Performance Evaluation
ITPG713	Data Mining & Statistical Analysis
ITPG602	Research Methods in Information Technology

Part 2: Concentration Requirements (Any 9 credits of the following courses.) (9 hours)	
NEBP701	<u>Advanced Networking</u>
NEBP704	<u>Design and Analysis of Networks</u>
NEBP702	<u>Pervasive Networking</u>
SECB702	<u>Computer and Network Systems Security</u>

NEBP703	Advanced Wireless Communications
NEBP705	Vehicular Mobile Ad hoc Networks
NEBP797	Special Topics in Software Engineering

Part 3: Elective Requirements (Upon the approval of the student's Advisory Committee, the student may take any 3 CH 600 to 800 level course from any approved graduate program at UAEU, except for special topics and Master degree core courses offered by CIT.) (3 hours)

Part 4: Qualification Requirements (0 hours)

ITPG800	Comprehensive Exam
ITPG810	Research Proposal

Part 5: Research Requirements (30 hours)

ITPG900	Dissertation Research
ITPG910	Dissertation Defense

Doctor of Philosophy (PhD) Concentration: Computer Engineering

The PhD students in Computer Engineering (CE) go through a research-oriented study of the breadth of the field. The students produce and disseminate knowledge of CE during the their degree program. He/she with the help of a faculty advisor outlines an academic and research program that is consistent with their backgrounds and is the most appropriate for the student's academic goal. The areas of research include but are not limited to: VLSI and FPGA design, CAD of VLSI, placement and routing, computer architecture, parallel and distributed systems, reliability and fault tolerance, testing and fault diagnosis.

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

- Will demonstrate the breadth of knowledge in the discipline and advance, in-depth knowledge in the sub-discipline or area of specialization.
- Will have performed and defended an original work of research in their fields of specialization which contributed new human knowledge.
- Will be able to identify, analyze critically and explain open problems in their disciplines and apply relevant research methodology for finding a possible solution.
- Will be able to communicate the major tenets of their field of specialization and their work orally and in writing to the faculty, their peers, and the lay public.
- Will be able to identify areas where ethical issues may arise in their field, and articulate strategies to mitigate situations related to ethical issues in their profession.
- Will demonstrate an insight into the transferable nature of research skills to other work environments and the range of career opportunities available to them inside and outside academia.

Degree Requirements

Required Credit Hours : minimum 54 hours

Program Requirements:

Part 1: General Requirements (12 hours)	
ITPG701	Advanced Design & Analysis of Algorithms
ITPG709	Modeling, Simulation & Performance Evaluation
ITPG713	Data Mining & Statistical Analysis
ITPG602	Research Methods in Information Technology

Part 2: Concentration Requirements (Any 9 credits of the following courses.) (9 hours)	
CEPG703	<u>High-Performance Microprocessor Architecture</u>
CEPG701	<u>Advanced Computer Architecture</u>
CEPG702	<u>Failure Mechanisms and Reliability</u>
CEPG704	<u>Advanced Digital Design</u>

CEPG705	ASIC Design
CEPG706	Advanced VLSI / Nano-electronics
CEPG797	Special Topics in Computer Engineering

Part 3: Elective Requirements (Upon the approval of the student's Advisory Committee, the student may take any 3 CH 600 to 800 level course from any approved graduate program at UAEU, except for special topics and Master degree core courses offered by CIT.) (3 hours)

Part 4: Qualification Requirements (0 hours)

ITPG800	Comprehensive Exam
ITPG810	Research Proposal

Part 5: Research Requirements (30 hours)

ITPG900	Dissertation Research
ITPG910	Dissertation Defense

Department of Computer Science and Software Engineering

Master of Science in Software Engineering

The Master of Science in Software Engineering offered by the College of Information Technology is designed to develop technical and managerial expertise in software engineering. The program focuses on meeting the growing needs for software engineers. Students acquire solid foundations in theory and practice in software engineering, with in-depth exposure to the state-of-the-art in software development processes, methodologies, and tools. The program is designed to impart knowledge and develop the skills needed to meet current and future information technology needs of government and corporate organizations, as well as to prepare students for Ph.D. degree programs in IT and related areas. Teamwork is emphasized throughout the curriculum to provide students with essential skills to be successful software engineering professionals. The program is intended for highly motivated groups of working professionals and recent Bachelor's degree graduates.

Program Objectives

- Assume leadership roles to promote professional and organizational goals that address the needs of the community;
- Uphold and apply the principles of professional and ethical responsibilities to the design, development, and deployment of computing artifacts;
- Maintain professional competency in light of the advancements in the related disciplines, and develop professionally through continuing training and advanced education in response to changes in roles and responsibilities;
- Contribute to the body of novel software products, services, and knowledge;
- Collaborate professionally within or outside of their disciplines at national and international levels.

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

- Apply software engineering knowledge to build robust, reliable, and maintainable software.
- Design complex systems based on efficiency, cost and data availability.
- Evaluate in depth the relative merits of software systems and artifacts at different levels of system architecture.
- Analyze Critically emerging software models, techniques, and technologies.
- Execute ethically project work or research that contribute significantly to Software Engineering discipline.
- Demonstrate advanced oral and writing communication skills individually and collectively

Degree Requirements

Required Credit Hours : minimum 30 hours

College of Information Technology

Required Courses (9 hours)	
ITCO601	<u>Current Emerging Trends in Information Technology</u>
ITCO602	<u>Management and Leadership in Information Technology</u>
ITCO603	<u>System Analysis, Modeling & Design</u>

Software Engineering

Required Courses (12 hours)	
SWEB651	Software Construction
SWEB652	Requirements Engineering
SWEB653	Software Testing & Quality Assurance
SWEB654	HCI and Usability

Elective Courses - 3CH for Thesis option and 6CH for Non-Thesis option (6 hours)	
SWEB655	Web Applications
SWEB656	Special Topics in Software Engineering
SWEB657	Embedded Software
ITPG698	Special Topics in Information Technology

Project or Thesis

Required Course (6 hours)

ITPG690

Practicum Project ¹

1 : Required 6 CH for Thesis & 3 CH for Non--Thesis

Doctor of Philosophy (PhD) Concentration: Computer Science

The Ph.D. program with a concentration in computer science is to advance the state of the art in any area of computer science. The program covers an overall perspective of the field structure and problems. Students study at least one subfield in considerable depth, and contribute to the creation and consolidation of knowledge in that subfield through creative research. In addition, the program prepare students to be able to understand, formalize, and analyze new theoretical and/or practical problems in different areas within subfields of computer science or in the intersection of computer science and other disciplines. The University awards the Ph.D. degree in recognition of high-quality academic research that represents an original contribution to the field of computer science.

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

- Will demonstrate the breadth of knowledge in the discipline and advance, in-depth knowledge in the sub-discipline or area of specialization.
- Will have performed and defended an original work of research in their fields of specialization which contributed new human knowledge.
- Will be able to identify, analyze critically and explain open problems in their disciplines and apply relevant research methodology for finding a possible solution.
- Will be able to communicate the major tenets of their field of specialization and their work orally and in writing to the faculty, their peers, and the lay public.
- Will be able to identify areas where ethical issues may arise in their field, and articulate strategies to mitigate situations related to ethical issues in their profession.
- Will demonstrate an insight into the transferable nature of research skills to other work environments and the range of career opportunities available to them inside and outside academia.

Degree Requirements

Required Credit Hours : minimum 54 hours

Program Requirements:

Part 1: General Requirements (12 hours)	
ITPG701	Advanced Design & Analysis of Algorithms
ITPG709	Modeling, Simulation & Performance Evaluation
ITPG713	Data Mining & Statistical Analysis
ITPG602	Research Methods in Information Technology

Part 2: Concentration Requirements (Any 9 credits of the following courses.) (9 hours)	
CEPG701	<u>Advanced Computer Architecture</u>
CSPG703	<u>Complex Software Systems</u>
CSPG704	<u>Elements of Artificial Intelligence</u>
CSPG705	<u>Intelligent Agents & Semantic</u>

CSPG706	Big Data Analytics and Cloud Computing
CSPG707	Pattern Recognition
CSPG797	Special Topics in Computer Science

Part 3: Elective Requirements (Upon the approval of the student's Advisory Committee, the student may take any 3 CH 600 to 800 level course from any approved graduate program at UAEU, except for special topics and Master degree core courses offered by CIT.) (3 hours)

Part 4: Qualification Requirements (0 hours)

ITPG800	Comprehensive Exam
ITPG810	Research Proposal

Part 5: Research Requirements (30 credits) (0 hours)

ITPG900	Dissertation Research
ITPG910	Dissertation Defense

Doctor of Philosophy (PhD) Concentration: Software Engineering

The Ph.D. degree in Software Engineering is geared toward individuals interested in conducting long-term research in the spectrum of intellectual activity in Software Engineering. The program emphasizes on providing a high quality, leading-edge education on Software Engineering that produces highly capable and sought after researchers and professional leaders. The degree is awarded in recognition of high quality academic research that represents original contribution to the field of Software Engineering.

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

- Will demonstrate the breadth of knowledge in the discipline and advance, in-depth knowledge in the sub-discipline or area of specialization.
- Will have performed and defended an original work of research in their fields of specialization which contributed new human knowledge.
- Will be able to identify, analyze critically and explain open problems in their disciplines and apply relevant research methodology for finding a possible solution.
- Will be able to communicate the major tenets of their field of specialization and their work orally and in writing to the faculty, their peers, and the lay public.
- Will be able to identify areas where ethical issues may arise in their field, and articulate strategies to mitigate situations related to ethical issues in their profession.
- Will demonstrate an insight into the transferable nature of research skills to other work environments and the range of career opportunities available to them inside and outside academia.

Degree Requirements

Required Credit Hours : minimum 54 hours

Program Requirements:

Part 1: General Requirements (12 hours)	
ITPG701	Advanced Design & Analysis of Algorithms
ITPG709	Modeling, Simulation & Performance Evaluation
ITPG713	Data Mining & Statistical Analysis
ITPG602	Research Methods in Information Technology

Part 2: Concentration Requirements (Any 9 credits of the following courses.) (9 hours)	
SWEB701	<u>Complex Software systems</u>
SWEB702	<u>Software Engineering</u>
SWEB703	<u>Advanced Software Architecture and Design</u>
SWEB704	<u>Software Maintenance, Evolution, and Re-Engineering</u>

ITPG797	Special Topics in IT
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Part 3: Elective Requirements (Upon the approval of the student's Advisory Committee, the student may take any 3 CH 600 to 800 level course from any approved graduate program at UAEU, except for special topics and Master degree core courses offered by CIT.) (3 hours)

Part 4: Qualification Requirements (0 hours)

ITPG800	Comprehensive Exam
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ITPG810	Research Proposal
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Part 5: Research Requirements (30 hours)

ITPG900	Dissertation Research
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ITPG910	Dissertation Defense
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Department of Architectural Engineering

Doctor of Philosophy (PhD) Concentration: Architectural Engineering

The Department of Architectural Engineering offers a PhD degree in Architectural Engineering. The program targets practicing architectural engineers and architects with an undergraduate B.Sc degree in Architectural Engineering from UAE University, or equivalent in related fields, who wish to enhance their architectural knowledge, research, and advance their career, particularly in the area of sustainability and the built environment as related to urban studies, building science, or construction management. In addition, the program is aimed at MSc students who wish to pursue an academic career in Architectural Engineering.

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

- Will demonstrate the breadth of knowledge in the discipline and advance, in-depth knowledge in the sub-discipline or area of specialization.
- Will have performed and defended an original work of research in their fields of specialization which contributed new human knowledge.
- Will be able to identify, analyze critically and explain open problems in their disciplines and apply relevant research methodology for finding a possible solution.
- Will be able to communicate the major tenets of their field of specialization and their work orally and in writing to the faculty, their peers, and the lay public.
- Will be able to identify areas where ethical issues may arise in their field, and articulate strategies to mitigate situations related to ethical issues in their profession.
- Will demonstrate an insight into the transferable nature of research skills to other work environments and the range of career opportunities available to them inside and outside academia.

Degree Requirements

Required Credit Hours : minimum 55 hours

Program Requirements:

Part 1: General Requirements (Group 1) (4 hours)	
MECH710	Research Methodologies
CHME755	Graduate PhD Seminar

Group 2: (Any 6 credits of the following courses:) (6 hours)	
ELEC620	Analytical Techniques in Engineering
ELEC600	Numerical Methods in Engineering
STAT615	Design/Analysis of Experiments

Part 2: Concentration Requirements (9 hours)	
ARCH734	Directed Studies in Architectural Engineering

ARCH735	Advanced Topics in Architectural Engineering I
ARCH736	Advanced Topics in Architectural Engineering II

Part 3: Elective Requirements (Any two Elective courses from Architectural Eng. or other programs) (6 hours)

Part 4: Qualification Requirements (0 hours)

ARCH800	Comprehensive Exam
ARCH810	Prospectus Exam

Part 5: Research Requirements (30 hours)

ARCH900	Dissertation Doctoral Research
ARCH910	Dissertation Defense

Master of Science in Architectural Engineering

The Architectural Engineering Department offers a Master of Science (MSc) degree in Architectural Engineering for students with interests in the design, construction and operation of high performing built environment. The MSc degree prepares students for specialized roles in professional practice as well as for advanced study at the doctoral level. The program includes rigorous architecture engineering course work on topics related to building science, engineering systems, sustainable development and high-performance design at various scales of the built environment. The program culminates in either a research-based project or a thesis. Applicants are expected to have undergraduate architectural or architectural engineering backgrounds, either with a BSc degree in Architectural Engineering from UAE University or equivalent in a closely related area.

Program Objectives

- Develop meaningful research on interactions between buildings and the surrounding environment at the local, national, and regional levels.
- Provide research and professional training necessary for graduates to advance and move into higher professional or academic functions.
- Maintain high international academic standards in research and professional students' learning outcomes.
- Promote the collaboration between the Architectural Engineering research and graduate studies and the government and industrial sectors nationally and internationally.

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

- Apply advanced research techniques and methods to the analysis and solution of engineering problems.
- Demonstrate advanced knowledge sufficient to analyze complex environmental issues related to building and urban systems.
- Develop comprehensive engineering systems, highly specialized components, or appropriate processes for built environment.
- Apply advanced knowledge in a specialized and emerging area in high performance built environment.
- Develop communication skills to present, explain and criticize highly complex issues.

- Evaluate engineering systems in high performance built environment according to relevant regulations and codes.
- Evaluate knowledge of contemporary professional practice in high performance built environment.

Degree Requirements

Required Credit Hours : minimum 30 hours

Architectural Engineering (15 CH for thesis and 18 for non-thesis)

Required Courses (15 hours)	
ARCH600	<u>Building Research & Methods</u>
ARCH601	<u>Graduate Research Seminar</u>
ARCH602	<u>Sustainable Urbanism</u>
ARCH603	<u>High Performance Buildings</u>
ARCH605	<u>Independent Research</u>
ARCH608	<u>Design Management for the Built Environment</u>

Elective Courses (9 CH for Thesis option and 15CH for Non-Thesis option) (9 hours)	
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ARCH614	<u>Sustainable Community Develop</u>	
ARCH616	<u>Impact Assessment for the Built Environment</u>	
ARCH617	<u>Selected Topics in Architectural Engineering</u>	
ARCH623	<u>Integrated Construction Tools and Processes</u>	
ARCH631	<u>Advanced Illumination and Daylighting</u>	
ARCH632	<u>Climate Research in Build Energy Efficiency</u>	
ARCH633	<u>Water Efficiency in the Built Environment</u>	
ARCH634	<u>Building Science Experiment Research Lab</u>	
ARCH635	<u>Fenestration Analysis & Design</u>	
ARCH636	<u>Building Ventilation</u>	

Thesis/Project

6 Credit Hours for Thesis option and 3 Credit Hours for non-thesis option (6 hours)

ARCH698

[Research Based Design Project](#) ¹

ARCH699

[Thesis](#) ²

1 : Non-Thesis Only

2 : Thesis Only

Department of Chemical & Petroleum Engineering

Master of Science in Chemical Engineering

The goal of this program is to graduate master-level chemical engineers who are highly qualified for a rewarding professional experience. Graduates may choose to work in the chemical, petrochemical or biochemical industries, continue on to other graduate level degrees, or join consulting/contracting companies. Prospective students have to be motivated to seek life-long learning and professional development and be capable of becoming professionals and leaders in the global chemical, petrochemical and biochemical industries. (Total credit hours is 30 for theses and 33 for no-theses).

Program Objectives

- To generate graduates with high levels of competence in fundamental and applied concepts of chemical engineering.
- To provide opportunities to address industrially important problems and to propose and investigate possible solutions
- To provide an environment in which students can embrace social and personal development.
- To motivate the students to seek life-long learning and professional development
- To enhance students recognition and understanding of the professional and societal responsibilities associated with working in the industry.
- To develop computational techniques, and written and oral communication skills.
- To cultivate innovation and entrepreneurship through deeper understanding and advanced knowledge of the Chemical Engineering principles and operations.

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

- Apply advanced concepts of fundamental sciences and engineering to solve complex Chemical Engineering problems.
- Demonstrate the ability to work effectively both independently and in teams of various backgrounds.
- Apply innovative and practical solutions to existing or novel processes in research.
- Search, evaluate and acquire information from relevant chemical engineering literature.
- Design advanced approaches to conduct chemical engineering experiments.
- Use advanced quantitative and qualitative methods to interpret research experimental results.
- Disseminate and discuss their professional and scientific work to the general public, as well as to experts in both writing and oral formats.
- Observe and apply ethical and professional codes and responsibilities.

Degree Requirements

Required Credit Hours : minimum 30 hours

Chemical and Petroleum Engineering and Geosciences

Required Courses (6 hours)	
CPSE600	Graduate Seminar
CIVL602	Environmental Impact Assessment Principles & Applications
STAT615	Design/Analysis of Experiments

Chemical Engineering

Required Courses (12 hours)	
CHME611	Transport Phenomena
CHME612	Advanced Reaction Engineering
CPSE610	Fluid Phase Equilibria
ELEC600	Numerical Methods in Engineering

Elective Courses - 6 CH for thesis option and 15 CH for non-thesis option (15 hours)	
CHME621	Advanced Mass Transfer
CHME622	Biochemical Engineering
CHME623	Advanced Polymer Engineering
CHME624	Advanced Process Dynamics & Controls

CHME625	Selected Topics in Chemical Engineering	
CPSE695	Technical Project ¹	
1 : Non-thesis option students		

Thesis

Required Course (6 hours)		
CPSE699	Thesis Research	

Master of Science in Petroleum Engineering

The goal of this program is to graduate master-level petroleum engineers who are highly qualified for a rewarding professional experience. Graduates may choose to work in the petroleum industry, continue on to other graduate level degrees, or join consulting/contracting companies. Prospective students have to be motivated to seek life-long learning and professional development and be capable of becoming professionals and leaders in the global petroleum industries. (Total credit hours is 30 for theses and 33 for no-theses).

Program Objectives

- To generate graduates with high levels of competence in fundamental and applied concepts of petroleum engineering.
- To provide opportunities to address industrially important problems and to propose and investigate possible solutions.
- To provide an environment in which students can embrace social and personal development.
- To motivate the students to seek life-long learning and professional development
- To enhance students recognition and understanding of the professional and societal responsibilities associated with working in the industry.
- To develop computational techniques, and written and oral communication skills.
- To cultivate innovation and entrepreneurship through deeper understanding and advanced knowledge of the Petroleum Engineering principles and operations.

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

- Apply advanced concepts of fundamental sciences and engineering to solve complex Petroleum Engineering problems.
- Demonstrate the ability to work effectively both independently and in teams of various backgrounds.
- Apply innovative and practical solutions to existing or novel processes in research.
- Search, evaluate and acquire information from relevant petroleum engineering literature.
- Design advanced approaches to conduct petroleum engineering experiments.
- Use advanced quantitative and qualitative methods to interpret research experimental results.

- Disseminate and discuss their professional and scientific work to the general public, as well as to experts in both writing and oral formats.
- Observe and apply ethical and professional codes and responsibilities.

Degree Requirements

Required Credit Hours : minimum 30 hours

Chemical and Petroleum Engineering and Geosciences

Required Courses (6 hours)	
CPSE600	Graduate Seminar
CIVL602	Environmental Impact Assessment Principles & Applications
STAT615	Design/Analysis of Experiments

Petroleum Engineering

Required Courses (12 hours)	
CPSE610	Fluid Phase Equilibria

ELEC600	Numerical Methods in Engineering
PETE612	Advanced Natural Gas Engineering
PETE615	Advanced Reservoir Engineering

Elective Courses - 6 CH for thesis option and 15 CH for non-thesis option (15 hours)

CPSE624	Well Stimulation
CPSE695	Technical Project ¹
PETE621	Non-Thermal EOR Methods
PETE622	Advanced Well Test Analysis
PETE623	Reservoir Simulation for IOR
PETE625	Selected Topics in Petroleum Engineering

1 : Non-thesis option

Thesis

Required Course (6 hours)	
CPSE699	Thesis Research

Doctor of Philosophy (PhD) Concentration: Chemical Engineering

The Ph.D. Degree in Chemical Engineering usually takes four to five years to complete. It involves course work and a research leading to the PhD Thesis. PhD research within the Chemical Engineering Department is broad, applying fundamental and applied sciences to investigate some of today's hot topics. Students gain advanced knowledge of chemical engineering theory and its relationship to engineering processes, including gas separation and membranes, industrial wastewater treatment technologies and environmental engineering, polymer and polymer nanotechnology, catalytic reaction engineering, biotechnology and biochemical engineering, food and pharmaceutical processing, desalination and water purification, CO₂ capture and storage, rheology, and composite materials. PhD graduates will be equipped with the important skills necessary for research and academia.

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

- Will demonstrate the breadth of knowledge in the discipline and advance, in-depth knowledge in the sub-discipline or area of specialization.
- Will have performed and defended an original work of research in their fields of specialization which contributed new human knowledge.
- Will be able to identify, analyze critically and explain open problems in their disciplines and apply relevant research methodology for finding a possible solution.
- Will be able to communicate the major tenets of their field of specialization and their work orally and in writing to the faculty, their peers, and the lay public.
- Will be able to identify areas where ethical issues may arise in their field, and articulate strategies to mitigate situations related to ethical issues in their profession.

Degree Requirements

Required Credit Hours : minimum 55 hours

Program Requirements:

Part 1: General Requirements ((Group 1) (4 hours)	
MECH710	Research Methodologies
CHME755	Graduate PhD Seminar
Group 2: (Any 6 credits of the following courses:) (6 hours)	
ELEC620	Analytical Techniques in Engineering
ELEC600	Numerical Methods in Engineering
STAT615	Design/Analysis of Experiments
Part 2: Concentration Requirements (9 hours)	
CHME640	Directed Studies in Chemical Engineering

CHME735	Advanced Topics in Chemical Engineering I
CHME736	Advanced Topics in Chemical Engineering II

Part 3: Elective Requirements (Any two Elective courses from Chemical Eng. or other programs) (6 hours)

Part 4: Qualification Requirements (0 hours)

CHME800	Comprehensive Exam
CHME810	Prospectus Exam

Part 5: Research Requirements (30 hours)

CHME900	Dissertation Doctoral Research
CHME910	Dissertation Defense

Doctor of Philosophy (PhD) Concentration: Petroleum Engineering

The Ph.D. Degree in Petroleum Engineering usually takes four to five years to complete. It involves course work and a research leading to the PhD Thesis. PhD research within the Petroleum Engineering Department is broad, applying fundamental and applied sciences to investigate some of today's hot topics. Students gain advanced knowledge of petroleum engineering theory and its relationship to real life problems, including reservoir characterization and engineering, enhanced oil recovery and production operations, fluid flow in porous media, modeling of fluid properties of crude oil and natural gas, multiphase flow in wells. PhD graduates will be equipped with the important skills necessary for research and academia.

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

- Will demonstrate the breadth of knowledge in the discipline and advance, in-depth knowledge in the sub-discipline or area of specialization.
- Will have performed and defended an original work of research in their fields of specialization which contributed new human knowledge.
- Will be able to identify, analyze critically and explain open problems in their disciplines and apply relevant research methodology for finding a possible solution.
- Will be able to communicate the major tenets of their field of specialization and their work orally and in writing to the faculty, their peers, and the lay public.
- Will be able to identify areas where ethical issues may arise in their field, and articulate strategies to mitigate situations related to ethical issues in their profession.
- Will demonstrate an insight into the transferable nature of research skills to other work environments and the range of career opportunities available to them inside and outside academia.

Degree Requirements

Required Credit Hours : minimum 55 hours

Program Requirements:

Part 1: General Requirements (Group 1) (4 hours)	
MECH710	Research Methodologies
CHME755	Graduate PhD Seminar

Group 2: (Any 6 credits of the following courses:) (6 hours)	
ELEC620	Analytical Techniques in Engineering
ELEC600	Numerical Methods in Engineering
STAT615	Design/Analysis of Experiments

Part 2: Concentration Requirements (9 hours)	
PETE640	Directed Studies in Petroleum Engineering

PETE735	Advanced Topics in Petroleum Engineering I
PETE736	Advanced Topics in Petroleum Engineering II

Part 3: Elective Requirements (Any two elective courses from Petroleum Eng. or other programs) (6 hours)

Part 4: Qualification Requirements (0 hours)

PETE800	Comprehensive Exam
PETE810	Prospectus Exam

Part 5: Research Requirements (30 hours)

PETE900	Dissertation Doctoral Research
PETE910	Dissertation Defense

Department of Civil & Environmental Engineering

Doctor of Philosophy (PhD) Concentration: Civil Engineering

The Department of Civil and Environmental Engineering offers Ph.D. degree in Civil Engineering. The program has evolved in response to the national need of developing qualified and specialized engineers in the various disciplines of Civil Engineering including structural, geotechnical, environmental, water resources, highway, transportation, surveying, and construction management. The award of the Ph.D. degree in Civil Engineering requires successful completion of a minimum of 25 credit hours of graduate “taught” coursework and 30 credit hours in research in addition to passing comprehensive and prospectus exams. Graduates of the program will contribute to the transfer of research knowledge, skills, and methodologies to work environments. Graduates of the program will be highly specialized in their respective areas and therefore they are anticipated to take the lead in the national development of the UAE in the various fields of Civil Engineering.

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

- Will demonstrate the breadth of knowledge in the discipline and advance, in-depth knowledge in the sub-discipline or area of specialization.
- Will have performed and defended an original work of research in their fields of specialization which contributed new human knowledge.
- Will be able to identify, analyze critically and explain open problems in their disciplines and apply relevant research methodology for finding a possible solution.
- Will be able to communicate the major tenets of their field of specialization and their work orally and in writing to the faculty, their peers, and the lay public.
- Will be able to identify areas where ethical issues may arise in their field, and articulate strategies to mitigate situations related to ethical issues in their profession.

Degree Requirements

Required Credit Hours : minimum 55 hours

Program Requirements:

Part 1: General Requirements (Group 1) (4 hours)	
MECH710	Research Methodologies
CHME755	Graduate PhD Seminar
Group 2: (Any 6 credits of the following courses:) (6 hours)	
ELEC620	Analytical Techniques in Engineering
ELEC600	Numerical Methods in Engineering
STAT615	Design/Analysis of Experiments
Part 2: Concentration Requirements (9 hours)	
CIVL631	Directed Studies in Civil Engineering

CIVL735	Advanced Topics in Civil Engineering I
CIVL736	Advanced Topics in Civil Engineering II

Part 3: Elective Requirements (Any two Elective courses from Civil Eng. or other programs) (6 hours)

Part 4: Qualification Requirements (0 hours)

CIVL800	Comprehensive Exam
CIVL810	Prospectus Exam

Part 5: Research Requirements (30 hours)

CIVL900	Dissertation Doctoral Research
CIVL910	Dissertation Defense

Doctor of Philosophy (PhD) Concentration: Water Resources

The Water Resources Graduate Program offers a Ph.D. degree in Water Resources that is in response to the national dire needs of developing its water resources. The program also aims at preparing specialists capable of providing leadership and necessary technical expertise to governmental and private sectors in different areas of water resources. These include surface and ground water resources, irrigation, treatment, desalination, in addition to management of water resources and demands. The offered program is interdisciplinary and accepts students with backgrounds in Engineering, Science, and Agriculture. The Ph.D degree in Water Resources requires successful completion of a minimum of 25 credit hours of graduate coursework and 30 credit hours in research in addition to passing comprehensive, prospectus, and final exams.

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

- Will demonstrate the breadth of knowledge in the discipline and advance, in-depth knowledge in the sub-discipline or area of specialization.
- Will have performed and defended an original work of research in their fields of specialization which contributed new human knowledge.
- Will be able to identify, analyze critically and explain open problems in their disciplines and apply relevant research methodology for finding a possible solution.
- Will be able to communicate the major tenets of their field of specialization and their work orally and in writing to the faculty, their peers, and the lay public.
- Will be able to identify areas where ethical issues may arise in their field, and articulate strategies to mitigate situations related to ethical issues in their profession.
- Will demonstrate an insight into the transferable nature of research skills to other work environments and the range of career opportunities available to them inside and outside academia.

Degree Requirements

Required Credit Hours : minimum 55 hours

Program Requirements:

Part 1: General Requirements (Group 1) (4 hours)	
MECH710	Research Methodologies
CHME755	Graduate PhD Seminar

Group 2: (Any 6 credits of the following courses) (6 hours)	
ELEC620	Analytical Techniques in Engineering
ELEC600	Numerical Methods in Engineering
STAT615	Design/Analysis of Experiments

Part 2: Concentration Requirements (9 hours)	
WATR632	Directed Studies in Water Resources

WATR735	Advanced Topics in Water Resources I
WATR736	Advanced Topics in Water Resources II

Part 3: Elective Requirements (Any two elective courses from Water Resources or other programs) (6 hours)

Part 4: Qualification Requirements (0 hours)

WATR800	Comprehensive Exam
WATR810	Prospectus Exam

Part 5: Research Requirements (30 hours)

WATR900	Dissertation Doctoral Research
WATR910	Dissertation Defense

Doctor of Philosophy (PhD) Concentration: Material Science and Engineering

The Ph.D. program in Material Science and Engineering is designed to give students a broad and deep understanding of materials science and engineering so that they will have long and fruitful careers as researchers. The interdisciplinary nature of the program is ideally suited to address this requirement. The graduate students in the Materials Science and Engineering Program benefit from the unique and broad combination of faculty members and research facilities. The program focuses on all materials: metals, polymers, ceramics, electronic materials, nanomaterials, biomaterials and their composites. The investments made in this graduate program will produce well-educated professionals who will contribute to society and the economy. The award of the Ph.D. degree in Material Science and Engineering requires successful completion of a minimum of 36 credit hours of graduate coursework and 36 credit hours in research in addition to passing comprehensive and prospectus exams.

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

- Will demonstrate the breadth of knowledge in the discipline and advance, in-depth knowledge in the sub-discipline or area of specialization.
- Will have performed and defended an original work of research in their fields of specialization which contributed new human knowledge.
- Will be able to identify, analyze critically and explain open problems in their disciplines and apply relevant research methodology for finding a possible solution.
- Will be able to communicate the major tenets of their field of specialization and their work orally and in writing to the faculty, their peers, and the lay public.
- Will be able to identify areas where ethical issues may arise in their field, and articulate strategies to mitigate situations related to ethical issues in their profession.
- Will demonstrate an insight into the transferable nature of research skills to other work environments and the range of career opportunities available to them inside and outside academia.

Degree Requirements

Required Credit Hours : minimum 55 hours

Program Requirements:

Part 1: General Requirements (Group 1) (4 hours)	
MECH710	Research Methodologies
CHME755	Graduate PhD Seminar

Group 2: (Any 6 credits of the following courses) (6 hours)	
ELEC620	Analytical Techniques in Engineering
ELEC600	Numerical Methods in Engineering
STAT615	Design/Analysis of Experiments

Part 2: Concentration Requirements (9 hours)	
MTSE625	Independent Studies in Materials Science and Eng.

MTSE735	Advanced Topics in Material Science and Engineering I
MTSE736	Advanced Topics in Material Science and Engineering II

Part 3: Elective Requirements (Any two elective courses from Material Sci. and Eng. or other programs) (6 hours)

Part 4: Qualification Requirements (0 hours)

MTSE800	Comprehensive Exam
MTSE810	Prospectus Exam

Part 5: Research Requirements (30 hours)

MTSE900	Dissertation Doctoral Research
MTSE910	Dissertation Defense

Master of Science in Civil Engineering

This graduate program covers various Civil Engineering disciplines including Structural Engineering, Geotechnical Engineering, Construction Management, Highway and Transportation, Water Resources, Environmental Engineering, and Surveying. The necessity of maintaining the national development is placing increasing demands upon the government and private sectors to secure proper infrastructures, transportation networks, residential and industrial complexes. To help meet those demands, the program is designed to provide the community and industry with distinguished national manpower and highly qualified civil engineers for the sustainable development of the country. The program will train students intending to pursue their Ph.D. in Civil Engineering. Graduates of the program would provide the link between the advancements in Civil Engineering sciences and corresponding applications.

Program Objectives

- Provide graduate students with a clear and comprehensive understanding of advanced civil engineering principles.
- Train graduate students on addressing contemporary, sophisticated, and complex civil engineering issues or projects by utilizing or applying multidisciplinary problem-solving approaches and using modern engineering tools.
- Serve the life-long learning needs of the engineering community and develop the graduate students' attitude to acquire further learning experiences and motivate them to get engaged in Ph.D. or advanced training programs
- Provide efficient and productive research environment to carry out fundamental and advanced applied research to address civil engineering problems in general and regional and national problems in particular.
- Provide the community and industry with quality technical assistance and highly qualified national manpower to lead the national industrial development plans.
- Enrich the collaboration in research and graduate studies between the UAE University and the national and industrial sectors in the country and worldwide.
- Provide a solid foundation for establishing a national research center for the Civil Engineering discipline in the country.

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

- Describe highly specialized civil engineering principles, concepts, and methodologies.
- Evaluate the performance of advanced civil engineering systems and components through the use of applicable research principles, analytical methods or modeling techniques.
- Conduct advanced research to develop innovative solutions for highly complex civil engineering problems through the use of appropriately selected research methodologies and modern engineering tools.
- Apply advanced multidisciplinary problem-solving approaches to critically analyze contemporary, sophisticated, and highly complex civil engineering problems.
- Present and critique highly complex civil engineering issues and communicate effectively at a high level of proficiency.
- Lead professional activities and manage ethical issues in highly complex civil engineering projects.
- Implement the social, environmental, ethical, economic and commercial aspects to develop valid decisions affecting highly complex civil engineering projects.

Degree Requirements

Required Credit Hours : minimum 30 hours

Civil Engineering

Required Courses (3 hours)	
CIVL600	Graduate Seminar
STAT615	Design/Analysis of Experiments

Elective Courses (21CH for Thesis and 30 CH for Non-Thesis) (21 hours)	
CIVL602	Environmental Impact Assessment Principles & Applications
CIVL605	Experimental Methods in Civil Engineering
CIVL610	Advanced Mechanics of Materials ¹
CIVL611	Structural Dynamics
CIVL612	Prestressed Concrete Structures
CIVL614	Advanced Steel Design

CIVL615	<u>Bridge Engineering</u>	
CIVL616	<u>Rehabilitation of Structures</u>	
CIVL618	<u>Construction Equipment & Methods</u>	
CIVL620	<u>Construction Cost Estimating</u>	
CIVL621	<u>Advanced Foundation Design</u>	
CIVL622	<u>Stability of Earth Supported Structures</u>	
CIVL623	<u>Foundation Dynamics</u>	
CIVL624	<u>Theory & Design of Pavement Structures</u>	
CIVL625	<u>Pavement Management Systems</u>	
CIVL626	<u>Advanced Traffic Engineering & Management</u>	
CIVL627	<u>Design of Transportation Systems</u>	
CIVL628	<u>Map Projections and Geometric Geodesy</u>	

CIVL629	Digital Terrain Modeling & Applications
CIVL630	Special Topics in Civil Engineering
CIVL631	Directed Studies in Civil Engineering ²
MECH633	Finite Element Methods
MEME621	Operations Research for Engineers

1 : CIVL 610,623,624 courses are offered intermittently

2 : Compulsory for non-thesis option students

Thesis

Required Course (6 hours)	
CIVL650	Research Thesis ³

3 : Thesis option students

Master of Science in Water Resources

The Water Resources Master Program (WRMP) is an interdisciplinary graduate program offers Master of Science degree addressing all areas of Water. The program accepts both full and part time students since its commencement in September 1999. The WRMP offers thesis and non-thesis options. Students with thesis option need to complete 30 CHs for graduation; while non-thesis option students need to complete 33 CHs to graduate. The WRMP covers various aspects related to water resources including (but not limited to) Integrated Water Resources Management and Sustainability, Groundwater Hydrology, Surface Water Hydrology, Subsurface Contaminant Hydrology, Water Quality, Risk Assessment, Environmental Engineering and Protection, Environmental Impact Assessment, Water Science and Technology, Hydrological and Hydrogeological Modeling, Water and Wastewater Treatment, Water Desalination, Hydraulic and Coastal Systems, Water Recycling, Water Infrastructure, Water Resources Planning and Assessment using GIS and Remote Sensing, and Water Economics and Policy. The participation of several experts from different university colleges conforms to the multidisciplinary nature of the program and brings deep knowledge on enormous practical applications related to water resources.

Program Objectives

- Educate and train graduate students to become competent in relevant issues of water resources.
- Allow the program graduates, who may already be working in related institutions, to provide leadership and technical assistance to their institutions on water-resource related issues in accordance with the national needs.
- Enrich and strengthen cooperation and scientific research in the field of water resources on national, regional, and international levels.
- Motivate students to be easily engaged in life-learning experience in various areas related to Water Resources.

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

- Gain comprehensive knowledge on Water Resources Assessment, Development and Management with specific reference to arid regions conditions
- Acquire skills to address contemporary issues related to Water Resources and understand their social and economic impacts.
- Develop skills of utilizing modern assessment and prediction tools related to water resources including field tests and computer software.

- Communicate effectively and produce professional reports related to various disciplines of Water Resources.
- Apply basic concepts in management, public policy and leadership in various areas of water resources.

Degree Requirements

Required Credit Hours : minimum 30 hours

Water Resources

Required Courses (9 CHs for thesis and non-thesis) (9 hours)	
WATR602	Water Resources Management
WATR608	Graduate Seminar
WATR605	Introduction to Water Science and Technology
STAT612	Experimental Design & Analysis

Elective Courses

Elective Courses (15 CHs for thesis and 21 CHs for non-thesis) (15 hours)

CIVL602	Environmental Impact Assessment Principles & Applications	
WATR601	Fluid Mechanics for Non Eng.	
WATR615	Groundwater Hydrology	
WATR617	Water and Wastewater Treatment	
WATR620	Membrane Desalination	
WATR631	Special Topics in Water Resources	
WATR632	Directed Studies in Water Resources	
WATR603	Surface Water Hydrology	
WATR606	Water Quality	
WATR611	Hydraulics of Closed Conduits	
WATR616	Advanced Hydrochemistry	
WATR618	Introduction to Water Desalination	

WATR622	Coastal Hydrodynamics	
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Thesis/Project

6 Credit Hours for Thesis option and 3 Credit Hours for non-thesis option (6 hours)

WATR640	Research Thesis ¹	
WATR695	Technical Project ²	

1 : For Thesis

2 : For Non-Thesis

Department of Electrical Engineering

Master of Science in Electrical Engineering

The Master of science program in Electrical Engineering provides advanced study opportunities for electrical engineers. The program includes elective courses, enabling students to individually tailor their programs to provide emphasis in a particular specialization (e.g., Power, control, communication, etc.). Areas of study include power systems, power electronics, electronics, control systems, computer engineering and communication systems. The program has a thesis and non-thesis options. The program provides the graduates with all the necessary abilities to pursue in a PhD program and/or actively participate in the management and maintenance of new technological innovations as well as the involvement in the development and design of new products. Other objectives include establishing strong two-way relationships with the local industry and governmental establishments, in addition to promoting scientific research and development (R&D) activities. (Total credit hours is 30 for theses and 33 for no-theses).

Program Objectives

- Provide graduates with a high level of analytical and applied skills necessary to actively participate in technology innovations in addition to maintaining the present ones in the UAE and abroad.
- Promote the interaction between UAE University and the local industry. The industry is encouraged not only to actually participate in selecting the various courses and their contents but also to have an effective role in endorsing the research themes of the students, especially those on study leave from the industry. Consequently, co-supervision from qualified scientists and researchers from the industry is encouraged.
- Promote the creative thinking skills among graduates necessary for lifelong learning.
- Promote scientific research and development (R&D) activities.

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

- Demonstrate understanding of highly specialized electrical engineering principles, concepts, and methodologies .
- Evaluate the performance of advanced electrical engineering systems and components through the use of applicable research principles, analytical methods and modelling techniques.
- Conduct advanced applied research to develop innovative solutions for highly complex electrical engineering problems through the use of appropriately selected research methodologies and modern engineering tools.
- Apply advanced multidisciplinary problem-solving approaches to critically analyze contemporary, sophisticated, and highly complex electrical engineering problems.
- Present and critique highly complex industrial electrical engineering issues and communicate effectively at a high level of proficiency.
- Demonstrate leadership and management of professional activities and ethical issues in highly complex electrical engineering projects.
- Recognize the social, environmental, ethical, economic and commercial considerations and professional responsibilities affecting highly complex industrial electrical engineering projects.

Degree Requirements

Required Credit Hours : minimum 30 hours

Electrical Engineering

Required Courses (9 hours)	
ELEC601	Applied Discrete Mathematics ¹
ELEC602	Linear Systems
ELEC604	Advanced Digital Signal Processing
ELEC605	Algorithmic Applications in Electrical Engineering
ARCH606	Project Management
ELEC600	Numerical Methods in Engineering
1 : For computer major only	

Elective Courses (21 hours)	
ELEC611	Detection and Estimation Theory

ELEC612	<u>Communications Networks</u>	
ELEC613	<u>Wireless Communications</u>	
ELEC614	<u>Electromagnetic Interference & Compatibility</u>	
ELEC615	<u>Adaptive Signal Processing</u>	
ELEC616	<u>Digital Image Processing</u>	
ELEC617	<u>Antenna Design & Applications</u>	
ELEC618	<u>Microwave Engineering</u>	
ELEC619	<u>Advanced Topics in Communication Engineering</u>	
ELEC621	<u>Power Systems Models & Control</u>	
ELEC622	<u>Power Systems Protection</u>	
ELEC623	<u>Power Systems Planning</u>	
ELEC624	<u>Power Electronic Applications in Utilities</u>	

ELEC625	<u>Power Systems Quality</u>	
ELEC626	<u>Power System Transients & Stability</u>	
ELEC627	<u>Advanced Motor Drives</u>	
ELEC628	<u>Embedded System Design Using Microcontrollers</u>	
ELEC629	<u>Advanced Topics in Power Engineering</u>	
ELEC631	<u>Quantum Semiconductor Structures</u>	
ELEC632	<u>Analog and Mixed Signal Design</u>	
ELEC630	<u>Power Electronics Analysis and Applications</u>	
ELEC633	<u>VLSI System Design</u>	
ELEC634	<u>Analog Integrated Circuits Design</u>	
ELEC635	<u>Integrated Circuits Test & Measurements</u>	
ELEC636	<u>MOS Devices and Circuits</u>	

ELEC637	<u>Sensors Design and Applications</u>	
ELEC638	<u>Mechatronics</u>	
ELEC639	<u>Advance Topics in Electrical Engineering</u>	
ELEC641	<u>Contemporary Digital Systems</u>	
ELEC642	<u>Artificial Intelligence</u>	
ELEC643	<u>Digital Circuit Test & Design Fault Testing</u>	
ELEC644	<u>Artificial Neural Networks</u>	
ELEC645	<u>Computer Architecture</u>	
ELEC646	<u>Computational Vision</u>	
ELEC647	<u>Computer Networks</u>	
ELEC648	<u>Software Engineering Design & Testing</u>	
ELEC649	<u>Advanced Topics in Computer Engineering</u>	

ELEC651	Robust Control
ELEC652	Nonlinear Control
ELEC653	Control & Instrumentation
ELEC654	Stochastic Estimation & Control
ELEC655	Adaptive Control
ELEC656	Optimal Control
ELEC657	Advanced Feedback Control
ELEC658	Sliding Mode Control
ELEC659	Advanced Topics in Control Systems

Thesis and Seminar

Required Courses (6 hours)

ELEC691	Graduate Seminar I ²	
ELEC692	Graduate Seminar II	
ELEC693	Master's Research Thesis	
ELEC694	Research / Design Paper ³	

2 : For these-option only

3 : For non-thesis option only

Doctor of Philosophy (PhD) Concentration: Electrical Engineering

The rapid growth of the communications, renewable energy, and oil industry in UAE requires academic infrastructure that can support the management and maintenance of new technological innovations, and for involvement in the development and design of new products. The electrical engineering department at UAE university has initiated PhD program in to support these growing needs. The award of the Ph.D. degree in Electrical Engineering requires successful completion of a minimum of 55 credit hours. 25 credit hours of graduate coursework and 30 credit hours in research in addition to passing comprehensive and prospectus exams. Graduates of the program will contribute to the transfer of research knowledge, skills, and methodologies to work environments. Graduates of the program will be highly specialized in their respective areas and therefore they are anticipated to take the lead in the national development of the UAE in the various fields of Electrical Engineering.

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

- Will demonstrate the breadth of knowledge in the discipline and advance, in-depth knowledge in the sub-discipline or area of specialization.
- Will have performed and defended an original work of research in their fields of specialization which contributed new human knowledge.
- Will be able to identify, analyze critically and explain open problems in their disciplines and apply relevant research methodology for finding a possible solution.
- Will be able to communicate the major tenets of their field of specialization and their work orally and in writing to the faculty, their peers, and the lay public.
- Will be able to identify areas where ethical issues may arise in their field, and articulate strategies to mitigate situations related to ethical issues in their profession.
- Will demonstrate an insight into the transferable nature of research skills to other work environments and the range of career opportunities available to them inside and outside academia.

Degree Requirements

Required Credit Hours : minimum 55 hours

Program Requirements:

Part 1: General Requirements (Group 1) (4 hours)	
MECH710	Research Methodologies
CHME755	Graduate PhD Seminar

Group 2: (Any 6 credits of the following courses) (6 hours)	
ELEC620	Analytical Techniques in Engineering
ELEC600	Numerical Methods in Engineering
STAT615	Design/Analysis of Experiments

Part 2: Concentration Requirements (9 hours)	
ELEC640	Directed Studies in Electrical Engineering

ELEC735	Advanced Topics in Electrical Eng I
ELEC736	Advanced Topics in Electrical Eng II

Part 3: Elective Requirements (Any two elective courses from Electrical Eng. or other programs) (6 hours)

Part 4: Qualification Requirements (0 hours)

ELEC800	Comprehensive Exam
ELEC810	Prospectus Exam

Part 5: Research Requirements (30 hours)

ELEC900	Dissertation Doctoral Research
ELEC910	Dissertation Defense

Department of Mechanical Engineering

Master of Science in Mechanical Engineering

Mechanical engineering is one of the broadest and oldest branches of engineering and can require work that ranges from the design and manufacture of very fine and sensitive instruments with micro and nano scales, to the design and fabrication of huge power plants. The ME program emphasizes a fundamental approach to engineering in which the student learns to identify needs, define problems and apply basic principles and techniques to obtain a solution. This philosophy is incorporated in the classroom lectures, laboratory activities, design projects and research. ME graduates are expected to deal with moving devices and complex systems. Students learn about materials, design, manufacturing, solid and fluid mechanics, thermodynamics, heat transfer, control, and instrumentation, to understand mechanical systems. Specialized ME subjects include energy conversion, energy management, air conditioning, turbomachinery, composite materials and materials processing, combustion, fracture mechanics, selected topics in mechatronics and vibration, control engineering, introduction to robotics, selected topics in manufacturing and design, maintenance engineering, biomechanics and selected topics in bioengineering. (Total credit hours is 30 for theses and 33 for no-theses).

Program Objectives

- Foster high quality graduate level mechanical engineering education and research and generate graduates with high levels of competence in fundamental and applied concepts of mechanical engineering.
- Prepare graduates for successful careers in industry and/or academia and to promote and instil ethical practice and life-long learning.
- Enrich the research collaboration between the university and the industrial sectors in the country and worldwide.
- Graduate professionals and leaders in the global industries.

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

- Apply knowledge and skills ethically for solving mechanical engineering problems and drawing conclusions.
- Conduct mechanical engineering studies utilizing experimental, computer software and other modern tools.
- Communicate effectively, both orally and in writing to present technical and research work.
- Conduct independently and with a team quality scientific and applied research.

Degree Requirements

Required Credit Hours : minimum 30 hours

Mechanical Engineering

Required Courses (15 hours)	
ELEC620	Analytical Techniques in Engineering
ELEC600	Numerical Methods in Engineering
MECH615	Advanced Dynamics
MECH630	Advanced Solid Mechanics
MECH650	Advanced Fluid Mechanics

Elective Courses - 9CH for Thesis and 18CH for Non-Thesis (18 hours)

MECH612	<u>Advanced Mechanical Vibrations</u>
MECH613	<u>Advanced Robotics & Vibrations</u>
MECH614	<u>Advanced Control Systems</u>
MECH622	<u>Theory of Elasticity & Plastic</u>
MECH633	<u>Finite Element Methods</u>
MECH626	<u>Fatigue & Fracture Mechanics</u>
MECH632	<u>Advanced CAD/CAM</u>
MECH635	<u>Advanced Manufacturing Engineering</u>
MECH645	<u>Advanced Heat Transfer</u>
MECH654	<u>Advanced Thermodynamics</u>
MECH655	<u>Dynamics of Viscous Fluids</u>

Thesis

Required Courses (6 hours)	
MECH660	Mechanical Engineering Seminar
MECH690	Thesis

Master of Engineering Management

Engineering Management is the Process of Planning, Organizing, Staffing, leading and influencing People and Controlling Activities which have a Technological Component. These functions require foundation skills from engineering managers to manage themselves, staff, teams, projects, technologies and global issues of importance. These requirements being partly technical and partly business related, the Colleges of Engineering, and Business and Economics got together and launched the program in 2006. The program focuses on product development, process management, Quality Engineering and Project management from the technical side and leadership, management of technical innovations, supply chain, finance and decision making from the business side. The knowledge and skills thus gained are integrated through an action project.

Program Objectives

- Management decision-making skills.
- Professional leadership and management skills.
- Knowledge of cost, financial and economic analysis.
- Knowledge about management of existing and emerging technologies.
- Continued intellectual growth in the engineering field.

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

- Describe the designing process and synthesize strategies to manage designing an overall engineering system or product that meets desired needs.
- Apply knowledge of mathematics, engineering and technology in managing engineering processes.
- Analyze engineering problems relating to Quality and manufacturing operations and Synthesize Solutions.
- Describe supply chain concepts and apply them to improve the business' overall and supply chain performance
- Apply concepts to manage technological innovations and synthesize relevant business strategy.
- Apply the accounting information for decision-making
- Apply knowledge of applied statistics and decision techniques in managing engineering processes.
- Analyze subjects with technical and business content and synthesize effective written reports and oral presentations

- Apply theories of human behavior to analyze and evaluate the role of managers and leaders in driving effective employee behaviors in industrial organizational contexts.

Degree Requirements

Required Credit Hours : minimum 33 hours

Engineering Management

Required Courses (33 hours)	
ACCT603	<u>Management Accounting & Financial Analysis</u>
MEME621	<u>Operations Research for Engineers</u>
MEME635	<u>Project Management for Engineers</u>
MEME651	<u>Quality Engineering</u>
MEME661	<u>Engineering Process Management</u>
MEME676	<u>Product Development and Marketing</u>
MEME685	<u>Action Project (Capstone)</u>
MGMT675	<u>Management and Leadership</u>

MIST625	<u>Management of Technology</u>	
SCML655	<u>Supply Chain Management</u>	
STAT609	<u>Decision Techniques and Data Analysis</u>	

Doctor of Philosophy (PhD) Concentration: Mechanical Engineering

The mechanical engineering ME graduate program offers Ph.D. degree in Mechanical Engineering. It strives to help students to develop professional independence, creativity, leadership, and the capacity for continuing professional and intellectual growth. The aim of the program is to prepare graduates for research and professional practice in an era of rapidly advancing interdisciplinary technology. Graduates with advanced research and education in all ME relevant fields can contribute effectively to the development of various national and international industries and academia. They will be qualified and specialized in various disciplines of ME such as materials, design, manufacturing, fluid mechanics, thermodynamics, heat transfer, control and dynamic. Specialized PhD topics include materials processing and characterization, fracture mechanics and fatigue, composite materials, polymers, tissue engineering, biomechanics, nanomechanics, biomedical engineering, energy conversion, combustion, microfluidics, micropower generation, mechanisms, mechatronics, robotics engineering, MEMS, vibrations, and nanotechnology. The award of the Ph.D. degree in ME requires successful completion of a minimum of 25 credit hours of graduate coursework and 30 credit hours in research in addition to passing comprehensive and prospectus exams.

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

- Will demonstrate the breadth of knowledge in the discipline and advance, in-depth knowledge in the sub-discipline or area of specialization.
- Will have performed and defended an original work of research in their fields of specialization which contributed new human knowledge.
- Will be able to identify, analyze critically and explain open problems in their disciplines and apply relevant research methodology for finding a possible solution.
- Will be able to communicate the major tenets of their field of specialization and their work orally and in writing to the faculty, their peers, and the lay public.
- Will be able to identify areas where ethical issues may arise in their field, and articulate strategies to mitigate situations related to ethical issues in their profession.
- Will demonstrate an insight into the transferable nature of research skills to other work environments and the range of career opportunities available to them inside and outside academia.

Degree Requirements

Required Credit Hours : minimum 55 hours

Program Requirements:

Part 1: General Requirements (Group 1) (4 hours)	
MECH710	Research Methodologies
CHME755	Graduate PhD Seminar

Group 2: (Any 6 credits of the following courses) (6 hours)	
ELEC620	Analytical Techniques in Engineering
ELEC600	Numerical Methods in Engineering
STAT615	Design/Analysis of Experiments

Part 2: Concentration Requirements (9 hours)	
MECH640	Directed Studies in Mechanical Engineering

MECH735	Advanced Topics in Mechanical Engineering I
MECH736	Advanced Topics in Mechanical Engineering II

Part 3: Elective Requirements (Any two elective courses from Mechanical Eng. or other programs) (6 hours)

Part 4: Qualification Requirements (0 hours)

MECH800	Comprehensive Exam
MECH810	Prospectus Exam

Part 5: Research Requirements (30 hours)

MECH900	Dissertation Doctoral Research
MECH910	Dissertation Defense

College of Education

Department of Curriculum & Instruction

Doctor of Philosophy (PhD) Concentration: Science Education

The PhD concentration in Science Education requires a minimum of 60 credit hours, 30 of them are to complete the dissertation. The degree requirement will be accomplished on full-time basis where students can complete the program in about 3.5 academic years. The main objective of Science Education concentration is to prepare doctorate students to obtain leadership positions in science education as supervisors and teachers in various levels of schooling. Other objectives includes to prepare students to demonstrate scholarship and research expertise in science education; design curriculum and instructional strategies that accommodate diverse students; understand and apply ethical and legal standards in their specialization; develop different skills of communication; and demonstrate productive and comprehensive knowledge of instructional theories and methods of teaching in their area of specialization. The most important part of preparing science education doctorate students to achieve those objectives is supporting them to involve in a broad range of experiences that will provide an extensive, balanced, and personalized form of professional development.

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

- Will demonstrate the breadth of knowledge in the discipline and advance, in-depth knowledge in the sub-discipline or area of specialization.
- Will have performed and defended an original work of research in their fields of specialization which contributed new human knowledge.
- Will be able to identify, analyze critically and explain open problems in their disciplines and apply relevant research methodology for finding a possible solution.
- Will be able to communicate the major tenets of their field of specialization and their work orally and in writing to the faculty, their peers, and the lay public.
- Will be able to identify areas where ethical issues may arise in their field, and articulate strategies to mitigate situations related to ethical issues in their profession.
- Will demonstrate an insight into the transferable nature of research skills to other work environments and the range of career opportunities available to them inside and outside academia.

Degree Requirements

Required Credit Hours : minimum 60 hours

Program Requirements:

Part 1: General Requirements All courses in Group 1 and 9 credits from Group 2. (18 hours)

Group 1: The following 9 credits (9 hours)

CURR701	<u>Curriculum Theory and Practice</u>
SPED704	<u>Teaching Children from Culturally and Linguistically Divers Background</u>
FOED702	<u>Organizational theory in educational leadership</u>

Group 2 Research Methodologies: (Any 9 credits of the following courses) (9 hours)

CURR710	<u>Quantitative Research Methods in Education I</u>
CURR712	<u>Advanced Data Analysis in Quantitative Research</u>
CURR713	<u>Qualitative Research Methods in Education</u>

CURR715	Mixed Methods Research in Education
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Part 2: Concentration Requirements (Any 9 credits of the following) (9 hours)

CURR702	Theory and research on learning and teaching
CURR720	Philosophical and historical perspectives in science education
CURR721	Science teacher education: Theory and practice
CURR722	Current issues in science education
CURR732	Assessment in science education

Part 3: Elective Requirements (A 3-credit CURR 7xx level course approved by the Advisory Committee.) (3 hours)

Part 4: Qualification Requirements (0 hours)

CURR800	Comprehensive Examination
CURR810	Research Proposal

Part 5: Research Requirements (30 hours)

CURR900

[Dissertation Research](#)

CURR910

[Dissertation Defense](#)

Doctor of Philosophy (PhD) Concentration: Mathematics Education

The PhD concentration in Mathematics Education requires a minimum of 60 credit hours including 30 credit hours of dissertation. The degree requirement will be accomplished on full-time basis where students can complete the program in about 3.5 academic years. The main objective of Mathematics Education concentration is to develop educators with an understanding of mathematics and its teaching and learning, and to prepare them to work as researchers or policy professionals. Additionally, doctoral candidates will demonstrate expertise in designing and implementing curriculum and instructional interventions that accommodate ALL students. Throughout this program, doctoral students will be involved in a broad range of experiences that focus on learning and teaching, understanding, mathematical communication, technology as well as participating in designing and conducting qualitative and quantitative research studies.

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

- Will demonstrate the breadth of knowledge in the discipline and advance, in-depth knowledge in the sub-discipline or area of specialization.
- Will be able to identify, analyze critically and explain open problems in their disciplines and apply relevant research methodology for finding a possible solution.
- Will be able to communicate the major tenets of their field of specialization and their work orally and in writing to the faculty, their peers, and the lay public.
- Will be able to identify areas where ethical issues may arise in their field, and articulate strategies to mitigate situations related to ethical issues in their profession.
- Will demonstrate an insight into the transferable nature of research skills to other work environments and the range of career opportunities available to them inside and outside academia.

Degree Requirements

Required Credit Hours : minimum 60 hours

Program Requirements

Part 1: General Requirements All courses in Group 1 and 9 credits from Group 2. (18 hours)

Group 1: The following 9 credits (9 hours)

CURR701	Curriculum Theory and Practice
FOED702	Organizational theory in educational leadership
SPED704	Teaching Children from Culturally and Linguistically Divers Background

Group 2 (Research Methodologies): Any 9 credits of the following courses (9 hours)

CURR701	Curriculum Theory and Practice
CURR712	Advanced Data Analysis in Quantitative Research
CURR713	Qualitative Research Methods in Education

CURR715	Mixed Methods Research in Education
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Part 2: Concentration Requirements (9 credits)

Any 9 credits of the following courses: (9 hours)	
CURR702	Theory and research on learning and teaching
CURR740	Theory and Research in Mathematical Thinking and Learning
CURR742	Theory and Research in Mathematics Teacher Education
CURR743	Integration of Technology into Mathematics Curriculum and Instruction
CURR751	Clinical Interviewing and Assessment in Mathematics Education

Part 3: Elective Requirements A 3-credit CURR 7xx level course approved by the Advisory Committee. (3 hours)	
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Part 4: Qualification Requirements (0 hours)	
CURR800	Comprehensive Examination

CURR810	Research Proposal
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Part 5: Research Requirements (30 hours)

CURR900	Dissertation Research
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CURR910	Dissertation Defense
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Doctor of Philosophy (PhD) Concentration: Language and Literacy Education

The PhD concentration in Language and Literacy Education requires a minimum of 60 credit hours including 30 credit hours of dissertation and 30 credit hours in course work. The degree requirements will be accomplished on full-time basis where students can complete the program in about 3.5 academic years. The main objective of the Language and Literacy Education concentration is to develop educators with an understanding of language and literacy Education and to achieve an epistemological ground in this field as well as a comprehensive understanding of the interconnectedness of language and literacy education in teaching and learning that will prepare them to work as academic professional, researchers or policy professionals. Additionally, doctoral candidates will demonstrate expertise in designing and implementing curriculum and instructional interventions and to acquire expertise in applying and evaluating appropriate research methodologies that inform recent developments in literacy and language education, and teacher education. Throughout this program, doctoral students will be equipped with a solid background in curriculum and instruction, literacy, linguistics, first and second language learning and acquisition, language development and assessment, qualitative and quantitative research methods and analysis.

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

- Will demonstrate the breadth of knowledge in the discipline and advance, in-depth knowledge in the sub-discipline or area of specialization.
- Will be able to identify, analyze critically and explain open problems in their disciplines and apply relevant research methodology for finding a possible solution.
- Will be able to communicate the major tenets of their field of specialization and their work orally and in writing to the faculty, their peers, and the lay public.
- Will be able to identify areas where ethical issues may arise in their field, and articulate strategies to mitigate situations related to ethical issues in their profession.
- Will demonstrate an insight into the transferable nature of research skills to other work environments and the range of career opportunities available to them inside and outside academia.

Degree Requirements

Required Credit Hours : minimum 60 hours

Program Requirements:

Part 1: General Requirements All courses in Group 1 and 9 credits from Group (18 hours)

Group 1: The following 9 credits (9 hours)

CURR701	<u>Curriculum Theory and Practice</u>
FOED702	<u>Organizational theory in educational leadership</u>
SPED704	<u>Teaching Children from Culturally and Linguistically Divers Background</u>

Group 2 (Research Methodologies): Any 9 credits of the following courses (9 hours)

CURR710	<u>Quantitative Research Methods in Education I</u>
CURR712	<u>Advanced Data Analysis in Quantitative Research</u>
CURR713	<u>Qualitative Research Methods in Education</u>

CURR715	Mixed Methods Research in Education
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Part 2: Concentration Requirements (Any 9 credits of the following courses:) (9 hours)

CURR702	Theory and research on learning and teaching
CURR741	Advanced Study of Students' Mathematical Understanding
CURR760	Language, Literacy and Culture
CURR761	Language and Literacy Pedagogy
CURR762	First and Second Language Development and Assessment
CURR763	Social and Psychological Aspects of Learning Language
CURR764	Discourse Analysis and Language Learning
CURR765	Bilingualism, Biliteracy and Multiliteracy Education

Part 3: Elective Requirements (A 3-credit CURR 7xx level course approved by the Advisory Committee.) (3 hours)

Part 4: Qualification Requirements (0 hours)

CURR800

[Comprehensive Examination](#)

CURR810

[Research Proposal](#)

Part 5: Research Requirements (30 hours)

CURR900

[Dissertation Research](#)

CURR910

[Dissertation Defense](#)

Master of Education

The Master of Education Program at the United Arab Emirates University is practice oriented with the primary focus of enhancing the knowledge, skills, and dispositions of graduate students. The program is designed to cater for the needs of school teachers, principals, and other school professionals who are eager to pursue graduate studies to improve their performances. It focuses on preparing leaders who will engage in school reform through curriculum development, school decision-making, and community outreach. The program is based on best international standards which will help in facilitating the continuous improvement of education in the United Arab Emirates. The Master's degree program offers three tracks: Educational Leadership, Special Education and Curriculum and Instruction (English, Arabic, Islamic Studies, Mathematics, Science and Social Studies). UAEU College of Education is considered a pioneer in the Middle East in Teacher Education preparation, demonstrated by its attainment of international recognition from the Center for Quality Assurance in International Education (CQAIE) in collaboration with the National Council for Accreditation of Teacher Education (NCATE), in 2005 and 2010 respectively.

Program Objectives

- Acquire advanced knowledge of educational theory, research, and skills related to the area of specialization.
- Enhance ability to incorporate theory and research into practice related to the area of specialization.
- Become reflective practitioners within the area of specialization.
- Become an educational leader and promotes the success of all students by advocating, nurturing, and sustaining a school culture and instructional program conducive to student learning.
- Enhance ability to use problem solving skills and critical thinking abilities to develop, implement, and evaluate collaborative teaching and learning activities.

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

- Apply advanced knowledge and skills necessary in their area of specialization.
- Create a responsive learning environment in which equal treatment, fairness, and respect for diversity are sustained.
- Collaborate with stakeholders to improve programs, services, and outcomes for students and their families.
- Use quantitative and qualitative research that enhance teaching and learning practices and/or school operations.

- Demonstrate leadership abilities in their profession.
- Integrate ICT (Information and Communication Technology) into teaching and learning and/or school operations.
- Use effective communication skills to manage the complexities of teaching for learning in all educational settings.

Degree Requirements

Required Credit Hours : minimum 36 hours

College of Education

Required Courses (9 hours)	
CURR6012	
FOED616	<u>Leading Schools & Communities</u>
SPED6018	<u>Human Development & Individual Differences</u>

Elective Courses (6 hours)	
CURR6013	<u>Advanced Teaching Applications in ED</u>
CURR6014	<u>Advanced Educational Research</u>

CURR6017		
FOED6015	Intern Perspective on ED LSH	
FOED6019	Leadership of Change in Education Organizations	
SPED6324		

Curriculum and Instruction Track

Required Courses (15 hours)		
CURR6017		
CURR6121	Advanced Study in Curriculum & Instruction	
CURR6122		
CURR6400	Thesis ¹	
CURR6401	Thesis Proposal Development Seminar I	

CURR6402	Thesis Proposal Development Seminar II	
CURR6403	Thesis Proposal Development Seminar III	
CURR6411	2	
CURR6412		

1 : Min CH:0 to Max CH:3 (Thesis Option)

2 : non-thesis option

C and I Concentration Methods Courses - Students should select two courses from the same subject area. (6 hours)

CURR612E	Advanced Teaching Methods / Eng I	
CURR612M	Advanced Teaching Methods / Math I	
CURR612S	Advanced Teaching Methods / Science I	
CURR622E	Advanced Teaching Methods / Eng II	
CURR622M	Advanced Teaching Methods / Math II	

CURR622S	Advanced Teaching Methods / Sc II
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Educational Leadership Track

Required Courses (21 hours)	
FOED6400	Thesis ³
FOED6401	Thesis Proposal Dev Seminar I
FOED6402	Thesis Proposal Dev Seminar II
FOED6403	Thesis Proposal Dev Seminar III
FOED6421	Personnel Administration & Staff Development
FOED6422	School Finance & Resource Management
FOED6423	Professional & Cultural Issues in Education
FOED6424	Educational Supervision

FOED6425	School Leadership	
3 : Min CH:0 to Max CH:3		

Special Education Track

Required Courses (21 hours)		
SPED6321	Advanced Assessment in Special Education	
SPED6322	Characteristics & Teaching Techniques for Individuals	
SPED6323	Advanced Collaboration in Special Education	
SPED6324		
SPED6325	Curriculum Modifications for Exceptional Individuals	
SPED6400	Thesis	
SPED6401	Thesis Proposal Dev Seminar I	

SPED6402	<u>Thesis Proposal Dev Seminar II</u>	
SPED6403	<u>Thesis Proposal Dev Seminar III</u>	

Department of Foundations of Education

Doctor of Philosophy (PhD) Concentration: Leadership and Policy Studies in Education

The PhD concentration in Leadership and Policy Studies in Education requires a minimum of 60 credit hours, 30 hours of which will be taken toward completing a dissertation. As per the UAEU regulations, students should be studying on a full-time basis where they study three courses each semester. The time to complete the degree depends on the ability of the student to pass the comprehensive exam and write their dissertations. However, it is very likely to get the degree in less than four years. The main objectives of a PhD in Leadership and Policy Studies in Education are to help doctoral students to be competent in doing research in this area of specialization, teaching in higher education institutions, and to advance their knowledge, skills, and dispositions in this important area. This would allow them to attain leadership positions in schools, school districts, or higher levels of educational administration. Students in the PhD concentration in Leadership and Policy Studies will learn about highly important issues for leading educational systems and policy planning. A few of the issues of importance in the concentration include learning about organizational behavior, motivating and leading personnel toward higher productivity, leading school change, becoming instructional and transformational leaders, learning about sociology of education, being inducted into ethical leadership of schools and educational institutions, learning how to bridge the gaps between schools and the surrounding community, understanding global influence on education and being prepared to adapt to international changes, caring for diverse groups of students, and doing quantitative and qualitative research on leadership and policy issues.

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

- Will demonstrate the breadth of knowledge in the discipline and advance, in-depth knowledge in the sub-discipline or area of specialization.
- Will have performed and defended an original work of research in their fields of specialization which contributed new human knowledge.
- Will be able to identify, analyze critically and explain open problems in their disciplines and apply relevant research methodology for finding a possible solution.
- Will be able to communicate the major tenets of their field of specialization and their work orally and in writing to the faculty, their peers, and the lay public.
- Will be able to identify areas where ethical issues may arise in their field, and articulate strategies to mitigate situations related to ethical issues in their profession.
- Will demonstrate an insight into the transferable nature of research skills to other work environments and the range of career opportunities available to them inside and outside academia.

Degree Requirements

Required Credit Hours : minimum 60 hours

Program Requirements:

Part 1: General Requirements All courses in Group 1 and 9 credits from Group 2. (18 hours)

Group 1: The following 9 credits (9 hours)

CURR701	Curriculum Theory and Practice
FOED702	Organizational theory in educational leadership
SPED704	Teaching Children from Culturally and Linguistically Divers Background

Group 2 (Research Methodologies): Any 9 credits of the following courses (9 hours)

CURR710	Quantitative Research Methods in Education I
CURR712	Advanced Data Analysis in Quantitative Research
CURR713	Qualitative Research Methods in Education

CURR715	Mixed Methods Research in Education
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Part 2: Concentration Requirements (Any 9 credits of the following courses:) (9 hours)

FOED704	Philosophy of Education
FOED720	Comparative and International Education
FOED721	Sociology of Education
FOED722	Leading School Change
FOED723	Leadership & Policy in Adult Education
FOED724	Ethics of Educational Leadership

Part 3: Elective Requirements (A 3-credit FOED 7xx level course approved by the Advisory Committee.) (3 hours)

Part 4: Qualification Requirements (0 hours)

FOED800	Comprehensive Examination
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FOED810	Research Proposal
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Part 5: Research Requirements (30 hours)

FOED900	Dissertation Research
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FOED910	Dissertation Defense
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Department of Special Education

Doctor of Philosophy (PhD) Concentration: Special Education

The PhD concentration in Special Education is designed for providing teachers, administrators, parents, and mental, health, or social service providers with the unique opportunity to develop their reflective thinking skills and leadership skills on the application of best practices on a diverse range of disabilities and to engage into critical educational issues, practices and concerns. The PhD concentration in Special Education, responds to the academic and professional needs of both school-based and agency-based personnel, who presently hold or desire to pursue leadership positions in Special Education. Our students are people, who seek a career in academy, or in field-based research; are specialized in government issues and policies; direct public and private agencies; and are consultants and advocates in Special Education. One of our goals is to support our graduates to seek academic positions as faculty at colleges and universities. The program involves theoretical and practical coursework, seminars, research activities, and field experiences that provide the knowledge and skills necessary to effectually perform leadership positions. The PhD concentration in Special Education program requires the inclusion of core doctoral courses (30 credits) and research/dissertation courses (30 credits). Courses may be selected from the general Special Education options in curriculum, educational leadership, and diversity, and from concentration options in Assistive Technology (AT), gifted learners, mild/moderate disabilities, and instruction/assessment.

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

- Will demonstrate the breadth of knowledge in the discipline and advance, in-depth knowledge in the sub-discipline or area of specialization.
- Will have performed and defended an original work of research in their fields of specialization which contributed new human knowledge.
- Will be able to identify, analyze critically and explain open problems in their disciplines and apply relevant research methodology for finding a possible solution.
- Will be able to communicate the major tenets of their field of specialization and their work orally and in writing to the faculty, their peers, and the lay public.
- Will be able to identify areas where ethical issues may arise in their field, and articulate strategies to mitigate situations related to ethical issues in their profession.
- Will demonstrate an insight into the transferable nature of research skills to other work environments and the range of career opportunities available to them inside and outside academia.

Degree Requirements

Required Credit Hours : minimum 60 hours

Program Requirements:

Part 1: General Requirements All courses in Group 1 and 9 credits from Group 2. (18 hours)

Group 1: The following 9 credits (9 hours)

CURR701	Curriculum Theory and Practice
FOED702	Organizational theory in educational leadership
SPED704	Teaching Children from Culturally and Linguistically Divers Background

Group 2 (Research Methodologies): (Any 9 credits of the following courses) (9 hours)

CURR710	Quantitative Research Methods in Education I
CURR712	Advanced Data Analysis in Quantitative Research
CURR713	Qualitative Research Methods in Education

CURR715	Mixed Methods Research in Education
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Part 2: Concentration Requirements (Any 9 credits of the following courses:) (9 hours)

SPED701	Advance Application of Assistive Technology in Special Education
SPED720	Education and Development of Gifted Learners
SPED721	Language and Literacy Impairment
SPED722	Advanced Topics in Special Education
SPED724	Developmental Disabilities

Part 3: Elective Requirements (A 3-credit SPED 7xx level course approved by the Advisory Committee). (3 hours)

Part 4: Qualification Requirements (0 hours)

SPED800	Comprehensive Examination
SPED810	Research Proposal

Part 5: Research Requirements (30 hours)

SPED900

[Dissertation Research](#)

SPED910

[Dissertation Defense](#)

Department of Private Law

Master of Private Law

Private Law is the branch of law that deals with the relations between individuals or institutions, rather than relations between these and the state. This specialty attracts the law graduates who are looking to get recruited in trading companies, law firms, economic establishments, and the judiciary. The program aims at providing graduates with adequate research and professional skills through focusing on financial transactions between individuals whether it be civil or commercial transactions.

Program Objectives

- Build and develop in depth a solid and advanced scientific base of knowledge in private law among the students.
- Enable students to conduct in depth researches and specialized legal studies in different areas of private law.
- Develop creativity and an advanced continuous knowledge in the field of Private Law.
- Provide students with the highest values and ethics necessary for the exercise of the legal profession.

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

- Analyzes cases and legal texts soundly and scientifically.
- Examines jurisprudence, various judicial and legislative trends, especially in the UAE legal system.
- Performs in-depth scientific research in a field of the Private Law utilizing curriculum-based legal research methods and drawing from scientific sources.
- Drafts legal papers (suits, memos, contracts and draft laws) in a sound and proper language.
- Performs tasks assigned to him/her in a professional and ethical manner.

Degree Requirements

Required Credit Hours : minimum 31 hours

Program Requirements

Part 1: Core Requirements (18 hours)	
PRVT600	<u>Advanced Studies in Civil Law</u>
PRVT601	<u>Advanced Studies in Commercial Law</u>
PRVT603	<u>International Trade Contracts (E)</u>
PRVT604	<u>Alternative Dispute Resolution (E)</u>
PRVT605	<u>Modern Finance Transactions in Islamic Law</u>
LAW666	<u>Legal Research</u>
Part 2: Elective Requirements (6 hours)	
PRVT607	<u>World Trade Agreements (E)</u>
PRVT608	<u>E-Commerce (E)</u>

PRVT609	<u>Advanced St.In Prvt.Int. Law</u>	
PRVT610	<u>Legal System for Economic Activity in Free Zones E</u>	
PRVT611	<u>Advanced Studies in Civil Procedure</u>	
PRVT612	<u>Advanced Studies in Insurance</u>	
PRVT613	<u>Advanced Studies in Intellectual Property</u>	

Part 3: Research Requirements (7 hours)

PRVT606	<u>Thesis</u>	
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Department of Public Law

Master of Public Law

The public law specialty emphasizes the laws related to the state, as sovereign state, such as Criminal Law, Administrative Law, International Law, and Constitutional Law. The program is designed to enhance the graduates' professional skills, their abilities to think critically, to analyze legal arguments, to articulate ideas, to research efficiently, to write effectively, and to support the college's academic position as a remarkable university within the UAE and abroad

Program Objectives

- Build and develop in depth a solid and advanced scientific base of knowledge in public law among the students.
- Enable students to conduct in depth researches and specialized legal studies in different areas of public law.
- Develop creativity and an advanced continuous knowledge in the field of Public Law.
- Provide students with the highest values and ethics necessary for the exercise of the legal profession.

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

- Analyzes cases and legal texts in a correct scientific manner.
- Criticizes jurisprudential and judicial view points and trends in general, and within the UAE legal system in particular.
- Conducts in depth a legal research in the field of public law, and analyzes the findings, in accordance with the correct scientific methodologies.
- Presents his/her scholarly activity orally in a correct scientific manner.
- Undertakes his/her duties professionally in accordance with ethical principles.

Degree Requirements

Required Credit Hours : minimum 31 hours

Program Requirements

Part 1: Core Requirements (18 hours)	
PUBL630	Advanced Studies in Criminal Law
PUBL631	Advanced Studies in Constitutional Law
PUBL633	Advance Studies in International Criminal Law
PUBL634	Advanced Studies in Criminal Procedures
PUBL635	Advanced Studies in Administrative Law
LAW666	Legal Research
Part 2: Elective Requirements (6 hours)	
PUBL637	Advanced Studies in Administrative Contracts
PUBL638	International Relations & Organizations(E)

PUBL639	Human Rights (E)	
PUBL640	Advanced Studies in Criminal Law-Specific Crimes	

Part 3: Research Requirements (7 hours)

PUBL636	Thesis	
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College of Food and Agriculture

Department of AridLand Agriculture

Master of Science in Horticulture

Graduates from the Master's Degree in Horticulture are in high demand in the current job market. The occupational positions which can be filled by graduates of this proposed program include, but are not limited to, horticulture architects and designers, city horticulturists, research assistants and university instructors, among many others. Students can focus their study in the areas of horticulture, agro-ecology, biotechnology, breeding, crop physiology, crop production, mineral nutrition, modeling and quantitative horticulture, plant growth and development, post-harvest physiology, renegotiation/restoration, as well as sustainable water management.

Program Objectives

- To prepare future leaders for industry, business and government agencies.
- To prepare students for PhD programs in various Horticultural science disciplines.
- To train students in interdisciplinary programs with emphasis on achieving career goals and objectives.
- To graduate students who are competitive in national and international job markets.
- To enhance students' abilities in scientific methodology in collecting, summarizing and analyzing research data.
- To prepare students to engage in high-level, horticultural problem solving.
- To train students to meet job requirements, enhance skills and to pursue life-long learning.

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

- Discuss contemporary issues related to horticultural challenges.
- Evaluate horticultural components, processes and the role of anthropogenic factors.
- Evaluate available resources, issues and challenges related to horticultural in UAE.
- Design and conduct scientific horticulture research, and use quantitative methods to analyze results.

- Demonstrate the ability to apply knowledge and skills to resolve problems, creatively and independently.
- Evaluate issues of ethical behavior in science, critically and reflectively.
- Demonstrate strong written and oral presentation skills.

Degree Requirements

Required Credit Hours : minimum 36 hours

Horticulture

Required Courses (7 hours)	
HORT610	Seminar in Horticulture
HORT611	Ecology and Agriculture
STAT612	Experimental Design & Analysis

Elective Courses (3 hours)	
HORT620	Plant Communities in UAE
HORT622	Research Perspectives in Horticulture

STAT621	Multivariate Systems & Modeling	
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Specialization Courses - Selected with Academic Advisor (20 hours)

HORT630	Greenhouse & Nursery Crop Production	
HORT631	Post Harvest Technology of Horticulture Crops	
HORT632	Small Fruit Production	
HORT633	Crop Management Systems for Vegetable Production	
HORT634	Forage Crop Ecology	
HORT635	Systems Analysis in Agriculture and Resource Management	
HORT636	Physiological Principles in Environmental Horticulture	
HORT638	Turfgrass and Amenity Grassland Utilization and Management	
HORT639	Woody Plants in the Landscape: Growth, Ecology and Management	
HORT640	Tree Biotechnology	

HORT641	<u>Modeling Horticultural System</u>	
HORT642	<u>Water Quality, Soil, Salinity and Reclamation</u>	
HORT643	<u>Irrigation & Drainage Systems</u>	
HORT644	<u>Landscape Ecology</u>	
HORT646	<u>UAE Floristics</u>	
HORT647	<u>Ecology of Crop Systems</u>	
HORT648	<u>Conservation of Plant Genetic Resources</u>	
HORT650	<u>Reproductive Biology of Flowering Plants</u>	
HORT649	<u>Plant Propagation</u>	
HORT651	<u>Concepts & Systems of Plant Protection and Pest Management</u>	

Thesis

Required Course (6 hours)

HORT699

[Thesis](#)

Doctor of Philosophy (PhD) Concentration: Horticultural Science

The degree of Doctor of Philosophy(PhD) in horticulture shall represent the attainment of a high level of scholarship and achievement in coursework and independent research. The Doctor of Philosophy in horticulture is designed to prepare students for academic or research-based careers. Graduate students are expected to excel in research, teaching, extension activities and develop professionally. Independent and original research is an important part of the graduate program and forms a basis for a graduate thesis. The research shall represent original contribution to human knowledge in the particular academic field and is presented in a written research dissertation of a publishable standard. The document shall also demonstrate the candidate's acquaintance with the literature of the field and the proper selection and execution of research methodology. The program cover the following areas: ornamental horticulture, floriculture, turfgrass, vegetable crops, fruit crops, environmental stress physiology, plant breeding, plant pathology and plant pathogen interactions, molecular biology, plant biotechnology, tissue culture, soil, water and sustainable and organic farming and others.

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

- Will demonstrate the breadth of knowledge in the discipline and advance, in-depth knowledge in the sub-discipline or area of specialization.
- Will have performed and defended an original work of research in their fields of specialization which contributed new human knowledge.
- Will be able to identify, analyze critically and explain open problems in their disciplines and apply relevant research methodology for finding a possible solution.
- Will be able to communicate the major tenets of their field of specialization and their work orally and in writing to the faculty, their peers, and the lay public.
- Will be able to identify areas where ethical issues may arise in their field, and articulate strategies to mitigate situations related to ethical issues in their profession.
- Will demonstrate an insight into the transferable nature of research skills to other work environments and the range of career opportunities available to them inside and outside academia.

Degree Requirements

Required Credit Hours : minimum 54 hours

Program Requirements:

Part 1: General Requirements (7 hours)	
COSC702	Ethics of Scientific Research II
STAT615	Design/Analysis of Experiments
COFA650	Graduate Seminar
COFA670	Global Food Supply Chain Management

Part 2: Concentration (Students must take at least one course at the 700 level) (9 hours)	
HORT805	Molecular approaches in plant research
HORT815	Assessment of energy and element fluxes in agroecosystems
HORT820	Urban landscape planning, policy and management

Part 3: Electives (Students must take at least one course at the 700 level.) (8 hours)

COFA660	<u>Advanced scientific writing</u>
HORT643	<u>Irrigation & Drainage Systems</u>
HORT633	<u>Crop Management Systems for Vegetable Production</u>
HORT641	<u>Modeling Horticultural System</u>
HORT642	<u>Water Quality, Soil, Salinity and Reclamation</u>
HORT648	<u>Conservation of Plant Genetic Resources</u>
HORT651	<u>Concepts & Systems of Plant Protection and Pest Management</u>
HORT720	<u>Integrated agricultural production systems</u>
HORT725	<u>Methods in agricultural microbiology</u>
HORT730	<u>Control and evaluation of agricultural product quality</u>

Part 4: Qualification (0 hours)

ARAG800	Comprehensive Examination	
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Part 5: Dissertation Research (30 hours)

HORT900	Dissertation Research	
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Department of Food Science

Master of Science in Food Science

The Department of Food Science is proposing Master Program in Food Science which will give students an opportunity to gain advanced knowledge related to Food Quality and Safety, Food Chemistry and Analysis, Food Processing and Engineering as well as Innovative and Functional Foods. Master program in Food Science is designed to reinforce and enhance the student's knowledge of scientific principles and processes used to produce safe and high quality foods. The program will provide a science-based professional education that encompasses classroom theory, practical research, and its application. Students will have an opportunity to comprehensively study theoretical and applied aspects of the science, technology, and engineering of foods. An in-depth understanding of science, as it applies to foods, will assist students with interest in career and technical education, to understand the food industry as well as food preparation in their daily life. This program is designed to produce expert food science postgraduate with the knowledge and skills to develop and further excel in the professional world.

Program Objectives

- Provide students with advanced theoretical and research knowledge in the field.
- Empower students to integrate and apply knowledge of food science to real-world issues in food systems, components, products, and processes.
- Produce highly trained graduates able to meet leadership needs of national and international professional careers.
- Develop well-prepared graduates to become research leaders and innovators in food science field.

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

- Discuss advanced concepts, theories, and emerging food science methodologies.
- Apply core knowledge of food science to identify problems and propose solutions in the field.
- Design and conduct scientific research in the field of food science, and use quantitative methods to analyze results.
- Communicate scientific and technical knowledge in written and oral forms to diverse audiences.
- Demonstrate knowledge of food science contemporary issues, ethics, and professional responsibility.

Degree Requirements

Required Credit Hours : minimum 30 hours

Food Science

Required Courses (15 hours)	
COSC501	Research Methods
COSC502	Ethics of Scientific Research
FDSC605	<u>Graduate Seminar</u>
FDSC610	<u>Advanced Food Chemistry - 1</u>
FDSC622	<u>Advanced Food Analysis - I</u>
FDSC633	<u>Advanced Food Processing I</u>
FDSC640	<u>Advanced Food Microbiology - I</u>
STAT503	<u>Applied Statistics</u>

Elective Courses - 6 CH for Thesis and 12 CH for Non-Thesis (12 hours)

FDSC611	Food Physics	
FDSC615	Advanced Shelf Life of Stored Foods	
FDSC630	Advanced Food Technologies	
FDSC631	Enzymes Technology and Fermentation	
FDSC650	Food Inspection	
FDSC651	Advanced Food Laws and Regulations	
FDSC660	Novel and Functional Foods	
FDSC691	Special Topics in Food Science	

Project or Thesis (9 hours)

FDSC695	Graduation Research Project ¹	
FDSC699	Research Thesis ²	

1 : For non-thesis option

2 : For Thesis Option

Doctor of Philosophy (PhD) Concentration: Food Science

The Ph.D. concentration "Food Science" aims to give students an opportunity to gain advanced knowledge related to Food Quality and Safety, Food Chemistry and Analysis, Food Processing and Engineering as well as Innovative and Functional Foods. The concentration is designed to reinforce and enhance the student's knowledge of scientific principles and processes used to produce safe and high quality foods. In Addition the concentration provides a science-based professional education that encompasses theory, practical research, and application of science and technology to conventional and novel foods. Furthermore, this program is designed to produce expert food science postgraduate with the knowledge and skills to develop and further excel in the professional world.

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

- Will demonstrate the breadth of knowledge in the discipline and advance, in-depth knowledge in the sub-discipline or area of specialization.
- Will have performed and defended an original work of research in their fields of specialization which contributed new human knowledge.
- Will be able to identify, analyze critically and explain open problems in their disciplines and apply relevant research methodology for finding a possible solution.
- Will be able to communicate the major tenets of their field of specialization and their work orally and in writing to the faculty, their peers, and the lay public.
- Will be able to identify areas where ethical issues may arise in their field, and articulate strategies to mitigate situations related to ethical issues in their profession.
- Will demonstrate an insight into the transferable nature of research skills to other work environments and the range of career opportunities available to them inside and outside academia.

Degree Requirements

Required Credit Hours : minimum 54 hours

Program Requirements:

Part 1: General Requirements (7 hours)	
COSC702	Ethics of Scientific Research II
STAT615	Design/Analysis of Experiments
COFA650	Graduate Seminar
COFA670	Global Food Supply Chain Management

Part 2: Concentration Requirements (9 hours)	
FDSC750	Advanced Food Chemistry 2
FDSC760	Advanced Food Processing 2
FDSC790	Conceptual & Multidisciplinary Food Science Studies

Part 3: Elective Requirements (Student must take at least one 800 course level from the following) (8 hours)

COFA660	<u>Advanced scientific writing</u>
FDSC615	<u>Advanced Shelf Life of Stored Foods</u>
FDSC631	<u>Enzymes Technology and Fermentation</u>
FDSC710	<u>Advanced Food Physics</u>
FDSC740	<u>Rapid Methods in Food Microbiology</u>
FDSC805	<u>Advanced Food Analysis II</u>
FDSC820	<u>Advanced Food Microbiology 2</u>

Part 4: Qualification Requirements (0 hours)

FDSC800	<u>Comprehensive Exam</u>
FDSC810	<u>Research Proposal</u>

Part 5: Research Requirements (30 hours)

FDSC900	<u>Dissertation Research</u>
FDSC910	<u>Dissertation Defense</u>

Department of Nutrition And Health

Doctor of Philosophy (PhD) Concentration: Nutritional Sciences

The Nutritional Sciences PhD program at the College of Food and Agriculture is within the common framework of the UAE University Ph.D. Program. The objectives of the program are to provide students with (1) expertise in the fundamental principles of modern nutritional science, (2) detailed conceptual and technical skills in the identified area of specialized research interest, (3) strong written and oral communication skills, and (4) the opportunity to conduct dissertation research that will contribute to the body of knowledge in nutrition. The faculty recognizes that the career goal of each student must be given maximum consideration in the design of individual programs of study. Nutritional Sciences students will follow the curriculum described in the Nutritional Sciences PhD program. Students with extensive prior training in nutrition, such as master's degree holders, may petition the Graduate Committee to evaluate modification of the curriculum.

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

- Will demonstrate the breadth of knowledge in the discipline and advance, in-depth knowledge in the sub-discipline or area of specialization.
- Will have performed and defended an original work of research in their fields of specialization which contributed new human knowledge.
- Will be able to identify, analyze critically and explain open problems in their disciplines and apply relevant research methodology for finding a possible solution.
- Will be able to communicate the major tenets of their field of specialization and their work orally and in writing to the faculty, their peers, and the lay public.
- Will be able to identify areas where ethical issues may arise in their field, and articulate strategies to mitigate situations related to ethical issues in their profession.
- Will demonstrate an insight into the transferable nature of research skills to other work environments and the range of career opportunities available to them inside and outside academia.

Degree Requirements

Required Credit Hours : minimum 58 hours

Program Requirements:

Part 1: General Requirements (9 hours)	
ETHC600	<u>Ethical Conduct in Medical Research</u>
STAT615	<u>Design/Analysis of Experiments</u>
PHY601	<u>Human Physiology 1</u>
PHY602	<u>Human Physiology 2</u>
COFA650	<u>Graduate Seminar</u>

Part 2: Concentration Requirements (11 hours)	
CHEM641	<u>Advanced Biochemistry II</u>
NUTR805	<u>Advanced Macronutrient Metabolism</u>
NUTR820	<u>Advanced Micronutrient Metabolism</u>

NUTR830	Human Nutrition Assessment
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Part 3: Elective Requirements (8 hours)

NUTR705	Advanced Community Nutrition
NUTR707	Advanced Medical Nutrition Therapy
NUTR710	Nutraceuticals and Functional Foods
NUTR720	Nutritional Immunology
NUTR730	Cell Biology in Health and Disease
NUTR740	Exercise and Health

Part 4: Qualification Requirements (0 hours)

NUTR800	Comprehensive Exam
NUTR810	Research Proposal

Part 5: Research Requirements (30 hours)

NUTR900

[Dissertation Research](#)

NUTR910

[Dissertation Defense](#)

Department of Veterinary Medicine

Doctor of Philosophy (PhD) Concentration: Animal Science

The degree of Doctor of Philosophy(PhD) in Animal Science shall represent the attainment of a high level of scholarship and achievement in coursework and independent research. The Doctor of Philosophy in Animal Science is designed to prepare students for academic or research-based careers. Graduate students are expected to excel in research, teaching, extension activities and develop professionally. Independent and original research is an important part of the graduate program and forms a basis for a graduate thesis. The research shall represent original contribution to human knowledge in the particular academic field and is presented in a written research dissertation of a publishable standard. The document shall also demonstrate the candidate's acquaintance with the literature of the field and the proper selection and execution of research methodology. The program cover the following areas: Animal growth and development, nutrition, breeding and genetics, physiology, production and management of ruminants and poultry, and animal well-being and behavior.

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

- Will demonstrate the breadth of knowledge in the discipline and advance, in-depth knowledge in the sub-discipline or area of specialization.
- Will have performed and defended an original work of research in their fields of specialization which contributed new human knowledge.
- Will be able to identify, analyze critically and explain open problems in their disciplines and apply relevant research methodology for finding a possible solution.
- Will be able to communicate the major tenets of their field of specialization and their work orally and in writing to the faculty, their peers, and the lay public.
- Will be able to identify areas where ethical issues may arise in their field, and articulate strategies to mitigate situations related to ethical issues in their profession.
- Will demonstrate an insight into the transferable nature of research skills to other work environments and the range of career opportunities available to them inside and outside academia.

Degree Requirements

Required Credit Hours : minimum 54 hours

Program Requirements:

Part 1: General Requirements (7 hours)	
COSC702	Ethics of Scientific Research II
STAT615	Design/Analysis of Experiments
COFA650	Graduate Seminar
COFA670	Global Food Supply Chain Management

Part 2: Concentration Requirements (9 hours)	
ANSC805	Advanced Reproductive Physiology and biotechnology
ANSC815	Animal Growth and Development
ANSC820	Animal Production and Management Systems

Part 3: Elective Requirements (8 hours)

COFA660	Advanced scientific writing
CHEM641	Advanced Biochemistry II
ANSC650	Precision Diet Formulation
ANSC655	Metabolism of Vitamins & Minerals
ANSC660	Applied Animal Breeding Strategies
ANSC670	Mammalian Endocrinology
ANSC720	Applied Animal Genomics

Part 4: Qualification Requirements (0 hours)

ANSC800	Comprehensive Exam
ANSC810	Research Proposal

Part 5: Research Requirements (30 hours)

ANSC900

[Dissertation Research](#)

ANSC910

[Dissertation Defense](#)

Master of Science in Molecular Biology and Biotechnology

The M.Sc. in Molecular Biology and Biotechnology is a 30 credit hours that is offered both full- and part-time within the Department of Biology. Students are required to complete 24 credit hours of coursework in addition to 6 credit hours assigned to research and a completion of a M.Sc. thesis. The coursework includes 5 credit hours of College of Science requirements (Graduate Seminar, Ethics, Research Methods and Statistics), 10 credit hours of 4 core Molecular Biology and Biotechnology courses in addition to 9 credit hours of intercollege (College of Science and College of Medicine and Health Sciences) elective courses that allows the student to specialize in any specific topic related to Molecular Biology and/or Biotechnology. Students can take up to 6 credit hours of elective courses offered by the CMHS. Student progress is overseen by a research supervisor (and co-supervisors) and a thesis defense committee. The program is a fee-based program open for all students who meet the entry requirements.

Program Objectives

- Develop proficiency of basic concepts in cellular and molecular biology, ecology and environmental sciences, and general biology.
- Foster teamwork and improve oral and communication skills.
- Foster a student-oriented research program that results in professional publications.
- Embrace student-oriented teaching methods that nurture critical thinking abilities and apply their knowledge to solve theoretical and empirical real-life problems.
- Prepare students for future job market and careers.

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

- Demonstrate leading edge knowledge in a chosen specialized area of molecular biology and/or biotechnology
- Gain insight into the most significant and recent biotechnology and molecular-based methods used to expand the understanding of biology.
- Manage and analyze data stored in databases, familiarize with various bioinformatics analysis tools available to analyze biological data.
- Conduct scientific molecular biology and/or biotechnology research, and use quantitative methods to analyze results
- Evaluate methods and results within the field of specialization critically and ethically.
- Work independently or in a team on complex project that requires multidisciplinary collaboration
- Communicate scientific results to both experts and general audience through writing structured reports and contributions for scientific publications and posters, and by oral presentations.

Degree Requirements

Required Credit Hours : minimum 30 hours

College of Science

Required Courses (4 hours)	
COSC501	Research Methods
COSC502	Ethics of Scientific Research
STAT503	Applied Statistics

Molecular Biology and Biotechnology

Required Courses (11 hours)	
BIOM512	Advanced Genetic Engineering
BIOM516	Advanced Molecular Biology Techniques I
BIOM571	Seminar in Biotechnology & Molecular Biology

BIOM572	Graduate Seminar
BIOM600	Advanced Molecular Biology Techniques II

Electives Specialization Courses

Students need to take a minimum of 9CH of elective credits from COS and CMHS (9 hours)

COS Electives Courses (0 hours)

BIOM508	Advanced Gene Expression
BIOM524	Applications of Bioinformatics
BIOM536	Biotechnology Applications in Forensic Science
BIOM640	Molecular Physiology
BIOM544	Epigenetics & Cell Different
BIOM552	Molecular & Genetic Aspects of Plant Responses to Pathogens

CMHS Elective Courses (0 hours)

ANAT604	Stem Cell Biology
MMIM601	Molecular Bacteriology – Gene, Structure, Pathogenesis
MMIM602	Principles of Cellular and Molecular Immunology
MMIM603	Molecular Principles of Viral Replication and Pathogenesis

Thesis

Required Course (6 hours)

COSR699	Thesis
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Master of Science in Environmental Sciences

The M.Sc. in Environmental Sciences is a 30 credit hour program that is offered both full and part time within the Biology Department. Students are required to complete 24 credit hours of coursework in addition to 6 credit hours assigned to research and a completion of a M.Sc. thesis. The coursework includes 4 credit hours of College of Science requirements (Ethics, Research Methods and Statistics), 10 credit hours of core environmental sciences courses and elective courses (10 credit hours) that allow the student to specialize in any specific topic relating to environmental sciences. Student progress is overseen by a research supervisor (and co-supervisors) and a thesis defense committee. The program is a fee-based program open for all students who meet the entry requirements.

Program Objectives

- Develop proficiency of basic concepts in cellular and molecular biology, ecology and environmental sciences, and general biology.
- Foster teamwork and improve oral and communication skills.
- Foster a student-oriented research program that results in professional publications.
- Embrace student-oriented teaching methods that nurture critical thinking abilities and apply their knowledge to solve theoretical and empirical real-life problems.
- Prepare students for future job market and careers.

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

- Discuss contemporary issues relating to environmental challenges, ethics, and professional responsibilities.
- Describe relationships between environmental components and processes and the role of anthropogenic factors.
- Evaluate material from available resources on issues and challenges relating to environmental problems facing the UAE.
- Evaluate the means by which human society can conserve and restore the environment using approaches drawn from various sciences and fields of study.
- Demonstrate strong written and oral presentation skills.
- Conduct scientific environmental research, and use quantitative methods to analyze results.

Degree Requirements

Required Credit Hours : minimum 30 hours

College of Science

Required Courses (5 hours)	
COSC501	Research Methods
COSC502	Ethics of Scientific Research
COSS633	Seminar
STAT503	Applied Statistics

Environmental Science

Required Courses (9 hours)	
BIOE611	Environmental Science I
BIOE613	Environmental Science II

GEO610	Social Impact Assessment	
PUBL655	Environmental Law	

Elective Courses (10 hours)

BIOE598	Selected Topics	
BIOE599	Independent Study	
BIOE621	Plant Research to Environmental Stresses	
BIOE623	Environmental Microbiology	
BIOE625	Coastal Management	
BIOE627	Desert Ecology	
BIOE629	Applied Systems Ecology	
BIOE631	Environmental Pollution & Pesticides	
BIOE633	Soil and Water Pollution	

BIOE649	<u>Community Medicine</u>	
BIOE651	<u>Industrial Hygiene</u>	
BIOE653	<u>Human Environmental Physiology</u>	
BIOE655	<u>Essentials Of Toxicology</u>	
CHEM673	<u>Petroleum & Petrochemical Pollution</u>	
CHEM674	<u>Biochemistry of Toxins & Pollutants</u>	
CHEM675	<u>Environmental Chemistry</u>	
CHEM677	<u>Corrosion Science For Environments</u>	
GEOL528	<u>Remote Sensing</u>	
GEOL565	<u>Environmental Geochemistry</u>	
GEOL574	<u>Energy Resources</u>	
GEOL575	<u>Engineering Geology</u>	

Thesis

Required Course (6 hours)	
COSR699	Thesis

Doctor of Philosophy (PhD) Concentration: Cellular and Molecular Biology

Ph.D. students are required to take a lab rotation-based course during their first year of graduate study. Typically, students will be required to rotate through three to 4 laboratories (minimum of 2 in exceptionally trained students), each of which lasts about three months. During each laboratory rotation, the student will be exposed to methods, equipment, and experimental procedures currently in use in a particular departmental research laboratory selected by the student and through arrangement with the professor in charge of that laboratory. At the end of each rotation, students will receive a written evaluation from by the rotation supervisor. These evaluations are then submitted to the program chair to become a part of the student's permanent file. It is important to note that these evaluation letters will be considered during the comprehensive examination evaluation.

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

- Will demonstrate the breadth of knowledge in the discipline and advance, in-depth knowledge in the sub-discipline or area of specialization.
- Will have performed and defended an original work of research in their fields of specialization which contributed new human knowledge.
- Will be able to identify, analyze critically and explain open problems in their disciplines and apply relevant research methodology for finding a possible solution.
- Will be able to communicate the major tenets of their field of specialization and their work orally and in writing to the faculty, their peers, and the lay public.
- Will be able to identify areas where ethical issues may arise in their field, and articulate strategies to mitigate situations related to ethical issues in their profession.
- Will demonstrate an insight into the transferable nature of research skills to other work environments and the range of career opportunities available to them inside and outside academia.

Degree Requirements

Required Credit Hours : minimum 54 hours

Program Requirements:

Part 1: General Requirements (6 hours)	
COSC701	Research Methods II
COSC702	Ethics of Scientific Research II
COSS711	Seminar I
COSS722	Seminar II
COSS733	Journal Club
Part 2: Concentration Requirements (6 credits) (0 hours)	
BIOM700	<u>Laboratory Rotations</u>
BIOM720	<u>Advanced Genetics</u>
BIOM793	<u>Advanced topics in Cellular and Molecular Biology: A literature review</u>

Part 3: Elective Requirements (Any 9 credits hours of the following courses, or other approved graduate courses of 600 levels or above according to the study plan.) (9 hours)

BIOM630	Molecular Basis of Diseases
BIOM635	Applied Immunobiology
BIOM640	Molecular Physiology
BIOM645	Selected Topics in Biotechnology
BIOM687	Developmental Biology
BIOM693	Genomics

Part 4: Qualification Requirements (0 hours)

COSC800	Comprehensive Exam
COSR810	Research Proposal

Part 5: Research Requirements (30 hours)

COSR900	Dissertation Research	
COSD910	Dissertation Defense	

Doctor of Philosophy (PhD) Concentration: Ecology and Environmental Sciences

Our Ph.D. program in ecology and environmental sciences equips students with skills and training in the basic and applied sciences with the objectives of improving society's understanding of environmental problems and helping manage, mitigate, and avoid those problems. The program in environmental science is a rigorous, interdisciplinary course of study. The overall objectives of the program are: (1) to clarify and improve understanding of environmental problems and to identify solutions to these problems; and (2) to foster collaborative, interdisciplinary research amongst scientists from various disciplines.

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

- Will demonstrate the breadth of knowledge in the discipline and advance, in-depth knowledge in the sub-discipline or area of specialization.
- Will have performed and defended an original work of research in their fields of specialization which contributed new human knowledge.
- Will be able to identify, analyze critically and explain open problems in their disciplines and apply relevant research methodology for finding a possible solution.
- Will be able to communicate the major tenets of their field of specialization and their work orally and in writing to the faculty, their peers, and the lay public.
- Will be able to identify areas where ethical issues may arise in their field, and articulate strategies to mitigate situations related to ethical issues in their profession.
- Will demonstrate an insight into the transferable nature of research skills to other work environments and the range of career opportunities available to them inside and outside academia.

Degree Requirements

Required Credit Hours : minimum 54 hours

Program Requirements:

Part 1: General Requirements (6 hours)	
COSC701	Research Methods II
COSC702	Ethics of Scientific Research II
COSS711	Seminar I
COSS722	Seminar II
COSS733	Journal Club
Part 2: Concentration Requirements (9 hours)	
BIOE700	Lab Rotations
BIOE720	Ecosystem Management & Sustainability
BIOE730	Topics In Ecology and Environmental Sciences

Part 3: Elective Requirements (Any 9 credits hours of the following courses, or other approved graduate courses of 600 level or above according to the study plan.) (9 hours)

BIOE610	Field Ecology
BIOE630	Aquatic Ecology
BIOE640	Wildlife Disease Ecology
BIOE659	Conservation Biology
BIOE665	Global Environmental Changes
BIOE682	Desert Ecology

Part 4: Qualification Requirements (0 hours)

COSC800	Comprehensive Exam
COSR810	Research Proposal

Part 5: Research Requirements (30 hours)

COSR900	Dissertation Research	
COSD910	Dissertation Defense	

Department of Chemistry

Master of Science in Chemistry

The M.Sc. in Chemistry program aims at providing opportunities to top UAE and international students to pursue a high quality graduate education in the field of chemistry. The program is built on knowledge depth and advanced research to prepare graduates for challenging jobs in multiple sectors. This is achieved by offering a well-balanced curriculum based on well-designed theoretical courses and providing opportunity and means for advanced research in highly important areas where major scientific and technological challenges are addressed. The Department of Chemistry is well-established in terms of research facilities allowing for advanced quality research under the supervision of faculty members with a wide spectrum of research interests. Research interests cover all of the traditional areas of chemistry, analytical, organic, inorganic, physical, and biochemistry besides cross-disciplinary research areas such as bio-analytical, petroleum, materials, environmental, pharmaceutical, and computational chemistry. The program is designed with significant flexibility by accepting full-time as well as part-time students and offering evening as well as week-end courses. The model study plan is to complete the required theoretical course work (24 credit hours) and thesis research work (6 credit hours) within two years for a full-time candidate and three years for a part-time candidate.

Program Objectives

- To provide students with in-depth knowledge of advanced topics in their chosen sub-discipline of chemistry.
- To graduate students with the skills necessary to carry out independent research.
- To develop students' communication and team-work skills.
- To produce graduates who are well prepared for the workplace or further studies (Ph.D.) in chemistry.

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

- Solve complex problems in chemical applications.
- Use modern methods to carry out research and solve real life problems.
- Properly document and present the results of research work.
- Work effectively in teams and manage group tasks.
- Apply appropriate ethical standards to issues related to science, research, and work.
- Critically evaluate new information in the field of chemistry

Degree Requirements

Required Credit Hours : minimum 30 hours

College of Science

Required Courses (6 hours)	
COSC501	Research Methods
COSC502	Ethics of Scientific Research
COSS633	Seminar
STAT503	Applied Statistics

Chemistry

Required Courses (9 hours)	
CHEM526	Chemical Instrumentation
CHEM531	Advanced Organic Synthesis

CHEM541	<u>Advanced Biochemistry I</u>	
CHEM551	<u>Advanced Inorganic Chemistry I</u>	
CHEM561	<u>Advanced Physical Chemistry I</u>	

Elective Courses (9 hours)

CHEM522	<u>Analytical Spectroscopy</u>	
CHEM523	<u>Separation & Chromatographic Techniques</u>	
CHEM524	<u>Electroanalytical Techniques</u>	
CHEM533	<u>Organic Reaction Mechanisms</u>	
CHEM534	<u>Catalysis in Organic Chemistry</u>	
CHEM535	<u>Polymer Chemistry</u>	
CHEM641	<u>Advanced Biochemistry II</u>	
CHEM651	<u>Advanced Inorganic Chemistry II</u>	

CHEM661	Advanced Physical Chemistry II	
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Thesis

Required Course (6 hours)		
COSR699	Thesis	

Doctor of Philosophy (PhD) Concentration: Chemistry

The PhD program in Chemistry is designed for students with Master degree in Chemistry from a credited university. It is a 56 credit hours program offered for full time students within the Department of Chemistry. The study plan is composed of 24 credit hours course work that students are required to complete successfully and 30 credit hours of research. Students are required to write and successfully defend a written PhD thesis at the end of their duration of study. The coursework includes 6 credit hours of College requirements (Ethics, Research Methods and Seminars), 3 chemistry core courses (9 credit hours) and 3 elective courses (9 credit hours). Students can choose their supervisors and have a chance to choose from a wide spectrum of available research topics. The program is fee-based and is open for all students who meet the entry requirements.

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

- Will demonstrate the breadth of knowledge in the discipline and advance, in-depth knowledge in the sub-discipline or area of specialization.
- Will have performed and defended an original work of research in their fields of specialization which contributed new human knowledge.
- Will be able to identify, analyze critically and explain open problems in their disciplines and apply relevant research methodology for finding a possible solution.
- Will be able to communicate the major tenets of their field of specialization and their work orally and in writing to the faculty, their peers, and the lay public.
- Will be able to identify areas where ethical issues may arise in their field, and articulate strategies to mitigate situations related to ethical issues in their profession.
- Will demonstrate an insight into the transferable nature of research skills to other work environments and the range of career opportunities available to them inside and outside academia.

Degree Requirements

Required Credit Hours : minimum 54 hours

Program Requirements:

Part 1: General Requirements (6 hours)	
COSC701	Research Methods II
COSC702	Ethics of Scientific Research II
COSS711	Seminar I
COSS722	Seminar II
COSS733	Journal Club

Part 2: Concentration Requirements (CHEM 701 + any 6 credits of the following courses:) (9 hours)	
CHEM701	<u>Advanced Analytical Chemistry</u>
CHEM702	<u>Advanced Organic Chemistry</u>
CHEM703	<u>Advanced Protein Biochemistry: Structure and Function</u>

CHEM704	Molecular Structure and Bonding
CHEM705	Modern Physical Chemistry

Part 3: Elective Requirements (Any 9 credits hours of the following courses, or other approved graduate courses of 600 levels or above according to the study plan.) (9 hours)

CHEM601	Organic Reaction Mechanisms
CHEM602	Polymer Chemistry
CHEM603	Spectroscopic methods of structure determination
CHEM604	Biotechnology in the Modern World
CHEM605	Mechanisms of cellular signal transduction
CHEM608	Surface and Interface Analysis
CHEM606	Structure, Bonding and Properties of Solids
CHEM609	Mass Spectrometry

CHEM612	Nanochemistry
CHEM613	Photochemistry
CHEM614	Organometallic Chemistry of the Transition Metals
CHEM615	Chemical Sensors and Biosensors
CHEM616	Advanced Topics in Physical Chemistry

Part 4: Qualification Requirements (0 hours)

COSC800	Comprehensive Exam
COSR810	Research Proposal

Part 5: Research Requirements (30 hours)

COSR900	Dissertation Research
COSD910	Dissertation Defense

Department of Geology

Doctor of Philosophy (PhD) Concentration: Geosciences

The PhD program in Geology is available for students who have successfully completed a Master Degree in Geology or Earth Sciences from a university acceptable to the UAEU. The program offered by the Geology Department requires the student to complete 54 credit hours comprising 24 credit hours of course work and 30 credit hours of original research leading to a PhD thesis. The course work is divided into General Requirements (6 credit hours, including courses in Research Methods, Ethics of Scientific Research, Seminars and Journal Club); compulsory Concentration courses (9 credit hours, including courses in Plate Tectonics, Geoinformatics and Geology, Environment and Society); and a further 9 credit hours of a range of advanced elective courses. A broad range of geoscience topics are available for research. The program is fee-based and is open for all students who meet the entry requirements.

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

- Will demonstrate the breadth of knowledge in the discipline and advance, in-depth knowledge in the sub-discipline or area of specialization.
- Will have performed and defended an original work of research in their fields of specialization which contributed new human knowledge.
- Will be able to identify, analyze critically and explain open problems in their disciplines and apply relevant research methodology for finding a possible solution.
- Will be able to communicate the major tenets of their field of specialization and their work orally and in writing to the faculty, their peers, and the lay public.
- Will be able to identify areas where ethical issues may arise in their field, and articulate strategies to mitigate situations related to ethical issues in their profession.
- Will demonstrate an insight into the transferable nature of research skills to other work environments and the range of career opportunities available to them inside and outside academia.

Degree Requirements

Required Credit Hours : minimum 54 hours

Program Requirements

Part 1: General Requirements (6 hours)	
COSC701	Research Methods II
COSC702	Ethics of Scientific Research II
COSS711	Seminar I
COSS722	Seminar II
COSS733	Journal Club
Part 2: Concentration Requirements (9 hours)	
GEOL710	<u>Advanced Topics in Plate Tectonics</u>
GEOL720	<u>Modeling and Geoinformatics</u>
GEOL730	<u>Geology, Environment and Society</u>

Part 3: Elective Requirements (Any 9 credits of the following courses, or other approved graduate courses of 600 level or above according to the study plan.) (9 hours)

GEOL610	Geophysical Instruments & Data Acquisition
GEOL615	Seismology & UAE Seismicity
GEOL620	Carbonate/Evaporate Deposit Systems
GEOL621	Diagenetic, Stratigraphy, & Reservoir Evaluation
GEOL623	Formation Evaluation
GEOL660	Computer Applications in Geosciences

Part 4: Qualification Requirements (0 hours)

COSC800	Comprehensive Exam
COSR810	Research Proposal

Part 5: Research Requirements (30 hours)

COSR900	Dissertation Research	
COSD910	Dissertation Defense	

Department of Mathematical Sciences

Master of Science in Mathematics

The M.Sc. in Mathematical Sciences is a 30 credit hour program that is offered both full and part time within the Department of Mathematical Sciences. Students are required to complete 24 credit hours of coursework in addition to 6 credit hours assigned to research and a completion of a M.Sc. thesis. The coursework includes 4 credit hours of College of Science requirements (Ethics, Research Methods and Statistics), 3 core mathematics courses, and 2 department seminars(a total of 11 credit hours) in addition to 3 elective courses (9 credit hours) that allow the student to specialize in any specific topic related to pure or applied mathematics. Student progress is overseen by a research supervisor (and co-supervisors) and a thesis defense committee. The program is a fee-based program open for all students who meet the entry requirements.

Program Objectives

- To provide students with a comprehensive advanced knowledge of the main areas of mathematics;
- To provide students with the necessary background for further studies in Mathematics, and enhance their research capabilities;
- To produce graduates with high level of analytic and numerical skills;
- To train students to communicate effectively both orally and in writing;

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

- Discuss in depth concepts, techniques, and results related to active research in Mathematics.
- Solve mathematical problems using theoretical tools and/or modeling.
- Develop concise mathematical proofs.
- Produce a comprehensive independent work, including a literature review.
- Contribute actively to research projects in mathematics, using an adequate methodology.
- Communicate effectively mathematical results to a specialized audience.
- Demonstrate awareness of ethical issues related to science, research, and work.

Degree Requirements

Required Credit Hours : minimum 30 hours

College of Science

Required Courses (6 hours)	
COSC501	Research Methods
COSC502	Ethics of Scientific Research
COSS633	Seminar ¹
STAT503	Applied Statistics
1 : (Taken twice)	

Mathematical Sciences

Required Courses (9 hours)	
MATH510	Real Analysis

MATH520	Numerical Analysis
MATH540	Algebra I

Elective Courses (9 hours)

MATH513	Calculus on Manifolds
MATH515	Complex Analysis
MATH516	C*-Algebras
MATH517	Advanced Geometry
MATH522	Numerical Methods in Differential Equations
MATH541	Number Theory
MATH561	General Topology
MATH570	Theory of Partial Differential Equations
MATH772	Theory of Ordinary Differential Equations

MATH573	<u>Dynamical Systems & Chaos Theory</u>
MATH611	<u>Several Complex Variables</u>
MATH612	<u>Measure Theory</u>
MATH616	<u>Functional Analysis</u>
MATH622	<u>Finite Element Methods</u>
MATH640	<u>Algebra II</u>
MATH662	<u>Algebraic Topology</u>
MATH670	<u>Advanced Partial Differential Equations</u>
MATH675	<u>The Mathematics of Finance</u>
MATH690	<u>Selected Topics</u>
MATH695	<u>Independent Studies</u>

Required Course (6 hours)

COSR699

Thesis

Doctor of Philosophy (PhD) Concentration: Mathematics

The PhD program in Mathematical Sciences is designed for students with Master degree in Mathematics from a credit university. It is a 56 credit hours program offered for full time students within the Department of Mathematical Sciences. Students are required to complete 24 credit hours of coursework in addition to 30 credit hours assigned to research and a completion of a PhD thesis. The coursework includes 6 credit hours of College of Science requirements (Ethics, Research Methods and Seminars), 3 core mathematics courses in addition to 3 elective courses (9 credit hours) that allow the student to specialize in any specific topic related to pure or applied mathematics. Student progress is overseen by a research supervisor (and co-supervisors) and a thesis defense committee. The program is a fee-based program open for all students who meet the entry requirements.

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

- Will demonstrate the breadth of knowledge in the discipline and advance, in-depth knowledge in the sub-discipline or area of specialization.
- Will have performed and defended an original work of research in their fields of specialization which contributed new human knowledge.
- Will be able to identify, analyze critically and explain open problems in their disciplines and apply relevant research methodology for finding a possible solution.
- Will be able to communicate the major tenets of their field of specialization and their work orally and in writing to the faculty, their peers, and the lay public.
- Will be able to identify areas where ethical issues may arise in their field, and articulate strategies to mitigate situations related to ethical issues in their profession.
- Will demonstrate an insight into the transferable nature of research skills to other work environments and the range of career opportunities available to them inside and outside academia.

Degree Requirements

Required Credit Hours : minimum 54 hours

Program Requirements:

Part 1: General Requirements (6 hours)	
COSC701	Research Methods II
COSC702	Ethics of Scientific Research II
COSS711	Seminar I
COSS722	Seminar II
COSS733	Journal Club

Part 2: Concentration Requirements (Student can choose any three of the following courses including MATH 715. The list of courses below will allow the students to choose their field of study either pure or applied mathematics.) (9 hours)	
MATH710	Functional Analysis
MATH715	Advanced Measure Theory

MATH720	Numerical Methods for Partial Differential Equations
MATH740	Advanced Algebra
MATH760	Topology
MATH770	Advanced Partial Differential Equations
MATH772	Theory of Ordinary Differential Equations

Part 3: Elective Requirements (9 credits) (Any 9 credits hours of the following courses, or other approved graduate courses of 600 level or above according to the study plan.) (9 hours)

MATH662	Algebraic Topology
MATH663	Knot Theory and Applications
MATH643	Cryptography
MATH644	Coding Theory
MATH664	Differential Manifold

MATH673	Dynamical Systems
MATH641	Advanced Number Theory
MATH674	Stochastic Calculus for Finance
MATH676	Advanced Mathematics of Finance
MATH671	Integral Equations and Calculus of Variations
MATH677	Numerical Methods for Finance
MATH745	Finite Fields and Applications
MATH716	Introduction to Operator Algebras
MATH746	Finite Groups
MATH747	Module and Ring Theory

Part 4: Qualification Requirements (0 hours)

COSC800	Comprehensive Exam
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COSR810	Research Proposal
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Part 5: Research Requirements (30 hours)

COSR900	Dissertation Research
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COSD910	Dissertation Defense
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Department of Physics

Doctor of Philosophy (PhD) Concentration: Physics

The PhD program in Physics is a research program that offers research opportunities in condensed matter and solid state physics, high energy physics, nano-physics, plasma physics and controlled fusion, applied nuclear science, medical and biophysics, astrophysics, and atomic and molecular physics. A PhD student is required to complete as minimum requirements 24 CH of course work and 30 CH in thesis research in addition to passing a comprehensive exam and defending his/her thesis research findings.

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

- Will demonstrate the breadth of knowledge in the discipline and advance, in-depth knowledge in the sub-discipline or area of specialization.
- Will have performed and defended an original work of research in their fields of specialization which contributed new human knowledge.
- Will be able to identify, analyze critically and explain open problems in their disciplines and apply relevant research methodology for finding a possible solution.
- Will be able to communicate the major tenets of their field of specialization and their work orally and in writing to the faculty, their peers, and the lay public.
- Will be able to identify areas where ethical issues may arise in their field, and articulate strategies to mitigate situations related to ethical issues in their profession.
- Will demonstrate an insight into the transferable nature of research skills to other work environments and the range of career opportunities available to them inside and outside academia.

Degree Requirements

Required Credit Hours : minimum 54 hours

Program Requirements:

Part 1: General Requirements (6 hours)	
COSC701	Research Methods II
COSC702	Ethics of Scientific Research II
COSS711	Seminar I
COSS722	Seminar II
COSS733	Journal Club

Part 2: Concentration Requirements (9 hours)	
PHYS705	<u>Quantum Physics II</u>
PHYS722	<u>Solid State Physics II</u>
PHYS730	<u>Electrodynamics II</u>

Part 3: Elective Requirements (Any 9 credit hours of the following courses, or other approved graduate courses of 600 level or above according to the study plan.) (9 hours)

PHYS715	<u>Synthesis, Characteristics & Applications of Nanomaterials</u>
PHYS720	<u>Quantum Field Theory I</u>
PHYS724	<u>Computational Physics</u>
PHYS735	<u>Quantum Theory of Polymers</u>
PHYS755	<u>Physics of NonIdeal Plasmas</u>
PHYS778	<u>Advanced Magnetic Resonance</u>
PHYS771	<u>Physics & Engineering of Radiation Detection</u>
PHYS780	<u>Quantum Field Theory II</u>
PHYS782	<u>Standard Model of Particle Physics</u>
PHYS790	<u>Particle Physics Phenomenology</u>

PHYS792	Supersymmetry
PHYS795	Advanced Topics in Particle Theory
PHYS733	Seminar III
PHYS798	Selected Topics II

Part 4: Qualification Requirements (0 hours)

COSC800	Comprehensive Exam
COSR810	Research Proposal

Part 5: Research Requirements (30 hours)

COSR900	Dissertation Research
COSD910	Dissertation Defense

Master of Science in Physics

The Master of Science in Physics program is designed to serve and support the UAE strategic needs in various areas which include, but are not limited to: nuclear energy, semiconductor industry, Medical Physics, Aerospace industry, Nanophysics and Nanotechnology. The program aims at preparing its graduates for professional and leadership positions in industrial, educational and governmental institutions.

Program Objectives

- A robust background in concepts and solving skills in fundamental Physics.
- The capability to research a topic in contemporary Physics.
- The capability to communicate finds.

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

- Demonstrate insightful understanding of advanced topics in physics.
- Demonstrate critical awareness of recent developments in physics.
- Manage their own learning and professional development and make use of appropriate literature, research articles and other primary sources.
- Plan and conduct a research project in specified time duration under supervision.
- Evaluate and solve complex real-world scientific problems both systematically and creatively.
- Analyze, interpret and publicize their research findings and defend their conclusions before specialists and non-specialist audiences.
- Consistently and sensitively manage highly complex ethical issues leading to informed, fair and valid decisions.

Degree Requirements

Required Credit Hours : minimum 30 hours

College of Science

Required Courses (6 hours)	
COSC501	Research Methods
COSC502	Ethics of Scientific Research
COSS633	Seminar
STAT503	Applied Statistics

Physics

Required Courses (9 hours)	
PHYS515	Methods of Mathematical Physics
PHYS525	Quantum Physics I

PHYS530	Electrodynamics I	
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Elective Courses (9 hours)

PHYS541	Atomic Physics	
PHYS542	Introduction to Astrophysics	
PHYS543	Laser Physics	
PHYS545	Analytical Mechanics	
PHYS552	Nuclear Physics	
PHYS555	Introduction to Plasma Physics	
PHYS560	Elementary Particle Physics	
PHYS571	Radiation Physics	
PHYS574	Physics of Radiotherapy	
PHYS575	Physics of Semiconductors	

PHYS576	Physics of Nuclear Medicine	
PHYS578	Diagnostics Radiology	
PHYS580	Biophysics	
PHYS614	Modern Statistical Physics	
PHYS616	Experimental Condensed Matter Physics	
PHYS705	Quantum Physics II	
PHYS622	Solid-State Physics I	
PHYS625	Group & Representation Theory	
PHYS730	Electrodynamics II	
PHYS635	General Relativity	
PHYS660	Methods in Experimental Particle Physics	
PHYS672	Medical Imaging & Instrumentation	

PHYS675	Imaging Science	
PHYS678	Magnetic Resonance Imaging & Spectro	
PHYS698	Selected Topics I	

Thesis

Required Course (6 hours)		
COSR699	Thesis	

Doctor of Philosophy (PhD) Concentration: Biomedical Sciences

The College of Medicine and Health Sciences at UAE University provides PhD program in Biomedical Sciences and Public Health & Occupational Health. The PhD program involves conducting coursework over a period of up to 2 years, followed by a comprehensive examination evaluating the breadth and depth of the student's knowledge of his or her discipline, as well as the student's scholarly potential. Passing the comprehensive examination results in the student being recommended to advance to candidacy followed by research and the writing of a dissertation over a further three to a maximum four year period.

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

- Will demonstrate the breadth of knowledge in the discipline and advance, in-depth knowledge in the sub-discipline or area of specialization.
- Will have performed and defended an original work of research in their fields of specialization which contributed new human knowledge.
- Will be able to identify, analyze critically and explain open problems in their disciplines and apply relevant research methodology for finding a possible solution.
- Will be able to communicate the major tenets of their field of specialization and their work orally and in writing to the faculty, their peers, and the lay public.
- Will be able to identify areas where ethical issues may arise in their field, and articulate strategies to mitigate situations related to ethical issues in their profession.
- Will demonstrate an insight into the transferable nature of research skills to other work environments and the range of career opportunities available to them inside and outside academia.

Degree Requirements

Required Credit Hours : minimum 54 hours

Program Requirements:

Part 1: General Requirements (9 hours)	
CMHS701	Research and Proposal Writing Process for Doctoral Students
CMHS702	Journal Club I
CMHS703	Journal Club II
CMHS704	Journal Club III
CMHS705	Journal Club IV

Part 2: Concentration Requirements Group 1: Students must complete all courses (6 credits) (9 hours)	
BMSC700	Advanced Molecular Biology
BMSC701	Advanced Research Techniques

Group 2: 3 credits from the following or any relevant 700-level courses offered by other UAEU Colleges approved by the Advisory Committee. (3 hours)

BMSC702	<u>Advances in General Pathology</u>
BMSC703	<u>Microbial Pathogenesis and Host Defense</u>
BMSC704	<u>Current Advances in Pharmacological Sciences</u>
BMSC705	<u>Advances in Genetics</u>
BMSC706	<u>Advanced Cancer Biology</u>
BMSC707	<u>Medical Cell and Tissue Biology</u>
BMSC708	<u>Advanced Topics in Neuroscience</u>
BMSC709	<u>Advanced Pathophysiology</u>

Part 3: Elective Requirements Any 6 credits of relevant 600 level courses or above offered by the CMHS (or relevant courses offered by other UAEU colleges) approved by the Advisory Committee and have not been taken previously. (6 hours)

Part 4: Qualification Requirements (0 hours)

CMCE800	Comprehensive Examination	
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Part 5: Research Requirements (30 hours)

RSCH900	Dissertation Research	
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RSCH910	Dissertation Defense	
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Master of Public Health

The program is designed to meet the development needs of professionals working in the field of public health or related fields such as occupational health, environmental health, primary care or health promotion. It is appropriate for those working in health and social care organizations, including health authorities, government departments and health service providers such as hospitals and clinics. The course will also be appropriate for those who wish to pursue a career in academic public health or to learn more about epidemiology and statistics for research or health service evaluation. The program is part-time and cannot be completed in less than three years. Students register for not more than six course credits per semester. The program is modular with teaching taking place during intensive courses 0830-1700 Wednesday-Saturday. The program is not suitable for full-time students.

Program Objectives

- History and philosophy of public health as well as its core values, concepts, functions, and leadership roles.
- Population health concepts, and the processes, approaches, and interventions that identify and address the major health-related needs and concerns of populations.
- Concepts, methods, and tools of public health data collection, analysis and interpretation, and the evidence-based reasoning and informatics approaches that are essential to public health practice.
- Biological, environmental, socio-economic, behavioral, cultural, and other factors that impact human health, influence the global and societal burden of disease, and contribute to health disparities.
- Identification and pursuit of opportunities for promoting health and preventing disease across the lifespan and for enhancing public health preparedness.
- Characteristics and organizational structures of selected health care systems.
- Legal, ethical, economic, and regulatory dimensions of health care and public health policy.
- Public health-specific communication and social marketing , including technical and professional writing.
- The cultural context of public health issues.
- Globalization and sustainable development and their relationship to population health.

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

- Use advanced concepts, methods, and tools of public health data collection, analysis and interpretation.
- Identify and address the major health-related needs and concerns of populations using population health concepts and methods
- Analyze the biological, environmental, socio-economic, behavioral, cultural, and other factors that impact human health.
- Use effective communication and strategies for promoting health and preventing disease across the lifespan.
- Compare the characteristics and organizational structures of health care systems in selected countries.
- Explain the legal, ethical, economic, and regulatory dimensions of health care and public health policy.

Degree Requirements

Required Credit Hours : minimum 34 hours

Public Health Major

Required Courses (18 hours)	
CMPH601	<u>Fundamentals of Public Health</u>
CMPH602	<u>Biostatistics I</u>
CMPH603	<u>Epidemiological Methods</u>
CMPH606	<u>Health Promotion and Disease Prevention</u>
CMPH609	<u>Introduction to Public Health</u>
CMPH614	<u>Public Health Assignments I</u>
CMPH616	<u>Public Health Assignments II</u>
CMPH623	<u>Public Health Assignments III</u>
CMPH629	<u>Skills for Public Health Practice</u>

Optional Modules (Not offered every year) (18 hours)

CMPH604	<u>Health Care Evaluation and Needs Assessment</u>
CMPH605	<u>Public Health Management</u>
CMPH607	<u>Health Protection</u>
CMPH613	<u>Occupational Health</u>
CMPH615	<u>Clinical Epidemiology</u>
CMPH617	<u>Environmental Public Health</u>
CMPH723	<u>Current Issues in Public Health</u>
CMPH622	<u>Chronic Disease Epidemiology</u>
CMPH627	<u>Maternal and Child Health</u>
CMPH628	<u>Global Health</u>
CMPH633	<u>Advanced Public Health</u>

CMPH708	<u>Advanced Biostatistics</u>	
CMPH707	<u>Advanced Epidemiology Methods</u>	
CMPH709	<u>Advanced Environmental Health</u>	

Doctor of Philosophy (PhD) Concentration: Public Health and Occupational Health

The College of Medicine and Health Sciences at UAE University provides PhD program in Biomedical Sciences and Public Health & Occupational Health. The PhD program involves conducting coursework over a period of up to 2 years, followed by a comprehensive examination evaluating the breadth and depth of the student's knowledge of his or her discipline, as well as the student's scholarly potential. Passing the comprehensive examination results in the student being recommended to advance to candidacy followed by research and the writing of a dissertation over a further three to a maximum four year period.

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

- Will demonstrate the breadth of knowledge in the discipline and advance, in-depth knowledge in the sub-discipline or area of specialization.
- Will have performed and defended an original work of research in their fields of specialization which contributed new human knowledge.
- Will be able to identify, analyze critically and explain open problems in their disciplines and apply relevant research methodology for finding a possible solution.
- Will be able to communicate the major tenets of their field of specialization and their work orally and in writing to the faculty, their peers, and the lay public.
- Will be able to identify areas where ethical issues may arise in their field, and articulate strategies to mitigate situations related to ethical issues in their profession.
- Will demonstrate an insight into the transferable nature of research skills to other work environments and the range of career opportunities available to them inside and outside academia.

Degree Requirements

Required Credit Hours : minimum 54 hours

Program Requirements:

Part 1: General Requirements (9 hours)	
CMHS701	<u>Research and Proposal Writing Process for Doctoral Students</u>
CMHS702	<u>Journal Club I</u>
CMHS703	<u>Journal Club II</u>
CMHS704	<u>Journal Club III</u>
CMHS705	<u>Journal Club IV</u>
Part 2: Concentration Requirements (9 hours)	
CMPH706	<u>Advanced Public Health</u>
CMPH707	<u>Advanced Epidemiology Methods</u>
CMPH708	<u>Advanced Biostatistics</u>

CMPH709	<u>Advanced Environmental Health</u>
CMPH723	<u>Current Issues in Public Health</u>

Part 3: Elective Requirements (Any 6 credits of the following courses.) (6 hours)

CMPH604	<u>Health Care Evaluation and Needs Assessment</u>
CMPH605	<u>Public Health Management</u>
CMPH607	<u>Health Protection</u>
CMPH613	<u>Occupational Health</u>
CMPH615	<u>Clinical Epidemiology</u>
CMPH617	<u>Environmental Public Health</u>
CMPH622	<u>Chronic Disease Epidemiology</u>
CMPH627	<u>Maternal and Child Health</u>
CMPH628	<u>Global Health</u>

CMPH602	Biostatistics I
CMPH629	Skills for Public Health Practice
CMPH603	Epidemiological Methods
CMPH601	Fundamentals of Public Health
CMPH606	Health Promotion and Disease Prevention

Part 4: Qualification Requirements (0 hours)

CMCE800	Comprehensive Examination
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Part 5: Research Requirements (30 hours)

RSCH900	Dissertation Research
RSCH910	Dissertation Defense

Master of Medical Sciences

The Master of Medical Sciences programs are designed to cater to the needs and aspirations of individual students, the expressed needs of the relevant institutions in the UAE, and the current strengths in different disciplines in the CMHS. Currently the structure of the M. Med. Sc. curriculum is organized into three tracks: "Microbiology & Immunology", "Pharmacology and Toxicology" and "Biochemistry and Molecular Biology (BMB)".

1- Biochemistry & Molecular Biology The Biochemistry and Molecular Biology track is a multidisciplinary program which provides students with a foundation in Biochemistry and Molecular and Cellular Biology as well as intensive state-of-the-art laboratory research training. Research areas in the Biochemistry Department focus on the Biochemical, Molecular and Cellular basis of human diseases including Cancer Biology, Diabetes, and Neurodegenerative disorders, in addition to areas in Gene Regulation, Bioinformatics, Proteomics, Epigenetic, Signal Transduction, Oxidative Stress, Mitochondrial Dysfunction, and Immunology and Biochemical Toxicology.

2- Microbiology & Immunology The Microbiology and Immunology track provides students with core knowledge at the respective levels in basic immunology, the pathogenesis of autoimmune and infectious diseases, the molecular details of host-pathogen interactions, the molecular biology and molecular epidemiology of selected pathogens, and the genetic manipulation of pathogens.

3- Pharmacology & Toxicology The Department of Pharmacology and Therapeutics offers a multidisciplinary program designed to prepare highly qualified individuals to be successful scientists in academic and industrial biomedical research. The pharmacology and toxicology faculty members carry out research in cancer pharmacology, neuropharmacology, cardiovascular pharmacology, drug metabolism, toxicology, proteomics, molecular pharmacology, receptors and signal transduction, and drug design.

Program Objectives

- Biomedical Knowledge.
- Interpersonal & Communication Skills.
- Scholarly Research.
- Professionalism and ethics.
- Publications and presentations.

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

- Apply the knowledge of biomedical sciences in their scholarly activities.
- Demonstrate communication skills (with peers and colleagues) that are effective in the exchange and translation of knowledge and information.
- Apply professional ethics and commitment to their scholarly activities.
- Engage in collaborative health science research.
- use quantitative and qualitative methods present and defend their scientific research findings.

Degree Requirements

Required Credit Hours : minimum 36 hours

Master of Medical Science Major

Required Courses (10 hours)	
ETHC600	Ethical Conduct in Medical Research
JRC601	Biomedical Sc Journal Club 1
PRR600	Principles of Research
SEM601	Biomedical Sciences Seminar I ¹
STA600	Biostatistics & Experimental Design
1 : Taken 3 Times	
Electives Courses (6CH for BM, PT tracks and 8CH MI track) (8 hours)	
Research Courses (12 hours)	

Biochemistry and Molecular Biology Track

Required Courses (8 hours)	
BMB601	Techniques in Biochemistry
BMB602	Advanced Molecular Biology
BMB603	Advanced Cell Biology
BMB604	Advanced Topics in Biochemistry

Microbiology and Immunology Track

Required Courses (6 hours)	
MMIM601	Molecular Bacteriology – Gene, Structure, Pathogenesis
MMIM602	Principles of Cellular and Molecular Immunology
MMIM603	Molecular Principles of Viral Replication and Pathogenesis

Pharmacology and Toxicology Track

Required Courses (8 hours)	
PHTX601	<u>General Systemic Pharmacology</u>
PHTX602	<u>Molecular Mechanism of Drug Action</u>
PHTX603	<u>Neurotransmitters in Health and Diseases</u>
PHTX604	<u>Molecular Principles of Organ Toxicity</u>