**AJMAN UNIVERSITY**
OF SCIENCE & TECHNOLOGY

UNDERGRADUATE STUDENT CATALOG
**2011-2012**

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# UNDERGRADUATE STUDENT CATALOG

# 2011-2012

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**His Highness Sheikh Khalifa Bin Zayed Al Nahayan**
President of the United Arab Emirates

**His Highness Sheikh Humaid Bin Rashid Al Nuaimi**
Member of the Supreme Council
Ruler of Ajman Patron of Ajman University of Science and Technology

**His Excellency Dr. Saeed Abdullah Salman**
President of Ajman University of Science and Technology
Honorary President & Founder of the Association of Arab Private Institutions for Higher Education
President of the Euro-Arab Research Network

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# From The President

Ajman University of Science and Technology (AUST) was founded in 1988 as a private institution of higher education. Today it is a cutting- edge university – one which employs state - of-the -art technology while at the same time remaining grounded in Arab culture and the traditions of the Middle East.

In June 2008, we celebrated the 20th anniversary y of AUST , and two decades of teaching, training, research, expertise and practice. These have been years of education, information and investment, not only in the UAE but across the Arab region and also in the wider world. Thanks to the adoption of its comprehensive three - dimensional vision, AUST has advanced in progress and prosperity. Today, as a result of this vision, the University is firmly established as an institution of expertise, providing the local community and the region with distinguished and high- quality experts in a variety of fields. Ajman and Fujairah campuses also provide open and innovative environments in which the latest educational methods and communication tools – CCTV, E -learning, videoconferencing, smart boards and multimedia labs - are used to fur their interactivity.

During the last two decades, AUST community members have spared no effort in communicating with both the business and civic communities via a variety of channels which include the organization of workshops, seminars, approach conferences and colloquia. Through such efforts, modest as they are, we aim to share the benefits of our endeavors with the wider community. At the regional level, AUST has both launched and contributed to more than 700 projects and initiatives, such as the Association of Arab Private Institutions for Higher education and the Euro-Arab Research Network.

To conclude, we believe that the achievements of AUST are due to our comprehensive vision – a vision which has been implemented through continuous revision and development, through the selection of the best models from among a variety of educational systems, and through the embracing of technological advancement.

*Assalamu Alaikum,*

### Dr. Saeed Abdullah Salman
*President, Ajman University of Science and Technology*
*Honorary President & Founder, Association of Arab Private Institutions for Higher Education*
*President, Euro-Arab Research Network*

# Academic Calendar for the Fall Semester

## Academic Year 2010 – 2011

| Day | Date | Event |
|---|---|---|
| Monday | August 30 | 11:00.:   TOEFL exam |
| Monday | September 13 | Faculty members report to work |
| Monday | September 13 | 11:00: The Deans welcome the new students<br>12:00-13:00: Tour of the Campus &  AUST Units<br>13:00-14:00:  Tutorial session on course registration for new students |
| Mon-Thurs. | Sept.13-16 | Examinations for Incomplete Removal |
| | | Period for accepting credit transfer requests |
| | | Period for accepting changing major requests |
| Tues -Sat. | Sept 14- 18 | Course registration for continuing  & new students |
| Sunday | September 19 | Beginning of Classes |
| Sun. -Thurs. | Sept. 19 – 30 | Add & Drop Period |
| Thursday | September 30 | Last date for registration suspension with 100% refund |
| Sun. – Thurs. | Oct. 3- 16 | Suspension registration period with 50% refund |
| Thursday | October  21 | Last date for dropping courses without academic penalty |
| Sunday | November 7 | Beginning of Mid-term Examinations |
| Sunday | November 7 | Commencement of Admission Period for Spring Semester |
| Sun.- Thurs. | Nov. 14-18 | Eid El ADHA holiday |
| Thursday | November 25 | Last date for dropping courses with academic penalty (W) |
| Sun. – Thurs. | Nov.28- Dec.  16 | Survey of Course & Academic Advising Assessment |
| | | Early Registration for Spring  Semester 2010-11 |
| Sat. - Thurs. | Jan. 8-20 | Final Examinations Period |
| Monday | January 24, 2011 | Last date for requesting incomplete |
| Tuesday | January 25, 2011 | 10:00: Colleges Council  meeting |
| Wednesday | January 26, 2011 | 13:00 :  Scientific and Academic Council meeting |
| Thursday | January 27, 2011 | Announcement of Final Examinations Results |
| Sun.- Thurs. | Jan. 30-Feb. 3, 2011 | Mid-year Vacation |

Public holidays will be scheduled accordingly by officials

# Academic Calendar for the Spring Semester

## Academic Year 2010 - 2011

| Day | Date | Event |
| --- | --- | --- |
| Thursday | February 3 | 10:00 a.m.:  TOEFL exam |
| Sunday | February 6 | Faculty members report to work |
| Sunday | February 6 | 10:00: The Deans welcome the new students<br>11:00-13:00: Tour of the Campus & AUST Units<br>13:00-14:00:  Tutorial session on course registration for new students |
| Sun. - Thurs. | Feb. 6 –10 | Course registration for continuing & new students |
| | | Examinations for Incomplete Removal |
| | | Period for accepting credit transfer requests |
| | | Period for accepting changing major requests |
| Sunday | February 13 | Beginning of classes |
| Sun.-Thurs. | Feb. 13 - 24 | Add & Drop Period |
| Thursday | February 24 | Last date for registration suspension with 100% refund |
| Sun. – Thurs. | Feb. 27-March 10 | Suspension registration period with 50% refund |
| Thursday | March  17 | Last date for dropping courses without academic penalty |
| Sunday | April 3 | Beginning of Mid-term Examinations |
| Thursday | April  14 | Last date for dropping courses with academic penalty (W) |
| Sun. - Thurs. | April 17 – May 5 | Survey of Course & Academic Advising Assessment |
| | | Early Registration for Summer Semester 2010-11 |
| Sun. - Thurs. | May 15- May 26 | Early Registration for Fall  Semester 2011-12 |
| Sat. - Thurs. | May 28– June 9 | Final Examinations Period |
| Monday | June 13 | Last date for requesting Incomplete |
| Tuesday | June 14 | 10:00 :  Colleges Council Meeting |
| Wednesday | June 15 | 13:00 :  Scientific and Academic Council Meeting |
| Thursday | June 16 | Announcement of Final Examinations Results |
| Thursday | June 16 | Late Registration for Summer Semester 2010-11 |
| Sun.- Thurs. | June 5- August 18 | Admission Period for Fall Semester 2012 |
| Sunday | June 26 | Beginning of Summer Vacation |

Public holidays will be scheduled accordingly by officials

# Academic Calendar for the Summer 1 Semester

## Academic Year 2010 - 2011

| Day | Date | Event |
|---|---|---|
| Sunday | June  19 | Beginning of classes |
| Sun-Mon. | June 19-20 | Add & Drop Period |
| Sunday | July -10 | Beginning of Mid-term Examinations |
| Thursday | July 14 | Last date for dropping courses with academic penalty (W) |
| Sat-Mon | July 30 – August 1 | Final examinations period |
| Thursday | August 4 | 10.00: Colleges Council meeting |
| | | 14:00:  Scientific and Academic Council Meeting |
| Sunday | August 7 | Announcement of Final Examinations Results |

# Academic Calendar for the Summer 2 Semester (Field Training)

## Academic Year 2010-11

| Day | Date | Event |
|---|---|---|
| Sunday | August 7 | Beginning of 6 - week  training  session |
| Thursday | September 15 | End of 6 - week training  session |
| Sunday | September 18 | Announcement of  Field Training results |

Public holidays will be scheduled accordingly by officials.

# AUST HISTORY

The establishment of Ajman University College of Science and Technology (AUCST) originated with the importance that His Highness Sheikh Zayed

Bin Sultan Al-Nahayan, the President of the United Arab Emirates, attaches to higher education, and in particular to science and technology. The institution's genesis can be regarded as an embodiment of the directives of His Highness regarding the expansion of this type of education, with the aim of producing graduates capable of executing the nation's ambitious development plans.

In accordance with this policy, and to assist national development, His Highness Sheikh Humaid Bin Rashid Al-Nuaimi, Member of the Supreme Council and Ruler of Ajman, issued the Emiri Decree establishing AUCST on the 3rd of Dhil Al Qi'dah 1408 AH (corresponding to June 17, 1988). His Highness became the patron of the University College, which received its first intake of students on June 15, 1988.

AUCST was recognized by the UAE Ministry of Higher Education and Scientific Research on May 3, 1994 and, in accordance with the decree of the ministry No. (54) of 1994, and the decree No. (54) of 1997, became Ajman University of Science and Technology (AUST). AUST now enjoys the legal status of a Limited Liability Company, shared by H E Dr. Saeed Salman and H H Sheikh Humaid Al-Nuaimi, Ruler of Ajman and Member of the Supreme Council, and is managed by a 16-member Board of Trustees, of which His Highness is Chair and H E Dr. Saeed Salman is Vice Chair.

AUST is a founding member of the Association of Arab Private Institutions for Higher Education and the Euro-Arab Research Network. On April 13, 1999, AUST was accepted as an active member of the Association of Arab Universities.

## MISSION

Ajman University of Science and Technology aims to produce competent and skilled graduates who can be of immediate benefit to society, contributing to its development and well-being. In its educational dimension the university has adopted teaching and learning methodologies that are internationally recognized and of high-quality, customizing them to accord with the specific values, traditions and needs of the society in which the institution operates. AUST is committed to excellence, and to this end its educational programs are under continual review, ensuring that scientific and technological advances, as well as considerations regarding the needs of society, are fully integrated. High quality achievements, satisfying stringent International standards, have resulted from the judicious blending of education, information and investment - the three dimensions of AUST - and bear testimony to the vision of the founder, Dr. Saeed Abdullah Salman.

## VISION

In today's world, the forces of globalization and new technology impose an increasingly uniform model of society – a model which in some respects threatens the cultural diversity and heritage of1humanity. Therefore now, more than ever before, nations have need of universities which have a comprehensive vision – a vision which reflects national ambitions for progress and modernity yet at the same time preserves national culture, traditions and identity.

As an institution which promotes a new and active role for education in society, Ajman University of Science and Technology (AUST ) seeks to adopt positive aspects of modernity. AUST believes that teaching, research and training practice need to constantly evolve, and that for this to happen an environment open to innovation is required – an environment which fosters creativity and favors the emergence of centers of excellence. Such an environment also requires an excellent infrastructure which actively promotes academic communication and interaction.

## OBJECTIVES

1. Offer degree programs relevant to the professional world

2. Enable graduates to achieve high professional objectives and assume leadership roles by providing them with up-to-date knowledge and advanced skills

3. Direct students' efforts towards the adaptation and application of their knowledge and skills to real and practical needs

4. Enable students to develop critical thinking skills, and impart to them the values of lifelong learning

5. Support the learning process and stimulate the teaching experience by providing an environment where teaching, research, training, expertise and practice complement and benefit each other

6. Establish a comprehensive framework for quality assurance involving both internal and external assessment

7. Guarantee the pertinence and quality of educational programs through the constant assessment of learning outcomes

8. Promote important aspects of professional life, such as ethical behavior, responsibility, standards and ideals

## THE UNIVERSITY'S OPEN SYSTEM

In a fiercely competitive world, innovation is essential for survival. To address the challenge, AUST seeks to bridge the gap between academia and the wider world, reaching out to the economic and business spheres in particular to enable them to benefit from developments forged in the academic environment. As the university evaluates its

activities - from teaching and training to research projects and conferences – in terms of the practical needs of society, the institution's interaction with the community becomes mutually beneficial.

The community provides the university with the practical input and experience necessary for ensuring a high quality of education, while at the same time enabling the university to correlate its programs with real needs. Many initiatives have been established facilitating collaboration between the university and the community, one example among many being the organization of "approach seminars," at which a variety of topics come under debate. As participants from government and private sectors attend, these events establish positive two-way interaction and provide valuable feedback which impacts the planning of academic programs and their contents

## SELECTION AND CUSTOMIZATION

An important aspect of AUST philosophy is the necessity for the careful selection of the best methodologies, whether cultural, economic or political, and the adaptation of them to the local environment. The choice of educational systems and their customization for the environment in which the institution operates are good examples of this philosophy in practice – a philosophy which reconciles culture and tradition with modernity and technology, thereby contributing to progress and development.

## "MODERNIZED-CONVENTIONAL" METHODS

AUST believes its main mission remains the instruction of tomorrow's intellectual elite. For this reason the vital process of imparting knowledge to students is continually reviewed and revised so as to ensure that the institution's programs meet their objectives. A variety of methods of delivery – harnessing the advantages offered by both "modernized-conventional" techniques and multimedia- based ones – are employed. "Modernized-conventional" methods have the merit of establishing direct student/professor interaction as

well as student/student contact, and in addition encourage peer interaction. Furthermore, the more recently developed computer-based teaching methodologies complement traditional pedagogical methods, allowing improvements in teaching processes and aiding the development of qualities such as self-dependence in students.

# WHERE IS AUST?

## THE UNITED ARAB EMIRATES

The United Arab Emirates is the federation of seven Arab Emirates: Abu Dhabi, Dubai, Sharjah, Ajman, Ras Al-Khaimah, Fujairah and Umm Al Quwain. The Federal State, which was formed in December 1971, is located on the eastern coast of the Arabian Peninsula. It covers an area of about 77,700 square kilometers situated between latitudes 22° 00′ and 26° 30′ North and longitudes 51° 00′ and 56° 30′ East. Some 86.6 percent of the land is accounted for by Abu Dhabi. The country is bordered by the Arabian Gulf to the North, Saudi Arabian and Qatar to the West, Saudi Arabia and Oman to the South East, and Oman and the Gulf of Oman to the East.

The terrain of the UAE is characterized by sand desert, barren mountains, and salt flats. However, a number of green valleys and oases are scattered all over the country.  Furthermore, an afforestation campaign and a land reclamation drive has turned hundreds of thousands of hectares of previously barren land into green areas. The country's total population is approximately five million people including nationals, foreign Arabs, and other expatriate residents.

The weather can be extreme during the summer months, from May to October, with interior temperatures reaching 49oC and coastal temperatures slightly lower but combined with high humidity. Pleasant weather prevails during the rest of the year with temperatures between 20oC and 35oC. The main natural resource is the oil with reserves up to almost one tenth of the world's total.

### Ajman:

The Emirate of Ajman is centrally located on the western coast of the U.A.E., a short distance from Sharjah, representing the northern flank of the (Dubai-Sharjah-Ajman) metropolitan area. Ajman was the birthplace of the University in 1988.



### Al-Fujairah:

The Emirate of Al-Fujairah is located at the eastern coast of the U.A.E., at about 120 km from Dubai. It overlooks both the Arabian Gulf and the Gulf of Oman. Ajman University's campus in Al Fujairah was opened in 2000.

INSTITUTE OF
ENVIRONMENT, WATER AND ENERGY

## Mission

The mission of the Institute of Environment, Water and Energy (IEWE) at Ajman University of Science & Technology (AUST) is to make use of the capabilities of the university's laboratory facilities, virtual environment, intranet and internet, in addition to extensive field investigations, to provide innovative solutions to environment, water and energy resource problems.

## Vision

In the viewpoint of AUST, the environment has two dimensions; the virtual dimension which encompasses human innovation, intellect, thought, ambitions and dreams, and the physical environment which includes human and his surroundings of the atmosphere, hydrosphere lithosphere, and biosphere. This vision is behind the initiation of the IEWE that addresses the environment as a whole, placing special emphasis on the environment, water and energy resource challenges. Therefore, the vision of the

IEWE at AUST arises from the vision of the institution as a whole.

# Goals

The goals of the Institute of Environment, Water and Energy are to:

1. Monitor, diagnose and analyze the problems facing the environment, water and energy resource in the United Arab Emirates (UAE).
2. Provide innovative solutions through intelligent programs of teaching, research, training, consultations and practice in the fields of environment, water and energy.

# Objectives

The objectives of Institute of Environment, Water and Energy are to:

1. Initiate undergraduate and graduate courses related to the institute's fields of interests
2. Offer intermediate undergraduate degrees.
3. Design graduate programs on environment, water resources and energy resources
4. Conduct applied interdisciplinary research.
5. Organize training programs.
6. Provide consultancy in environment, water and energy-related areas.

# Outcomes

The intended outcomes of the Institute of Environment, Water and Energy are to:

1. Establish a new undergraduate, university-requirement course in Environmental Sciences since 2003.
2. Design a Master Program in Groundwater Engineering and Management, which is accredited by the UAE Ministry of Higher Education and Scientific Research.
3. Carry out training courses in the fields of environment, water and energy, in collaboration with reputable national, regional and international institutions.
4. Conduct research projects on environment, energy and water resource problems, with special emphasis on evaluation of conventional and non-conventional water resources, use a of environmental isotopes in water resource studies, application of advanced numerical and mathematical models in environment and water resource studies, water resource evaluation, assessment and conservation, use of remote sensing and GIS techniques for environmental investigations, and coastal zone management.

# Information Technology Department

## Mission

The mission of the Information Technology Department is to provide efficient and up-to-date services to all University IT users (college, students, and staff) to support their teaching, research and administrative activities.

## Objectives

The objectives of the IT Department are to:

- provide a robust IT physical and logical infrastructure, maintain WAN and LAN nodes and perform administrative operations to maintain constant IT service availability to users

- provide prompt and accurate technical assistance via knowledgeable staff, and to give due attention to users' requests and feedback

- develop database systems, maintain university-wide database applications and give full support to application users

- create, maintain and enhance university and related websites, and to develop integrated applications to enhance user's web browsing experience

- perform RND to recommend new technology

## Services

- Help Desk
- User Accounts and Emails
- Video-Conferencing
- Training
- Internet
- Wireless Networking
- Online Registration
- Maintenance and Replacement of Computing and Network Resources
- Systems and Network Security

# Health Clinics

## Mission

The University Health Clinics seek to complement the academic mission of AUST and are dedicated to providing educational, supportive, consultative healthcare services to students, staff, college and eligible dependents. In doing so the Health Clinics strive to make the campus a healthy and safe place to study, work and live.

## Objectives

The objectives of the University Health Clinics are to:

- provide primary healthcare to students, college, staff and eligible dependents
- provide emergency healthcare to Residential Hall and campus residents after working hours and at weekends and on holidays
- support the integration of university services and provide a healthy atmosphere to accomplish the university objective of a disease-free community
- provide high quality integrated health services in a timely manner, providing complete customer satisfaction

## Services

The Medical Services Administration provides the following primary healthcare, within available capabilities, through its clinics:

- Round-the-clock services for males and females

- General Clinics: primary healthcare, treatment, preventative medicine and health education on common diseases through the general practitioners to the university community
- Nursing: comprehensive nursing care and services, including routine and emergency cases, recording patient details and providing treatment
- Reception: receiving patients, preparing the patient files and records, recording personal data, preparing daily, monthly and annual statistics
- Medical Lab: carrying out medical tests and running tests referred from university physicians for nominal fees
- Referral System: referring urgent cases to hospital specialists
- Following up chronic cases and coordinating referrals to hospital specialists if necessary
- Carrying out medical checkups for new students

# Students Affairs

The Deanship of Students Affairs (DSA) was established in1988 and is overseen by the Dean of Students Affairs. The DSA plays a vital role in governing, shaping and organizing activities that offer cultural activities and entertainment to the entire university community. It also provides various services to AUST students, contributes to the building of students' personalities and develops their talents.

*The DSA comprises two divisions:*

## Advising and Counseling Unit

All counseling sessions are confidential. Information that students share with counselors is not passed on to any third party, for example professors, parents, employees, etc.

For most AUST students, their academic life represents a significant period of transition. Although transitions can be exciting, they also require change and adjustment, which can sometimes be difficult. The university's Advising and Counseling Unit offers support services to assist students in their pursuit of academic and personal growth, helping them gain a better understanding and appreciation of themselves. It also supports students as they take important decisions in life.

The services provided help students overcome difficulties and learn the processes of problem solving, achieving their educational goals, enhancing their capacity for satisfying interpersonal relationships, defining their career goals and maximizing their ability for continued emotional growth

beyond their educational experience. Members of this unit recognize and respect the diverse backgrounds, cultures, beliefs, experiences, values and capabilities of each student.

The services offered include both individual and group counseling sessions. The former is a one-on-one session where a student can meet with one of our professional student counselors to discuss matters such as physical complaints, anxiety, unhappiness, lack of interest in daily activities, personality changes that cannot be explained (such as sudden shifts in behavior, etc). The latter comprises a group of students who, led by a counselor, discuss matters such as smoking, dating, procrastinating, making friends and succeeding.

Students can also visit the unit and read some of our self-help publications to educate themselves about their own issues and challenges.

**To ensure that it meets its goals, the unit's functions include the following:**

- distributes questionnaires to elicit feedback
- opens special files for students who are currently under counseling and advising
- conducts interviews with students to identify any urgent problems
- holds regular sessions to establish good relationships with students

# Student Activities Unit

Under the sponsorship of the DSA, this unit organizes many activities that span a wide range of interests, covering social issues, culture, art and sport. It also acts as the central support for the numerous student societies. This unit provides and organizes the following social, cultural, art and athletics activities:

## 1. Social Activities

These activities aim at widening and promoting the social aspects of the students' personality, thus activating and developing their role in building society and its social institutions. These activities also aim at training students in group and voluntary work. Moreover, there are several other social services and activities offered by the social division throughout the academic year such as:

- Receiving new students and their parents and finding solutions for the difficulties students may face at the beginning of their academic life
- Arranging and supervising meetings at which students are able to get to know each other, thus breaking down the psychological barriers between senior and new students and familiarizing them with the university atmosphere
- Listening to student complaints, working to find solutions, and informing parents about the academic status of their sons and daughters
- Promoting social awareness among students is done through a number of activities which include raising money for a variety of charitable causes and visiting institutions, for example orphanages
- Organizing activities during the holy month of Ramadan, which include Iftar, conferences, religious lectures, competitions, financial donations and other charitable deeds. Competitions in the recitation and memorization of the Holy Quran are also arranged
- Arranging social and educational activities, for example visits to cultural landmarks, scientific exhibitions and entertainment centers, and exchanging visits with scientific, teaching and social institutions
- Cooperating with UAE institutions and authorities in health- awareness campaigns on subjects such as illegal drugs and smoking
- Organizing blood donation campaigns in cooperation with the Ministry of Health, and taking part in campaigns

and celebrations organized by formal authorities, such as the Civil Defense and Traffic Week Festivals

- Running training courses, for example on first-aid and personality development

- Supporting social activities that aim to develop students' personalities and consolidate their relationship with local values and morals

## 2. Cultural Activities

The DSA organizes a series of intellectual and cultural activities throughout the academic year. These activities aim at stimulating and enriching both intellectual and cultural aspects of students' personalities. They also contribute positively to building a solid intellectual and cultural background, and help students distinguish between constructive and destructive thinking in their campus life.

**Cultural activities organized by this division include the following:**

- organizing intellectual and cultural lectures and conferences featuring experts from within and outside the university

- running cultural, intellectual, literary and scientific competitions, and awarding prizes and certificates for distinguished projects such as short stories, literary articles, scientific research and poetry competitions, with the aim of promoting student creativity

- organizing poetry readings, seminars, discussion forums and exhibitions of student work

- encouraging students to write articles for publication in the University Magazine

- forming student theatre groups and providing them with financial support

- participating in cultural, intellectual and scientific competitions organized by educational, literary and scientific institutions in the UAE

## 3. Art Activities

The DSA is keen in promote the aesthetic and artistic aspects of student life and seeks to further develop these. Throughout the year this division arranges participation in the following activities:

- Presentation of student work, such as drawings, sculpture, calligraphy, art, zincography and photography, in magazines. Exhibitions of student artwork, which provides excellent motivation for talented students

- Art competitions among talented students in a variety of fields

- Art competitions held in the UAE

- The design of wall magazines featuring students' written and artistic work, exhibited in university halls and corridors

## 4. Sport Activities

Sport is a major feature of the function of the DSA, under the patronage of His Excellency Dr. Saeed Abdullah Salman, President of the AUST . Sport activities play an important role in promoting the physical and intellectual development of students.

Sport enables participants to build their physical wellbeing through exercise and is an important element in the development of personal and psychological balance. As an important part of the strategy and vision of AUST, the university has a wide range of sporting facilities. These include playing fields for football, handball, basketball and volleyball. In addition, the gymnasium is equipped for a variety of sports and there are further facilities for chess, billiards, tennis, etc.

The division also organizes sporting events and participates in many indoor and outdoor athletic championships, such as:

- Inter-college teams

- forming university sport teams and regular training sessions
- participating with universities and colleges from across the UAE in championships and sporting competitions organized by the Higher Education Sports Federation
- promoting health and fitness through body-fitness programs and courses in track and field sports, games and swimming
- ensuring that the university sport facilities and equipment are updated
- ensuring that safety standards are upheld

## The DSA provides other services, as outlined below:

### Student Council

The Student Council is dedicated to the continuous development and welfare of the AUST community. The council is an executive authority consisting of 23 students chosen through campus-wide elections. The Student Council's mission is to represent students and give them the opportunity to communicate their views. It provides resources for various student organizations and clubs, offering guidance and support, as it seeks to build a generation that is established on the principles of teamwork, dedication and responsibility.

### Student Societies

A student society is a body elected by AUST students; society activities are supported by the DSA. There are also academic societies in each college. The goals of these societies are to:

- encourage student participation in a variety of activities
- promote the spirit of cooperation among students, and encourage them to take on responsibility

- provide support to new students by advising them and helping them in their new academic life
- obtain student input regarding needs and wishes, and pass the information obtained to the DSA
- act as a liaison between students and DSA supervisors
- meet with DSA members on a regular basis
- arrange for "acquaintance" meetings among students in order to break down the barrier between new students and the new academic society
- promote a study ethic among students and encourage them to abide by the rules and regulations of the university
- urge students to abide by the morals, principles and doctrines required by Islam

In line with the vision and philosophy of the AUST, the DSA arranges a series of developmental, educational and cultural courses for student leaders, with the aim of improving their performance and developing their leadership skills.

## Student societies supported by the DSA:

### 1. Social Society

The Social Society is concerned with the social and human aspects of student life. It seeks to develop the relationship between students, the university and the community. The Social Society supports morality and promotes welfare work. The society also participates in social activities organized by the DSA.

### 2. Cultural Society

The Cultural Society is concerned with the intellectual, cultural, and literary life of students. It aims to promote students' talents through performances, exhibitions and participation in cultural activities, for example reading intellectual and literary publications and writing.

### 3. Arts Society

This society seeks to develop the talents of students who are artistically inclined (e.g., in drawing, photography, art, etc.). It also arranges art exhibitions and conducts training courses in drawing and other forms of creative activity. Members of the society also participate in external exhibitions.

Various athletic facilities also provided and the university is currently working on building swimming pools at accommodation sites. Mosques are also available and contain religious books.

*Student Residential Halls have the following facilities:*

### 4. Athletic Society

This society seeks to improve students' athletic skills. It participates in organizing competitions, encourages students to take part in athletic activities and conducts training courses to improve stamina. The society also supports the DSA in athletic activities.

## Student Services

The DSA is responsible for monitoring the student services offered by AUST and service providers working within it – for example accommodation, transportation and health care services. It seeks feedback from students regarding the effectiveness of these services and uses it to inform decisions regarding the improvement of these services.

### 1. Accommodation

In line with its vision, the AUST is eager to ensure the success of the education it provides. Student accommodation is therefore given high priority, as it plays a key role in student wellbeing and can have a positive impact on academic performance. For this reason an independent organization has been founded which is concerned with every aspect of life in the student accommodation, for example matters of comfort, the provision of three meals daily, the mini-market, health club, internet, etc. These services are offered at very low prices.

In addition, the organization offers additional free facilities, for example electricity and water, study rooms, libraries and newspapers.

- Well-designed rooms equipped with appropriate facilities such as furniture, refrigerators, AC, etc.
- Continuous supervision (day and night) by qualified supervisors (both male and female)
- Comfortable transportation between the accommodation and the university. Transportation is also provided for shopping trips and visits

*Student conduct in Residential Halls is subject to certain regulations:*

- Security - all residential halls are protected by security staff patrols
- Curfew - staff monitor attendance records regularly for absences. Repeated violation of attendance regulations may result in dismissal from the residential hall for one or more semesters 21
- Smoking - male students are allowed to smoke out of doors and in their rooms. However, smoking in common areas is strictly prohibited
- Littering - all students are expected to maintain cleanliness inside the halls. Rooms are inspected periodically for cleanliness.
- Alcohol/Illegal Drugs – the use of alcohol or illegal drugs is strictly prohibited on campus. Students found in violation of this regulation will face severe disciplinary consequences
- Housekeeping – student rooms are cleaned at least once a week, and all common areas are cleaned daily
- Dorm Leave - all resident students are expected to sleep in their residential hall every night, except during

official dorm closing periods or upon verification with residential hall staff by parents/guardians

To conclude, the DSA is eager to promote the quality of life in the residential halls. The Dean pays regular visits, meeting students and listening to their suggestions and complaints. The DSA also receives regular reports from advisors concerning conditions in the halls and takes action as necessary.

## 2. Transportation

The transportation department is responsible for ferrying students between the residential halls and the university. The department has many buses which make more than fifty trips daily.

This department also provides students with transport to activities outside the university, for example visits to scientific and entertainment venues, lectures or conferences. Two buses are kept on standby round the clock to cover emergency requirements.

*The DSA's role in student transportation is to:*

- coordinate the transportation of students to participate in various activities
- elicit student views concerning the transportation services offered
- solve student problems with the cooperation of advisors, who keep the DSA informed of recent developments
- improve the organizational performance in order to achieve high standards of services

## 3. SMART Superstore

Retail outlets on all campuses meet student needs for stationery, books in Arabic and other languages, software facilities, photocopying, printing and binding. Students may also purchase prescribed textbooks for all fields of specialization at low prices. The DSA monitors the services

and coordinates with the supervisors of SMART Superstore to solve any problems that may arise. The Deanship makes every effort to ensure that books are delivered promptly.

## 4. Other Services

The Deanship is responsible for examining the standard of other student services, for example restaurants, mosques, maintenance, cleanliness and security on campuses. With regards to restaurants, the DSA ensures that they are operating in accordance with required health standards. Mosques are kept clean and safe. The Deanship also checks the cleanliness and maintenance of lecture halls and deals with any problems that may arise. It also coordinates with the university's security staff to ensure appropriate handling of any problems. Finally, the Deanship designs questionnaires to assess the standard of services provided and recommends improvements.

# Career Counseling Center

## Mission

The Career Counseling Center endeavors to serve AUST students and alumni by educating them to successfully identify, plan and pursue their career goals. The center supports the mission of the university in its three dimensions - education, information and investment - by providing quality services which will enhance clients' employment potential, and by liaising with prospective employers. To achieve its mission, the center is assisted by the AUST Alumni Association, a non-profit organization which aims to enhance interaction between alumni, students, the university and the community.

## Objectives

*The Career Counseling Center aims to:*

- Help new students to selecting courses appropriate to their career interests and aspirations
- help students and graduates in decision-making, goal setting and planning for their careers
- offer guidance to students and graduates regarding the skills necessary to meet evolving job requirements
- help students and graduates acquire effective job search skills
- signpost students and graduates to job search resources
- provide AUST with job-market information to aid academic planning

- seek recruitment, internship and voluntary or part-time opportunities for students and graduates through liaison with businesses, governmental bodies and organizations
- establish a plan for assessing the performance of career services and activities
- Establish and foster lifelong professional and personal relationships between the university and its alumni
- promote communication between alumni, and between alumni and the university
- promote the Alumni Association within the university and engender goodwill, understanding and support for the university in the wider community
- offer alumni opportunity to contribute to and participate in the university's decision-making processes
- establish fundraising mechanisms for the Alumni Association

## Services

*The work of the Career Counseling Center includes: Organizing:*

- Career days
- Social and cultural events
- Alumni clubs and forums

*Providing services:*

- Career guidance
- Group and individual counseling
- Employability skills development
- Psychometric tests
- "Innovation incubators" Informing:
- Posting job advertisements electronically and on campus notice boards
- Employer portal
- Job seeker portal
- Classified jobs

# Training Center

## Mission

The Training Center seeks to support the strategic vision of the university by bridging the gap between the academic realm, the community and the employment market. It strives to achieve this aim through three strategies: student training, staff training and community training. In doing so the center applies scientific criteria in the selection of trainers, programs and performance assessment.

## Objectives

The Training Center's short-term objectives:

• Student Training: to seek suitable credited-hour training opportunities for students in various public and private organizations, as part of their study plan

## The Training Center's long-term objectives:

• Continuing learning, training and rehabilitation: to lead training development programs for college members and staff in areas such as teaching and learning methodology, computer skills, research methods, languages, management and technical skills

• Community Training: to play an active role in developing community programs through symposia and seminars on rehabilitation, development and the upgrade of worker skills and capacities

• To promote training and learning through the use of modern technology

## Continuing Education Center

The Continuing Education Center (CEC) was founded in response to the market's mounting need for excellence. We specialize in preparing both men and women for rewarding careers in various businesses and environments. We are well aware that students come to CEC with a variety of academic experiences and backgrounds; hence, every effort is made by the administration and staff to integrate these experiences with the requirements of the work requisite. The long-term growth and success of our Center relies heavily on its aptitude to attract and retain qualified and keen staff and to maintain being a zenith in what it does best: continuing education.

CEC also prepares students to work effectively by developing essential competencies in a reflective, learner-centered teaching milieu. This method is implemented through an academic curriculum that incorporates field-based practice, reflection and application.

• Courses offered TOEFL Courses TOEIC Courses ICDL Courses CCNA Courses
• Business English Courses English Level I Courses English Level II Courses Management Courses
• IT Courses
• Web Designing Courses Clerical Courses Graphics Courses
• Soft Skills Courses (Customer Service, Leadership, Business Etiquette, Communication Skills, Sales)

# Library & Learning Resources Center

The literature relating to library and information science states that the effectiveness of the organization and its various activities cannot be determined without a statement of goals and objectives because, by definition, effectiveness is the degree to which a library accomplishes its stated objectives. The Association of College and Research Libraries (ACRL) Standards, published in June 2004, anticipates that the mission, goals and objectives of a college library should support the mission of the parent institution and should be spelled out clearly so as to serve as a framework for its activities. Outcome assessment measures take into consideration the library's dependence on technology, its increasing use of online services, its provision of information literacy skills and the budgetary split between print and electronic resources. The ACRL Standards require goals to be compatible and consistent with those developed by the institution. Assessment of the quality and effectiveness of the library should be linked closely with the specific mission and goals of the institution. The Information Resources Center should be involved in the overall planning process. These planning methods require input from a broad spectrum of the institution's community. Strategic planning that includes evaluation, updating, and refinement, provides an overall direction that helps to guide day-to-day activities and decisions.

## Mission

The mission of AUST's library and Learning Resources Center is to support the university mission in identifying, organizing, preserving and offering accessible resources which serve the needs of college members, students and
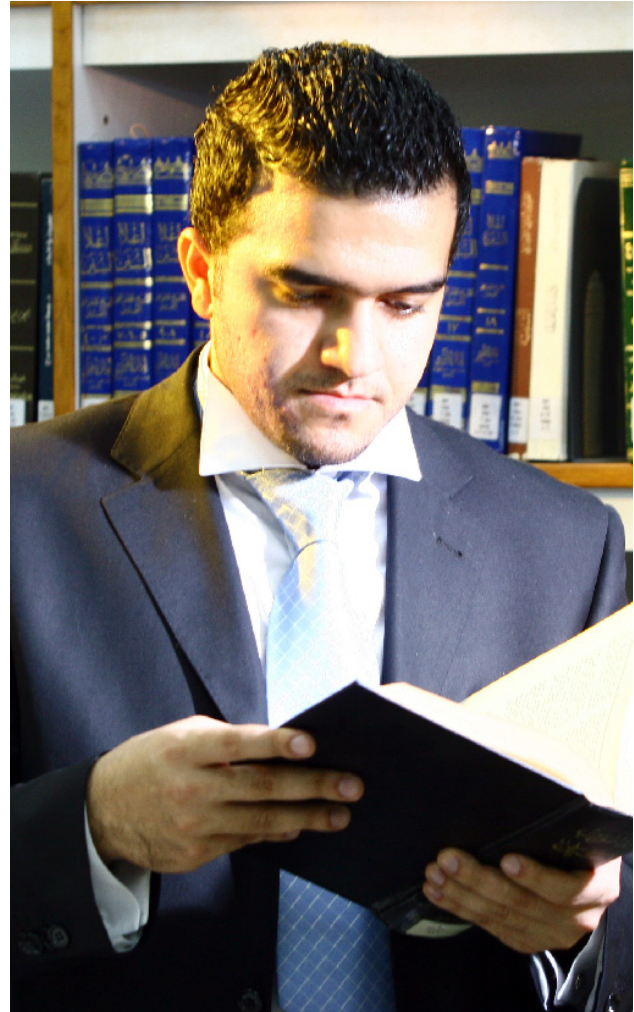
the community at large. In addition the library seeks to locate, acquire, organize and select the most appropriate material and make it accessible to users. It is also the mission of the library to build a comprehensive, balanced library collection and provide a good environment for reading, learning and research.

The upgrading and preserving of the library's information technology infrastructure to ensure prompt access to information and information services is also among the AUST library mission priorities.

## Goals and Objectives

The goals and objectives of AUST's library and LRC are to:

- Provide current library materials and databases that support the academic curriculum

- Provide access to information resources, regardless of location

- Collect library materials in all formats, broaden and update all collections to meet the needs of AUST's programs and support the various aspects of the institution: teaching, training, research and services

- Educate and assist college, students and staff in the identification and effective use of information resources

- Continue to strengthen and update all collections to meet the needs of AUST programs

- Preserve AUST's collections and materials, and maintain and upgrade physical and technological infrastructure to enhance the quality of services

- Recognize that a minimum expectable standard is one resource per topic per student

- Meet or exceed accreditation standards 25

- Provide access to library resources and servers via web pages and online recourses

- Ensure that resources available are current appropriate and accessible 24/7

- Work closely with users; know their needs and interests

- Put into practice the motto that building library resources is a continuous process

- Enhance information literacy, especially in the student community, by developing effective plans aiming at improving student ability to:

  1. Access information effectively and efficiently

  2. Evaluate information and its sources critically

  3. Understand economic, legal and social issues when using information

  4. Access and use information critically and legally

# The Wise and Elite House

## Mission

As a point of departure, 'The Wise and Elite House Project' stems from the global vision and philosophy of Ajman University of Science and Technology, 'The Wise and Elite House' represents a feature of a revival project and development scheme contemplated by His Excellency Dr. Saeed Abdullah Salman. His aim is to create the adequate milieu that helps utilize most of the talents and expertise from inside and outside the Arab World in order to address and solve the problems and enigma of the nation, enabling it to thrive to the horizons of progress in all economic, social, scientific and political spheres. 'The Wise and Elite House' comprises distinguished Arab cadre from inside and outside the Arab World to work together via communion, deliberations and constant methodological collaboration utilizing modern technology to consistently monitor and survey the requisites of the nation, and hence fulfill these basic needs through innovative research and training activities. AUST has launched the Wise and Elite House Project in cooperation with the World Intellectual Property Organization ( WIPO) in Geneva on June 11th, 2002. Together with WIPO, AUST has organized three International Approach Seminars on the Wise and Elite House in Geneva, Ajman and Berlin.

## Objectives

1. This project stems from the global vision of Ajman University of Science and Technology in its three dimensions: education, information and investment, and it strives to develop the nation's technological, scientific, economic and social fields.

2. Despite the fact that the nation has huge human and intellectual assets, it is still lagging behind in almost all domains. This is because of a human brain-drain; lack of the necessary innovative environment that translates research achievements into sensible social and economic development projects.

3. 'The Wise and Elite House' accommodates intellectual elites inside and outside the Arab World who can share the nation's dreams and ambitions in order to utilize research through national and international available potential.

4. 'The Wise and Elite House' will communicate with its members through the internet, video conferencing and other modern means and tools of the cyber-zone, which is adopted by the AUST.

5. 'The Wise and Elite House' promotes different specializations working together with economic business experts to identify existing problems and solve them through the environment of innovation.

6. 'The House' intellectuals will also create a strategic bond between academia and the world of business and industry, which in turn guarantees the provision of a skilled, talented and creative labor force and which preserves the highest and best rates of productivity, qualitatively and quantitatively.

7. The elites will help in defining and organizing educational and training programs in continuing education that will make use of 'The Elite House' as a resource that continually provides it with creative integrants.

8. They will organize approach seminars with various sectors of the nation so as to expound its projects and hence secure harmony in the way of thinking.

9. The distinguished elites will set up a database for the actual problems and difficulties that face the community together with suggested solutions and the previous attempts and their results.

10. Plan and organize theoretical and applied research in terms of its order of importance and the availability of human and logistic means that facilitates its implementation.

# Innovative Medical Environment

## Mission

'The Innovative Medical Environment' is a realistic and direct application of the global vision of the AUST in breaking the barrier between the academic entities, with its all academic and training programmes, expertise, practitioners and researchers, and the business community, including hospitals, medical centre and the various areas of practical applications.

'The Innovative Medical Environment' is the sixth basic reference authority in the AUST. It houses all the academic, research, training, expertise and practical activities that are relevant to health and medical fields, with the aim of joining all the facilities and potentials to present the best possible outcome for users and beneficiaries.

## Objectives

1. Making use of available databases and information sources for enriching the process of teaching, learning and research, in addition to facilitating the exchange of information, discussion and debate through the internet.

2. Making available the infrastructure for teaching, research, training, consultations and practice in medical and health areas through drawing on all the experiences and potential at hand.

3. Carrying out joint applied research in the fields of medicine and health by studying the actual needs of the community and meeting these needs in a comprehensive way.

4. Making available places for training AUST students in different locations (hospitals, factories, pharmacies etc.) to assist students in the development of their intellectual abilities and to provide the community with distinguished elements capable of producing and innovating.

5. Making available training and continuing teaching programs for the community.

6. Training teaching staff members and all members of the medical environment to acquire harmony between theory and practice.

7. Applying the philosophy of the multiplicity of uses, functions and goals, by employing laboratories and human research facilities in various ways, as this will save a lot of effort and expenditure, leading to the best results.

8. Organizing approach seminars within the frame of a comprehensive plan that aims at introducing the idea to all and measuring the reactions. This will be followed by the required adjustment and development, during the experimental period, to attain distinction during the comprehensive application stage.

# ADMISSION AND REGISTRATION

## 1. System of Education and Programs Offered

The university utilizes the credit hour system. This system requires that students earn a total number of credit hours, as determined by the university, to complete their program of study. The required number of credit hours is distributed over a certain number of semesters, depending on the program (see Table 1 for details).

*Table 1: Accredited degree programs offered*

### a. Undergraduate Programs

| College | Degree | Total Credit Hours | Type of School certificate & minimum average score |
|---|---|---|---|
| Dentistry | Doctor in Dental Surgery | 199 | 80% Science |
| | Diploma in Dental Hygiene | 84 | 70% Science |
| Pharmacy and Health Sciences | Bachelor of Pharmacy | 150 | 70% Science |
| | BSc in Nursing | 132 | 70% Science |
| Engineering | BSc in Electrical Engineering (Electronics) | 142 | 70% Science |
| | BSc in Electrical Engineering (Communication) | 142 | 70% Science |
| | BSc in Electrical Engineering (Instrumentation & Control) | 142 | 70% Science |
| | BSc in Biomedical Engineering | 135 | 70% Science |
| | BSc in Architectural Engineering | 169 | 70% Science |
| | Bachelor in Interior Design | 133 | 70% Science, 65% Arts |

| College | Degree | Total Credit Hours | Type of School certificate & minimum average score |
|---|---|---|---|
| Information Technology | BSc in Computer Engineering | 140 | 70% Science |
| | BSc in Computer Science | 126 | 60% Science |
| | BSc in Information Systems | 126 | 60% Science, 65% Arts |
| | BSc in Multimedia & Web Development | 126 | 60% Science, 65% Arts |
| | BSc in Information Technology/Networking & Security | 123 | 70% Science |
| | BSc in Information Technology/Databases & Web Design | 123 | 70% Science |
| Business Administration | BSc in Management | 126 | 60% Science/Arts |
| | BSc in Marketing | 126 | 60% Science/Arts |
| | BSc in Finance | 126 | 60% Science/Arts |
| | BSc in Accounting | 126 | 60% Science/Arts |
| Education & Basic Sciences | Bachelor of Education: "Teacher Training Program in Arabic Language & Islamic Studies" | 132 | 60% Science/Arts |
| | Bachelor of Education: "Teacher Training Program in Mathematics & Science" | 132 | 60% Science |
| | Bachelor of Education: "Teaching English as a Foreign Language" | 126 | 60% Science/Arts |
| | Bachelor in Educational Technology | 120 | 60% Science/Arts |
| Information, Mass Communication & Humanities | BA in Mass Communication/ Public Relations & Advertising | 126 | 60% Science/Arts |
| | BA in Mass Communication/ Radio & Television | 126 | |
| | BA in Mass Communication/ Electronic & Printed Print | 126 | |
| | BA in Mass Communication/ Graphic Design | 126 | |
| | BA in English Language & Translation | 126 | |
| | BA in English Language & Translation/ Translation for Media | 126 | |
| Law | Bachelor of Law | 132 | 60% Science/Arts |

## b. Graduate Programs

| College | Degree | Total Credit Hours |
|---|---|---|
| Institute of Environment, Water, and Energy | M.Sc. in Ground Water Engineering & Management | 36 |
| Business Administration | MBA ( Human Resource Management) | 36 |
| | MBA ( Financial Management) | 36 |
| | MBA ( Marketing) | 36 |
| Information Technology | M.Sc. in Information Systems | 33 |
| Engineering | M.Sc. in Architecture and Urban Studies | 36 |
| Law | Master of Law (Private Law) | 33 |
| | Master of Law ( Public Law) | 33 |
| Dentistry | M.Sc. in Restorative Dentistry | 57 |
| Pharmacy & Health Sciences | M.Sc. in Pharmacy | 36 |
| Education & Basic Sciences | Professional Diploma in Education | 33 |

# 2. Admission and registration

Applications for admission should be submitted to the Admission and Registration Deanship prior to the beginning of each semester. To be eligible for admission, a student must have a secondary school certificate issued in the UAE, or its equivalent as approved by the UAE Ministry of Education. The AUST Council of Academic and Scientific Affairs determines the number of students to be admitted to each degree program each semester, according to the university's available resources.

## 2.1. General Admission Conditions

### a. Holders of UAE Secondary School Certificate:

Holders of a Secondary School Certificate (SSC), Science Section, are eligible for admission in any college of the university if they satisfy the minimum score requirement for the degree program (see Table 1 ). Holders of the Secondary School Certificate, Literary Section, with a minimum score of

60 percent, are eligible for admission to all degree programs offered by the following colleges:

- College of Business Administration.
- College of Law
- College of Information, Mass Communication and Humanities

They are also eligible for admission to the following programs offered by other colleges:

- Bachelor of Education/Teacher Training Program in Arabic and Islamic Studies
- Bachelor of Education in Teaching English as a Foreign Language
- Bachelor of Science in Information Systems
- Bachelor in Interior Design.

The decision to admit a student is made on a competitive basis taking into account the number of available seats as determined by the individual college and the applicant's final secondary school examination score.

Applications made by holders of foreign secondary school certificates will be considered according to Circular No. 200,

2004, and Circular No. 123, 2005, issued by His Excellency the Minister of Education, UAE, as listed below:

## b. Holders of Foreign Secondary School Certificates other than British System Certificates

In general, holders of the national high-school certificate of a foreign country are eligible for admission if:

- The certificate is considered for admission in public universities of the country where it was obtained
- The certificate was awarded after at least 11 years of schooling
- The certificate includes at least six subjects covering the following four areas:
    1. Mathematics
    2. Sciences
    3. Languages
    4. Social Sciences/Humanities or Arts

Holders of high-school certificates from countries having two-level high-school certificates, must submit the certificate of the higher level.

### Examples of Acceptable Foreign Certificates:

- Iranian: the Pre-University Certificate
- Indian Board(s): Senior Secondary School Certificate (Part II)
- Pakistani Board(s): Higher Secondary School Certificate (Part II)
- French Baccalaureate: completion of Part II
- Lebanese Baccalaureate: completion of Part II
- International Baccalaureate: completion of six subjects, with three at the higher level
- American High-school Diploma : High-school Diploma and completion of SAT

## c. Holders of British System Certificates (IGCSE, GCSE, GCE)

A holder of a British system certificate is eligible for admission if:

- the applicant has passed seven subjects at the ordinary level of IGCSE or GCSE, with a minimum grade of C. If a subject is taken at the AS Level or A Level the required minimum score is reduced to D and E respectively

- the seven subjects must cover the following four areas: Mathematics, Science, Language, and Humanities or Arts
- the applicant must prove that he/she has completed at least 11 years of schooling by providing the grade transcript of Grade 11 and that of Grade 12, when available
- the applicant submits his/her school leaving certificate

## 2.2 English Language Proficiency

Full admission to programs where the medium of instruction is English is given only to applicants with a score of at least 500 in the TOEFL examination (paper-based test), 61 in TOEFL (iBT), or Band 5 in IELTS (Academic). Students who do not satisfy the above-mentioned minimum English proficiency requirement may begin their studies with conditional admission provided they have a TOEFL score of at least 450, iBT 45 or an IELTS Band 4. During their first semester they will be required to enroll in the Intensive English Program (IEP) offered by the College of University Requirements and Academic Counseling, until they obtain at least 500 in the TOEFL, or its equivalent. Admitted students with a score of below 450 (TOEFL) are required to enroll for an English preparation course (lower level) at the on-campus Continuing Education Centre. However, colleges will reserve a seat for them, for one semester only, if they obtain a score of at least 450 in TOEFL, iBT 45, or Band 4 in IELTS, at the end of their first semester of studies.

## 2.3 Admission on Probation

Applicants holding a high-school score below the required minimum admission score, not less than 60%, of an academic program may be admitted on probation in the program. They must sign an undertaking stating that they are aware that they will be dismissed from the program at the end of the probation period if they do not satisfy the condition(s) set by the College such as: obtaining a Grade C in a given course, or a GPA greater or equal to 2, etc.

## 2.4 Re-Admission of Former Students

Students who have missed more than two consecutive semesters of enrollment (excluding the summer semester) at the university may apply for re-admission by completing the re-enrollment form which is available from the Deanship of Admission and Registration. To be eligible for readmission, the applicant must meet the following conditions:

1. The applicant was not subject to academic or behavioral dismissal from AUST
2. The applicant must satisfy admission requirements in effect at the time of re-admission
3. If the applicant transferred from AUST to another accredited institution, he/she must apply as a transfer student.

No student will be re-admitted until all fees, charges and dues owed to the university have been paid. A non-refundable re-admission fee of AED 300 is charged.

## 2.5 Transfer Students from Accredited Institutions

Students from accredited institutions of higher education may apply for admission in an AUST program in the same field of study if they have been in good academic standing, i.e., their Cumulative Grade Point Average (CGPA) is a least 2.0 on a scale of 4.0, or the equivalent, and they have not been the subject of disciplinary dismissal. However, those students who have not been in good academic standing (i.e. those having a CGPA of less than 2.0 on a scale of 4.0) will be allowed to transfer only to programs in a different field from the one in which they were enrolled at the institution they previously attended.

Any transferred student is required to meet the English Language Proficiency condition (see Section 2.2). If the student was admitted at his/her previous university based on the Institutional TOEFL, he/she will be requested to re-take TOEFL test at AUST.

The transfer of credited courses is considered for students who are transferring to a similar program to one studied previously if:

- their cumulative grade point average was at least 2.0 on a scale of 4.0, or the equivalent
- the number of credit hours for the course is not less than that of the AUST equivalent course
- the grade obtained on the previous course must have been at least C (or the grade that corresponds to "Merit/Good" for institutions using a different grading scale)
- the course content at the institution previously attended should be similar to that of the corresponding course offered at AUST

If a student meets these transfer conditions but is unable to submit the course content that was covered previously, he/she may sit an examination set by the college (after payment of a fee). The examination result will be used to determine whether the credits of the course will be transferred or not.

Only grades obtained from courses taken at AUST will be taken into account in the calculation of a student's CGPA, i.e., grades obtained from transferred courses at the previous institution will not be taken into account in the computation of the CGPA.

*It is important to note that AUST does not grant transfer students a degree unless they successfully complete at least 50 percent of the credit hours of the program, including the majority of courses of the final year, at one of the campuses of AUST*

## 2.6 Documents Required for Admission

- Application form, which may be obtained from the Admission and Registration Deanship, to be filled in by the applicant
- UAE Secondary School Certificate, or its equivalent, and grade transcript. Certified copies are acceptable
- Photocopy of valid passport
- Health certificate, issued by a university doctor
- Certificate of good conduct, issued by an official body
- Six recent passport-size photographs
- A written commitment signed by the applicant that he/she will observe university rules and regulations
- If available, a certificate of proficiency in English language, e.g. TOEFL with a minimum score of 500 score, or IELTS with a score of at least 5

*Note:* AUST does not take into consideration Institutional TOEFL scores obtained in another institution.

Applications will be processed by the Admission and Registration Deanship only after the payment of application and registration fees of AED 1,300. Transfer students are also requested to pay AED 500 for the evaluation of the credits that will be transferred to them.

## 2.7 Certification of Documents

Newly-admitted students are requested to have their documents certified before the end of the first semester of study, otherwise their registration will be cancelled.

- High-school certificates obtained in the UAE must be certificated by the UAE Ministry of Education
- High-school certificates obtained abroad must be certificated by the Ministry of Education, and by either the Ministry of Foreign Affairs of the country of origin and the UAE embassy in that country, or by the

embassy of the country which issued the certificate, and by the UAE Ministry of Foreign Affairs.

## 2.8 Seat Reservation

Students admitted to the Architectural Engineering, Interior Design, Pharmacy and Dentistry programs are required to pay a seat reservation deposit of AED 4,000. This deposit is non-refundable and non-transferable and must be paid before the deadline stated on the letter of admission. This deposit is deductible from the student's fee once the applicant joins Ajman University of Science and Technology. If the student asks to defer admission to the following semester and the request is approved, the deposit will be applied to the following semester.

## 2.9 Course Registration for New Students

Newly-admitted students who have a TOEFL score of at least 500, iBT 61, or IELTS Band 5, will be allowed to register for between 9 and 18 credit hours according to their study plan. Newly-admitted students who have a TOEFL score of between 480 and 499, iBT 54 - 60, or an IELTS Band 4.5, will be allowed to register up to nine credit hours according to their study plan, subject to concurrent registration in the Advanced Level of the Intensive English Program (nine hours per week), which is offered by the College of University Requirements and Academic Counseling.

Newly-admitted students who have a TOEFL score of between 450 and 479, iBT 45 - 53, or an IELTS Band 4, will be allowed to register for up to six credit hours according to their study plan subject to concurrent registration in the Intermediate Level of the Intensive English Program (15 hours per week) which is offered by the College of University Requirements and Academic Counseling.

Newly-admitted students who have a TOEFL score less than 450 or 45 iBT, or less than Band 4 of IELTS, will be allowed to register for a three credit hours course according to their study plan subject to concurrent registration in the Lower Level of the Preparatory English Program (15 hours per week) which is offered by AUST Continuing Education Centre.

### Intensive English Program Requirements for New Students

#### TOEFL or IELTS Scores

| TOEFL (Paper-Based) | TOEFL (iBT) | IELTS (Academic) | Number of IEP Hours Required | Number of University Credit Hours Permitted |
|---|---|---|---|---|
| 500 or more | 61 | 5 | None | 9-18 |
| 480-499 | 54-60 | 4.5 | 9 | Not more than 9 |
| 450-479 | 45-53 | 4.0 | 15 | Not more than 6 |
| Below 450 | Below 45 | Below 4 | 15 | 3 |

*Important:* Students are allowed to complete at most 15 credit hours before fulfillment of English Language Proficiency. If they complete 15 credit hours without achieving 500 score in TOEFL, they will be allowed to register only in the appropriate IEP program for the next semester. If the student does not achieve the 500 TOEFL score during 3 semesters after his/her admission, the Council of the College may consider dismissal of the student from his/her program. In this case, the student may be allowed to transfer to a program taught in Arabic if he/she satisfies its admission conditions.

Once a student's selected courses have been approved by the academic advisor, and on payment of the tuition fees, the student will be given a timetable which states the name of the courses, the schedule of classes, the name of the lecturer and the number of the classroom or laboratory in which the course is held.

The offer of admission may be canceled if the student fails to finalize his/her registration during the registration week.

## 2.10 Course Registration for Continuing Students

Colleges encourage non-warned students (see Section 9 for an explanation of the academic warning system) to use the early registration period to select courses in consultation with their academic advisor. The early registration period is specified in the academic calendar. Warned students and students who did not benefit from the early registration phase can register during the registration week. See the academic calendar. Registered AUST students may take some courses outside AUST provided that they obtain the prior approval of the dean of the college. Acceptance of the transfer of external courses is conducted according to the criteria outlined in Section 2.4.

## 2.11 Adding and Dropping Courses

Students may add/drop courses only with the approval of their academic advisor. Students who add and drop courses during the approved period will not lose the fees paid for dropped courses. When adding/dropping courses students should bear in mind that the minimum number of credit hours for which they may register is nine. The academic calendar also specifies the period allocated for dropping courses without affecting the student's academic record, but without refund of fees. The academic calendar also specifies the last date for withdrawal from a course with a "W" grade without refund of fees. In this case the course appears in the transcript with the letter "W" with no effect on the computation of the semester Grade Point Average or the CGPA.

## 2.12 Study Load

A student's "study load" is the number of credit hours for which he or she is registered during the semester. For the fall and spring semesters, the study load varies from nine to 18 credit hours, where one credit hour refers to one lecture hour or two hours of practical study per week, lasting for fifteen weeks. For summer semesters, the study load varies from three to six credit hours.

Students may increase their study load to up to twenty-one credit hours in the fall and spring semesters in the following cases:

- The student's CGPA was at least 3.5 in the preceding semester
- The student is expected to graduate at the end of the semester and his/her CGPA is at least 2.0

Students may increase their study load to up to nine credit hours in a summer semester in the following cases:

- The student's CGPA was at least 3.5 in the preceding semester
- The student is expected to graduate at the end of the semester

However, independently of their academic standing, students will not be allowed to register for more than 12 credit hours during the two summer semesters of the academic year.

The study load of academically warned students is given in Section 9.

## 2.13 Time Allowed for Completion of a Degree Program

The maximum time allowed a student in which they may complete a degree program is a maximum of double the regular number of required semesters. In other words, a four-year bachelor degree must be completed in a maximum of 16 regular semesters of enrolment in the program. The minimum time allowed to complete a degree for non-transfer students is a minimum of six regular semesters for four-year programs and eight regular semesters for five-year programs.

The maximum and minimum number of semesters of enrollment for transfer students is determined after the deduction of the number of earned/transferred semesters (15 credits correspond to one semester) from the above limits.

## 2.14 Suspension of Registration

Suspension of study is allowed only if a student has completed his/her first semester. The total number of semesters that can be suspended is four. However, suspension for more than two consecutive semesters is not allowed. In all cases, the Deanship of Admission and Registration should be notified in writing.

Suspension request may be rejected by the Deanship of Admission and Registration if the student did not complete an acceptable number of credit hours during his/her past enrolment.

## 2.15 Right to Withdraw Registration

The university reserves the right to withdraw an offer of admission if the applicant fails to satisfy all requirements, or it is found that admission was obtained through the use of incomplete, falsified, altered or embellished information. In the case of withdrawal of registration from a matriculated student, credit earned at AUST will be withheld and no transcript will be issued to the student.

# 3. Orientation Program for New Students

AUST gives special attention and assistance to new students to ease the transition between life at high-school and the university. For this purpose, a special program has been designed:

## a. Orientation Session

At the beginning of each semester, AUST organizes an orientation session for new students which enables them to meet the Vice-Presidents, Deans of the Colleges and the Deanships of Admission & Registration and Students Affairs. The orientation also provides them with essential information about course registration, academic advising, important deadlines and other related matters.

## b. Orientation Course

All new students must register in the orientation course during their first semester. It is a non-credit course which aims to provide them with information about AUST rules and regulations, services and essential skills such as time-management and exam preparation.

# 4. Academic Advising

AUST is committed to providing quality advising services. Each new student is assigned an academic advisor who is a member of the college in which the student is enrolled. Advising is a very important element of the credit hour system. Not only does the advising system help acquaint

the student with the syllabus and its contents, but it also strengthens the relationship between the student and college members in order to achieve the objectives of the educational process. Academic advisors assist student in solving the problems that they face during their academic career. In addition, they follow the student's academic progress through their course of study and assist in the selection of appropriate courses prior to the start of each semester. Students are encouraged, and sometimes required, to meet their academic advisors regularly during each semester.

# 5. Change of Major

## 5.1 New Students

Admitted students may apply to transfer from one major to another within the university during the add/drop period. The application is processed through the Admission and Registration Deanship provided that:

1. The applicant meets the admission requirements of the degree program to which he/she is applying

2. There is availability of seats

3. Approval of the deans of both colleges concerned is obtained

## 5.2 Transfer between Programs

Students may transfer from one program to another within the university provided that they satisfy items 2 and 3 of section 7.1. In addition, they must satisfy the following:

1. The preceding semester's Grade Point Average should be equivalent to that required by the new program

2. The application for transfer should be submitted within the period specified in the academic calendar

A student is normally entitled to only one transfer throughout his/her course of study at the university.

# 6. Academic Evaluation and Assessment

## 6.1. Course Assessment

In each registered course, a student's performance is assessed according to a procedure established by the college concerned, and explained in the course plan. The overall score is normally distributed as follows:

1. Semester tests and activities :        40 percent

2. Mid-Semester examination :         20 percent

3. Final examination:                        40 percent

The score for semester tests and activities includes marks for tests, quizzes, assignments, research and laboratory work.

The pass mark in each course is sixty percent.

## 6.2. Grading System

The university adopts the following grading system:

| Mark | Grade | | Merit |
|---|---|---|---|
| | Letter | Point | |
| From 95 to 100 | A+ | 4.5 | Excellent with Honor |
| From 90 to 94 | A | 4.0 | Excellent |
| From 85 to 89 | B+ | 3.5 | Very Good (High) |
| From 80 to 84 | B | 3.0 | Very Good |
| From 75 to 79 | C+ | 2.5 | Good (High) |

| Mark | Grade | | Merit |
|------|-------|---|-------|
| From 70 to 74 | C | 2.0 | Good |
| From 65 to 69 | D+ | 1.5 | Pass (High) |
| From 60 to 64 | D | 1.0 | Pass |
| Less than 60 | F | 0 | Fail |

## 6.3. Semester Grade Point Average

The semester GPA indicates student performance during the semester, and is calculated as follows: the total of the grade point of each course taken in the semester multiplied by its credit hours, divided by the total number of credit hours registered in the semester.

For example, if a student obtains the results as set out in the following table, his/her grade point average will be computed as follows: GPA = 54/18 = 3

| Course | Credit Hours | Points | Product of Credit Hours by Point Grade |
|--------|-------------|--------|----------------------------------------|
| Mathematics 1 | 3 | 3 | 9 |
| Statistics | 3 | 2 | 6 |
| Physics I | 3 | 3 | 9 |
| Islamic Culture | 3 | 4 | 12 |
| Arabic Language | 3 | 4 | 12 |
| Psychology | 3 | 2 | 6 |
| Total | 18 | / | 54 points |

## 6.4 Cumulative Grade Point Average

The CGPA indicates the student's average performance over all semesters up to the final or current semester. It is calculated as follows: the total of the point grade of each course taken to date, multiplied by its credit hours, divided by the total number of credit hours taken.

If a student repeats a course in which he/she obtained an "F" grade, or does so in order to improve his/her CGPA, the last grade obtained will be considered in the calculation of the CGPA regardless of whether the last grade is higher than the original one or not. However, the original grade will continue to appear in the academic record without affecting the calculation of the CGPA.

The CGPA is also used for academic probation as follows: starting from the end of the second semester of study, if the student's CGPA is less than 2.0, he/she will be regarded as an "academically-warned "student and will be requested to improve his/her academic performance to raise the CGPA to 2.0 or higher. (See Section 9 for the policy regulating the study load of warned students).

A student will not be allowed to graduate unless his/her CGPA is at least 2.0, even if he/she has passed all required courses of the program of study. In this case, in consultation with the academic advisor, the student must repeat a number of courses of the study plan in order to raise his/her CGPA to at least 2.0.

## 6.5. Incomplete Grade

Attendance at final examinations is compulsory. Failure to attend means failure in the course. However, if a student does not attend the final examination for urgent reasons and he/she scored at least a total of 35 out of 60 in coursework (tests and midterm examination) the course may be considered as "incomplete." Acceptable evidence for failure to attend a final examination consists of the following:

1. illness certified in a medical report approved by the university doctor
2. death certificate of a first or second degree relative

3.    arrest or summons before a court or other legal body

In these cases the student must complete and submit a request form within three days of the examination date. He/she also must present the relevant documents to the Admission and Registration Deanship. The application will be processed only if the student has no financial obligation to the university and has paid the fee for an "incomplete request." The application will not be accepted if the student has a 25 percent absence warning. A student who has been deemed to be "incomplete" in a course must take the final examination before the end of the second week of the following semester in which he/she registers.

## 6.6. Examination Re-sits

If a student passes all courses required for graduation except one, which he/she failed in the last semester, he/she will be allowed to reregister for that course. In this case there is a charge of 50 percent of the course fees and the student must re-take the final examination before the beginning of the following semester.

## 6.7. Complaints about Grades

Complaints regarding final examination results must be lodged within a period of two weeks following the announcement of the examination results. The student should complete and submit a Complaint Form to the Admission and Registration Deanship. The form will be transferred to the college concerned where an appropriate decision will be made. The admission and Registration Deanship notifies the student of this decision.

# 7. Supervised Credit-Earning

Colleges may approve supervised credit-earning on selected courses designed for advanced undergraduates that have completed 50 percent of the required credits for graduation. The purpose of such courses is to make it possible to study all the units of a course under the supervision of a college member on a meeting session basis. The schedule of these meetings should not be less than 16 contact hours per semester. The supervised work should cover all the content of the course and meet its objectives. The supervisor must ensure that the course is devoted to advancing student's knowledge and skills as required in the course outline.

Reasons why a student may wish to take a supervised study course include:

1.    To adjust his/her study plan by completing a specific course which is not offered in that semester

2.    To complete a course which is not offered but it is required for graduation during the final semester

3.    To gain additional knowledge and practical experience in designing, conducting, analyzing and documenting coursework

A maximum of nine credit-hours of supervised study can be taken during a student's undergraduate degree program. A student may not register for more than three credit hours of supervised study per semester. The assessment of the course will be conducted as follows:

1.     the student will be required to sit for a written exam to be evaluated by the supervisor out of 20 percent before the end of the semester

2.     at the end of the semester the student will submit a written report to the supervisor detailing the work carried out. This report will be evaluated out of 50 percent

3.    The student will defend his work in front of an internal examiner who will not be the supervisor. The oral presentation will be evaluated out of 30 percent

The student's final grade for the supervised study course will be determined by the student's supervisor and the internal examiner after evaluation of the student's work, written report, oral presentation and response to questions.

# 8. Attendance Policy

Attending classes is compulsory for all courses. A student will not be allowed to take the final examination if he/she has missed more than 25 percent of the classes during the semester. Absence warning policies are set out below:

- If a student is absent for 10 percent of theoretical and practical class hours, the lecturer will issue a 10 percent absence warning.
- If a student is absent for 20 percent of theoretical and practical class hours, the lecturer will issue a 20 percent absence warning.
- If a student is absent for 25 percent of theoretical and practical class hours, the lecturer will issue a 25 percent absence warning and the student will receive the grade of "F."

The Council of Academic and Scientific Affairs may consider a student's withdrawal from the course if sufficient and convincing reason for the absence is submitted to it by the Admission and Registration Deanship.

# 9. Academic Probation

If a student's CGPA is less than 2.0 in any regular semester, starting from his/her second semester at the university, he/she will receive an academic warning and be placed on probation. The Admission and Registration Deanship will notify the student and his/her guardian. A student on probation must raise his/her CGPA to at least 2.0 within three semesters, not including the summer session, and he/she will not be allowed to register unless he/she signs

the corresponding undertaking and produces the address of his/her guardian. The study load of warned students will be reduced, as follows:

a)  First warning: a maximum of 15 credit hours among which three or six credit hours are repeated depending on the  CGPA and the previous semester's GPA

b)  Second warning: a maximum of 12 credit hours among which six or nine credit hours are repeated depending on the CGPA and the previous semester's GPA

c)  Third warning: nine repeated credit hours

If a student having a third warning has failed to raise his/her CGPA to 2.0 or higher at the end of the semester, his/her case will be reviewed by the College Council. The council may take one of the following actions:

a)  transfer the student to another program providing that his/her CGPA for the courses to be transferred is 2.0 or higher

b)  suspend the student for a maximum of two consecutive semesters during which he/she repeats courses at another accredited institution. He/she may be re-admitted if the transfer of the courses will raise his/her CGPA to 2.0

c)  dismiss the student from the university

# 10. Graduation Requirements

A student will be awarded a degree subject to fulfilling the following requirements:

a)   Completion of all courses of the academic program

b)   Completion of practical training as specified in the study plan

c)   A CGPA of at least 2.0

The merit of the degree is determined according to the following scale:

*Scaling system for graduation*

| Cumulative GPA | Merit |
|---|---|
| From 4.0 to 4.5 | Excellent with Honors |
| From 3.75 to less than 4.0 | Excellent |
| From 2.75 to less than 3.75 | Very Good |
| From 2.25 to less than 2.75 | Good |
| From 2.0 to less than 2.25 | Satisfactory |

# 11. Information Technology and E-Learning Facilities

Students are strongly encouraged to use the IT facilities and services provided by the University, in addition to a working storage space available on the University internal network. However, in order to avoid any loss of data, it is recommended to make a copy of any work using media storage devices such as CDs or flash memories.

AUST Information Technology Department is responsible of all IT resources provided to the students. It has developed an easy, efficient and integrated communication system via the University network. There is an IT Help Desk at each AUST campus with a team ready to help computer-users.

All students will be given a personal user ID and an Email address ID@ajman.ac.ae   to access online services such as the online registration system, and E-learning applications from AUST website ( www.ajman.ac.ae).

All registered students can access useful information from the Online Registration system such as: Schedule of registered courses, Transcript, offered courses and their scheduling, E-payment of the tuition fees, etc. Non-academically warned students can register online their courses by completing the following three steps:

1.    Send to the academic advisor a set of selected courses to be registered for the next semester.

2.   Receive back from the academic advisor the list of submitted courses with his approval or denial and related justifications and comments.

3.   Complete the registration of the approved courses after having selected the appropriate sections.

Students can also add and drop courses using the application during the Add & Drop period.

A help manual for online registration is available to all users.

In collaboration with the IT Department, the Academic E-Services Department manages the online Learning Management System, Moodle, which provides students with all teaching materials related to their courses and allow them to interact with their instructors, and submit their assignments.

*Note:* Access to and use of IT facilities by students must comply with UAE laws and AUST internal regulations. Any misuse of IT facilities may result in disciplinary sanctions. It is considered as a violation of AUST regulations to intentionally and without prior authorization to access other computers, or alter the operation of a computer, or publish a password or any other confidential information that allows non-authorized users to gain access to the AUST network.

# 12. Student ID Card

Students will receive a university ID card containing their photograph, name, date of birth and AUST ID number. The ID card should be carried at all times. It provides access to certain academic buildings and hostels. In addition, the card is required for admission to sports facilities, to sit university exams and to make use of IT facilities.

The loss of an ID card should be reported immediately to the Admission and Registration Deanship. Fraudulent use of an ID card shall result in disciplinary action.

# 13. Student Behavior Code

All members of AUST are expected to conduct themselves in accordance with the regulations of the university, and the laws of the UAE. In particular, AUST students are requested to play an exemplary and positive role in enhancing the reputation of the university by:

- demonstrating a clear commitment to their own learning
- conforming themselves to all specified time requirements for registration, class schedules, examinations and completion of assignments
- ensuring that work presented is their own personal work
- ensuring that all information presented to college members and administrative staff is accurate and true
- conducting themselves in a courteous and proper manner in their dealings with college members, employees or other students
- meeting their academic advisors regularly
- respecting the property of others and of the university
- reporting grievances to their academic advisor or the Dean of the College

- not engaging in cheating, plagiarism, disruptive behavior or improper conduct which could damage the reputation of the university . See below Plagiarism policy.
- not using AUST facilities for other than learning purposes without prior authorization
- not falsifying documents or using falsified documents for any purpose related to the university
- not distributing leaflets or collecting signatures on university premises or in hostels without prior authorization
- abiding by AUST rules and regulations, and the directives of the academic and administrative staff
- acting in a way that will not cause offence to the culture of the UAE

# 14. Plagiarism Policy

The rich learning resources that are available at AUST are expected to be used for reading to help you to understand and to find out the work of others in the topic of your essays or projects only. Students are requested to submit their own work to be used for evaluating the level of achievement of a specific learning outcome. Thus, your Faculty is interested in evaluating your own work and not the work of others. However, it is not forbidden to reproduce an idea or sentences from a book or an article as long as you use quotation marks and give its source. Usually a good student reproduces a material to justify his/her arguments or his/her understanding. In other words, a quoted sentence (s) must either be preceded or followed by your own sentences. There is no usage in reproducing sentences if you do not refer to them in your won sentences. For instance, every submitted project is expected to contain a Bibliography in which you list all the materials that you consulted or used in your project.

Plagiarism is strictly forbidden at AUST which has acquired a specialized software that detects plagiarism. If plagiarism is proven, a Zero mark could be given to the project and can induces a Failure in the course. See Plagiarism policy for more detail and do not hesitate to request help from your academic advisor or your Faculty for what could regarded as plagued work.

# 15. Disciplinary Policy

Any violation of university regulations or directives, or improper behavior (as set out in Section 13), is considered as misconduct and will render the student liable to disciplinary action which may range from a verbal warning to dismissal from the university.

In addition, if a student violates any rule or instruction during an examination, or is caught cheating, he/she will be asked to leave the examination room. In this event, the campus examination committee will interview the student on the day following that in which the incident occurred and will as a result submit a detailed report to the President of the University, in which the level of punishment is recommended. The level of punishment may range from the giving of an "F" grade for the course concerned, or failure in all courses for which the student is registered that semester.

A copy of the decision of the President will be kept in the student's file, and the Admission and Registration Deanship will also inform the sponsor as appropriate.

# 16. Student Grievance Procedure

The purpose of the grievance procedure is to resolve grievances, other than grade complaints, that are raised by students. If a student has a complaint or grievance about any aspect of university life, he/she should raise the matter with the academic advisor or the dean of the college at the earliest opportunity. The academic advisor or dean will inform the appropriate parties so that the grievance may be resolved. If the student is not satisfied with the results obtained via normal administrative procedures, he/she can submit the grievance in writing within three weeks of the occurrence of the incident to the Dean of Students Affairs.

The Dean of Student Affairs will then forward the matter to the Chairman of the Grievance Committee who will arrange a meeting to hear both parties, and witnesses, as appropriate. The committee will then deliberate upon its findings and make a recommendation to the university President who will take the final decision, to be communicated to both parties.

# 17. Tuition Fees & Financial Regulations

## 17.1 Application and Registration Fees

Application and registration fees of up to AED 1,300 should be paid in cash in one installment upon registration, and do not form part of the tuition fees. Application and registration fees are non-refundable, except when the student's application is not accepted.

A student who wishes to apply for transfer from another accredited institution will pay a non-refundable fee of AED 500. This fee shall be considered part of the application and registration fees.

## 17.2 Tuition Fees

### a. Credit Hours

- - Tuition fees for the Bachelor's programs offered at the University are as follows:

| College | Fee per one credit hour |
|---|---|
| College of Information, Mass Communication and Humanities | AED 850 |
| College of Law | AED 850 |
| College of Information Technology | AED 850 |
| College of Engineering:<br>BSc in Biomedical Engineering | AED 850 |
| BSc in Electrical Eng. ( Electronics) | AED 850 |
| BSc in Electrical Eng. (Communication) | AED 850 |
| BSc in Electrical Eng. (Instrumentation & Control) | AED 850 |
| BSc In Architectural Engineering | AED 900 |
| Bachelor in Interior Design | AED 900 |
| College of Dentistry | AED 1,200 |
| College of Pharmacy and Health Sciences | AED 1,000 |
| College of Education and Basic Sciences | AED 850 |
| College of Business Administration | AED 850 |

### b. Laboratory, Clinic and Studio Fees

Students registered in the programs offered by the College of Dentistry and College of Pharmacy & Health Science pay a flat semester fee for specialized laboratory sessions and clinics as shown in the table below:

| College | Dentistry | | | Pharmacy |
|---|---|---|---|---|
| | 1st -3rd year | 4th & 5th year | | |
| Fees | AED 1,500 | Clinics | Productive Lab | AED 850 |
| | | AED 2,500 | AED 1,500 | |

This fee does not include the lab fee of courses of the proposed sequence of study (study plan) offered by other colleges.

Students registered in the programs of Architectural Engineering and Interior Design will pay a studio fee of AED 1000 per semester.

Students registered in a program other than those of Doctor of Dental Surgery and the Bachelor in Pharmacy will pay a lab fee of AED 500 for each registered course having lab sessions. This Fee is AED 800 if the Lab session is a TV/Radio Studio session for Mass Communication students.

*Notes:*

- The flat semester fee AED 1500 for DDS students, AED 850 for BPharm students, and studio fee AED 1000 for Arch & ID students are payable starting from the first semester of enrolment after having fulfilled the English Language Proficiency requirement.

- If a student is not holder of 500 TOEFL score or its equivalent and he/she was allowed to register in one course from specialized courses, not requiring high performance in English, then he/she will be also eligible to the above stated flat fees.

### c. Tutorial Session Fees

Students registered in courses having tutorial sessions will be charged a fee of AED 350 per course.

### d. Orientation Course Fee

New students pay a fee of AED 850 for the Orientation Course, which is taken during the first semester of enrolment.

## 17.3 Additional Fees

- one-off fee for medical check-up upon enrolment: AED 150

- student service fee, per semester: AED 200

- application for an incomplete course: AED 50

- reference letter: AED 30

- extra copy of the academic record: AED 20

- grade grievance application: AED 30

- ID card, per semester: AED 10

The student should pay the tuition fees in full for all courses upon registration as requested by the financial department.

The University reserves the right to change any fee when deemed necessary.

## 17.4 Refund Policy

### a. Add/Drop Period

The add/drop period is two weeks from the start of the course. During this time students may add or drop courses without incurring a charge. If a student adds one or more courses during the add/drop period, he/she must pay additional fees for the added course(s) at the time of submitting the application, or the application will be rejected.

If a student withdraws from one or more courses during the add/drop period, the fees of the dropped course(s) will be refunded only after the end of the add/drop period. Alternatively, the student may request that the money be credited to his/her balance for the following semester.

A student may withdraw from one or more course(s) after the end of the add/drop period, provided he/she remains registered in at least three courses that semester. In this case the student does not have the right to claim any refund for the fees of the dropped courses.

If a student wishes to reclaim any money from a credit balance, he/she must fill in an Application for Refund Form and submit it to the Student Account Officer after the end of the add/drop period. If the student fails to do this, the money will be credited to the student balance for the following semester.

### b. Suspension of Registration

During the add/drop period a student may submit an application for suspension of registration for one or a maximum of two consecutive semesters. The application should be submitted to the Admissions and Registration Deanship. In this case, the full amount of any fees paid shall be credited in full to the student's balance for the following semester, or refunded one week after the submission of the application for refund to the Student Account Officer.

If the student submits an application for suspension of registration for one or two semesters during the two weeks following the end of add/drop period, he/she shall be entitled to only 50 percent of the tuition fees of the semester in which he/she submits the application for suspension.

If the student submits an application for suspension of registration after the end of the two weeks following the add/drop period, he/she will not be entitled to claim a refund of any part of the tuition fees of the semester in which he/she submits the application for suspension.

### c. Withdrawal from the University

During the add/drop period, the student may submit an application for suspension of registration and withdrawal from the University. The application should be submitted to the Admissions and Registration Deanship. In this case, the student is entitled to a full refund of tuition fees paid for the semester in which he/she submits the application for withdrawal. The refund will be made one week after the submission of the application for refund to the Student Accounts Office.

If the student makes an application for suspension of registration and withdrawal from the University within the two weeks following the end of the add/drop period, he/she is entitled to a refund of only 50 percent of the tuition fees for the semester in which he/she submits the application.

The student shall not be entitled to claim a refund of any part of the tuition fees if the application for suspension of registration and withdrawal from the University is made more than two weeks after the end of the add/drop period.

### d. Disciplinary Dismissal

A student who is dismissed from the University for disciplinary reasons is not entitled to any refund of tuition fees of the semester of dismissal.

## 17.5 Tuition Fee waiver

### a. New students

New students are entitled to a waiver of 20 percent of the tuition fee for the courses in which they register in the first semester of their study, after fulfillment of the English proficiency requirements, if:

i.    The student obtains a minimum grade of 95 percent in secondary school final examinations (for the College of Dentistry and College of Pharmacy and Health Sciences programs)

ii.   The student obtains a minimum of 90 percent in secondary school final examinations (for all other colleges)

### b. Continuing Students

Non academically warned continuing students are entitled to a waiver of 20 percent of the tuition fee of the courses in which they register in a regular semester if they obtained a GPA of 4.0 or higher, and registered for at least 15 credit hours, during the previous semester.

### c. Sibling Fee waiver

Any two brothers/sisters who enroll in the University during the same semester shall each be granted a five percent waiver in tuition fees.

### d. Performance Fee waiver

Exemptions from tuition and laboratory fees shall be granted to academically distinguished students, except during the summer session, in accordance with the following regulations:

• a student holding first place at the College level: 100 percent fee exemption.

• a student holding second place at the College level: 50 percent fee exemption.

- a student holding third place at the College level: 40 percent fee exemption.

These exemptions shall be applied only to students who have demonstrated good conduct, who have completed at least 60 credit hours at the University, and who have not breached the Student Behavior Code during their entire period of study.

*Note:* If a student meets more than one of the above conditions, a-d, of fee waiver or scholarship, he/she will not be entitled to benefit from more than one fee reduction at the same time. In this case, the student will be granted the greater fee reduction

## 17.6 .Scholarships

The University offers a number of scholarships on an annual basis. Scholarships will be cancelled for the remaining period of studies if the CGPA will decrease to less than 2.0 in any semester. For more information, students may contact the scholarships committee and the Scholarship policy.

## 17.7 Books

The university will supply course textbooks to students at reasonable prices. It should be noted, however, that a student in receipt of a fee exemption as listed above will not be provided with textbooks without charge.

# COLLEGE OF
# UNIVERSITY REQUIREMENTS
# & ACADEMIC COUNSELING

The College of University Requirements and Academic Counseling was established in 2005 in order to cater for the General Education Program, which is an absolutely vital component of tertiary education. Having such a college will render both the required and elective courses relevant, enriching, and appropriate. In addition, they will feature both originality and modernity.

# Mission

Ajman University of Science & Technology has established the College of University Requirements & Academic Counseling based on its strategic vision and educational philosophy in its three dimensions: education, information and investment. It aims at providing students with a variety of competencies associated with a range of University requirements intended to lay the ground for their future progress and development, academically as well as professionally.

# Objectives of the College

- Providing students with basic knowledge in IT and required skills to become computer literate and operate a computer and its most common software packages such as Microsoft Office.
- Enhancing and developing students' proficiency in the English and Arabic languages in order to pursue their studies in their majors effectively and successfully.
- Strengthening students' essential skills such as time management, test preparation and library utilization.
- Promoting counseling & academic advising among faculty members and students by introducing them to academic life, university rules and services.
- Offering a variety of courses to provide students with basic knowledge required in their academic programs.
- Fostering their values and good traditions.

# Units of the College

The College is composed of the following five units:

## Basic Education Unit

It is responsible for the management of all General Education courses in the fields of Arabic Language, Islamic Studies and Culture, History, humanities, and UAE Society. For the full list of courses see the next section.

## Basic Science Unit

It is responsible for the management of all General Education courses in the fields of Mathematics/Statistics, Health, Biology, Chemistry, Environment, and Social Sciences. For the full list of courses see the next section.

## Information Technology Unit

It is responsible for offering General Education courses in the fields of IT, Internet, and Technology

## English Language Unit

The Unit is in charge of the Intermediate and Advanced Levels of the Intensive English Program (IEP) which is offered to students that did not fulfill the English Language Proficiency Requirement but they had scored at least 450 in TOEFL or its equivalent.

## Academic Counseling Unit

The Unit is in charge of the orientation of new students to assist them in the transition from a High School Environment to a University Environment.

# Offered General Education Courses

Every AUST student is required to complete 30 credit hours in General Education covering the following areas: Mathematics, Science, Information Technology, Languages, and Social Sciences & Humanities. After a review of all offered programs at AUST, the Academic Council of Academic Affairs & Scientific Affairs identified 24 out of the 30 credit hours of General Education that could be taken by all AUST students independently of their specialization. In fact, the College of University Requirements & Academic Counseling is responsible for offering 15 credit hours, (see below), that are compulsory to all students and 9 credit hours to be chosen from a large number of courses covering the different areas of General Education, as shown below.

## List of required Courses (15 credit hours)

| Course Code | Course Name | Credit hours |
|---|---|---|
| 0101000 | Orientation | 0 |
| 0102110 | Islamic Culture | 3 |
| 0102140 | Communication Skills in Arabic Language | 3 |
| 0104110 | Computer Applications | 3 |
| 0103110 | Statistics | 3 |
| 0103120 | Environmental Sciences | 3 |

## List of elective courses (9 credit hours)

| Course Code | Course Name | Credit hours |
|---|---|---|
| 0115140 | Principle of Mathematics | 3 |
| 0115130 | General Psychology | 3 |
| 0115110 | History of Science in Islam | 3 |

| Course Code | Course Name | Credit hours |
|---|---|---|
| 0115120 | Scientific Pioneering | 3 |
| 0115150 | The Art of Written Expression | 3 |
| 0115160 | Emirates Society | 3 |
| 0115170 | Educational Technology | 3 |
| 0112110 | Principles of Architecture & Art | 3 |
| 0112120 | Principles of Interior Design | 3 |
| 0112130 | Modern Technology and Society | 3 |
| 0113110 | Internet Concepts | 3 |
| 0113120 | Introduction to Information System | 3 |
| 0114110 | Economic Concepts | 3 |
| 0114120 | Entrepreneurship Development | 3 |
| 0118110 | Principles of Ethics | 3 |
| 0118120 | General Biology | 3 |
| 0118130 | Oral Health | 3 |
| 0118140 | General Principles of Epidemiology | 3 |
| 0118150 | CPR-Cardio Pulmonary Resuscitation | 3 |
| 0119110 | Communication Skills | 3 |
| 0117110 | General Chemistry | 3 |
| 0117120 | Fundamentals of Human Nutrition | 3 |
| 0117130 | First Aid | 3 |
| 0103130 | Research Methodology | 3 |
| 0117120 | Applications of Remote Sensing & GIS. | 3 |
| 0119120 | Introduction to Communication Sociology | 3 |

| Course Code | Course Name | Credit hours |
|---|---|---|
| 0119130 | Information Society | 3 |
| 0120110 | Legal Culture | 3 |

## Laboratories

The College has well-equipped laboratories to provide practical hands-on experience to students of all specializations. These laboratories are as follows:

- Information Technology laboratories.
- Statistics laboratories.
- English Language laboratories.

The faculty of the college is also using the E-Learning system and MOODLE to enhance the learning process by giving students the opportunity, of accessing the teaching materials while they are away from the University through the use of the Internet..

## Intensive English Program

The Intensive English Program, IEP has two strands: TOEFL and IELTS. The student is free to choose either. Each of which has two levels: Advanced and Intermediate.

Students whose score is between 480 and 499 on TOEFL or Band 4.5 on IELTS are eligible to register in the Advanced Level. Students whose score is between 450 and 479 on TOEFL, or Band 4 on IELTS are eligible to register in the Intermediate Level. The table below summarizes this information.

| Level | TOEFL | | IELTS |
|---|---|---|---|
| | Paper-Based | Internet-Based | |
| Advanced (AD) | 480-499 | 54-60 | Band 4.5 |
| Intermediate (INT) | 450-479 | 45-53 | Band 4 |

The student who starts in the Intermediate Level can register in the Advanced Level when he gets the required score as shown in the table

## IEP Organizations

| Level | Organization | Other Courses |
|---|---|---|
| Advanced | Contact teaching hours: 6 + 3 for Independent Learning in the English Lab. | Up to 3 additional courses from the College of University Requirements |
| Intermediate | Contact teaching hours: 12 + 3   Independent learning in the English Lab | 2 additional courses from the College of University Requirements |

# IEP Structure

The Advanced Level Program is a program that consists of 9 contact hours per week during 15 weeks. It is suitable to students whose English Proficiency is close to the minimum required Level to be admitted in a Program taught in English. It covers the following components:

## 1. Listening

The central object of the listening components is to enhance and develop student competence to enable him/her to understand the English language in both academic and social settings. At the beginning of the listening component, emphasis is given to skills such as understanding conversation, identifying main and detailed ideas, and interacting with other students and lecturers in social settings. Later, more emphasis will be placed on comprehending conversations and talks, taking lecture notes and being aware of the structure of a lecture.

## 2. Speaking

The objective of the speaking component is to enable students to communicate in English appropriately, fluently and successfully in both academic and social settings where they are required to ask and answer questions, agree and disagree, express their opinions clearly with supporting evidence, give presentations and take part in short debates and discussions.

## 3. Reading

The main objective of the reading component is to enable students to become good readers, by developing in them reading skills such as text comprehension, appropriate speed, reading with a purpose, skimming, scanning, etc. In order to achieve these aims, students will be exposed to a diverse range of text forms and genres.

## 4. Writing

Since writing is viewed as a process, it is imperative that students acquire and develop the different steps of the writing process: generating ideas; organizing ideas; editing; revising, etc. Emphasis is also given to grammatical accuracy, lexical appropriateness, fluency and coherence.

## 5. Vocabulary

Rather than being developed in isolation, vocabulary is integrated into all skills. The main aim of the vocabulary component is to expand and enrich the student vocabulary repertoire and enable them to acquire academic vocabulary pertinent to their university studies.

## 6. Grammar

Like vocabulary, grammar is not developed in isolation, and is also integrated into the four skills of listening, speaking, reading and writing. The ultimate aim of this component is to enable students to acquire both the rules of usage (accuracy) and at the same time to acquire the rules of use (appropriateness) in both spoken and written discourse.

## 7. Test-taking strategies

In addition to the components listed above, test-taking strategies are an essential element and are incorporated into the program.

## Courses of the TOEFL programs

| Course Code | Seq. | Course Name | Weekly Hours |
|---|---|---|---|
| 105000 | 2 | TOEFL AD/ Independent Learning | 3 |
| 105101 | 2 | TOEFL AD/ Listening, Speaking & Reading | 3 |
| 105102 | 2 | TOEFL AD/ Grammar & Test Practice | 3 |
| 105200 | 2 | TOEFL INT/ Independent Learning | 3 |
| 105201 | 2 | TOEFL INT/ Listening & Speaking | 3 |
| 105202 | 2 | TOEFL INT/ Reading | 3 |
| 105203 | 2 | TOEFL INT/ Grammar | 3 |
| 105204 | 2 | TOEFL INT/ Test Practice | 3 |

## Courses of the IELTS programs

| Course | SEQ. | Course Name | Weekly Hours |
|---|---|---|---|
| 105000 | 3 | IELTS AD/ Independent Learning | 3 |
| 105101 | 3 | IELTS AD/ Listening & Speaking | 3 |
| 105102 | 3 | IELTS AD/ Reading & Writing | 3 |
| 105200 | 3 | IELTS INT/ Independent Learning | 3 |
| 105201 | 3 | IELTS INT/ Listening | 3 |
| 105202 | 3 | IELTS INT/ Speaking | 3 |
| 105203 | 3 | IELTS INT/ Reading | 3 |
| 105204 | 3 | IELTS INT/ Writing | 3 |

## Students exit the IEP successfully if they achieve one of the following:

| TOEFL | | | IELTS |
|---|---|---|---|
| Paper-Based | Computer-Based | Internet-Based | Band |
| 500 | 173 | 61 | 5 |

# Course Descriptions

### 101000 ORIENTATION (0 Cr. Hrs.)

This course will inform new students about academic policies and procedures, help with the academic and social transition to higher education, prepare students to make reasoned and well-informed choices, and enable them to become competent members of the university community. The course presents an overview of the foundation and objectives of the university and provides information on career and academic issues, policies and procedures about the registration rules. Also, it gives them brief advice in the social, personal and career orientation, study and time management and achieving success at university.

## 102110 Islamic Culture (3 Cr. Hrs.)

This course aims at providing students with knowledge about culture, Islamic faith and beliefs, sources of legislation and characteristics of Islam. It will also deal with some contemporary issues from an Islamic perspective such as human rights, women status, globalization and environment.

## 102120 The Miraculousness of the Holy Kuran (3 Cr. Hrs.)

The course deals with the concepts of the miraculousness of the Holy Kuran; its types and necessity; and the principles pertinent to it with special emphasis on its scientific dimension. It also covers the miraculousness in the Sunah to illustrate aspects of miraculousness based also on principles agreed upon by Muslim scholars.

## 102140 Communication Skills in Arabic Language (3 Cr. Hrs.)

This course aims at providing students with communication skills in the Arabic language, such as: listening, reading, writing, and speaking. These skills are taught and achieved through the use of selected texts from traditional poetry, modern poetry and prose. There is also an emphasis on students' academic and cultural surroundings in which they live and interact with.

## 102140 Communication Skills in Arabic Language (Non-Arabs) (3 Cr. Hrs.)

This course aims at providing non-Arab students with Communication Skills in the Arabic language. It focuses on the following skills: reading, writing, speaking and listening. It also aims at encouraging students to communicate in Arabic in their environment, university and society

## 103110 Statistics for Science (3 Cr. Hrs.)

This course is designed for students who need to gain skills in the basic statistics knowledge. It covers the essential statistical topics that students in the science section are expected to know. It is a basic course where essential material in statistics is covered. The first part of the course deals with data tabulation and calculation of descriptive measures. The second part covers basic concepts of probability, probability laws of addition and multiplication and bays' law. The third part covers some discrete distributions namely (Binomial and Poisson) and continuous distribution, where the emphasis is on Standard Normal Distribution. The fourth part covers the linear regression analysis and correlation.

## 103110 Statistics for Arts (3 Cr. Hrs.)

This course is designed for students who need to gain skills in basis statistics knowledge, so it covers the essential statistical material and topics that students are expected to know. The first part of the course deals with data tabulation and calculation of descriptive measures. The second part covers basic concepts of probability such as population, sample, sample space and probability laws of addition and multiplication. The third part covers the discrete and continuous distribution, where the emphasis on Standard Normal Distribution. The fourth part covers the linear regression analysis and correlation.

## 103120 Environmental Sciences (3 Cr. Hrs.)

This course is designed for students who need to gain knowledge in environmental sciences in general. Special emphasis is given to water and energy resources because of their importance in the Arab Region and the world. The course includes three basic modules: environment, water and energy. The environment module covers population dynamics, natural resources, pollution, remote sensing and GIS applications, environmental protection and sustainable development. The water module discusses the hydrologic

cycle, basics of hydrogeology and water quality as well as water-related problems in the Gulf Region. The third module covers the conventional and non-conventional energy resources, energy production and use, also energy management and sustainability.

### 103130 Research Methodology (3 Cr. Hrs.)

The course provides students with some basic tools of research methods in different fields. It covers the research process including: formulating research questions, sampling and surveying, measurement (scaling), data organization, data analysis, methods of extracting knowledge from the readable materials, searching for relevant references, and writing research reports.

### 104110 Computer Applications (3 Cr. Hrs.)

This course is an introduction to the most common software applications such as word processing, spreadsheets, presentations, and other features found in current software packages. Students will also acquire knowledge related to basic computer concepts and components.

### 105101 TOEFL ADVANCED (9 Hours)

The advanced course aims to foster and develop further both language proficiency and test-taking strategies. It also aims to encourage students to maximize their exposure to the language by encouraging them to be independent learners who can benefit from the different resources available to them such as the English lab, MOODLE and other online sources.

### 105101 IELTS ADVANCED (9 Hours)

The advanced course fosters and develops further English proficiency and test-taking strategies. Besides attending classes, students are encouraged to make use of the different learning resources available to them such as the English lab, MOODLE and the Internet. They also take

active roles by using pair-work, group work, bridging the information gap, doing presentations, etc.

### 105201 TOEFL INTERMEDIATE (15 Hours)

The course gives students intensive practice in language skills: listening, reading and writing. It also focuses on vocabulary and grammar together with test-taking strategies in order to develop proficiency in the English language and perform efficiently in the TOEFL exam. Learning takes place in a user-friendly and anxiety-free environment.

### 105201 IELTS INTERMEDIATE (15 Hours)

IELTS requires proficiency in the four language skills: listening, speaking, reading and writing. Students are exposed to intensive practice so as to develop their communicative competence. They learn in a user-friendly and anxiety-free environment, making use of the different resources such as the English lab, MOODLE and the Internet.

### 112110 THE PRINCIPES OF ARCHITECTURE & ART (3 Cr. Hrs)

The course introduces the student to the world of architecture and art through a series of lectures which highlight this subject by exploring visual presentations, videos, and slideshows. In addition, the course gives the student the chance to practice what he has visualized by creating drawings, pictures, and other media outcomes as required.

### 112120 Principles of Interior Design (3 Cr. Hrs)

The aim of this course is to introduce students to elements and principles of interior design and expose them to contemporary designs. Students will be able to understand the principles of interior design and appreciate its impact on their surroundings.

### 112130 Modern Technology and Society (3 Cr. Hrs)

The course starts with defining key terms such as: science, engineering and technology then it deals with the history of technological developments that changed society, philosophical theories of interaction, ethical and legal issues pertinent to the use of modern technology and entrepreneurship in modern technology.

In addition, the course describes the roles modern technology play in shaping the lifestyle of individuals and society, and tin politics, the economy and health. Other issues such as: the impact of modern technology on the environment, how individuals interact with technology and immerging and future technology with its possible effects are also discussed.

### 113110 Internet Concepts (3 Cr. Hrs)

This course is designed as an introduction to the Internet and World Wide Web. It starts by introducing the history of the Internet and includes the use of Internet applications and the basics of web page and web site production, and continues with matters such as Internet security, cookies, viruses, etc.

### 113120 Introduction to Information Systems (3 Cr. Hrs)

The purpose of this course is to introduce the topic of information systems (IS) and how organizations use it to support a variety of tasks ranging from basic day to day activities to creating competitive edge in the market place. It will focus on topics such as business process reengineering, collaborative computing, electronic commerce, the impacts of IS upon organizations and society, ethical use of information systems, types of information systems, and how to analyze and design information systems.

### 114110 Economic Concepts (3 Cr. Hrs)

This course is an integrated introduction to the analysis of individual firms and markets, as well as aggregate economic variables. These include inflation, unemployment and economic growth, with a focus on the state's role in attempts to regulate the economy. Thus, efforts will be focused on learning how societies use scarce resources to produce and distribute commodities among its various people.

### 114120 Entrepreneurship Development (3 Cr. Hrs)

Based on the economic and social dimensions, the entrepreneurship development concept has become an imminent part of life. This course aims to highlight the economics of entrepreneurship, its role in venture creation and facilitation of capital resource. The course also aims at describing the management strategies for starting up businesses which necessarily includes the business plan. The course focuses on all the basic tenets of entrepreneurship development.

### 115110 History of science in Islam (3 Cr. Hrs)

The course consists of four units. In the first unit, we elaborate on introductory aspects related to history of science in general and the science in the context of Islamic Culture in particular. This unit includes: nature of human knowledge, the term science and scientific method, significance of the recent concern of studying history of science, scientific achievements of ancient nations and the cultural context of the scientific accomplishments of the intellectuals of the Islamic Culture. The second unit is devoted to the achievements of the scientists of this culture in medical sciences and prominent figures in these fields. In the third unit, we concentrate on the field of natural sciences, mathematics and prominent figures in these fields in the context of the Islamic Culture. Last, we discuss, in the fourth unit, agricultural endeavors in the Islamic culture in addition to the impact of this culture on the scientific progress in Europe.

### 115120 Scientific Pioneering (3 Cr. Hrs)

The course consists of four distinct units. The first unit deals with human knowledge, introduction to epistemology, science and the scientific method and the nature of scientific explanation of observed phenomena. In the second unit, we study the societal influence on science, first by illustrating the theoretical basis of this influence, then by illustrating this influence via real societal examples extracted from ancient and recent history. The third unit is devoted to studying the salient features of modern science and technology, including particularly: science and natural resources and intellectual property and patents. In the last unit we discuss the scientific impact on human behavior and thought.

### 115130 General Psychology (3 Cr. Hrs)

The course aims to provide students with basic concepts, methods, techniques and theories of psychology as applied to the field and practice of several academic discipline specialties. The course also introduces areas of psychology dealing with biology, learning, motivation, human development, personality, society, maladjustment and other topics.

### 115140 Principles of Mathematics (3 Cr. Hrs)

This course deals with algebraic equations of degree 1 and 2, the elementary ideas of plane geometry; Cartesian coordinates system, equations of line, circles, linear inequalities and systems of inequalities are introduced. Also, basic notions of real functions such as limits, continuity, and differentiability are studied along with simple applications. In addition basic knowledge about matrices and their algebra is provided.

### 115150 The Art of Written Expression

The course analyzes writing practices within and across disciplines, recognizing the role writing plays in consolidating knowledge in a retrievable form which is easily accessible within each academic specialization. This course highlights the processes, practices and application of written expression in various academic fields. Students have the opportunity to develop a critical understanding of important discourses within their particular area of study.

### 115160 Emirates Society (3 Cr. Hrs)

This course covers topics related to the nature of UAE society before and after the discovery of oil, and its effect on the political, geographical, cultural, social and educational aspects of national life.

### 115170 Educational Technology (3 Cr. Hrs)

This introductory course surveys the field of educational technology through the historical development of Educational Technology, an overview of modern classroom applications, and an examination of trends and issues surrounding the use of technology for teaching and learning.

### 117110 Chemistry of Life (3 Cr. Hrs)

The course aims to provide students with the basic knowledge of chemical principles needed for the daily life. It deals with the development of life on Earth from its origins (Chemistry of life, Cells) and the characteristics of living things.

### 117120 Fundamentals of Human Nutrition (3 Cr. Hrs.)

This course discusses the fundamental principles of human nutrition and their application to food selection. Emphasis is placed upon the Essential Nutrients and their vital importance as well as the recommended dietary allowances and other dietary guidelines, which promote health maintenance and disease prevention. Moreover, it answers the questions of what Nutrition is, why it is

important for our life, and how to easily adjust the life style based on what is learned will be highlighted.

### 117130 First Aid (3 Cr. Hrs.)

This course aims to teach the skills and knowledge critical to saving life and minimizing the severity of injury or sudden illness. Safety awareness and accident prevention are emphasized.

### 117150 Remote Sensing and GIS Applications (3 Cr. Hrs.)

This course introduces students to the basic elements of spatial sciences, including Global Positioning System (GPS), Remote Sensing (RS) and Geographic Information System (GIS). Students are taught how to locate themselves and determine their direction with a GPS. Students will study data collection, acquisition and processing in a much wider way than the visible spectrum, including IR, UV and microwave zone of the electromagnetic spectrum in the RS. Finally, students will learn how to capture, store, retrieve, display and interpret data through GIS; identify the art of image interpretation and enhancement.

### 118110 Academic and Technological Ethics (3 Cr. Hrs.)

The course is concerned about ethical issues related to the misuse of scientific and technological advances, miscommunication of scientific research results, the ethical aspects related to the actual practice of scientists in their scientific endeavors and the lack of ethics in all facets of academic character at all levels of educational standing. The course starts with clarifying the relevance of discussing ethical issues in the present age. Then it discuss examples of misbehaving by students and instructors in educational institutes at all levels, further we discuss examples of the random growth of modern technology without paying attention to ethical standards and finally we shed some light on the miscommunication and fraud in research results among scientists. Stress is made on case studies related to aspects mentioned above.

### 118120 General Biology (3 Cr. Hrs)

This course provides students with general knowledge in biology. The students are provided with a basic knowledge of chemistry of living materials, the cell structure, types and functions. The students are also provided with good knowledge concerning cell division, general embryology and genetics. A basic knowledge about the morphological features of the tissues and recognize their roles in forming organs and organisms integrates the above information. The students are also provided with brief knowledge concerning human health and common diseases.

### 118130 Oral Health (3 Cr. Hrs)

This course defines the responsibilities of the individual within community dental health education with emphasis on the etiology of dental disease, methods for prevention, and principles of nutrition in relation to oral health and preventive dentistry.

### 119110 English Communication Skills (3 Cr. Hrs)

This course aims to satisfy students' immediate needs in the communication field in both their academic environment and their future needs as professionals. It covers, among other things: the concept of human communication and its problems; communication and culture; telephoning; interview skills; conducting and participating in meetings; note-taking; presentation skills; knowing your audience; developing a positive public image; writing for the web. The course is practically oriented to ensure interactivity by the students playing a very active and constructive role.

## 119120 Introduction to communication sociology (3 Cr. Hrs)

This course focuses on the inevitable social role of communication in society. The course clarifies some of the effects, functions and dysfunctions of mass communication in society. The course concentrates on the role of communication in different social fields and analyzes its role in public service sectors and non- governmental organizations (NGOs)

The course is also intended to make students aware of sensitive topics to avoid using words that might offend or upset people.

## 119130 Information Society (3 Cr. Hrs)

The course focuses on the information revolution in all fields around the world. It concentrates on the characteristics of the information society, its consequences, challenges and future implications on Arab society under the information revolution and the international information market map.

## 120115 Legal Culture (3 Cr. Hrs)

The course addresses itself to general legal concepts at a macro level of generality such as the rule of practice and its characteristics, sources of obligation with reference to the rules of malpractices. It also deals with: the trader, commercial business and documents; labor law, rights and duties of workers, termination of contracts and penal law illustrated by common crimes such as robbery, fraud etc. In addition, matters related to administrative decisions are covered such as the employee rights and duties, the marriage contract and the wife's rights and duties.

# List of Faculty

| Name | Rank | Specialization | Degree | Date | University |
|------|------|----------------|--------|------|------------|
| Mahmoud  Abou Naaj | Associate Professor Dean | Computer Science | Ph. D | 1983 | Leeds University, U.K |
| Mehdi Saleh | Assistant Professor | Statistics | Ph. D | 1985 | University of Wales - UK |
| Nadia Ouakili | Lecturer | Statistics | Doct 3rd cycle | 1986 | Paris  VI  University – France |
| Mr. Laith Aljumaily | Lecturer | Statistics | Master | 1978 | Mississipi State University |
| Mr. Emad Shadid | Lecturer | Statistics | M.Sc | 1991 | Middle East  University – Turkey |
| Dr. Mourad Abid | Assistant Professor | Education Psychology | Ph.D | 2007 | Annaba University,  Algeria |
| Dr. Yousuf Ali Mahmud | Assistant Professor | Physics | Ph. D | 1978 | Standford  University, U.S.A |
| Dorria  Hegazy | Assistant Professor Head of Dept | Arabic | Ph. D | 1995 | Monofia University |
| Hayam  Al Maamari | Lecturer | Arabic | Ph. D | 2004 | Jordan University |
| Mohammad  Al Wahidi | Lecturer | Islamic | Master | 2000 | Al Bait University |
| Ahmed  Yacoob | Lecturer | Islamic | Master | 2000 | Dar Al Hadith Alhassaniya College, Morocco |
| Salah Abdelhai | Lecturer | Psycology | Master | 1986 | Oum El Qura University, Mekka |
| Siddiq Ismail Abd Elmonim | Lecturer Head of Dept | English | Master | 1982 | Manchester  University, U.K |
| Hanaa  Mansour | Lecturer | English | Master | 2000 | Kardiff  University, U.K |
| William  Vize | Lecturer | English | Master | 1999 | Bath University, U.K. |

| Name | Rank | Specialization | Degree | Date | University |
|------|------|----------------|--------|------|------------|
| Nida  Hadi | Lecturer | English | Master | 1986 | Bangor University, U.K |
| Belal  Ibrahim | Lecturer | English | Master | 1998 | Rajastan University |
| Said  Lezzar | Lecturer Head of Dept | Information Technology | Master | 1982 | American University, U.S.A |
| Dr. Mohammed Salahat | Lecturer | Information Technology | Master | 1996 | Arab Academy Jordan |
| Hussein Taha | Associate Professor Deputy Dean | Foundations of Education | Ph D | 1984 | Minnesota  University, USA |
| Abdul Majid  Al-Abbasi | Associate professor | Statistics | Ph D | 1987 | Essex University, UK |
| Said Mahmoud Hamad | Lecturer | Arabic | Master | 1996 | Tanta  University, Egypt |
| Mohamed Ashraf El Zamil | Lecturer | English | Master | 2004 | American University ,Cairo |
| Mohammed Hachlaf | Lecturer | Islamic | Master | 2002 | Institute of Holy Koran & Islamic Studies, Sudan |
| Nasser Mahmoud Nasser | Lecturer | Statistics | Master | 1978 | University of Wales, UK |
| Maachou Bendelhoum | Lecturer | Computer Science | Master | 1991 | Salford  University, UK |
| Peter D Troiano | Lecturer | Journalism + (English certificate) | Master | 1987 | Columbia  University, USA |

# COLLEGE OF
# BUSINESS ADMINISTRATION

The remarkable growth in economic and business activity in the Arabian Gulf region over the past decade has greatly stimulated the demand for skilled and competent business graduates. The College of Business Administration has built up a reputation for providing high quality teaching and training programs to equip its students with the knowledge, skills and attitudes they need to effectively address the challenges and opportunities of today's business environment.

# Mission

The college adheres to the fulfillment of AUST's overall mission, which seeks to meet the educational needs of local, regional and international students. As such the college philosophy is grounded in finding practical and scientific solutions to contemporary organizational and business problems through the BSc degree programs offered in four areas of specialization: Management, Accounting, Marketing, and Finance and the Master of Business Administration degree program in three areas of specialization: HR Management, Financial Management and Marketing.

Stemming from this underlying philosophy, the college's strategic focus is to enhance the intellectual, professional and behavioral development of its students to meet the managerial challenges of the 21st century.

# Degree Programs

The college offers four bachelor programs and three MBA tracks, providing students with the theoretical and practical backgrounds that form an excellent foundation for satisfying career requirements or for further study. The department's undergraduate programs have been reaccredited by the UAE Ministry of Higher Education and Scientific Research, and the MBA programs are also accredited.

The four bachelor degree programs, Management, Accounting, Marketing and Finance each require four years of study. The Master of Business Administration program has three tracks, each of which takes two years of study: HR Management, Financial Management and Marketing.

# Facilities

The college's current physical facilities, which include offices, labs and teaching rooms are equipped to meet its needs and are regularly upgraded. The library is regularly updated with the latest books in the field for the benefit of students and college members. IT facilities include:

- wireless internet connection, available in the university campus
- Internet labs available 14 hours per day
- multimedia facilities provided in all labs
- more than 12 business programs installed in the labs
- college computers connected through local and wide area networks

# DEPARTMENT OF MANAGEMENT

The Department of Management offers a comprehensive and dynamic program leading to the Bachelor of Science in Management, which combines courses from all core areas of business administration. Through the careful selection of teaching materials and real-life cases, the department builds the marketable skills of students to facilitate their entry into the global business arena as professional managers and entrepreneurs.

# Bachelor of Science in Management

## Mission

The mission of the management program is to achieve excellence in delivering management knowledge. It aims to contribute to the competitiveness of the organizations of the UAE and the GCC in the global market-place by producing highly skilled, ethical and well-rounded graduates in areas of strategic relevance to the global economy.

## Program Goals

*The program's goals are to enable students to:*

- deal effectively and efficiently with managerial responsibilities, tasks and challenges in a changing and complex business environment
- gain proficiency in modern analytical problem-solving, communication and decision-making skills
- gain broad managerial skills, abilities and competences required in a globalized world
- carry out research and postgraduate study

## Program Educational Objectives

*The objectives of the program are to:*

- Clarify management theories in leadership and justifications for the need of organizational reengineering, through professional programs and the managing of organizational assets
- Explain organizational objectives of specialization, coordination, adaptation and alignment to benefit the community and the business milieu, and what is beneficial to the community and the business milieu

- Identify quantitative and qualitative research and diagnosis tools and their appropriate end use through creative thinking and continuous learning
- Raise student awareness to the managerial, ethical and other principles of "what is measurable is manageable"
- Clarify the global multidimensional managerial challenges as they pertain to the various functions of the global corporation
- Clarify the importance of strategic change and development, and the need for alignment to the principle of management by performance and results linked to an increasingly competitive environment
- Explain the vital role of fundamental and quality standards in an applied business strategy, congruent with research for developing innovative products and services in tune with a highly competitive business environment
- Explain the need for creative thinking in the employment field, thus turning out graduates who are able to use skills such as "thinking out of the box," and intellectual capital-based innovation
- Provide knowledge and skills appropriate for the conducting of research and the pursuit of postgraduate study

## Admission Requirements

The normal admission requirement for an applicant is the UAE Secondary School Certificate (both sections), or an equivalent qualification, with a minimum average grade of 60 percent, & TOEFL certificate with a minimum score of 500.

## Career Opportunities

Management is the art of getting things done by others. Hence, the need for future managers never stops, particularly

for those who are equipped with the latest managerial knowledge skills and the ability to think analytically.

The Bachelor of Science in Management program has been carefully crafted to meet market demands qualitatively. The program is intended to produce graduates who will be efficient and effective managers able to achieve organizational objectives. AUST management graduates have been well received in the job markets of the UAE and other Arabian Gulf countries for their outstanding teamwork, and creative and management leadership skills.

## Graduation Requirements

Students will be awarded the Bachelor of Science in Management degree upon fulfillment of the following requirements:

- Successful completion of 126 credit hours, which normally takes eight semesters.
- 8 weeks of industrial internship (after the completion of 96 credit hours including seven management core courses), which is equivalent to three credit hours.
- A minimum Cumulative Grade Point Average of 2.0.

## Degree Requirements

The BSc in Management degree requires the completion of 126 credit hours distributed according to the following plan:

| Type of Courses | Credit Hours |
|---|---|
| 1. University General Education Requirements | |
| (a) University Required Courses | 15 |
| (b) University Elective Courses | 9 |
| 2. College Requirements | |
| (a) College Required Courses | 54 |
| (b) College  Elective Courses | 9 |
| 3. Major Requirements | |
| (a)  Major Required Courses | 33 |
| (b)  Major Electives Courses | 6 |
| Total Credit Hours | 126 |

# UNIVERSITY GENERAL EDUCATION REQUIREMENTS

## (a) University Required Courses (15 Credit Hours)

| Course No. | Course Title | Cr. Hrs. | Prerequisite |
|---|---|---|---|
| 101000 | Orientation | 0 | - |
| 102110 | Islamic Culture | 3 | - |
| 102140 | Communication Skills in Arabic Language | 3 | - |
| 103110 | Statistics | 3 | - |
| 102130 | Environmental Sciences | 3 | - |
| 104110 | Computer Applications | 3 | - |

## (b)University Elective Courses (9 Credit Hours)

| Course No. | Course Title | Cr. Hrs. | Prerequisite |
|---|---|---|---|
| 102120 | The Miraculousness of the Holy Qur'an | 3 | - |
| 103130 | Research Methodology | 3 | - |
| 112110 | Principles of Architecture & Art | 3 | - |
| 112120 | Principles of Interior Design | 3 | - |
| 112130 | Modern Technology and Society | 3 | - |
| 113110 | Internet Concepts | 3 | - |
| 113120 | Introduction to Information Systems | 3 | - |
| 114110 | Economic Concepts | 3 | - |
| 114120 | Entrepreneurship Development | 3 | - |
| 115110 | History of Science in Islam | 3 | - |
| 115120 | Scientific Pioneering | 3 | - |
| 115130 | General Psychology | 3 | - |
| 115140 | Principles of Mathematics | 3 | - |
| 115150 | The Art of Expression and Writing | 3 | - |
| 115160 | Emirates Society | 3 | - |
| 115170 | Education Technology | 3 | - |
| 117110 | General Chemistry | 3 | - |
| 117120 | Fundamental of Human Nutrition | 3 | - |
| 117130 | First Aid | 3 | - |
| 117150 | Applications of Remote Sensing | 3 | - |
| 118110 | Principles of Ethics | 3 | - |
| 118120 | General Biology | 3 | - |
| 118130 | Oral Health | 3 | - |

| Course No. | Course Title | Cr. Hrs. | Prerequisite |
|---|---|---|---|
| 118140 | General Principles of Epidemiology | 3 | - |
| 118150 | CPR-Cardio Pulmonary Resuscitation | 3 | - |
| 119110 | Communication Skills | 3 | - |
| 119120 | Introduction to Communication Sociology | 3 | - |
| 119130 | Information Society | 3 | - |
| 120115 | Legal  Culture | 3 | - |

## COLLEGE REQUIREMENTS (63 Credit Hours)

### a. College Compulsory Courses (54 Credit Hours)

| Course No. | Course Title | Cr. Hrs | Prerequisite |
|---|---|---|---|
| 110140 | Math for Management | 3 | - |
| 400393 | Microeconomics | 3 | - |
| 102211 | Statistics for Business | 3 | 103110 |
| 311102 | PC Application | 3 | 104110 |
| 400292 | Principles of Accounting I | 3 | - |
| 400513 | Quantitative Analysis | 3 | 102211, 110140 |
| 400394 | Principles of Accounting II | 3 | 400292 |
| 400396 | Fundamentals of Finance | 3 | 400292 |
| 400291 | Introduction  to Management | 3 | - |
| 400408 | Business Communication | 3 | 400291 |
| 400395 | Principles of Marketing | 3 | 400291 |
| 400411 | Business Law | 3 | 400291 |
| 400615 | Management Information Systems | 3 | 400291, 306460 |
| 400409 | Organizational Behavior | 3 | 400291 |
| 400410 | Macroeconomics | 3 | 400393 |
| 306460 | Data Base Management Systems | 3 | 311102 |
| 310202 | IT in Business | 3 | 311102 |
| 400516 | Supervised Training | 3 | Earning 96 Hrs including 7 management core courses |

### b. College Elective Courses (9 Credit Hours)

| Course No. | Course Title | Cr. Hrs. | Prerequisite |
|---|---|---|---|
| 400419 | Business Ethics | 3 | 400291 |
| 400512 | Economic Development of GCC | 3 | 400410 |

| Course No. | Course Title | Cr. Hrs. | Prerequisite |
|---|---|---|---|
| 400307 | Business Research Methods | 3 | 400291, 102211 |
| 400522 | Managerial Economics | 3 | 400410 |
| 400523 | Public Relations | 3 | 400408 |
| 400524 | Feasibility Studies | 3 | 400393, 400396 |

## 3. MAJOR REQUIREMENTS (39 Credit Hours)

### (a) Major Compulsory Courses (33 Credit Hours)

| Course No. | Course Title | Cr. Hrs. | Prerequisite |
|---|---|---|---|
| 410501 | Production & Operations Mgt. | 3 | 103110, 400291 |
| 410602 | Human Resources Management | 3 | 400291 |
| 410603 | International Business | 3 | 400291, 400410 |
| 410704 | Purchasing & Material Mgt. | 3 | 410501 |
| 410705 | Computer App. Management | 3 | 311102, 400291 |
| 410706 | Strategic Management | 3 | 400291, 400409 |
| 410612 | Mgt. of Small Business | 3 | 400291 |
| 410712 | Total Quality Management | 3 | 410501 |
| 410808 | Org. Theory & Design | 3 | 400409 |
| 410909 | Selected Topics Mgt. | 3 | 410706 |
| 410811 | Graduation Project / Mgt. | 3 | 102 Credit Hours |

### b. Major Elective Courses (6 Credit Hours)

| Course No. | Course Title | Cr. Hrs | Prerequisite |
|---|---|---|---|
| 430707 | Service Marketing | 3 | 400395 |
| 440612 | Personal Finance | 3 | 400396 |
| 410820 | Project Management | 3 | 400291 |
| 410830 | Electronic Business | 3 | 400291, 311102 |

# Proposed Sequence of Study

## Semester 1

| Course No. | Course Title | Contact & Credit Hrs. | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Lab | Tut | Cr. Hrs. | |
| 101000 | Orientation | 1 | 0 | 0 | 0 | - |
| 102110 | Islamic Culture | 3 | 0 | 1 | 3 | - |
| 102140 | Communication Skills in Arabic Language | 3 | 0 | 0 | 3 | - |
| 103110 | Statistics | 2 | 2 | 0 | 3 | - |
| 400291 | Introduction to Management | 3 | 0 | 0 | 3 | - |
| Xxxxxx | University Elective Course 1 | 3 | 0 | 0 | 3 | - |
| Total | | 15 | 2 | 1 | 15 | |

## Semester 2

| Course No. | Course Title | Contact & Credit Hrs. | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Lab | Tut | Cr. Hrs. | |
| 104110 | Computer Applications | 2 | 2 | 0 | 3 | - |
| 102130 | Environmental Sciences | 3 | 0 | 0 | 3 | - |
| 102110 | Principles of Accounting I | 3 | 0 | 0 | 3 | - |
| 102211 | Statistics for Business | 3 | 0 | 0 | 3 | 103110 |
| Xxxxxxx | University Elective Course 2 | 3 | 0 | 0 | 3 | - |
| Total | | 14 | 2 | 0 | 15 | |

## Semester 3

| Course No. | Course Title | Contact & Credit Hrs. | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Lab | Tut | Cr. Hrs. | |
| 311102 | PC Applications/ Management | 2 | 2 | 0 | 3 | 104110 |
| 400393 | Microeconomics | 3 | 0 | 0 | 3 | - |
| 400394 | Principles of Accounting II | 3 | 0 | 0 | 3 | 400292 |
| 400395 | Principles of Marketing | 3 | 0 | 0 | 3 | 400291 |
| 400396 | Fundamentals of Finance | 3 | 0 | 0 | 3 | 400291 |
| xxxxxx | University Elective Course 3 | 3 | 0 | 0 | 3 | - |
| Total | | 17 | 2 | 0 | 18 | |

## Semester 4

| Course No. | Course Title | Contact & Credit Hrs. | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Lab | Tut | Cr. Hrs. | |
| 110140 | Mathematics for Management | 3 | 0 | 2 | 3 | - |
| 310202 | IT in Business | 2 | 2 | 0 | 3 | 311102 |
| 306460 | Database Management Systems | 2 | 2 | 0 | 3 | 311102 |
| 400410 | Macroeconomics | 3 | 0 | 0 | 3 | 400393 |
| 400411 | Business Law | 3 | 0 | 0 | 3 | - |
| xxxxxxx | College Elective Course 1 | 3 | 0 | 0 | 3 | - |
| Total | | 16 | 4 | 2 | 18 | |

## Semester 5

| Course No. | Course Title | Contact & Credit Hrs. | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Lab | Tut | Cr. Hrs. | |
| 400408 | Business Communications | 3 | 0 | 0 | 3 | 400291 |
| 400409 | Organizational Behavior | 3 | 0 | 0 | 3 | 400291 |
| 410501 | Production and Operations Management | 3 | 0 | 0 | 3 | 103110, 400291 |
| 400513 | Quantitative Analysis | 3 | 0 | 0 | 3 | 102211, 110140 |
| 400615 | Management Information Systems | 3 | 0 | 0 | 3 | 400291, 306460 |
| xxxxxxx | College Elective Course 2 | 3 | 0 | 0 | 3 | - |
| Total | | 18 | 0 | 0 | 18 | |

## Semester 6

| Course No. | Course Title | Contact & Credit Hrs. | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Lab | Tut | Cr. Hrs. | |
| 410603 | International Business | 3 | 0 | 0 | 3 | 400291, 400410 |
| 410611 | Management of Small Business | 3 | 0 | 0 | 3 | 400291 |
| 410704 | Purchasing and Materials Management | 3 | 0 | 0 | 3 | 410501 |
| 410705 | Computer Applications /Management | 2 | 2 | 0 | 3 | 311102, 400291 |
| 410712 | Total Quality Management | 3 | 0 | 0 | 3 | 410501 |
| xxxxxxx | College Elective Course 1 | 3 | 0 | 0 | 3 | - |
| Total | | 17 | 2 | 0 | 18 | |

## Semester 7

| Course No. | Course Title | Contact & Credit Hrs. | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Lab | Tut | Cr. Hrs. | |
| 400516 | Supervised Training | - | - | - | 3 | 96 cr. hrs. |
| 410602 | Human Resource Management | 3 | 0 | 0 | 3 | 400291 |
| 410706 | Strategic Management | 3 | 0 | 0 | 3 | 400409 |
| xxxxxxx | Major Elective Course 1 | 3 | 0 | 0 | 3 | - |
| Total | | 9 | 0 | 0 | 12 | |

## Semester 8

| Course No. | Course Title | Contact & Credit Hrs. | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Lab | Tut | Cr. Hrs. | |
| 410808 | Organizational Theory & Design | 3 | 0 | 0 | 3 | 400409 |
| 410811 | Graduation Project | - | - | - | 3 | 102 cr. Hrs. |
| 410909 | Selected Topics in Management | 3 | 0 | 0 | 3 | 410706 |
| xxxxxxx | Major Elective Course 2 | 3 | 0 | 0 | 3 | - |
| Total | | 9 | 0 | 0 | 12 | |

# DEPARTMENT OF ACCOUNTING

Accounting is described as "The Language of Business." Accounting is the study of the concepts and techniques used in reporting on matters related to an entity's financial status and performance. Because entities compete in both input and product markets, accounting information is essential for managers to plan and control activities. Information generated through the accounting process is required for business decision-making.

# Bachelor of Science in Accounting

## Mission

The mission of the Accounting Department is derived mainly from the larger vision and philosophy of the university and the college. Accordingly, the department is in pursuit of excellence in accounting education and professional practice via a rigorous academic program that promotes critical thinking, interpersonal skills, technical competence and, above all, ethical practice.

## Goals

*The goals of the program are to:*

- Provide students with adequate accounting knowledge that qualifies them for employment in accounting practice and the profession
- Enable students to prepare, analyze and communicate accounting information using information technology to facilitate the decision-making process
- Develop skills of ethical reasoning, critical thinking and problem-solving
- Prepare students to conduct research in accounting and related areas

## Objectives

*The objectives of the program are to enable students to:*

- Understand the conceptual framework of accounting and the mechanics of the
- accounting cycle
- Understand the core concepts of cost and management accounting and the uses of accounting information in the decision-making process
- Understand the auditing standards, practices and rules of professional conduct
- Prepare financial statements for profit and non-profit organizations
- Use manual and computer-based tools to identify and analyze logical relations among accounting data
- Combine and consolidate financial information
- Make ethical and professional judgments in accounting and auditing
- Use accounting analytical tools to develop skills and critical thinking
- Understand the relevance and applicability of accounting models and theories
- Conduct research in accounting

## Admission Requirements

The normal entry requirement is the UAE Secondary School Certificate, or an equivalent qualification, with a minimum average grade of 60 percent, & TOEFL certificate with a minimum score of 500.

## Career Opportunities

A career in accounting offers the potential of a larger number of job openings than in many other disciplines. A qualification in accounting today opens the door to careers in business, NGOs and government units, preparing

graduates for work in any of the following areas: financial reporting, public practice, strategic business planning, cost and management accounting, information systems, insolvency and reconstruction, accounting and finance consulting, and business analysis and evaluation. In addition to employment our graduates are equipped to pursue postgraduate study in accounting and finance as well as professional certification, for example CPA, CMA, CFA, ACCA and CIA.

## Graduation Requirements

Students will be awarded the Bachelor of Science in Accounting degree upon fulfillment of the following requirements:

- Successful completion of 126 credit hours, which normally takes eight semesters.
- 8 weeks of industrial internship (after the completion of 96 credit hours including seven Accounting compulsory courses
- A minimum Cumulative Grade Point Average of 2.0.

## Degree Requirements

The BSc in Accounting degree requires the completion of 126 credit hours distributed according to the following plan:

| Type of Courses | Credit Hours |
|---|---|
| **1. University General Education Requirements** | |
| (a) University Required Courses | 15 |
| (b) University Elective Courses | 9 |
| **2. College Requirements** | |
| (a) College Compulsory Courses | 54 |
| (b)  College Elective Courses | 9 |
| **3. Major Requirements** | |
| (a)  Major Compulsory Courses | 36 |
| (b)  Major Electives Courses | 3 |
| Total Credit Hours | 126 |

# UNIVERSITY GENERAL EDUCATION REQUIREMENTS

## (a) University Compulsory Courses (15 Credit Hours)

| Course No. | Course Title | Cr. Hrs. | Prerequisite |
|---|---|---|---|
| 101000 | Orientation | 0 | - |
| 102110 | Islamic Culture | 3 | - |
| 102140 | Communication Skills in Arabic Language | 3 | - |
| 103110 | Statistics | 3 | - |
| 102130 | Environmental Sciences | 3 | - |
| 104110 | Computer Applications | 3 | - |

## (b) University Elective Courses (9 Credit Hours)

| Course No. | Course Title | Cr. Hrs. | Prerequisite |
|---|---|---|---|
| 102120 | The Miraculousness of the Holy Qur'an | 3 | - |
| 103130 | Research Methodology | 3 | - |
| 112110 | Principles of Architecture & Art | 3 | - |
| 112120 | Principles of Interior Design | 3 | - |
| 112130 | Modern Technology and Society | 3 | - |
| 113110 | Internet Concepts | 3 | - |
| 113120 | Introduction to Information Systems | 3 | - |
| 114110 | Economic Concepts | 3 | - |
| 114120 | Entrepreneurship Development | 3 | - |
| 115110 | History of Science in Islam | 3 | - |
| 115120 | Scientific Pioneering | 3 | - |
| 115130 | General Psychology | 3 | - |
| 115140 | Principles of Mathematics | 3 | - |
| 115150 | The Art of Expression and Writing | 3 | - |
| 115160 | Emirates Society | 3 | - |
| 115170 | Education Technology | 3 | - |
| 117110 | General Chemistry | 3 | - |
| 117120 | Fundamental of Human Nutrition | 3 | - |
| 117130 | First Aid | 3 | - |
| 117150 | Applications of Remote Sensing | 3 | - |
| 118110 | Principles of Ethics | 3 | - |
| 118120 | General Biology | 3 | - |
| 118130 | Oral Health | 3 | - |

| Course No. | Course Title | Cr. Hrs. | Prerequisite |
|---|---|---|---|
| 118140 | General Principles of Epidemiology | 3 | - |
| 118150 | CPR-Cardio Pulmonary Resuscitation | 3 | - |
| 119110 | Communication Skills | 3 | - |
| 119120 | Introduction to Communication Sociology | 3 | - |
| 119130 | Information Society | 3 | - |
| 120115 | Legal  Culture | 3 | - |

## COLLEGE REQUIREMENTS  (63 Credit Hours)

### a.  College Compulsory Courses (54 Credit Hours)

| Course No. | Course Title | Cr. Hrs. | Prerequisite |
|---|---|---|---|
| 110140 | Math for Management | 3 | - |
| 400393 | Microeconomics | 3 | - |
| 102211 | Statistics for Business | 3 | 103110 |
| 311102 | PC Application | 3 | 104110 |
| 400292 | Principles of Accounting I | 3 | - |
| 400513 | Quantitative Analysis | 3 | 102211, 110140 |
| 400394 | Principles of Accounting II | 3 | 400292 |
| 400396 | Fundamentals of Finance | 3 | 400292 |
| 400291 | Introduction  to Management | 3 | - |
| 400408 | Business Communication | 3 | 400291 |
| 400395 | Principles of Marketing | 3 | 400291 |
| 400411 | Business Law | 3 | 400291 |
| 400615 | Management Information Systems | 3 | 400291, 306460 |
| 400409 | Organizational Behavior | 3 | 400291 |
| 400410 | Macroeconomics | 3 | 400393 |
| 306460 | Data Base Management Systems | 3 | 311102 |
| 310202 | IT in Business | 3 | 311102 |
| 400516 | Supervised Training | 3 | 96 Cr. Hrs. incl. 7 Accounting core courses |

## b. College Elective Courses (9 Credit Hours)

| Course No. | Course Title | Cr. Hrs. | Prerequisite |
|---|---|---|---|
| 400419 | Business Ethics | 3 | 400291 |
| 400512 | Economic Development of GCC Countries | 3 | 400410 |
| 400307 | Business Research Methods | 3 | 400291, 102211 |
| 400522 | Managerial Economics | 3 | 400410 |
| 400523 | Public Relations | 3 | 400408 |
| 400524 | Feasibility Studies | 3 | 400393, 400396 |

# MAJOR REQUIREMENTS (39 Credit Hours)

## Major Compulsory Courses (36 Credit Hours)

| Course No. | Course Title | Cr. Hrs. | Prerequisite |
|---|---|---|---|
| 420401 | Intermediate Accounting 1 | 3 | 400394 |
| 420501 | Intermediate Accounting II | 3 | 420401 |
| 420502 | Managerial Accounting | 3 | 420603 |
| 420602 | Auditing | 3 | 420401 |
| 420603 | Cost Accounting | 3 | 400394 |
| 420604 | Advanced Accounting | 3 | 420501 |
| 420705 | Governmental Accounting | 3 | 420401 |
| 420706 | Advanced Auditing | 3 | 420602 |
| 420707 | Accounting Theory | 3 | 420604 |
| 420810 | Computerized Acct. Inf. Sys | 3 | 311102, 420401 |
| 420802 | Financial Management & Control | 3 | 420604, 420502 |
| 420811 | Graduation Project | 3 | 102 credit hours |

## b. Major Elective Courses (3 Credit Hours)

| Course No. | Course Title | Cr. Hrs. | Prerequisite |
|---|---|---|---|
| 420612 | International Accounting | 3 | 420401 |
| 420613 | Islamic Accounting | 3 | 420401 |
| 420714 | Oil & Gas Accounting | 3 | 420401 |
| 420716 | Taxation Accounting | 3 | 420401 |
| 420809 | Topical Issues in Accounting | 3 | 420401 |

# Proposed Sequence of Study

## Semester 1

| Course No. | Course Name | Contact & Credit Hrs | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Lab | Tut | Cr. Hrs. | |
| 101000 | Orientation | 1 | 0 | 0 | 0 | - |
| 102110 | Islamic Culture | 3 | 0 | 1 | 3 | - |
| 102140 | Communication Skills in Arabic Language | 3 | 0 | 0 | 3 | - |
| 103110 | Statistics | 2 | 2 | 0 | 3 | - |
| 400291 | Introduction to Management | 3 | 0 | 0 | 3 | - |
| xxxxxxx | University Elective Course 1 | 3 | 0 | 0 | 3 | - |
| Total | | 15 | 2 | 1 | 15 | |

## Semester 2

| Course No. | Course Name | Contact & Credit Hrs | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec. | Lab | Tut | Cr. Hrs. | |
| 104110 | Computer Applications | 2 | 2 | 0 | 3 | - |
| 117140 | Environmental Sciences | 3 | 0 | 0 | 3 | - |
| 102110 | Principles of Accounting I | 3 | 0 | 0 | 3 | - |
| 102211 | Statistics for Business | 3 | 0 | 0 | 3 | 103110 |
| xxxxxxx | University Elective Course 2 | 3 | 0 | 0 | 3 | - |
| Total | | 14 | 2 | 0 | 15 | |

## Semester 3

| Course No | Course Name | Contact & Credit Hrs | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Lab | Tut | Cr. Hrs. | |
| 311102 | PC Applications/ Management | 2 | 2 | 0 | 3 | 104110 |
| 400393 | Microeconomics | 3 | 0 | 0 | 3 | - |
| 400394 | Principles of Accounting II | 3 | 0 | 0 | 3 | 400292 |
| 400395 | Principles of Marketing | 3 | 0 | 0 | 3 | 400291 |
| 400396 | Fundamentals of Finance | 3 | 0 | 0 | 3 | 400291 |
| xxxxxxx | University Elective Course 3 | 3 | 0 | 0 | 3 | - |
| Total | | 17 | 2 | 0 | 18 | |

## Semester 4

| Course No | Course Name | Contact & Credit Hrs | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Lab | Tut | Cr. Hrs. | |
| 110140 | Mathematics for Management | 3 | 0 | 2 | 3 | - |
| 310202 | IT in Business | 2 | 2 | 0 | 3 | 311102 |
| 420401 | Intermediate Accounting I | 3 | 0 | 0 | 3 | 400394 |
| 400410 | Macroeconomics | 3 | 0 | 0 | 3 | 400393 |
| 400411 | Business Law | 3 | 0 | 0 | 3 | - |
| xxxxxxx | College Elective Course 1 | 3 | 0 | 0 | 3 | - |
| Total | | 17 | 2 | 2 | 18 | |

## Semester 5

| Course No | Course Name | Contact & Credit Hrs | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Lab | Tut | Cr. Hrs. | |
| 306460 | Data Base Management Systems | 2 | 2 | 0 | 3 | 400394 |
| 400408 | Business Communications | 3 | 0 | 0 | 3 | 400291 |
| 420501 | Intermediate Accounting II | 3 | 0 | 0 | 3 | 420401 |
| 400513 | Quantitative Analysis | 3 | 0 | 0 | 3 | 102211, 110140 |
| 420603 | Cost Accounting | 3 | 0 | 0 | 3 | 400394 |
| xxxxxxx | College Elective Course 2 | 3 | 0 | 0 | 3 | - |
| Total | | 17 | 2 | 0 | 18 | |

## Semester 6

| Course No | Course Name | Contact & Credit Hrs | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Lab | Tut | Cr. Hrs. | |
| 400409 | Organizational Behavior | 3 | 0 | 0 | 3 | 400291 |
| 400502 | Management Information Systems | 3 | 0 | 0 | 3 | 400291, 306460 |
| 420502 | Managerial Accounting | 3 | 0 | 0 | 3 | 420603 |
| 420602 | Auditing | 3 | 0 | 0 | 3 | 420401 |
| 420705 | Governmental Accounting | 3 | 0 | 0 | 3 | 420401 |
| xxxxxxx | College Elective Course 1 | 3 | 0 | 0 | 3 | - |
| | Total | 18 | 0 | 0 | 18 | |

## Semester 7

| Course No | Course Name | Contact & Credit Hrs | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec. | Lab | Tut | Cr. Hrs. | |
| 400516 | Supervised Training | - | - | - | 3 | 96 Cr. Hrs. |
| 420604 | Advanced Accounting | 3 | 0 | 0 | 3 | 420501 |
| 420706 | Advanced Auditing | 3 | 0 | 0 | 3 | 420602 |
| xxxxxx | Major Elective Course 1 | 3 | 0 | 0 | 3 | - |
| | Total | 9 | 0 | 0 | 12 | |

## Semester 8

| Course No | Course Name | Contact & Credit Hrs | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec. | Lab | Tut | Cr. Hrs. | |
| 420707 | Accounting Theory | 3 | 0 | 0 | 3 | 420604 |
| 420802 | Financial Management & Control | 3 | 0 | 0 | 3 | 420604, 420502 |
| 420810 | Computerized Accounting Info. Systems | 2 | 2 | 0 | 3 | 420401, 311102 |
| 420811 | Graduation Project | 3 | 0 | 0 | 3 | 102 Cr. Hrs. |
| | Total | 11 | 2 | 0 | 12 | |

# DEPARTMENT OF MARKETING

The BSc in Marketing degree program offered at AUST provides education of international standard and caters to the needs of all the employment sectors in the UAE and the GCC. Graduates from this program are capable individuals who can address the challenging issues of businesses and the dynamic market. The program also equips students with the academic credentials required to pursue higher education in the national and international universities.

# Bachelor of Science in Marketing

## Mission

The mission of the marketing degree program is derived mainly from the philosophy and vision of AUST. Hence, the program's mission is in line with the mission and objectives of the College of Business Administration. The focus of this mission is to impart high quality education that will develop the skills and knowledge of students in areas that will enable them to perform efficiently and effectively in their careers. Accordingly, both the structure of the course and the curricula are designed to achieve these ends.

## Goals

*The goals of the program are to enable students to:*

- Gain the knowledge and understanding of theoretical and applied aspects of marketing, as well as specialized areas, that will enable them to perform effectively in a variety of positions in the marketing profession
- Analyze and communicate marketing knowledge using information technology to
- facilitate decision-making processes

- Develop the communication, teamwork, critical thinking and problem-solving skills required in marketing activities in organizations
- Conduct research in marketing and related areas

## Objectives

*The objectives of the program are to enable students to:*

- Understand the role and practice of marketing within an organization and develop an understanding of theoretical and applied aspects of marketing
- Understand international and national marketing strategies
- Understand core concepts and comprehend and apply distribution strategies
- Understand core concepts, comprehend and be adept in service marketing
- Become proficient in integrated marketing communications and comprehend buyer-seller behavior within the context of the overall market environment
- Use computer-based tools to identify and analyze marketing data and information to facilitate decision-making processes
- Consolidate marketing information with the various marketing activities
- Communicate effectively and perform in and lead teams to achieve organizational objectives effectively
- Use marketing knowledge and information to develop the critical thinking and problem solving skills needed to function effectively in organizations
- Carry out research

## Admission Requirements

The normal entry requirement is the UAE Secondary School Certificate, or an equivalent qualification, with a minimum average grade of 60 percent, & TOEFL certificate with a minimum score of 500.

## Career Opportunities

Graduates of the BSc in Marketing degree program are equipped for employment in marketing departments in the following sectors: government, multinational subsidiaries, national companies (especially those operating in distribution), manufacturing, advertising and marketing research. In addition, there are employment opportunities in the banking and hospitality sectors, the travel industry, insurance companies, advertising agencies, the media and other organizations that have marketing departments.

## Graduation Requirements

Students will be awarded the Bachelor of Science in Marketing degree upon fulfillment of the following requirements:

- Successful completion of 126 credit hours, which normally takes eight semesters
- 8 weeks of industrial internship (after the completion of 96 credit hours including seven marketing core courses), which is equivalent to three credit hours
- A minimum Cumulative Grade Point Average of 2.0

## Degree Requirements

The BSc degree in Marketing requires the completion of 126 credit hours distributed according to the following plan:

| Type of Courses | Credit Hours |
|---|---|
| 1. University General Education Requirements | |
| (a) University Required Courses | 15 |
| (b) University Elective Courses | 9 |
| 2. College Requirements | |
| (a) College Required Courses | 54 |
| (b) College Elective Courses | 9 |
| 3. Major Requirements | |
| (a) Major Required Courses | 33 |
| (b) Major Electives Courses | 6 |
| Total Credit Hours | 126 |

# UNIVERSITY GENERAL EDUCATION REQUIREMENTS

## (a) University Compulsory Courses (15 Credit Hours)

| Course No. | Course Title | Cr. Hrs. | Prerequisite |
|---|---|---|---|
| 101000 | Orientation | 0 | - |
| 102110 | Islamic Culture | 3 | - |
| 102140 | Communication Skills in Arabic Language | 3 | - |
| 103110 | Statistics | 3 | - |
| 102130 | Environmental Sciences | 3 | - |
| 104110 | Computer Applications | 3 | - |

## (b) University Elective Courses (9 Credit Hours)

| Course No. | Course Title | Cr. Hrs. | Prerequisite |
|---|---|---|---|
| 102120 | The Miraculousness of the Holy Qur'an | 3 | - |
| 103130 | Research Methodology | 3 | - |
| 112110 | Principles of Architecture & Art | 3 | - |
| 112120 | Principles of Interior Design | 3 | - |
| 112130 | Modern Technology and Society | 3 | - |
| 113110 | Internet Concepts | 3 | - |
| 113120 | Introduction to Information Systems | 3 | - |
| 114110 | Economic Concepts | 3 | - |
| 114120 | Entrepreneurship Development | 3 | - |
| 115110 | History of Science in Islam | 3 | |
| 115120 | Scientific Pioneering | 3 | - |
| 115130 | General Psychology | 3 | - |
| 115140 | Principle of Mathematics | 3 | - |
| 115150 | The Art of Expression and Writing | 3 | - |
| 115160 | Emirates Society | 3 | - |
| 115170 | Education Technology | 3 | - |
| 117110 | General Chemistry | 3 | - |
| 117120 | Fundamental of Human Nutrition | 3 | - |
| 117130 | First Aid | 3 | - |
| 117150 | Applications of Remote Sensing | 3 | - |
| 118110 | Principles of Ethics | 3 | - |
| 118120 | General Biology | 3 | - |
| 118130 | Oral Health | 3 | - |

| Course No. | Course Title | Cr. Hrs. | Prerequisite |
|---|---|---|---|
| 118140 | General Principles of Epidemiology | 3 | - |
| 118150 | CPR-Cardio Pulmonary Resuscitation | 3 | - |
| 119110 | Communication Skills | 3 | - |
| 119120 | Introduction to Communication Sociology | 3 | - |
| 119130 | Information Society | 3 | - |
| 120115 | Legal  Culture | 3 | - |

## COLLEGE REQUIREMENTS (63 Credit Hours)

### a. College Required Courses (54 Credit Hours)

| Course No | Course Title | Cr. Hrs. | Prerequisite |
|---|---|---|---|
| 110140 | Math for Management | 3 | - |
| 400393 | Micro Economics (G.E) | 3 | - |
| 102211 | Statistics for Business | 3 | 103110 |
| 311102 | PC Application | 3 | 104110 |
| 400292 | Principles of Accounting I | 3 | - |
| 400513 | Quantitative Analysis | 3 | 102211, 110140 |
| 400394 | Principles of Accounting II | 3 | 400292 |
| 400396 | Fundamentals of Finance | 3 | 400292 |
| 400291 | Introduction  to Management | 3 | - |
| 400408 | Business Communication | 3 | 400291 |
| 400395 | Principles of Marketing | 3 | 400291 |
| 400411 | Business Law | 3 | 400291 |
| 400615 | Management Information Systems | 3 | 400291, 306460 |
| 400409 | Organizational Behavior | 3 | 400291 |
| 400410 | Macroeconomics | 3 | 400393 |
| 306460 | Data Base Management Systems | 3 | 311102 |
| 310202 | IT in Business | 3 | 311102 |
| 400516 | Supervised Training | 3 | 96 Cr. Hrs incl. 7  Marketing core courses |

### b. College Elective Courses (9 Credit Hours)

| Course No | Course Title | Cr. Hr. | Prerequisite |
|---|---|---|---|
| 400419 | Business Ethics. | 3 | 400291 |
| 400512 | Economic Development of GCC Countries | 3 | 400410 |

| Course No | Course Title | Cr. Hr. | Prerequisite |
|-----------|--------------|---------|--------------|
| 400307 | Business Research Methods | 3 | 400291, 102211 |
| 400522 | Managerial Economics | 3 | 400410 |
| 400523 | Public Relations | 3 | 400408 |
| 400524 | Feasibility Studies | 3 | 400393, 400396 |

## MAJOR REQUIREMENTS (39 Credit Hours)

### (a) Major Required Courses (33 Credit Hours)

| Course No. | Course Title | Cr. Hr. | Prerequisite |
|------------|--------------|---------|--------------|
| 430501 | Marketing Research | 3 | 102211, 103130 |
| 430602 | Consumer Behavior | 3 | 400395 |
| 430603 | Advertising and Promotion | 3 | 430602 |
| 430604 | Marketing Channels | 3 | 400395 |
| 430606 | Personal Selling | 3 | 400395, 400408 |
| 430706 | Business to Business Marketing | 3 | 400395 |
| 430707 | Service Marketing | 3 | 400395 |
| 430808 | International Marketing | 3 | 400395 |
| 430809 | Marketing Management | 3 | 430602, 430501 |
| 430810 | Computer Application in Marketing | 3 | 430809 |
| 430811 | Graduation Project/Marketing | 3 | 102 cr. hrs. |

### b. Major Elective Courses (6 Credit Hours)

| Course No | Course Title | Cr. Hr | Prerequisite |
|-----------|--------------|--------|--------------|
| 430612 | E-Marketing | 3 | 400395 |
| 430613 | Product and Brand Management | 3 | 400395 |
| 410704 | Purchasing and Material Management | 3 | 400291, 400395 |
| 430714 | Retail Marketing | 3 | 400395 |
| 430715 | Selected Topics in Marketing | 3 | 400395 |

# Proposed Sequence of Study

## Semester 1

| Course No | Course Title | Contact & Credit Hrs | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Lab | Tut | Cr. Hrs. | |
| 101000 | Orientation | 1 | 0 | 0 | 0 | - |
| 102110 | Islamic Culture | 3 | 0 | 1 | 3 | - |
| 102140 | Communication Skills in Arabic Language | 3 | 0 | 0 | 3 | - |
| 103110 | Statistics | 2 | 2 | 0 | 3 | - |
| 400291 | Introduction to Management | 3 | 0 | 0 | 3 | - |
| xxxxxxx | University Elective Course 1 | 3 | 0 | 0 | 3 | - |
| Total | | 15 | 2 | 1 | 15 | |

## Semester 2

| Course No | Course Title | Contact & Credit Hrs | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Lab | Tut | Cr. Hrs. | |
| 104110 | Computer Applications | 2 | 2 | 0 | 3 | - |
| 1101140 | Mathematics for Management | 3 | 0 | 2 | 3 | - |
| 102130 | Environmental Sciences | 3 | 0 | 0 | 3 | - |
| 400292 | Principles of Accounting I | 3 | 0 | 0 | 3 | - |
| 102211 | Statistics for Business | 3 | 0 | 0 | 3 | 103110 |
| Total | | 17 | 2 | 2 | 18 | |

## Semester 3

| Course No | Course Title | Contact & Credit Hrs | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Lab | Tut | Cr. Hrs. | |
| 311102 | PC Applications/ Management | 2 | 2 | 0 | 3 | 104110 |
| 400393 | Microeconomics | 3 | 0 | 0 | 3 | - |
| 400394 | Principles of Accounting II | 3 | 0 | 0 | 3 | 400292 |
| 400395 | Principles of Marketing | 3 | 0 | 0 | 3 | 400291 |
| 400396 | Fundamentals of Finance | 3 | 0 | 0 | 3 | 400291 |
| xxxxxxx | University Elective Course 2 | 3 | 0 | 0 | 3 | - |
| Total | | 17 | 2 | 0 | 18 | |

## Semester 4

| Course No | Course Title | Contact & Credit Hrs | | | | Prerequisite |
|-----------|--------------|-----|-----|-----|----------|--------------|
| | | Lec | Lab | Tut | Cr. Hrs. | |
| 310202 | IT in Business | 2 | 2 | 0 | 3 | 311102 |
| 400408 | Business Communications | 3 | 0 | 0 | 3 | 400291 |
| 400410 | Macroeconomics | 3 | 0 | 0 | 3 | 400393 |
| 400411 | Business Law | 3 | 0 | 0 | 3 | - |
| 420604 | Marketing Channels | 3 | 0 | 0 | 3 | 400395 |
| xxxxxxx | College Elective Course 1 | 3 | 0 | 0 | 3 | - |
| Total | | 17 | 2 | 0 | 18 | |

## Semester 5

| Course No | Course Title | Contact & Credit Hrs | | | | Prerequisite |
|-----------|--------------|-----|-----|-----|----------|--------------|
| | | Lec | Lab | Tut | Cr. Hrs. | |
| 306460 | Data Base Management Systems | 2 | 2 | 0 | 3 | 3111102 |
| 400513 | Quantitative Analysis | 3 | 0 | 0 | 3 | 102211, 110140 |
| 430602 | Consumer Behavior | 3 | 0 | 0 | 3 | 400395 |
| 430606 | Personal Selling | 3 | 0 | 0 | 3 | 400395, 400408 |
| xxxxxxx | University Elective Course 3 | 3 | 0 | 0 | 3 | - |
| xxxxxxx | College Elective course 2 | 3 | 0 | 0 | 3 | - |
| Total | | 17 | 2 | 0 | 18 | |

## Semester 6

| Course No | Course Title | Contact & Credit Hrs | | | | Prerequisite |
|-----------|--------------|-----|-----|-----|----------|--------------|
| | | Lec | Lab | Tut | Cr. Hrs. | |
| 400409 | Organizational Behavior | 3 | 0 | 0 | 3 | 400291 |
| 430501 | Marketing Research | 3 | 0 | 0 | 3 | 102211, 103130 |
| 430706 | Business-to-Business Marketing | 3 | 0 | 0 | 3 | 400395 |
| 430707 | Service Marketing | 3 | 0 | 0 | 3 | 400395 |
| xxxxxxx | College Elective Course 3 | 3 | 0 | 0 | 3 | - |
| Total | | 15 | 0 | 0 | 15 | |

## Semester 7

| Course No | Course Title | Contact & Credit Hrs | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Lab | Tut | Cr. Hrs. | |
| 400516 | Supervised Training | - | - | - | 3 | 96 cr. hrs |
| 400615 | Management Information Systems | 3 | 0 | 0 | 3 | 400291, 306460 |
| 430809 | Marketing Management | 3 | 0 | 0 | 3 | 430501, 430602 |
| xxxxxxx | Major Elective Course 1 | 3 | 0 | 0 | 3 | - |
| Total | | 9 | 0 | 0 | 12 | |

## Semester 8

| Course No | Course Title | Contact & Credit Hrs | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Lab | Tut | Cr. Hrs. | |
| 430808 | International Marketing | 3 | 0 | 0 | 3 | 400395 |
| 430810 | Computer Applications in Marketing | 2 | 2 | 0 | 3 | 430809 |
| xxxxxxx | Major Elective Course 2 | 3 | 0 | 0 | 3 | |
| 420811 | Graduation Project/Marketing | 3 | 0 | 0 | 3 | Completion:102 Cr. Hrs |
| Total | | 11 | 2 | 0 | 12 | |

# DEPARTMENT OF FINANCE

The BSc in Finance degree program is designed to develop students' technical and critical thinking and to provide them with an in-depth understanding of financial theory, analytical financial instruments, and dynamics of financial markets. The program prepares students for careers in finance in public, private, as well as non-profit organizations.

# Bachelor of Science in Finance

## Mission

The mission of the finance degree program is to provide an educational experience that develops the student's financial, technical, and critical thinking, communication skills, the ability to integrate both quantitative and qualitative factors into business and finance decisions, and to create and disseminate knowledge concerning value management in each of these fields.

## Goals

The goals of the program are to:

- Deliver to students the functional aspects of all areas of finance
- Enable students to adapt to the changing environment of finance in the real world situation
- Build analytical skills based on critical thinking, reasoning and communication
- Enable students to further their studies in postgraduate and professional programs

## Objectives

*The objectives of the program are to enable students to:*

- Gain an in-depth knowledge of the principles of finance
- Integrate knowledge of the various areas of finance to solve business and finance problems
- Develop a broader understanding of the functions of finance to facilitate effective decision-making processes
- Understand the principles of efficient financial management abilities and strategies
- Understand how changes in the business environment impact the various areas of finance
- Analyze and research business problems from the financial point of view
- Analyze current and emerging issues in finance
- Use financial analytical tools to evaluate financial markets behavior
- Be able to make financial projections for corporations, projects and financial institutions
- Demonstrate the proficiency in oral and written communication needed to make ethical and professional judgments in the financial world

## Admission Requirements

The normal entry requirement for an applicant is the Secondary School Certificate, or an equivalent qualification, with a minimum average grade of 60 percent, & TOEFL certificate with a minimum score of 500.

## Career Opportunities

The degree in finance adequately qualifies graduates for various corporate, financial, and management positions in areas such as Financial Analysis, Capital Budgeting, Cash and Risk Management, Portfolio Management, and Bank Management. It also prepares entrepreneurs operating their own business.

## Graduation Requirements

Students will be awarded the Bachelor of Science in Finance degree upon fulfillment of the following requirements:

- Successful completion of 126 credit hours, which normally takes eight semesters.
- 8 weeks of industrial internship (after the completion of 96 credit hours including seven finance core courses).
- A minimum Cumulative Grade Point Average of 2.0

## Degree Requirements

The BSc degree in Finance requires the completion of 126 credit hours distributed according to the following plan:

| Type of Courses | Credit Hours |
|---|---|
| **1. University General Education Requirements** | |
| (a) University Required Courses | 15 |
| (b) University Elective Courses | 9 |
| **2. College Requirements** | |
| (a) College Required Courses | 54 |
| (b) College Elective Courses | 9 |
| **3. Major Requirements** | |
| (a) Major Required Courses | 33 |
| (b) Major Electives Courses | 6 |
| Total Credit Hours | 126 |

## UNIVERSITY GENERAL EDUCATION REQUIREMENTS

### (a) University Required Courses (15 Credit Hours)

| Course No. | Course Title | Cr. Hrs. | Prerequisite |
|---|---|---|---|
| 101000 | Orientation | 0 | - |
| 102110 | Islamic Culture | 3 | - |
| 102140 | Communication Skills in Arabic Language | 3 | - |
| 103110 | Statistics | 3 | - |

| Course No. | Course Title | Cr. Hrs. | Prerequisite |
|---|---|---|---|
| 102130 | Environmental Sciences | 3 | - |
| 104110 | Computer Applications | 3 | - |

## (b) University Elective Courses (9 Credit Hours)

| Course No. | Course Title | Cr. Hrs. | Prerequisite |
|---|---|---|---|
| 102120 | The Miraculousness of the Holy Qur'an | 3 | - |
| 103130 | Research Methodology | 3 | - |
| 112110 | Principles of Architecture & Art | 3 | - |
| 112120 | Principles of Interior Design | 3 | - |
| 112130 | Modern Technology and Society | 3 | - |
| 113110 | Internet Concepts | 3 | - |
| 113120 | Introduction to Information Systems | 3 | - |
| 114110 | Economic Concepts | 3 | - |
| 114120 | Entrepreneurship Development | 3 | - |
| 115110 | History of Science in Islam | 3 | - |
| 115120 | Scientific Pioneering | 3 | - |
| 115130 | General Psychology | 3 | - |
| 115140 | Principles of Mathematics | 3 | - |
| 115150 | The Art of Expression and Writing | 3 | - |
| 115160 | Emirates Society | 3 | - |
| 115170 | Education Technology | 3 | - |
| 117110 | General Chemistry | 3 | - |
| 117120 | Fundamentals of Human Nutrition | 3 | - |
| 117130 | First Aid | 3 | - |
| 117150 | Applications of Remote Sensing | 3 | - |
| 118110 | Principles of Ethics | 3 | - |
| 118120 | General Biology | 3 | - |
| 118130 | Oral Health | 3 | - |
| 118140 | General Principles of Epidemiology | 3 | - |
| 118150 | CPR-Cardio Pulmonary Resuscitation | 3 | - |
| 119110 | Communication Skills | 3 | - |
| 119120 | Introduction to Communication Sociology | 3 | - |
| 119130 | Information Society | 3 | - |
| 120115 | Legal Culture | 3 | - |

# COLLEGE REQUIREMENTS  (63 Credit Hours)

## a. College Required Courses (54 Credit Hours)

| Course No | Course Title | Cr. Hrs. | Prerequisite |
|---|---|---|---|
| 110140 | Math for Management | 3 | - |
| 400393 | Microeconomics | 3 | - |
| 102211 | Statistics for Business | 3 | 103110 |
| 311102 | PC Application | 3 | 104110 |
| 400292 | Principles of Accounting I | 3 | - |
| 400513 | Quantitative Analysis | 3 | 102211, 110140 |
| 400394 | Principles of Accounting II | 3 | 400292 |
| 400396 | Fundamentals of Finance | 3 | 400292 |
| 400291 | Introduction  to Management | 3 | - |
| 400408 | Business Communication | 3 | 400291 |
| 400395 | Principles of Marketing | 3 | 400291 |
| 400411 | Business Law | 3 | 400291 |
| 400615 | Management Information Systems | 3 | 400291, 306460 |
| 400409 | Organizational Behavior | 3 | 400291 |
| 400410 | Macroeconomics | 3 | 400393 |
| 306460 | Data Base Management Systems | 3 | 311102 |
| 310202 | IT in Business | 3 | 311102 |
| 400516 | Supervised Training | 3 | 96 Cr. Hrs incl. 7 core Finance courses |

## b. College Elective Courses (9 Credit Hours)

| Course No | Course Title | Cr. Hrs. | Prerequisite |
|---|---|---|---|
| 400419 | Business Ethics. | 3 | 400291 |
| 400512 | Economic Development of GCC Countries | 3 | 400410 |
| 400307 | Business Research Methods | 3 | 400291,102211 |
| 400522 | Managerial Economics | 3 | 400410 |
| 400523 | Public Relations | 3 | 400408 |
| 400524 | Feasibility Studies | 3 | 400393, 400396 |

# MAJOR REQUIREMENTS  (39 Credit Hours)

## (a) Major Required Courses (33 Credit Hours)

| Course No. | Course Title | Cr. Hrs. | Prerequisite |
|---|---|---|---|
| 440501 | Corporate Finance | 3 | 400396 |
| 440602 | Financial Risk & Insurance | 3 | 440501 |
| 440603 | Financial Planning and Control | 3 | 400396 |
| 440604 | Commercial Banking | 3 | 400396 |
| 440705 | Financial Markets | 3 | 440604 |
| 440611 | Portfolio Management & Theory | 3 | 440705 |
| 440707 | International Finance | 3 | 440501 |
| 440808 | Selected Topics in Finance | 3 | 440501 |
| 440809 | Investments | 3 | 440602 |
| 440810 | Computer Application in Finance | 3 | 306460, 440501 |
| 440811 | Graduation Project | 3 | 102 Credit Hrs |

## b. Major Elective Courses (6 Credit Hours)

| Course No. | Course Title | Cr. Hrs. | Prerequisite |
|---|---|---|---|
| 440612 | Personal Finance | 3 | 400396 |
| 420401 | Intermediate Accounting 1 | 3 | 400394 |
| 440715 | Islamic Banking | 3 | 440604 |
| 410707 | Management of Fin. Institutions | 3 | 400396, 400410 |
| 400420 | Money & Financial Systems | 3 | 400396 |

# Proposed Sequence of Study

## Semester 1

| Course No. | Course Name | Contact & Credit Hrs | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Lab | Tut | Cr. Hrs. | |
| 101000 | Orientation | 1 | 0 | 0 | 0 | - |
| 102110 | Islamic Culture | 3 | 0 | 1 | 3 | - |
| 102140 | Communication Skills in Arabic Language | 3 | 0 | 0 | 3 | - |
| 103110 | Statistics | 2 | 2 | 0 | 3 | - |
| 400291 | Introduction to Management | 3 | 0 | 0 | 3 | - |
| xxxxxxx | University Elective Course 1 | 3 | 0 | 0 | 3 | - |
| Total | | 15 | 2 | 1 | 15 | |

## Semester 2

| Course No. | Course Name | Contact & Credit Hrs | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Lab | Tut | Cr. Hrs. | |
| 104110 | Computer Applications | 2 | 2 | 0 | 3 | - |
| 110140 | Mathematics for Management | 3 | 0 | 2 | 3 | - |
| 102130 | Environmental Sciences | 3 | 0 | 0 | 3 | - |
| 400292 | Principles of Accounting I | 3 | 0 | 0 | 3 | - |
| 102211 | Statistics for Business | 3 | 0 | 0 | 3 | 103110 |
| Total | | 17 | 2 | 2 | 18 | |

## Semester 3

| Course No. | Course Name | Contact & Credit Hrs | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Lab | Tut | Cr. Hrs. | |
| 311102 | PC Applications/ Management | 2 | 2 | 0 | 3 | 104110 |
| 400393 | Microeconomics | 3 | 0 | 0 | 3 | - |
| 400394 | Principles of Accounting II | 3 | 0 | 0 | 3 | 400292 |
| 400395 | Principles of Marketing | 3 | 0 | 0 | 3 | 400291 |
| 400396 | Fundamentals of Finance | 3 | 0 | 0 | 3 | 400292 |
| xxxxxxx | University Elective Course 2 | 3 | 0 | 0 | 3 | - |
| Total | | 17 | 2 | 0 | 18 | |

## Semester 4

| Course No. | Course Name | Contact & Credit Hrs | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Lab | Tut | Cr. Hrs. | |
| 110140 | Math  For Management | 3 | 0 | 2 | 3 | - |
| 310202 | IT in Business | 2 | 2 | 0 | 3 | 311102 |
| 400409 | Organizational Behavior | 3 | 0 | 0 | 3 | 400291 |
| 400411 | Business Law | 3 | 0 | 0 | 3 | - |
| 440501 | Corporate Finance | 3 | 0 | 0 | 3 | 400396 |
| Total | | 14 | 2 | 2 | 15 | |

## Semester 5

| Course No. | Course Name | Contact & Credit Hrs | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Lab | Tut | Cr. Hrs. | |
| 306460 | Data Base Management systems | 2 | 2 | 0 | 3 | 311102 |
| 400408 | Business Communications | 3 | 0 | 0 | 3 | 400291 |
| 400513 | Quantitative Analysis | 3 | 0 | 0 | 3 | 102211, 110140 |
| 440603 | Financial Planning & Control | 3 | 0 | 0 | 3 | 400396 |
| 440604 | Commercial Banking | 3 | 0 | 0 | 3 | 400396 |
| xxxxxxx | College Elective Course 2 | 3 | 0 | 0 | 3 | - |
| Total | | 17 | 2 | 0 | 18 | |

## Semester 6

| Course No. | Course Name | Contact & Credit Hrs | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Lab | Tut | Cr. Hrs. | |
| 400615 | Management Information Systems | 3 | 0 | 0 | 3 | 306460,  400291 |
| 440602 | Financial Risk & Insurance | 3 | 0 | 0 | 3 | 440501 |
| 440707 | International Finance | 3 | 0 | 0 | 3 | 440501 |
| 440808 | Selected Topics in Finance | 3 | 0 | 0 | 3 | 440501 |
| xxxxxxx | Major  Elective Course 1 | 3 | 0 | 0 | 3 | - |
| Total | | 15 | 0 | 0 | 15 | |

## Semester 7

| Course No. | Course Name | Contact & Credit Hrs | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Lab | Tut | Cr. Hrs. | |
| 400516 | Supervised Training | - | - | - | 3 | 96  Cr. Hrs. |
| 440705 | Financial Markets | 3 | 0 | 0 | 3 | 440604 |
| 440809 | Investments | 3 | 0 | 0 | 3 | 440602 |
| 440810 | Computer Applications in Finance | 3 | 0 | 0 | 3 | 306460,  440501 |
| Total | | 9 | 0 | 0 | 12 | |

## Semester 8

| Course No. | Course Name | Contact  & Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Lab | Tut | Cr. Hrs. | |
| 440611 | Portfolio Management & Theory | 3 | 0 | 0 | 3 | 440705 |
| xxxxxxx | College  Elective Course 3 | 3 | 3 | 0 | 3 | |
| xxxxxxx | Major Elective Course 2 | 3 | 0 | 0 | 3 | |
| 440811 | Graduation Project/Finance | 3 | 0 | 0 | 3 | 102 Cr. Hrs |
| Total | | 12 | 0 | 0 | 12 | |

# Course Descriptions

## Courses offered by the Management Department

### 400 291 Introduction to Management (3,0,0,3)

This introductory course provides an overview of the field of management. The topics covered are designed around the key functions of management: planning, organizing, leading, and controlling. Students are exposed to the development of management theories and approaches, managerial decision-making, business environment, business ethics and social responsibility.

### 400 307 Business Research Methods (3,0,0,3)

This course provides an introduction to research methods in social sciences in general and business administration in particular. The primary aim of the course is to equip students with the essential research techniques they would use in advanced specialized courses such as marketing research, feasibility studies and project planning, and the graduation project. The course will cover a range of topics including, in particular, research designs, sampling theory, data collection tools, questionnaire development and program evaluation methodology. The course will also cover basic data analysis methods involving both exploratory and hypothesis testing statistical techniques.

*Pre-requisites: 102 211, 400 291*

### 400 408 Business Communications (3,0,0,3)

The course aims to equip students with effective business communication skills, providing thorough practice in writing business letters, memos, reports, resumes and job applications. In addition to developing written communication, the course teaches verbal communication skills, for example public speaking, interviewing and other forms of communication. The entire teaching process is focused on building effective communication skills.

*Pre-requisite: 400 291*

### 400 409 Organizational Behavior (3,0,0,3)

This course surveys the background and development of organizational behavior, and examines major conceptual models in the field. A number of topics are explored in detail, including personality, perception, motivation, groups and teams, communication, leadership, conflict and negotiation, and organizational sources of stress and coping strategies. Issues relating to organizational change and development are given special attention.

*Pre-requisite: 400 291*

### 400 411 Business Law (3,0,0,3)

The aim of this course is to review basic legal principles and sources of contract law, background of law and legal theory. The following topics are covered in detail: formation of contracts, modifications, terminations, remedies, award law, pricing, patent, business organizations, company law, sales of goods, transfer of ownership rights, employment and health and safety laws.

*Pre-requisite: 400 291*

### 400 615 Management Information Systems (3,0,0,3)

This course provides an overview of computers and information processing. It covers the following topics in detail: management information system concepts, information processing applications, data handling process, data processing and automation, fundamentals of any system and system design, and development and implementation.

*Pre-requisites: 400 291, 306460*

## 400 419 Business Ethics (3,0,0,3)

The aim of this course is to provide comprehensive and systematic coverage of a wide range of ethical issues in all functional areas of business. Using cases, vignettes and discussion points, the course will examine the ethical problems involved in real-life business situations. Some of the major topics to be covered include: ethical theory and business practice, corporate social responsibility, rights and obligations of employees and employers, ethical issues in international business, and social and economic justice.

*Pre-requisite: 400 291*

## 400 524 Feasibility Studies (3,0,0,3)

Feasibility studies and project evaluation have become increasingly important, since they signal the success of any industrial, tourism or investment project. This course is designed to introduce students to the concepts and process of feasibility studies and project evaluation. It explains how to prepare feasibility studies and project evaluation, and how to benefit from them in the investment decision-making process. Feasibility studies and project evaluation depend on collecting and analyzing marketing, technical, administrative and financial data and information.

*Pre-requisites: 400 393, 400 396*

## 410 501 Production and Operations Management (3,0,0,3)

This course is designed to cover the principles of production and operations management as they relate to both manufacturing and service operations. The course will examine the following topics: decision-making process, forecasting, operations strategy, production planning, scheduling, productivity, quality control, and future trends in production and operations management.

*Pre-requisites: 103 110, 400 291*

## 410 602 Human Resource Management (3,0,0,3)

The aim of this course is to survey the principles and practices in managing human resources. The course covers a number of basic topics, for example job analysis and job design techniques, human resource policies, human resource acquisition and maintenance strategies, recruitment, selection, development and training, compensation, health and safety issues and policies. The topics of labor relations and collective bargaining also receive careful attention.

*Pre-requisite: 400 291*

## 410 603 International Business (3,0,0,3)

This course covers a number of topics of both a general and specific nature. It examines the objectives and motives of international companies (MNCs) for operating internationally, and the strategies they use to achieve global presence. Special attention is given to the following topics: theories of international trade, domestic trade, free trade and protectionism, tariffs, foreign exchange, foreign direct investments (FDI), international financial institutions, international corporate planning and competitive strategies.

*Pre-requisites: 400 291, 400 410*

## 410 704 Purchasing and Materials Management (3,0,0,3)

This course offers a survey of the principles and techniques used in purchasing and materials management. It examines the following topics: recognition of materials needs, the acquisition process and the overall supply management issues and policies. Within these broader topics, the course looks at techniques used in materials requirement planning, stock and inventory control, transportation, stores management, quality and quality assurance, JIT and TQM. The course also examines the purchasing and supply management processes and methods used by governments, non-profit and service organizations.

*Pre-requisite: 410 501*

## 410 706 Strategic Management (3,0,0,3)

This advanced course focuses on all aspects of the strategic management process, including decision-making, company objectives, strategies, implementation and outcome assessment. The course develops a thorough understanding among students of policy formulation and evaluation with special attention to the capabilities and competencies of a firm. The course also addresses issues relating to resource analysis and allocation techniques, and the management of strategic change.

*Pre-requisites: 400 291,400 409*

## 410 808 Organizational Theory and Design (3,0,0,3)

The primary aim of this course is to expose students to the evolution of organization theory, and the contribution of different schools of thought to the development of classical and contemporary theoretical perspectives. The topics of bureaucracy, power and politics, organizational structures and technology, and emerging design options will be extensively examined. The course also looks at the issues of information and control, organizational renewal and learning, techno-structural change and adaptive capacity of organizations. Case studies and actual examples from a range of firms will be used to investigate the application of organization theory to management issues.

*Pre-requisite: 400 409*

## 410 909 Selected Topics in Management (3,0,0,3)

This is an advanced course in management. Its primary aim is to offer a more thorough examination of selected topics. The course instructor will select topics keeping in view students' interests and the availability of teaching material and resources. In general, an attempt will be made to include topics that have received little attention in other management courses, or topics in new areas that are not covered in the prescribed syllabus. The choice of topics is expected to vary from semester to semester.

*Pre-requisite: 410 706*

## 410 612 Management of Small Business (3,0,0,3)

The course is designed to answer the fundamental question that students and aspiring entrepreneurs often ask: how can I start and manage my own business? With this objective, the course discusses different types of businesses, legal organizations, accounting and financial requirements. Other topics covered in the course include: obtaining capital, controlling inventory, setting prices, staffing, marketing strategies, growth and expansion decisions and strategies.

*Pre-requisite: 400 291*

## 410 712 Total Quality Management (3,0,0,3)

This course offers an introduction to principles and philosophy of Total Quality Management. It draws upon the work of experts such as Edwards Deming, Joseph Juran, Philip Crosby and Genichi Taguchi to develop an understanding of the concepts of quality from the perspectives of customers and product/service organizations. The course also evaluates the criteria used in well-known quality awards (e.g., The Malcolm Balding National Quality Award, and ISO 9000, as well as local UAE quality awards), and reviews the performance of selected quality-award winning companies.

*Pre-requisite: 410 501*

## 400 513 Quantitative Analysis (2,2,0,3)

The aim of this course is to review basic quantitative methods used in business decision-making. The major focus of the course will be on decision-making under uncertainty and certainty such as linear programming. Some of the specific topics to be covered will include: problem formulation, graphic solutions and different forms of linear programming

such as transportation and assignment models, queuing theory, decision analysis, inventory systems and forecasting.

*Pre-requisites: 102 211, 110 140*

# Courses Offered by the Accounting Department

## 400 292 Principles of Accounting I (3,0,0,3)

Accounting is something that affects people in their personal lives just as much as it affects very large businesses. Financial accounting is concerned with the provision of accounting information to owners, investors and other external users. The term accounting may refer to different activities, for example collecting, recording, processing and communicating economic data to produce useful accounting information. This course is a study of the fundamental principles and procedures of accounting as applied to sole proprietorships, partnerships and corporations.

## 400 394 Principles of Accounting II (3,0,0,3)

The users of accounting information need complete and comparable information to assess company profitability and financial position. The course provides details on the preparation of financial statements (balance sheet, income statement, and statement of cash flow) as well as the accounting treatment of their components

## 420 401 Intermediate Accounting I (3,0,0,3)

Like other human activities, accounting is largely a product of its environment. Therefore, accounting objectives are not the same today as they were in the past. To provide managers and other interested parties with useful information, they must know how this information can be generated. "Accountants must act as well as think," therefore it is important for business administration students to understand how accounting reports are prepared, as well as why. The course places particular emphasis on valuation procedures and alternative accounting treatments of various assets and abilities.

*Pre-requisite: 400 394*

## 420 501 Intermediate Accounting II (3,0,0,3)

Like other human activities, accounting is largely a product of its environment. Therefore, accounting objectives are not the same today as they were in the past. To provide managers and other interested parties with useful information, they must know how this information can be generated. "Accountants must act as well as think," therefore it is important for business administration students to understand how accounting reports are prepared, as well as why. The course places particular emphasis on valuation procedures and alternative accounting treatments of various assets and abilities.

*Pre-requisite: 420 401*

## 420 502 Managerial Accounting (3,0,0,3)

Managers in every organization are better equipped to perform their duties when they have a reasonable grasp of accounting data. Decision-making which is "the choice of alternative courses of action" is the core of the management process, that depends ultimately on useful accounting information. This type of information will be provided through management accounting, which refers to accounting information developed for managers within an organization. The course is designed primarily for students who have studied basic accounting for two semesters. Emphasis is placed on accounting as a tool for planning and control.

*Pre-requisite: 420 603*

### 420 705 Governmental Accounting (3,0,0,3)

The aim of this course is to equip the students with the theory and practice of fund accounting in government units and not-for-profit organizations. In the process, the course discusses all issues related to the preparation of financial statements of the government units and non-profit organizations.

*Pre-requisite: 420401*

### 420 602 Auditing (3,0,0,3)

Auditing is interdisciplinary in its scope and methodology, encompassing accounting theory and applications, legal aspects, managerial issues, environmental factors and computer processing. In its modern sense, an audit is a process whereby the accounts of business entities and managerial performance are subjected to scrutiny to develop an opinion on fairness of financial statements and effectiveness of management. The general concern of auditing could be derived from the famous statement of Confucius: "The aim of the superior man is truth." This course is designed to introduce students to basic concepts and standards. Concentration is mainly on auditing standards, ethics, principles and procedures used by external auditors in conducting financial and managerial audit.

*Pre-requisite: 420 401*

### 420 603 Cost Accounting (3,0,0,3)

The relevance of information depends on the decision being made. Decision-making is essentially choosing among several courses of action. Accountants have an important role in the decision-making process, not as decision-makers but as collectors and reporters of relevant information. The accountant's role in decision-making is primarily that of a technical expert on cost analysis, cost control and cost reduction, information that will lead to the best decision on production, marketing, profitability, performance evaluation, transfer pricing and capital budgeting. The study of the basic concepts and practical aspects of cost accounting is the primary concentration of this course.

*Pre-requisite: 400 394*

### 420 604 Advanced Accounting (3,0,0,3)

In most business combinations, one company acquires control over the net assets of another. The transfer of control from one group of owners to another affects the economic interests of many people, including the owners, managers, creditors and customers. Although the single proprietorship is the most common form of business in the Arab world, and although the corporate form of organization accounts for the largest volume of business, the partnership form is widely used by smaller business entities in the Arabian Gulf region. The study of partnership and consolidated financial statements is the primary concentration of this course. Fundamentals of fair value and equity accounting methods are reviewed.

*Pre-requisite: 420 501*

### 420 706 Advanced Auditing (3,0,0,3)

Many accounting students will choose a career in auditing, either in public accounting, private industry or government. These students need to acquire technical expertise and to understand the theoretical concepts underlying current auditing practice. This course is designed to acquaint the student of accounting with the advanced practical aspects of auditing procedures and techniques with reference to the method of their application in commercial, industrial and other profit making organizations, paying particular attention to assessment of risk, concept of internal control and assertions of assets and liabilities.

*Pre-requisite: 420 602*

## 420 802 Financial Management and Control (3,0,0,3)

This course aims to provide with an understanding of financial statements and the analytical tools available for use in properly managing and adding value to an organization. It focuses on analysis of financial and accounting information and its impact on financial decision-making and profit planning. The course uses some basic applications of statistics in analyzing the impact on financial markets and consequently setting up standards in the field of financial planning in order to ensure the financial stability.

*Pre-requisites: 420 604, 420 502*

## 420 707 Accounting Theory (3,0,0,3)

Accounting theory is concerned with the models, hypotheses and concepts that together form the foundation for financial accounting practice. This course traces the historical development of accounting to gain an understanding of how we arrived at current practices, together with the social, political and economic influences on accounting standards.

*Pre-requisite: 420 604*

## 420 809 Selected Topics in Accounting (3,0,0,3)

This course is to deal with a number of topics of a controversial nature in accounting. The course deals specifically with the theoretical basis and recent professional pronouncements related to some problems in financial reporting and disclosure, application and implications of accounting profit, profit-sharing under the Islamic accounting system, accounting for mergers and acquisitions, as well as accounting under inflationary conditions.

*Pre-requisite: 420 401*

## 420 810 Computerized Accounting Information Systems (2,2,0,3)

The computerized accounting information system combines the skill sets of two areas experiencing rapid growth and change - accounting and information technology. Electronic commerce, direct-business-to-business communication, paperless work process and many other technology-intensive innovations have created new challenges and opportunities for accountants who also have expertise in information systems. Many traditional accounting functions are now embodied in systems that require a different combination of technical and financial knowledge. The CAIS course is designed to provide the combination of knowledge and skill sets to meet the new challenges and opportunities of the information technology world.

*Pre-requisites: 311 102, 420 401*

## 420 612 International Accounting (3,0,0,3)

The global economy is best characterized by a new economic and corporate world in which national boundaries are losing their importance. Multinational and local firms need to be aware of the linkages, ramifications, conditions and demands of the global economy. This course looks at how accounting information that reflects this international reality for both external and internal users can be produced. International accounting takes in all the technical accounting problems in financial accounting, cost accounting, management accounting and auditing that have a bearing on the conduct of foreign operations.

*Pre-requisite: 420 401*

## 420 613 Islamic Accounting (3,0,0,3)

This course provides a broad framework of the structure of Islamic accounting thought. The conceptual framework of accounting, accounting policy, operationalization of terms, financial reporting standardization of accounting

practice and profit and loss sharing in Islam on the most controversial issues at the academic and professional levels.

*Pre-requisite: 420 401*

### 420 714 Oil and Gas Accounting (3,0,0,3)

Since the early 1970s, oil revenues have transformed the Arabian Gulf region into a modern sophisticated industrialized economy. Crude oil exports, which are the preserve of the Arabian Gulf region, remain the mainstay of economic activity. Oil and gas accounting is concerned with the models and concepts that together form the foundation and practice of financial and cost accounting for oil and gas industry.

*Pre-requisite: 420 401*

### 420 716 Taxation Accounting (3,0,0,3)

Managers of local and multinational corporations face different tax systems in different countries that require adequate tax planning and knowledgeable people in the field of taxation accounting. Taxation of business does vary from one country to another. Not only are tax rates different, but also opinions differ as to definitions of taxable income and types of taxes to be used.

*Pre-requisite: 420 401*

## Courses Offered by the Marketing Deptartment:

### 400 395 Principles of Marketing (3,0,0,3)

This introductory course sheds light on the basic concepts of marketing, its varied definitions, origins and evolution through time. It also covers the main components of the marketing program (product, price, place and promotion) on which any attempts to plan marketing efforts rest.

*Pre-requisite: 400 291*

### 400 523 Public Relations (3,0,0,3)

The course represents a survey of the fundamental principles, tools and practices of the public relations profession in addition to the issues involved in designing and evaluating public relations programs to solve specific internal and external communication problems.

*Pre-requisite: 400 408 / Pre-requisite: 400 292*

### 430 707 Service Marketing (3,0,0,3)

The course explores the area of service marketing and identifies the main characteristics that set product and service marketing apart. As such the course represents an extension of the marketing management process beyond its traditional role in the physical products area.

*Pre-requisite: 400 395*

### 430 501 Marketing Research (3,0,0,3)

This course offers a closer review and examination of research techniques applicable to problem-solving and decision-making in marketing and other management fields. The course exposes the students to the complete research process starting with problem formulation and definition of key concepts and analytical techniques, data collection, analysis, interpretation and presentation of findings. Students are required to develop a major marketing research project using appropriate field techniques.

*Pre-requisites: 102 211, 103 130*

## 430 602 Consumer Behavior (3,0,0,3)

The course introduces students to the study of consumer behavior. In so doing, the course borrows key concepts and theories from the behavioral sciences and examines their relevance and usefulness in understanding shopping behavior. Specifically the course traces those forces that shape, constrain and color consumer's buying decisions and their implications for mapping out marketing strategies.

*Pre-requisite: 400 395*

## 430 603 Advertising and Promotion (3,0,0,3)

The prime focus of this course is on the communication function of marketing which is known in the marketing literature as the promotional mix, i.e. advertising, public relations, sales promotion and personal selling. As such the course provides an understanding as to how these variables interact in an integrated field.

*Pre-requisite: 430 602*

## 430 604 Marketing Channels (3,0,0,3)

The course follows an institutional approach to marketing by concentrating on the main institutions which are involved in making goods and services available for use and consumption. Given such a premise, the course sheds light on these institutions and dwells on their nature, types, history, functions and patterns of development.

*Pre-requisite: 400 395*

## 430 706 Business-to-Business Marketing (3,0,0,3)

The focus of this course is on studying and analyzing the unique aspects of marketing goods and services to organizational buyers rather than to ultimate consumers. Towards this end the course constitutes a description and analysis of the institutions and functions of business markets.

*Pre-requisite: 400 395*

## 430 808 International Marketing (3,0,0,3)

The interdependence among countries has forced business organizations to practice marketing beyond domestic boundaries. This course addresses this issue and endeavors to expose the students to international marketing and the application of marketing techniques and strategies in a global environment.

*Pre-requisite: 400 395*

## 430 809 Marketing Management (3,0,0,3)

This is the capstone course in the marketing major. It is intended to help the students integrate the knowledge he acquired in other marketing courses. As such, it is a managerial decision-making process aimed at matching organizational strengths with market opportunities. The course looks at the relationships between the customer, competition and the company. It explores ways for the company to differentiate itself from competition by providing superior value to the customer.

*Pre-requisites: 430 602,430 501*

## 430 810 Computer Applications in Marketing (2,2,0,3)

The course represents an attempt to explore the potential of certain computerized software and programs in summarizing, organizing, interpreting and analyzing marketing data, in addition to the use of a host of advanced statistical packages in predicting specific marketing phenomena.

*Pre-requisite: 430 809*

### 430 612 Electronic Marketing (3,0,0,3)

The course introduces students to the Internet and Internet marketing, in a sense enabling them to use the Internet to market goods and services worldwide. Towards this end students will learn how to create and publish web pages, develop Web marketing skills, promote and sell products over the World Wide Web.

*Pre-requisite: 400 395*

### 430 613 Product and Brand Management (3,0,0,3)

The product (and/or service) plays a central role in the activities of all organizations for it is the medium through which they seek to achieve their objectives and at the same time satisfy their customers. This course is designed to shed light on issues relevant to product and brand management processes. Specifically the course focuses on two major problems: the development and introduction of new products/brands from the idea inception to commercialization, and the marketing of existing brands with emphasis on building, measuring and managing brand equity.

*Pre-requisite: 400 395*

### 430 714 Retail Marketing (3,0,0,3)

The course provides an overview of the field of retailing and endeavors to familiarize the student with the basic concepts and issues that are deemed pertinent in today's world of retailing and retail marketing. These include, but are not limited to, the nature and structure of retail industry, the determinants of successful retail marketing strategies and the fundamental principles of sound retail management.

*Pre-requisite: 400 395*

### 430 715 Selected Topics in Marketing (3,0,0,3)

This course caters for specific issues, topics and recent developments in marketing thought and practice that are new or controversial in nature and that have not adequately covered or addressed in other marketing courses.

*Pre-requisite: 400 395*

### 430 606 Personal Selling (3,0,0,3)

This course focuses on familiarizing students with the concepts, theory and practice of personal selling. Through emphasis on professional salesmanship, the course deals with interpersonal communication and understanding consumer motivation for buying as the foundation to effective selling.

*Pre-requisites: 400 395,400 408*

## Courses Offered by the Finance Department

### 400 396 Fundamentals of Finance (3,0,0,3)

This introductory course discusses in detail basic terms commonly used in finance. Topics covered include functions of financial management, financial analysis and planning, working capital management, the capital budgeting process and long term financing.

*Pre-requisite: 400 292*

### 440 501 Corporate Finance (3,0,0,3)

This course introduces financial issues from the corporate point of view. It includes the concept of net present value (NPV) and valuation of future cash flows. The course extends to the application of NPV in the capital budgeting decisions. The course covers the risk-return concept with the help of CAPM and APT theories. It also highlights long-term financial planning and capital structure decisions.

*Pre-requisite: 400 396*

## 440 603 Financial Planning and Control (3,0,0,3)

This course provides an understanding of financial statements and the analytical tools available for use in properly managing and adding value to an organization. It focuses on analysis of financial and accounting information and its impact on financial decision-making and profit planning. The course uses some basic applications of statistics in financial planning in order to ensure corporate financial stability.

*Pre-requisite: 400 396*

## 440 604 Commercial Banking (3,0,0,3)

This commercial bank management course will equip the students with good grounding in the banking industry by teaching both the theory and practice of commercial banking. It focuses on the dynamic and rapidly changing financial-services industry; it explores modern financial management decision-making and highlights the importance of adapting to change and creating value as the way for financial institutions to succeed. The following areas are explained: introduction to bank management, strategic and financial management and the measurement of bank performance, the portfolio risks of banking and their management, managing the bank lending functions, and capital adequacy in banking institutions.

*Pre-requisite: 400 396*

## 440 705 Financial Markets (3,0,0,3)

This course is designed to build an understanding of financial markets, institutions and market participants. The coverage includes various types of financial markets like foreign exchange markets, stock markets, derivative markets and bond markets. The specific topics covered include the determination of interest rates; fixed income securities, mortgages, foreign exchange, futures, options, and money markets; commercial banks, savings banks, and credit unions; insurance companies, securities firms, finance companies, mutual funds, and pension funds. It also studies financial institution and market regulation, past and present banking crises, management and hedging of risk, central banking and monetary policy.

*Pre-requisite: 440 604*

## 440 707 International Finance (3,0,0,3)

This course is designed to introduce an overview of the environment of global finance, the international dimension of corporate finance, balance of payments and exchange market, the international monetary system, political risk, international cash management, international portfolio diversification, foreign direct investment and international and other developmental international financial issues.

*Pre-requisite: 440 501*

## 440 808 Selected Topics in Finance (3,0,0,3)

The primary aim of this course is to offer a more thorough examination of selected topics. The course instructor will select topics keeping in view topics of current interest and the availability of teaching material and resources. The choice of topics is expected to vary from semester to semester. In general, the course caters for specific issues, topics and recent developments in financial thought and practice that are new or controversial in nature and that have not been adequately covered or addressed in other finance courses.

*Pre-requisite: 440 501*

## 440 809 Investments (3,0,0,3)

This course develops advanced analytical and managerial skills in the field of investments. The topics covered include risk and returns, the analysis of different types of securities, basics of portfolio theory, modern investment theory, and portfolio selection and management. The course helps

students learn how to make good investment decisions, recognize investment problems and deal with them.

*Pre-requisite: 440 602*

## 440 810 Computer Applications in Finance (2,2,0,3)

This course will equip students with the skills required to apply their acquired finance knowledge using computer applications and available software, like EXCEL. The following topics are covered using computers: accounting primer, cash management, financial ratios analysis, break-even analysis, EPS, P/E ratio, taxation, time-value of money, interest/discount rates, capital budgeting, PV, FV, NPV, IRR, loan repayment schedule, dividends, measurement of risk and returns, valuation of securities, cost of capital, credit-scoring models, yield measurement, and advanced models in finance.

*Pre-requisites: 306460, 440 501*

## 440 612 Personal Finance (3,0,0,3)

This personal finance course equips the student with financial knowledge and tools to maximize financial resources over an individual's lifetime. This course discusses the latest financial planning tools and techniques that enable an individual to achieve his/her financial goals. Financial and personal satisfaction is the result of an organized process referred to as personal money management, which is the focus of this course.

*Pre-requisite: 400 396*

## 440 715 Islamic Banking (3,0,0,3)

This course will equip students with a firm grounding in the banking industry. It teaches the theory and practice of Islamic banking within the backdrop of conventional banking. Focusing on the dynamic and rapidly changing financial services industry, it explores modern financial engineering for financial product development that is Shari'ah-compliant. The following areas are covered; introduction to Islamic economy and Islamic financial system, Islamic financial instruments, the measurement of bank performance, management of Islamic banks' investment risk, Shari'ah-compliant management of bank financing functions, bank capital (theory, management and regulation), financial innovations, Information technology, and corporate restructuring in the financial services industry.

*Pre-requisite: 440 604*

## 440 611 Portfolio Management and Theory (3,0,0,3)

This course is designed to introduce an overview of portfolio management, more specifically securities and security analyses, risk and return, environment analyses, company analyses, bond analyses, options, rights, warrants and convertibles, futures, efficient-market theory, portfolio analyses and selection, capital market theory, managed portfolios and performance measurements.

*Pre-requisite: 440 705*

## 440 602 Financial Risk and Insurance (3,0,0,3)

This course explores various types of corporate and financial risks, analyzes them, and identifies methods to control them. Specific issues covered include risk identification and measurement, risk analysis and management, and relevance of corporate risk management from shareholders' value point of view. It also deals with the main tool to diffuse risk, i.e., insurance, describing the mechanics of insurance contracts and their pricing, risk pooling and risk diversification, and risk hedging with derivative contracts.

*Pre-requisite: 440 501*

## 400 420 Money and Financial System (3,0,0,3)

This course is designed to introduce basic economic and financial concepts related to money, banking and

financial systems. It uses basic economic principles to introduce the structure of financial markets, financial institution management, the foreign exchange markets, the internationalization of financial markets and the role of monetary policy in the economy. This course offers students a balanced picture of the interactions between money, the financial system and the economy.

*Pre-requisite: 400 396*

### 410 707 Management of Financial Institutions (3,0,0,3)

This course offers a detailed coverage of financial institutions and strategies involved in their effective management. The course looks at the modes of operations of different financial institutions and examines the strengths and limitations of each. Problems and issues relating to the management of assets and liabilities in financial institutions are also considered at length in this course. The role of non-bank financial institutions, such as insurance companies and credit unions is also covered.

*Pre-requisites: 400 396, 400 410*

### 400 393 Microeconomics (3,0,0,3)

This course is designed to introduce basic economic concepts related to individual decision-makers in the economy - households, businesses and governments - and how they interact. Meaning, nature and methods of economic study are introduced. Supply, demand and elasticity are used to analyze consumer and firm behaviors in different types of markets. The rationale for various public policies designed to modify the workings of markets is examined.

### 400 410 Macroeconomics (3,0,0,3)

This course is designed to introduce basic economic concepts related to aggregate economic relationships such as output and income, national income accounting, aggregate supply and aggregate demand, unemployment, inflation, economic growth and development, money and banking, and the international economy. The course emphasizes the main components of aggregate expenditure and determination of equilibrium level of income, in addition to the analysis of the effects of fiscal and monetary policies on the economy. It extends understanding of the ability of governments to influence economic performance.

*Pre-requisite: 400 393*

### 400 522 Managerial Economics (3,0,0,3)

This course is designed to acquaint students of business administration with the economics of managerial decision-making, paying special attention to the criteria for rational decision making in private business, non-profit institutions and public agencies. The course emphasizes the application of economic theory and the tools of decision science to examine how an organization can achieve its objectives most efficiently. It is an application of economic theory and analysis to the managerial decision-making process.

*Pre-requisites: 400 410, 400 393*

### 400 512 Economic Development of GCC (3,0,0,3)

This course is designed to introduce the concepts, measurements and theories of broad-based sustainable development, as well as the relationships between economic development, human development and environment. Students will also become familiar with several theories of development, and the characteristics and the quality of life in GCC countries will be investigated and compared to those of other countries. The focus would be on the causes, problems and challenges associated with the development of GCC countries, such as population structure and localization policies, the feasibility of GCC states integration and the impact of oil and non-oil production on development.

*Pre-requisite: 400 393*

### 410 811, 420 811, 430 811, 440 811 *Graduation Project (3,0,0,3)*

This course takes the form of a dissertation completed by graduating students in partial fulfillment of BSc in Management, Accounting, Marketing and Finance degree programs. Students choose an appropriate research project, justify it, work out the research methodology, and analyze, synthesize and evaluate information, then communicate significant knowledge and understanding. The proposed research should be related to the program. An academic advisor is assigned to advise the student at various stages of the research project. This course culminates in the preparation of a dissertation by each student. The course is an integral part of the curriculum, designed to train students to undertake scientific research and bridge the gap between theory and practice in management, accounting, marketing or finance.

*Pre-requisite: 102 credit hours*

### 400 516 Supervised Training (3,0,0,3)

After the completion of 96 credit hours, including seven major core courses. The aim of supervised training is to enable students to practice the learnt theories and concepts in a business organization. Students from any business discipline undergo a training period that is closely monitored by an instructor and the manager/supervisor of the organization to ensure that the student cultivates sound professional attitudes and ethics needed in work places.

# Faculty members of the College of Business Administration

| Sr. No. | Name | Academic Rank | Specialization | Degree | Date | University |
|---------|------|---------------|----------------|--------|------|------------|
| 1 | Mohamed Ali Alshami, Dean | Dean | Economics | PhD | 1995 | Colorado School of Mines, USA |
| 2 | Rubeena Cetin , Head of Mark. Dept. | Assistant Professor. | Marketing | PhD | 2002 | Middle East Technical Univ., Turkey |
| 3 | Joseph George M. Lutta , Head of Mgt Dept | Assistant Professor. | Human Resources | PhD | 2008 | Louisiana State Univ., USA |
| 4 | Lilyan Gheyath Saleh,  Head of Acct. Dept | Assistant Professor. | Accounting | PhD | 1988 | Free Univ. of Brussels (VUB), Belguim |
| 5 | Azeemuddin Subhani ,Head of Fin. Dept | Assistant Professor. | Islamic Finance | PhD | 2007 | McGill Univ./Montreal, Canada |
| 6 | John J. Ireland | Associate Professor | Marketing | PhD | 1992 | I.E.S.E. University of Navarra, Spain |
| 7 | Mazharul Haque Kazi | Associate Professor | Finance | PhD | 2005 | University of Western Sydney, Australia |
| 8 | Mohammed N. Chaker | Associate Professor | Economics | PhD | 1994 | University of Colorado, USA |
| 9 | Abdulkarim Ali Dahan | Assistant Professor. | Economics | PhD | 1996 | University of Arizona, USA |
| 10 | Ahmed Zain El Abideen | Assistant Professor. | Management | PhD | 2001 | Oumdrman University, Sudan |
| 11 | Majed El-Helou | Assistant Professor. | Management | MS | 2002 | Ottawa University, Canada |
| 12 | Olga Hordt | Assistant Professor. | Management | PhD | 2006 | University of Lveneberg, Germany |
| 13 | Srinivas Inguva | Assistant Professor. | Commerce | PhD | 1990 | Sri Venkatesvara University, India |
| 14 | Samia Abbas Ali Kargawil | Assistant Professor. | Business Management | PhD | 2006 | Birmingham University, UK |
| 15 | Wise Mainga | Assistant Professor. | Management | PhD | 2000 | Univ. of Bradford, UK |

| Sr. No. | Name | Academic Rank | Specialization | Degree | Date | University |
|---------|------|---------------|----------------|--------|------|------------|
| 16 | Rima Shishakly | Assistant Professor. | Management Information System | PhD | 2006 | University of Manchester, UK |
| 17 | Priya Maria Vaalentino | Assistant Professor. | Accounting & Finance | PhD | 2000 | Texas University, USA |

COLLEGE OF
# INFORMATION TECHNOLOGY

# Introduction

The rapid growth in the development of computer hardware, software, information technology and the widespread applications in all aspects of life created a considerable demand for computer graduates in all specializations. The College of Information Technology has the reputation of offering quality teaching and training programs to prepare its students for a much needed career in the dynamic and rapidly evolving computing industry of today.

# Mission Statement

- Participate in the overall mission of the University with commitment to high standards of teaching and training.
- Provide our graduates with the knowledge, training and skills to tackle emerging Information Technology (IT) problems.
- Break the barriers between academia and the market.
- Prepare students for graduate studies in different disciplines of computing.
- Contribute to the development of the UAE society and the region in the area of IT.

# Degree Programs

The College offers four different Bachelor programs, which provide the student with an excellent foundation for satisfying his/her career requirements, or future study. They also provide the student with a sound theoretical and practical background. In addition, the College offers a Master program in Information Systems. All programs are accredited by the Ministry of Higher Education and Scientific Research.

*Programs offered are:*

1. Bachelor of Science in Information Technology / Networking & Security
2. Bachelor of Science in Information Technology / Databases & Web systems
3. Bachelor of Science in Information Systems
4. Bachelor of Science in Computer Engineering
5. Bachelor of Science in Computer Science
6. Bachelor of Science in Multimedia & Web Development
7. Master of Science in Information Systems

# Facilities

The College actually is equipped with the state-of-the-art computing facilities which are among the best in the region. These facilities are regularly upgraded. All University computers are connected through local and wide area networks. Multimedia facilities are provided in all University labs. Other facilities include electronics, microprocessor and computer network labs. In addition to WINDOWS 2000 servers, there are dedicated UNIX, SQL and ORACLE servers. All staff and students computers are linked to the Internet. A dedicated Internet lab is also available on each campus of the university. The laboratories as well as the computer equipment provide students with an excellent support in their lower and upper level undergraduate courses. The College also maintains a library of computer textbooks. This library is regularly updated with the latest books in the field, for the benefit of both students and faculty members.

# Department of Computer Science

## Introduction

The Department of Computer Science at Ajman University of Science and Technology offers two programs: the Bachelor of Science in Computer Science and the Bachelor of Science in Information Technology which are 4-years programs accredited by the Ministry of Higher Education & Scientific Research and requires the completion of 126 and 123 credit hours respectively. Students enrolled in the Bachelor of Science in Information Technology can choose one of two tracks: Networking & Security or Database & Web Systems.

## Bachelor of Science in Computer Science

### Mission

Provide quality education in the field computer science that allows graduates of the program to pursue a rewarding career and adapt to evolving technologies in the computing field.

### Program Educational Objectives

- Provide students with current core knowledge of computer science that allows them to investigate and provide solutions to computer science related problems.
- Prepare students for professional career in computer science and related areas.
- Offer broad and in-depth curriculum that prepare students to pursue graduate studies or engage in life-long learning in computer science and related disciplines.

### Program Outcomes

- An understanding of the theoretical foundations of computer science.
- Analytical and critical thinking ability for problem solving.
- An understanding of the principles of efficient program design techniques and strategies.
- Knowledge, skills and use of variety of system and application software, hardware, computational algorithms, programming languages and human computer interfaces techniques.
- Knowledge and skills to store retrieve and manipulate information.
- The ability to analyze, design, implement, test, and evaluate a computer-based system.
- The ability to work both independently and as team members.
- The ability to communicate effectively orally and in writing.
- An awareness of the ethical issues affecting computer science and the impact of computers on society.
- The ability to pursue postgraduate study and research.

### Admission Requirements

The normal entry requirement for an applicant is the UAE Secondary School Certificate (scientific section) or an equivalent qualification with a minimum average grade of 60%.

## Career Opportunities

Computer science graduates of Ajman University of Science & Technology can undertake a variety of careers & jobs after graduation. Particular jobs and careers include: a software engineer (analysis, design, testing, evaluation, and maintenance of software), an applications software programmer, a systems software programmer, an algorithms design & analyst, a computer science teacher or trainer, a manager of  an IT department, marketing of computer software & hardware, and pursuance of graduate studies & research.

## Graduation requirements

Students at Ajman University of Science & Technology (AUST) are eligible for a Bachelor in Computer Science after completion of 126 credits hours, which normally takes eight semesters. In addition, students must undertake 12 weeks of industrial training in a summer session, which is equivalent to 3 credit hours. The minimum a cumulative grade point average for graduation is 2.0.

## Degree requirement

The B.Sc. degree in Computer Science requires the completion of 126 Cr. Hrs. distributed according to the following plan:

| Type of Courses | Credit/hour |
|---|---|
| 1. University General Education Requirements | |
| (a) University Required Courses | 15 |
| (b) University Elective Courses | 9 |
| 2. College Requirements | |
| (a) College General Education Requirements | 6 |
| (b) College Specializations Requirements | 18 |
| 3. Major Requirements | |
| (a)  Major Requirements - College Courses | 60 |
| (b)  Major Requirements- Non-College Courses | 6 |
| (c)  Major Electives - College Courses | 12 |
| Total Credit Hours | 126 |

# UNIVERSITY GENERAL EDUCATION REQUIREMENTS

## (a) University Required Courses (15 Cr.Hrs.)

| Course No. | Course Title | Th. | Lab. | Tut. | Cr. Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 101000 | Orientation | 1 | 0 | 0 | 0 | - |
| 102110 | Islamic Culture | 3 | 0 | 1 | 3 | - |
| 102140 | Communication Skills in Arabic Language | 3 | 0 | 0 | 3 | - |
| 103110 | Statistics | 2 | 2 | 0 | 3 | - |
| 104110 | Computer Applications | 2 | 2 | 0 | 3 | - |
| 117140 | Environmental Science | 3 | 0 | 0 | 3 | - |

## (b) University Elective Courses (9 Cr.Hrs.)

| Course No. | Course Title | Th. | Lab. | Tut. | Cr. Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 102120 | The Miraculousness of the Holy Koran | 3 | 0 | 0 | 3 | - |
| 103130 | Research Methodology | 3 | 0 | 0 | 3 | - |
| 112110 | Principles of Architecture & Art | 3 | 0 | 0 | 3 | - |
| 112120 | Principles of Interior Design | 3 | 0 | 0 | 3 | - |
| 112130 | Modern Technology and Society | 3 | 0 | 0 | 3 | - |
| 113110 | Internet Concepts | 3 | 0 | 0 | 3 | - |
| 113120 | Introduction to Information Systems | 3 | 0 | 0 | 3 | - |
| 114110 | Economic Concepts | 3 | 0 | 0 | 3 | - |
| 114120 | Entrepreneurship Development | 3 | 0 | 0 | 3 | - |
| 115110 | History of science in Islam | 3 | 0 | 0 | 3 | - |
| 115120 | Scientific pioneering | 3 | 0 | 0 | 3 | - |
| 115130- | General psychology | 3 | 0 | 0 | 3 | - |
| 115140 | Principle of mathematics | 3 | 0 | 0 | 3 | - |
| 115150 | The Art of Expression and writing | 3 | 0 | 0 | 3 | - |
| 115160 | Emirates Society | 3 | 0 | 0 | 3 | - |
| 115170 | Education Technology | 3 | 0 | 0 | 3 | - |
| 117110 | General chemistry | 3 | 0 | 0 | 3 | - |
| 117120 | Fundamental of Human Nutrition | 3 | 0 | 0 | 3 | - |
| 117130 | First Aid | 3 | 0 | 0 | 3 | - |
| 117150 | Applications of Remote sensing | 3 | 0 | 0 | 3 | - |
| 118110 | Principles of Ethics | 3 | 0 | 0 | 3 | - |
| 118120 | General Biology | 3 | 0 | 0 | 3 | - |
| 118130 | Oral Health | 3 | 0 | 0 | 3 | - |

| Course No. | Course Title | Th. | Lab. | Tut. | Cr. Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 118140 | General principles of Epidemiology | 3 | 0 | 0 | 3 | - |
| 118150 | CPR-Cardio Pulmonary Resuscitation | 3 | 0 | 0 | 3 | - |
| 119110 | Communication Skills | 3 | 0 | 0 | 3 | - |
| 119120 | Introduction to Communication Sociology | 3 | 0 | 0 | 3 | - |
| 119130 | Information Society | 3 | 0 | 0 | 3 | - |
| 120115 | Legal  Culture | 3 | 0 | 0 | 3 | - |

# COLLEGE REQUIREMENTS

## (a) College General Education Requirements (6 Cr.Hrs.)

| Course No. | Course Title | Th. | Lab. | Tut. | Cr. Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 300100-0 | Mathematics I /C | 3 | 0 | 2 | 3 | - |
| 300200-0 | Mathematics II /C | 3 | 0 | 2 | 3 | 300100 |

## (b) College Specializations Requirements (18 Cr. Hrs.)

| Course No. | Course Title | Th. | Lab. | Tut. | Cr. Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 310112-0 | Programming I | 2 | 2 | 2 | 3 | |
| 310211-0 | Programming II | 2 | 2 | 2 | 3 | 310112 |
| 311223-0 | Data Structures & Algorithms | 3 | 0 | 0 | 3 | 310211 |
| 311335-0 | Software Engineering I | 3 | 0 | 0 | 3 | 310211 |
| 311381-0 | Computer Networks I | 2 | 2 | 0 | 3 | 104110 &  40 Cr. Hrs. |
| 311382-0 | Computer Networks II | 3 | 0 | 2 | 3 | 311381 |

# MAJOR REQUIREMENTS

## (a) Major Requirements -College Courses ( 60  Cr.Hrs.)

| Course No. | Course Title | Th. | Lab. | Tut. | Cr. Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 310314-0 | Computer Ethics | 3 | 0 | 0 | 3 | 45 Cr. Hrs. |
| 311221-6 | Discrete Structures | 3 | 0 | 2 | 3 | 300100, 104110 |
| 311242-6 | Digital Logic Design | 3 | 0 | 2 | 3 | 104110 |
| 311300-6 | Training (Computer Science) | 0 | 0 | 0 | 3 | 60 Cr. Hrs. |
| 311319-0 | Introduction  to Formal Languages & Automata | 3 | 0 | 0 | 3 | 311221 |
| 311321-0 | Computer Graphics | 2 | 2 | 0 | 3 | 310211 |

| Course No. | Course Title | Th. | Lab. | Tut. | Cr. Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 311323-0 | Operational Research | 3 | 0 | 0 | 3 | 103110 |
| 311332-0 | Database Management Systems | 2 | 2 | 0 | 3 | 310211 |
| 311336-0 | Software Engineering II | 3 | 0 | 0 | 3 | 311335 |
| 311342-0 | Computer Architecture | 3 | 0 | 0 | 3 | 312245 |
| 311422-0 | Organization of Programming Languages | 3 | 0 | 0 | 3 | 311223 |
| 311431-6 | Computer Science Project | 1 | 4 | 0 | 3 | 100 Cr. Hrs. |
| 311435-0 | Human Computer Interaction | 3 | 0 | 0 | 3 | 310211 |
| 311442-0 | Design & Analysis of Algorithms | 3 | 0 | 0 | 3 | 311223 |
| 311451-6 | Operating Systems | 3 | 0 | 2 | 3 | 312245 |
| 311463-0 | Database Design & Implementation | 2 | 2 | 0 | 3 | 311332 |
| 311471-0 | Artificial Intelligence | 2 | 2 | 0 | 3 | 60 Cr.Hrs. |
| 311472-0 | Compiler Theory & Design | 3 | 0 | 0 | 3 | 311223, 311319 |
| 312245-0 | Computer Organization | 2 | 2 | 0 | 3 | 310211, 311242 |
| 314241-0 | Multimedia Technology | 2 | 2 | 0 | 3 | 310112 |

## (b) Major Requirements - Non-College courses (6 Cr.Hrs.)

| Course No. | Course Title | Th. | Lab. | Tut. | Cr. Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 400291-0 | Introduction to Management | 3 | 0 | 0 | 3 | - |
| 400292-6 | Principles of Accounting  I | 3 | 0 | 0 | 3 | - |

## (c) Major Electives - College courses (12 Cr.Hrs.)

| Course No. | Course Title | Th. | Lab. | Tut. | Cr. Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 310335-0 | Data Mining | 3 | 0 | 0 | 3 | 311332 |
| 310445-0 | Selected Topics in Programming   Languages | 2 | 2 | 0 | 3 | 310211 |
| 310455-0 | E-Commerce | 3 | 0 | 0 | 3 | 314231 |
| 310466-0 | Computer Security | 3 | 0 | 0 | 3 | 311381 |
| 311248-0 | Microprocessor Systems & Design | 2 | 2 | 0 | 3 | 312245 |
| 311450-2 | Selected Topics in Computer Science | 2 | 2 | 0 | 3 | 60 Cr. Hrs. |
| 311453-6 | Parallel Processing | 3 | 0 | 0 | 3 | 311342 |
| 311473-0 | Computer Simulation | 2 | 2 | 0 | 3 | 310 211, 60 Cr. Hrs. |
| 311475-0 | Expert Systems & Applications | 2 | 2 | 0 | 3 | 311471 |
| 311478-0 | Fault Tolerant Computing | 3 | 0 | 0 | 3 | 311342 |
| 314231-0 | Internet Programming | 2 | 2 | 0 | 3 | 310112 |
| 314232-0 | Web Development | 2 | 2 | 0 | 3 | 314231 |
| 314242-0 | Multimedia Authoring | 2 | 2 | 0 | 3 | 314241 |
| 314332-0 | Web Design | 2 | 2 | 0 | 3 | 314232 |
| 314347-0 | Computer Animation | 2 | 2 | 0 | 3 | 314242 |
| 314370-0 | Wireless Programming | 2 | 2 | 0 | 3 | 310 211, 60 Cr. Hrs. |
| 314477-0 | Game Programming | 2 | 2 | 0 | 3 | 310 211, 60 Cr. Hrs. |

*Note:     A student can take one elective course from Computer Engineering, Information Systems, or Multimedia & Web Development curricula.*

# Course Sequencing Plan

## FIRST SEMESTER

| Course Code | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Lab | Tut | Cr.Hrs. | |
| 101000 | Orientation | 1 | 0 | 0 | 0 | - |
| 102110 | Islamic Culture | 3 | 0 | 1 | 3 | - |
| 102140 | Communication Skills in Arabic Language | 3 | 0 | 0 | 3 | - |
| 104110 | Computer Applications | 2 | 2 | 0 | 3 | - |
| 300100 | Mathematics I /C | 3 | 0 | 2 | 3 | - |
| 117140 | Environmental Sciences | 3 | 0 | 0 | 3 | - |
| TOTAL | | 15 | 2 | 3 | 15 | |

## SECOND SEMESTER

| Course Code | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Lab | Tut | Cr.Hrs. | |
| 103110 | Statistics | 2 | 2 | 0 | 3 | - |
| 310112 | Programming I | 2 | 2 | 2 | 3 | - |
| 300200 | Mathematics II /C | 3 | 0 | 2 | 3 | 300100 |
| 311242 | Digital Logic Design | 3 | 0 | 2 | 3 | 104110 |
| xxxxxx | University Elective I | 3 | 0 | 0 | 3 | - |
| xxxxxx | University Elective II | 3 | 0 | 0 | 3 | - |
| TOTAL | | 16 | 4 | 6 | 18 | |

## THIRD SEMESTER

| Course Code | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Lab | Tut | Cr.Hrs. | |
| 310211 | Programming II | 2 | 2 | 2 | 3 | 310112 |
| 311221 | Discrete Structures | 3 | 0 | 2 | 3 | 300100, 104110 |
| 400292 | Principles of Accounting I | 3 | 0 | 0 | 3 | - |
| 400291 | Introduction to Management | 3 | 0 | 0 | 3 | - |
| xxxxxx | University Elective III | 3 | 0 | 0 | 3 | - |
| TOTAL | | 14 | 2 | 4 | 15 | |

## FOURTH SEMESTER

| Course Code | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Lab | Tut | Cr.Hrs. | |
| 311223 | Data Structures & Algorithms | 3 | 0 | 0 | 3 | 310211 |
| 311335 | Software Engineering I | 3 | 0 | 0 | 3 | 310211 |
| 311323 | Operational Research | 3 | 0 | 0 | 3 | 103110 |
| 312245 | Computer Organization | 2 | 2 | 0 | 3 | 310211, 312242 |
| 314241 | Multimedia Technology | 2 | 2 | 0 | 3 | 310112 |
| TOTAL | | 13 | 0 | 4 | 15 | |

*Summer session: Industrial training for six weeks (1.5 Cr.Hrs.)*

## FIFTH SEMESTER

| Course Code | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Lab | Tut | Cr.Hrs. | |
| 311319 | Introduction to Formal Langages & Automata | 3 | 0 | 0 | 3 | 311221 |
| 311332 | Database Management Systems | 2 | 2 | 0 | 3 | 310211 |
| 311422 | Organization of Programming Languages | 3 | 0 | 0 | 3 | 311223 |
| 311336 | Software Engineering II | 3 | 0 | 0 | 3 | 311335 |
| 311381 | Computer Networks I | 2 | 2 | 0 | 3 | 104110 & 40 Cr. Hrs. |
| TOTAL | | 13 | 0 | 4 | 15 | |

## SIXTH SEMESTER

| Course Code | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Lab | Tut | Cr.Hrs. | |
| 311342 | Computer Architecture | 3 | 0 | 0 | 3 | 312245 |
| 311442 | Design & Analysis of Algorithms | 3 | 0 | 0 | 3 | 311223 |
| 311463 | Database Design & Implementation | 2 | 2 | 0 | 3 | 311332 |
| 311472 | Compiler Theory & Design | 3 | 0 | 0 | 3 | 311223, 311319 |
| 311382 | Computer Networks II | 3 | 0 | 2 | 3 | 311381 |
| TOTAL | | 14 | 2 | 2 | 15 | |

*Summer Session: Industrial training for six weeks (1.5 Cr.Hrs.)*

## SEVENTH SEMESTER

| Course Code | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Lab | Tut | Cr.Hrs. | |
| 311451 | Operating Systems | 3 | 0 | 2 | 3 | 312245 |
| 311471 | Artificial Intelligence | 2 | 2 | 0 | 3 | 60 Cr.Hrs. |
| 311435 | Human Computer Interaction | 3 | 0 | 0 | 3 | 310211 |
| xxxxxx | Major Elective I | x | x | 0 | 3 | xxxxxx |
| xxxxxx | Major Elective II | x | x | 0 | 3 | xxxxxx |
| TOTAL | | x | x | 2 | 15 | |

## EIGHTH SEMESTER

| Course Code | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Lab | Tut | Cr.Hrs. | |
| 311321 | Computer Graphics | 2 | 2 | 0 | 3 | 310211 |
| 311431 | Computer Science Project | 1 | 4 | 0 | 3 | 100 Cr. Hrs. |
| 310314 | Computer Ethics | 3 | 0 | 0 | 3 | 45 Cr. Hrs. |
| xxxxxx | Major Elective III | x | x | 0 | 3 | xxxxxx |
| xxxxxx | Major Elective IV | x | x | 0 | 3 | xxxxxx |
| TOTAL | | x | x | 0 | 15 | |

*The minimum number of credit required for Bachelor of Science degree is 123 Cr.Hrs plus, the student must complete a 12-week training period (3 Cr.Hrs.)*

# Bachelor of Science in Information Technology

## Mission

The mission of the Information Technology program is to provide quality education in the field of information technology based on internationally recognized standards for undergraduate programs; produce information technology professionals who can deploy efficiently IT technologies and implement IT solutions according to market and society needs, particularly in the UAE and Gulf region; and prepare individuals for lifelong learning and research.

## Program Educational Objectives

The Bachelor of Science in Information Technology program has the following goals:

1) Provide students with current core and specialized knowledge and skills of IT methodologies and practices that allow them to get entry-level positions in the IT job market or pursue postgraduate studies.

2) Provide technical skills as well as general education knowledge that allow graduates of the program to provide IT solutions that satisfy market and societal needs.

3) Offer broad and in-depth curriculum that prepare students to engage in life-long learning and professional development in diverse areas of IT.

4) Expose students to the ethical and professional issues of working in an IT environment.

5) Train students to develop effective communication skills that allow them to communicate effectively orally and in writing; and work as productive members of a team.

## Program Outcomes

### Common Outcomes (All tracks)

*Graduates will be able to:*

C1**. Demonstrate** general education knowledge in diverse fields.

C2. **Demonstrate** an analytical and critical thinking ability for problem solving.

C3. **Demonstrate** knowledge of fundamental concepts, principles and techniques of information technology.

C4. **Analyze**, **identify,** and **define** the computing requirements that must be addressed to provide a solution to an IT problem.

C5. **Manage** the information technology resources of an IT-based entity.

C6. **Demonstrate** ethical and professional behavior in an information technology environment.

C7. **Communicate** effectively both orally and in writing.

C8. **Function** independently and as an effective member of a team.

## Track Specific Outcomes

### Networking & Security

*Graduates will be able to:*

NS1. **Design** and **implement** basic network functionalities.

NS2. **Maintain** and **administer** network systems.

NS3. **Analyze** and **evaluate** network configurations and security needs.

NS4. **Provide** solutions for network security needs.

NS5. **Integrate** security management within IT management.

### Databases & Web Systems

*Graduates will be able to,*

DW1. **Design** database-driven applications.

DW2. **Implement** database-driven applications.

DW3. **Design** web-based client/server systems.

DW4. **Implement** web-based client/server systems.

DW5. **Manage** a database application in an online-environment.

## Admission Requirements

The normal entry requirement for an applicant is the U.A.E secondary school certificate (scientific section) or an equivalent qualification with a minimum average grade of 70% in addition to the English proficiency requirements.

## Career Opportunities

Graduates of the Information Technology program can undertake a variety of job positions at both the managerial and technical levels. Job opportunities may include but not limited to: IT resources management; IT project management; professional IT consultant; professional teacher or trainer; marketing of software and hardware; and pursuing postgraduate study and research. For those specializing in networks and security, additional job opening may include: network administration and management; network security management; and building and designing networks. Graduate of Databases and Web Systems may find additional job opportunities in database administration and management; developing database applications; and developing web applications.

## Graduation requirements

Students at Ajman University of Science & Technology (AUST) are eligible for a Bachelor in Information Technology in either track after the completion of 123 credits hours, which normally takes eight semesters or less (not counting summer semesters). Students must undertake 12 weeks of internship in a summer session, which is equivalent to 3 credit hours. The minimum accumulative grade point average for graduation is 2.0.

## Degree Requirements

The B.Sc. degree in Information Technology with its two tracks requires the completion of 123 Cr. Hrs. distributed according to the following plan for the two tracks:

| Type of Courses | Credit/hour |
|---|---|
| 1. University General Education Requirements | |
| (a) University Compulsory Courses | 15 |
| (b) University Elective Courses | 9 |
| 2. Information Technology Program Common Compulsory Courses | |
| (a) General Courses | 12 |
| (b) Information Technology Core Courses | 51 |
| (c ) Internship | 3 |
| 3. Information Technology Program Track Courses | 21 |
| 4. Information Technology Program Elective Courses | 12 |
| Total Credit Hours | 123 |

# University General Education Requirements

## (a) University Required Courses ( 15 Cr.Hrs.)

| Course No. | Course Title | Th. | Lab. | Tut. | Cr. Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 101000 | Orientation | 1 | 0 | 0 | 0 | - |
| 102110 | Islamic Culture | 3 | 0 | 1 | 3 | - |
| 102140 | Communication Skills in Arabic Language | 3 | 0 | 0 | 3 | - |
| 103110 | Statistics | 2 | 2 | 0 | 3 | - |
| 104110 | Computer Applications | 2 | 2 | 0 | 3 | - |
| 117140 | Environmental Sciences | 3 | 0 | 0 | 3 | - |

## (b) University Elective Courses ( 9 Cr.Hrs.)

| Course No. | Course Title | Th. | Lab. | Tut. | Cr. Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 102120 | The Miraculousness of the Holy Koran | 3 | 0 | 0 | 3 | - |
| 103130 | Research Methodology | 3 | 0 | 0 | 3 | - |
| 112110 | Principles of Architecture & Art | 3 | 0 | 0 | 3 | - |
| 112120 | Principles of Interior Design | 3 | 0 | 0 | 3 | - |
| 112130 | Modern Technology and Society | 3 | 0 | 0 | 3 | - |
| 113110 | Internet Concepts | 3 | 0 | 0 | 3 | - |
| 113120 | Introduction to Information Systems | 3 | 0 | 0 | 3 | - |
| 114110 | Economic Concepts | 3 | 0 | 0 | 3 | - |
| 114120 | Entrepreneurship Development | 3 | 0 | 0 | 3 | - |
| 115110 | History of science in Islam | 3 | 0 | 0 | 3 | - |
| 115120 | Scientific pioneering | 3 | 0 | 0 | 3 | - |
| 115130- | General psychology | 3 | 0 | 0 | 3 | - |
| 115140 | Principle of mathematics | 3 | 0 | 0 | 3 | - |
| 115150 | The Art of Expression and writing | 3 | 0 | 0 | 3 | - |
| 115160 | Emirates Society | 3 | 0 | 0 | 3 | - |
| 115170 | Education Technology | 3 | 0 | 0 | 3 | - |
| 117110 | General chemistry | 3 | 0 | 0 | 3 | - |
| 117120 | Fundamental of Human Nutrition | 3 | 0 | 0 | 3 | - |
| 117130 | First Aid | 3 | 0 | 0 | 3 | - |
| 117150 | Applications of Remote sensing | 3 | 0 | 0 | 3 | - |
| 118110 | Principles of Ethics | 3 | 0 | 0 | 3 | - |
| 118120 | General Biology | 3 | 0 | 0 | 3 | - |

| Course No. | Course Title | Th. | Lab. | Tut. | Cr. Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 118130 | Oral Health | 3 | 0 | 0 | 3 | - |
| 118140 | General principles of Epidemiology | 3 | 0 | 0 | 3 | - |
| 118150 | CPR-Cardio Pulmonary Resuscitation | 3 | 0 | 0 | 3 | - |
| 119110 | Communication Skills | 3 | 0 | 0 | 3 | - |
| 119120 | Introduction to Communication Sociology | 3 | 0 | 0 | 3 | - |
| 119130 | Information Society | 3 | 0 | 0 | 3 | - |
| 120115 | Legal  Culture | 3 | 0 | 0 | 3 | - |

# MAJOR REQUIREMENTS

## (a) Major Requirements - General Education Courses  (12 Credit Hours.)

| Course No. | Course Title | Th. | Lab. | Tut. | Cr. Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 315101 | Calculus for  Information Technology | 3 | 0 | 2 | 3 | - |
| 315207 | Principles of Accounting | 3 | 0 | 0 | 3 | - |
| 315208 | Computerized  Accounting | 2 | 2 | 0 | 3 | 315207 |
| 315209 | Principles of Management | 3 | 0 | 0 | 3 | - |

## (b) Major Requirements - Core Courses & Internship  (54 Cr. Hrs.)

| Course No. | Course Title | Th. | Lab. | Tut. | Cr. Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 315102 | Algorithms and Problem Solving | 2 | 2 | 0 | 3 | - |
| 315103 | Information Technology in Business | 2 | 2 | 0 | 3 | 104110 |
| 315201 | Object Oriented programming | 2 | 2 | 0 | 3 | 315102 |
| 315202 | Discrete Mathematics | 3 | 0 | 0 | 3 | 315101 |
| 315203 | Computer Organization | 3 | 0 | 0 | 3 | 104110 |
| 315204 | Data Structures and Algorithms | 2 | 2 | 0 | 3 | 315201, 315202 |
| 315205 | Fundamentals of Data Communications and Networking | 2 | 2 | 0 | 3 | 315203 |
| 315206 | Human Computer Interaction | 2 | 2 | 0 | 3 | 315201 |
| 315301 | Operating Systems | 2 | 2 | 0 | 3 | 315203 |
| 315302 | Database Management Systems | 2 | 2 | 0 | 3 | 315201 |
| 315303 | Fundamentals of Information security | 3 | 0 | 0 | 3 | 315205 |
| 315304 | Fundamentals of  Web Systems | 2 | 2 | 0 | 3 | 315201 |
| 315305 | Fundamentals of Software Engineering | 2 | 2 | 0 | 3 | 315204 |
| 315306 | Computer Ethics and Professional Practices | 3 | 0 | 0 | 3 | 315303 |
| 315307 | Information Technology Project Management | 2 | 2 | 0 | 3 | 315305 |

| Course No. | Course Title | Th. | Lab. | Tut. | Cr. Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 315308 | Enterprise Systems | 3 | 0 | 0 | 3 | 315206 |
| 315401 | Information Technology Project | 1 | 4 | 0 | 3 | 315307, & 99 Cr. Hrs. |
| 315402 | Information Technology Internship | | | | 3 | 117 Cr. Hrs |

## (c) Major Requirements - Track Courses (21 Cr. Hrs.)

*Networking and Security Track*

| Course No. | Course Title | Th. | Lab. | Tut. | Cr. Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 315311 | Advanced Computer Networks | 2 | 2 | 0 | 3 | 315205 |
| 315312 | Network Security | 2 | 2 | 0 | 3 | 315303 |
| 315411 | Network Design and Implementation | 2 | 2 | 0 | 3 | 315311 |
| 315412 | Wireless and Mobile Computing | 2 | 2 | 0 | 3 | 315312 |
| 315413 | Network Operating Systems | 2 | 2 | 0 | 3 | 315301 |
| 315414 | Enterprise Security | 3 | 0 | 0 | 3 | 315312 |
| 315415 | Network Management | 2 | 2 | 0 | 3 | 315311 |

*Databases and Web Systems*

| Course No. | Course Title | Th. | Lab. | Tut. | Cr. Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 315321 | Database Administration | 2 | 2 | 0 | 3 | 315302 |
| 315322 | Web Technologies | 2 | 2 | 0 | 3 | 315304 |
| 315421 | Web Application Design and Development | 2 | 2 | 0 | 3 | 315322 |
| 315422 | Information Architecture | 2 | 2 | 0 | 3 | 315302 |
| 315423 | Advanced Database Design and Implementation | 2 | 2 | 0 | 3 | 315302 |
| 315424 | E-Commerce | 2 | 2 | 0 | 3 | 315322 |
| 315425 | Distributed and Object Oriented Databases | 2 | 2 | 0 | 3 | 315423 |

## (d) Major Requirements (Both Tracks) - Elective Courses (12 Cr. Hrs.)

| Course No. | Course Title | Th. | Lab. | Tut. | Cr. Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 315403 | Selected Topics in Information Technology | 3 | 0 | 0 | 3 | 315307 |
| 315404 | Individual Project | 2 | 2 | 0 | 3 | 315307 |
| 315405 | Knowledge Based Systems | 2 | 2 | 0 | 3 | 315305 |
| 315406 | Computer Modeling and Simulation | 2 | 2 | 0 | 3 | 315308 |
| 315416 | Data Compression | 2 | 2 | 0 | 3 | 315303 |
| 315417 | Distributed Systems | 3 | 0 | 0 | 3 | 315311 |
| 315418 | Wireless Network Security | 3 | 0 | 0 | 3 | 315312 |

| Course No. | Course Title | Th. | Lab. | Tut. | Cr. Hrs. | Prerequisite |
|------------|-------------|-----|------|------|----------|--------------|
| 315426 | Knowledge Management | 3 | 0 | 0 | 3 | 315308 |
| 315427 | Advanced Web Topics | 2 | 2 | 0 | 3 | 315322 |
| 315428 | Data Warehousing and Data Mining | 3 | 0 | 0 | 3 | 315308 |

# Proposed Sequence of Study

### FIRST SEMESTER (Both Tracks)

| Course Code | Course Name | Lec | Lab | Tut | Cr.Hrs. | Prerequisite |
|-------------|-------------|-----|-----|-----|---------|--------------|
| 101000 | Orientation | 1 | 0 | 0 | 0 | - |
| 102110 | Islamic Culture | 3 | 0 | 1 | 3 | - |
| 102140 | Communication Skills in Arabic Language | 3 | 0 | 0 | 3 | - |
| 117140 | Environmental Sciences | 3 | 0 | 0 | 3 | - |
| 104110 | Computer Applications | 2 | 2 | 0 | 3 | - |
| xxxxxx | University Elective I | 3 | 0 | 0 | 3 | - |
| TOTAL | | 15 | 2 | 1 | 15 | |

### SECOND SEMESTER (Both Tracks)

| Course Code | Course Name | Lec | Lab | Tut | Cr.Hrs. | Prerequisite |
|-------------|-------------|-----|-----|-----|---------|--------------|
| 315101 | Calculus for Information Technology | 3 | 0 | 2 | 3 | - |
| 315102 | Algorithms and Problem Solving | 2 | 2 | 0 | 3 | - |
| 315103 | Information Technology in Business | 2 | 2 | 0 | 3 | 104110 |
| xxxxxx | University Elective II | 3 | 0 | 0 | 3 | - |
| xxxxxx | University Elective III | 3 | 0 | 0 | 3 | - |
| TOTAL | | 13 | 4 | 2 | 15 | |

### THIRD SEMESTER (Both Tracks)

| Course Code | Course Name | Lec | Lab | Tut | Cr.Hrs. | Prerequisite |
|-------------|-------------|-----|-----|-----|---------|--------------|
| 103110 | Statistics | 2 | 2 | 0 | 3 | - |
| 315201 | Object Oriented Programming | 2 | 2 | 0 | 3 | 315102 |
| 315202 | Discrete Mathematics | 3 | 0 | 0 | 3 | 315101 |
| 315203 | Computer Organization | 3 | 0 | 0 | 3 | 104110 |
| 315207 | Principles of Accounting | 3 | 0 | 0 | 3 | - |
| TOTAL | | 13 | 4 | 0 | 15 | |

## FOURTH SEMESTER (Both Tracks)

| Course Code | Course Name | Lec | Lab | Tut | Cr.Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 315204 | Data Structures and Algorithms | 2 | 2 | 0 | 3 | 315201, 315202 |
| 315205 | Fundamentals of Data Communications and Networking | 2 | 2 | 0 | 3 | 315203 |
| 315206 | Human Computer Interaction | 2 | 2 | 0 | 3 | 315201 |
| 315208 | Computerized  Accounting | 2 | 2 | 0 | 3 | 315207 |
| 315209 | Principles of Management | 3 | 0 | 0 | 3 | - |
| TOTAL | | 11 | 8 | 0 | 15 | |

## FIFTH SEMESTER (Both Tracks)

| Course Code | Course Name | Lec | Lab | Tut | Cr.Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 315301 | Operating Systems | 2 | 2 | 0 | 3 | 315203 |
| 315302 | Database Management Systems | 2 | 2 | 0 | 3 | 315201 |
| 315303 | Fundamentals of Information Security | 3 | 0 | 0 | 3 | 315205 |
| 315304 | Fundamentals of  Web Systems | 2 | 2 | 0 | 3 | 315201 |
| 315305 | Fundamentals of  Software Engineering | 2 | 2 | 0 | 3 | 315204 |
| TOTAL | | 11 | 8 | 0 | 15 | |

## SIXTH SEMESTER

### 1. Networking and Security Track

| Course Code | Course Name | Lec | Lab | Tut | Cr.Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 315306 | Computer Ethics and Professional Practices | 3 | 0 | 0 | 3 | 315303 |
| 315307 | Information Technology Project Management | 2 | 2 | 0 | 3 | 315305 |
| 315308 | Enterprise Systems | 3 | 0 | 0 | 3 | 315206 |
| 315311 |  Advanced Computer Networks | 2 | 2 | 0 | 3 | 315205 |
| 315312 | Network Security | 2 | 2 | 0 | 3 | 315303 |
| TOTAL | | 12 | 6 | 0 | 15 | |

### 2. Databases and Web Systems Track

| Course Code | Course Name | Lec | Lab | Tut | Cr.Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 315306 | Computer Ethics and Professional Practices | 3 | 0 | 0 | 3 | 315303 |
| 315307 | Information Technology Project Management | 2 | 2 | 0 | 3 | 315305 |
| 315308 | Enterprise Systems | 3 | 0 | 0 | 3 | 315206 |
| 315321 |  Database Administration | 2 | 2 | 0 | 3 | 315302 |
| 315322 | Web Technologies | 2 | 2 | 0 | 3 | 315304 |

| Course Code | Course Name | Lec | Lab | Tut | Cr.Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| TOTAL | | 12 | 6 | 0 | 15 | |

## SEVENTH SEMESTER

### 1. Networking and Security Track

| Course Code | Course Name | Lec | Lab | Tut | Cr.Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 315411 | Network Design and Implementation | 2 | 2 | 0 | 3 | 315311 |
| 315412 | Wireless and Mobile Computing | 2 | 2 | 0 | 3 | 315312 |
| 315413 | Network Operating Systems | 2 | 2 | 0 | 3 | 315301 |
| xxxxxx | Major Elective I | x | x | 0 | 3 | xxxxxx |
| xxxxxx | Major Elective II | x | x | 0 | 3 | xxxxxx |
| TOTAL | | x | x | 0 | 15 | |

### 2. Databases and Web Systems Track

| Course Code | Course Name | Lec | Lab | Tut | Cr.Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 315421 | Web Application Design and Development | 2 | 2 | 0 | 3 | 315322 |
| 315422 | Information Architecture | 2 | 2 | 0 | 3 | 315302 |
| 315423 | Advanced Database Design and Implementation | 2 | 2 | 0 | 3 | 315302 |
| xxxxxx | Major Elective I | x | x | 0 | 3 | xxxxxx |
| xxxxxx | Major Elective II | x | x | 0 | 3 | xxxxxx |
| TOTAL | | x | x | 0 | 15 | |

# EIGHTH SEMESTER

## 1. Networking and Security Track

| Course Code | Course Name | Lec | Lab | Tut | Cr.Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 315401 | Information Technology Project | 1 | 4 | 0 | 3 | 315307, & 99 Cr. Hrs. |
| 315414 | Enterprise Security | 3 | 0 | 0 | 3 | 315312 |
| 315415 | Network Management | 2 | 2 | 0 | 3 | 315311 |
| xxxxxx | Major Elective III | x | x | 0 | 3 | xxxxxx |
| xxxxxx | Major Elective IV | x | x | 0 | 3 | xxxxxx |
| TOTAL | | x | x | 0 | 15 | |

## 2. Databases and Web systems Track

| Course Code | Course Name | Lec | Lab | Tut | Cr.Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 315401 | Information Technology Project | 1 | 4 | 0 | 3 | 315307, & 99 Cr. Hrs. |
| 315424 | E-Commerce | 2 | 2 | 0 | 3 | 315322 |
| 315425 | Distributed and Object Oriented Databases | 2 | 2 | 0 | 3 | 315423 |
| xxxxxx | Major Elective III | x | x | 0 | 3 | xxxxxx |
| xxxxxx | Major Elective IV | x | x | 0 | 3 | xxxxxx |
| TOTAL | | x | x | 0 | 15 | |

# Department of Computer Engineering

## Introduction

The Department of Computer Engineering offers a B.Sc. degree in Computer Engineering that was re-accredited for a further period of five years beginning May 2006. In the new study plan the total number of credit hours required for students to graduate has been reduced to 140.

## Bachelor of Science in Computer Engineering

### Mission

- Produce computer engineers who are able to apply the theories and principles of science and mathematics to the design of hardware, software and networks in the emerging IT fields.
- Produce computer engineers capable of building prototypes, working both with hardware and software aspects of systems design and development.
- Prepare students for professional careers and to pursue advanced studies in Computer Engineering.

### Program Educational Objectives

The objectives of the Computer Engineering Program are to prepare graduates with:

- Knowledge and skills in hardware and software design & implementation.
- An understanding of how to implement and manage computer networks.
- An ability to communicate effectively orally and in writing.
- Self-learning skills.

### Program Outcomes

The above-mentioned goals will be achieved through the following program objectives:

- Develop skills in analysis, design and implementation of logic circuits.
- Provide an understanding of the organization and interaction of various parts of a computer system.
- Develop an ability to design a software component and implement it using a high level programming language.
- Provide an understanding of how computers communicate in a network
- Develop skills in implementing client/server based local area networks
- Provide knowledge and hands-on practice on securing LANs using Routers and Firewalls.
- Develop an ability to formulate and explain a solution to a technical problem orally and in writing.
- Develop self-learning skills by searching for information and acquiring knowledge independently.

### Admission Requirements

The normal entry requirements for applicants are the UAE Secondary School certificate (Grade 12), with a minimum overall score of 70% (scientific section) or an equivalent qualification certified by the Ministry of Education, UAE. In addition to this an applicant must have obtained a minimum score of 70% or grade C in Mathematics and Physics.

## Career Opportunities

Graduates can find a wide range of job opportunities as Design Engineer (computer hardware, software and systems), Network Administrator, Network (Systems) Engineer, Network Programmer/Analyst, Network / Information Systems Manager.

## Graduation requirements

Students at Ajman University of Science & Technology (AUST) are eligible for a Bachelor Degree in Computer Engineering after completion of 140 credit hours. This includes industrial training in summer sessions that is equivalent to 4 credit hours. The minimum cumulative grade point average for graduation is 2.0. For students transferring credits taken at other institutions, it is required that at least fifty percent of third and fourth year courses be completed through instruction at AUST.

## Degree requirement

The B.Sc. degree in Computer Engineering requires the completion of 140 Credit Hours distributed according to the following plan:

| Type of Courses | Credit hours |
|---|---|
| 1. University General Education Requirements | |
| (a) University Required Courses | 15 |
| (b) University Elective Courses | 9 |
| 2. College Requirements | |
| (a) College General Education Requirements | 6 |
| (b) College Specializations Requirements | 18 |
| 3. Major Requirements | |
| (a)  Major Requirements - College Courses | 62 |
| (b)  Major Requirements- Non-College Courses | 18 |
| (c)  Major Electives - College Courses | 12 |
| Total Credit Hours | 140 |

# UNIVERSITY GENERAL EDUCATION REQUIREMENTS

## (a) University Required Courses ( 15 Cr.Hrs.)

| Course No. | Course Title | Th. | Lab. | Tut. | Cr. Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 101000 | Orientation | 1 | 0 | 0 | 0 | - |
| 102110 | Islamic Culture | 3 | 0 | 1 | 3 | - |
| 102140 | Communication Skills in Arabic Language | 3 | 0 | 0 | 3 | - |
| 103110 | Statistics | 2 | 2 | 0 | 3 | - |
| 104110 | Computer Applications | 2 | 2 | 0 | 3 | - |
| 117140 | Environmental Sciences | 3 | 0 | 0 | 3 | - |

## (b)University Elective Courses ( 9 Cr.Hrs.)

| Course No. | Course Title | Th. | Lab. | Tut. | Cr. Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 102120 | The Miraculousness of the Holy Koran | 3 | 0 | 0 | 3 | - |
| 103130 | Research Methodology | 3 | 0 | 0 | 3 | - |
| 112110 | Principles of Architecture & Art | 3 | 0 | 0 | 3 | - |
| 112120 | Principles of Interior Design | 3 | 0 | 0 | 3 | - |
| 112130 | Modern Technology and Society | 3 | 0 | 0 | 3 | - |
| 113110 | Internet Concepts | 3 | 0 | 0 | 3 | - |
| 113120 | Introduction to Information Systems | 3 | 0 | 0 | 3 | - |
| 114110 | Economic Concepts | 3 | 0 | 0 | 3 | - |
| 114120 | Entrepreneurship Development | 3 | 0 | 0 | 3 | - |
| 115110 | History of science in Islam | 3 | 0 | 0 | 3 | - |
| 115120 | Scientific pioneering | 3 | 0 | 0 | 3 | - |
| 115130- | General psychology | 3 | 0 | 0 | 3 | - |
| 115140 | Principle of mathematics | 3 | 0 | 0 | 3 | - |
| 115150 | The Art of Expression and writing | 3 | 0 | 0 | 3 | - |
| 115160 | Emirates Society | 3 | 0 | 0 | 3 | - |
| 115170 | Education Technology | 3 | 0 | 0 | 3 | - |
| 117110 | General chemistry | 3 | 0 | 0 | 3 | - |
| 117120 | Fundamental of Human Nutrition | 3 | 0 | 0 | 3 | - |
| 117130 | First Aid | 3 | 0 | 0 | 3 | - |
| 117150 | Applications of Remote sensing | 3 | 0 | 0 | 3 | - |
| 118110 | Principles of Ethics | 3 | 0 | 0 | 3 | - |
| 118120 | General Biology | 3 | 0 | 0 | 3 | - |

| Course No. | Course Title | Th. | Lab. | Tut. | Cr. Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 118130 | Oral Health | 3 | 0 | 0 | 3 | - |
| 118140 | General principles of Epidemiology | 3 | 0 | 0 | 3 | - |
| 118150 | CPR-Cardio Pulmonary Resuscitation | 3 | 0 | 0 | 3 | - |
| 119110 | Communication Skills | 3 | 0 | 0 | 3 | - |
| 119120 | Introduction to Communication Sociology | 3 | 0 | 0 | 3 | - |
| 119130 | Information Society | 3 | 0 | 0 | 3 | - |
| 120115 | Legal  Culture | 3 | 0 | 0 | 3 | - |

# COLLEGE REQUIREMENTS

## (a) College General Education Requirements *(6 Cr.Hrs.)*

| No. | Course No. | Course Title | Th. | Tut. | Lab. | Cr. | Prerequisite |
|---|---|---|---|---|---|---|---|
| 1 | 300100 | Mathematics I /C | 3 | 2 | 0 | 3 | - |
| 2 | 300200 | Mathematics II /C | 3 | 2 | 0 | 3 | 300100 |

## (b) College Specializations Requirements (*18 Cr. Hrs.)*

| No. | Course No. | Course Title | Th. | Tut. | Lab. | Cr. | Prerequisite |
|---|---|---|---|---|---|---|---|
| 1 | 310112 | Programming I | 2 | 2 | 2 | 3 | 0104110 |
| 2 | 310211 | Programming II | 2 | 2 | 2 | 3 | 310112 |
| 3 | 311223 | Data Structures & Algorithms | 3 | 0 | 0 | 3 | 310211 |
| 4 | 311335 | Software Engineering I | 3 | 0 | 0 | 3 | 310211 |
| 5 | 311381 | Computer Networks I | 2 | 0 | 2 | 3 | 0104110 & 40 Cr. Hrs. |
| 6 | 311382 | Computer Networks II | 3 | 2 | 0 | 3 | 311381 |

# MAJOR REQUIREMENTS

## (a) Major Requirements - College Courses *(62 Cr.Hrs.)*

| No. | Course No. | Course Title | Theo. | Tut. | Lab. | Cr. | Prerequisite |
|-----|-----------|--------------|-------|------|------|-----|--------------|
| 1 | 310466 | Computer Security | 3 | 0 | 0 | 3 | 311381 |
| 2 | 311221 | Discrete Structures | 3 | 2 | 0 | 3 | 300100 |
| 3 | 311311 | Computational Mathematics | 2 | 0 | 2 | 3 | 300200 |
| 4 | 311332 | Database Management Systems | 2 | 0 | 2 | 3 | 310211 |
| 5 | 311342 | Computer Architecture | 3 | 0 | 0 | 3 | 312245 |
| 6 | 311442 | Design & Analysis of Algorithms | 3 | 0 | 0 | 3 | 311223 |
| 7 | 311451 | Operating Systems | 3 | 2 | 0 | 3 | 312245 |
| 8 | 312201 | Electric Circuit Analysis | 3 | 0 | 1 | 3 | 121132 |
| 9 | 312242 | Digital Logic Design | 3 | 0 | 2 | 4 | 0104110 |
| 10 | 312245 | Computer Organization | 2 | 0 | 2 | 3 | 310211, 312242 |
| 11 | 312300 | Training | - | - | - | 4 | 75 Cr. Hrs. |
| 12 | 312302 | Electronics I | 3 | 0 | 2 | 4 | 312201 |
| 13 | 312303 | Electronics II | 2 | 0 | 2 | 3 | 312302 |
| 14 | 312305 | Electronic Meas. & Instrumentation | 2 | 0 | 2 | 3 | 312302 |
| 15 | 312348 | Microprocessor Systems | 3 | 0 | 2 | 4 | 312245 |
| 16 | 312415 | Integrated Circuit Design | 3 | 0 | 0 | 3 | 312302 |
| 17 | 312441 | Embedded Systems | 2 | 0 | 2 | 3 | 312348 |
| 18 | 312531 | Project I | 1 | 0 | 4 | 3 | 90 Cr. Hrs. |
| 19 | 312532 | Project II | 1 | 0 | 4 | 3 | 312531 |
| 20 | 312545 | Computer Ethics | 1 | 0 | 0 | 1 | 70 Cr. Hrs. |

## (b) Major Requirements - Non-College courses *(18 Cr.Hrs.)*

| No. | Course No. | Course Title | Theo. | Tut. | Lab. | Cr. | Prerequisite |
|-----|-----------|--------------|-------|------|------|-----|--------------|
| 1 | 121131 | Physics I | 2 | 2 | 2 | 3 | - |
| 2 | 121132 | Physics II | 2 | 2 | 2 | 3 | - |
| 3 | 212523 | Digital Data Communications | 3 | 0 | 1* | 3 | 214441 |
| 4 | 214441 | Signals and Systems | 3 | 0 | 1* | 3 | 217203 |
| 5 | 217203 | Mathematics III | 3 | 2 | 0 | 3 | 300200 |
| 6 | 217204 | Mathematics IV | 3 | 2 | 0 | 3 | 217203 |

*Non-credit*

## (c) Major Electives - College courses *(12 Cr.Hrs.)*

| No. | Course No. | Course Title | Theo. | Tut. | Lab. | Cr. | Prerequisite |
|-----|-----------|--------------|-------|------|------|-----|--------------|
| 1 | 212531 | Digital Signal Processing | 3 | 0 | 1 | 3 | 214441 |
| 2 | 311321 | Computer Graphics | 2 | 0 | 2 | 3 | 311223 |
| 3 | 311336 | Software Engineering II | 3 | 0 | 0 | 3 | 311335 |
| 4 | 311453 | Parallel Processing | 3 | 0 | 0 | 3 | 311342 |
| 5 | 311471 | Artificial Intelligence | 2 | 0 | 2 | 3 | 70 Cr. Hrs. |
| 6 | 311472 | Compiler Theory and Design | 3 | 0 | 0 | 3 | 311223 |
| 7 | 311473 | Computer Simulation | 2 | 0 | 2 | 3 | 310211 & 70 Cr. Hrs. |
| 8 | 311475 | Expert Systems and Applications | 3 | 0 | 0 | 3 | 311471 |
| 9 | 311478 | Fault Tolerant Computing | 3 | 0 | 0 | 3 | 311342 |
| 10 | 312530 | Selected Topics in Computer Engineering | 3 | 0 | 0 | 3 | 70 Cr. Hrs. |
| 11 | 312552 | Performance Evaluation of Computer Systems | 3 | 0 | 0 | 3 | 311342 |
| 12 | 312560 | Digital Image Processing | 3 | 0 | 1 | 3 | 70 Cr. Hrs. |
| 13 | 312570 | Fuzzy Logic and Neural Networks | 3 | 0 | 0 | 3 | 311471 |
| 14 | 314241 | Multimedia Technology | 2 | 0 | 2 | 3 | 70 Cr. Hrs. |
| 15 | 314370 | Wireless Programming | 2 | 0 | 2 | 3 | 60 Cr. Hrs. |
| 16 | 314477 | Game Programming | 2 | 0 | 2 | 3 | 60 Cr. Hrs. |

*Note: Students may register for at most one course not listed above from courses offered by other departments within the College subject to approval of the academic advisor and the head of department.*

# Course Sequencing Plan

## FIRST SEMESTER

| Course No. | Course Name | Contact Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec. | Tut. | Lab. | Cr. Hrs. | |
| 101000 | Orientation \CS | 1 | 0 | 0 | 0 | - |
| 102140 | Communication Skills in Arabic Language | 3 | 0 | 0 | 3 | - |
| 117140 | Environmental Sciences | 3 | 0 | 0 | 3 | - |
| 104110 | Computer Applications | 2 | 0 | 2 | 3 | - |
| 121131 | Physics I | 2 | 2 | 2 | 3 | - |
| 300100 | Mathematics I /C | 3 | 2 | 0 | 3 | - |
| Total | | 14 | 4 | 4 | 15 | |

* Non-credit course

## SECOND SEMESTER

| Course No. | Course Name | Contact Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec. | Tut. | Lab. | Cr. Hrs. | |
| 102110 | Islamic Culture | 3 | 1 | 0 | 3 | - |
| 103110 | Statistics | 2 | 0 | 2 | 3 | - |
| 121132 | Physics II | 2 | 2 | 2 | 3 | - |
| 300200 | Mathematics II /C | 3 | 2 | 0 | 3 | 300100 |
| 310112 | Programming I | 2 | 2 | 2 | 3 | 104110 |
| 312242 | Digital Logic Design | 3 | 0 | 2 | 4 | 104110 |
| Total | | 15 | 7 | 8 | 19 | |

*Non-credit course

## THIRD SEMESTER

| Course No. | Course Name | Contact Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec. | Tut. | Lab. | Cr. Hrs. | |
| 217203 | Mathematics III | 3 | 2 | 0 | 3 | 300200 |
| 310211 | Programming II | 2 | 2 | 2 | 3 | 310112 |
| 311221 | Discrete Structures | 3 | 0 | 0 | 3 | 300100, 104110 |
| 312201 | Electric Circuit Analysis | 3 | 0 | 1* | 3 | 121132 |
| xxxxxx | University Elective I | 3 | 0 | 0 | 3 | - |
| Total | | 14 | 4 | 3 | 15 | |

## FOURTH SEMESTER

| Course No. | Course Name | Contact Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec. | Tut. | Lab. | Cr. Hrs. | |
| 217204 | Mathematics IV | 3 | 2 | 0 | 3 | 217203 |
| 311223 | Data Structures & Algorithms | 3 | 0 | 0 | 3 | 310211 |
| 312245 | Computer Organization | 2 | 0 | 2 | 3 | 310211, 312242 |
| 312302 | Electronics I | 3 | 0 | 2 | 4 | 312201 |
| xxxxxx | University Elective II | 3 | 0 | 0 | 3 | - |
| Total | | 14 | 2 | 4 | 16 | |

## FIFTH SEMESTER

| Course No. | Course Name | Contact Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec. | Tut. | Lab. | Cr. Hrs. | |
| 214441 | Signals and Systems | 3 | 0 | 1* | 3 | 217203 |
| 311311 | Computational Mathematics | 2 | 0 | 2 | 3 | 300200 |
| 311332 | Database Management Systems | 2 | 0 | 2 | 3 | 310211 |
| 312303 | Electronics II | 2 | 0 | 2 | 3 | 312302 |
| 311381 | Computer Networks I | 2 | 0 | 2 | 3 | 0104110 & 40 Cr. Hrs. |
| xxxxxx | University Elective III | 3 | 0 | 0 | 3 | - |
| Total | | 14 | 0 | 9 | 18 | |

*Non-credit

Internship training (1 credit hour)

## SIXTH SEMESTER

| Course No. | Course Name | Contact Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec. | Tut. | Lab. | Cr. Hrs. | |
| 311335 | Software Engineering I | 3 | 0 | 0 | 3 | 310211 |
| 311342 | Computer Architecture | 3 | 0 | 0 | 3 | 312245 |
| 311442 | Design & Analysis of Algorithms | 3 | 0 | 0 | 3 | 311223 |
| 312305 | Electrical & Electronic Measurements and Instrumentation | 2 | 0 | 2 | 3 | 312302 |
| 311382 | Computer Networks II | 3 | 2 | 0 | 3 | 311381 |
| xxxxxx | Major Elective I | 3 | 0 | 0 | 3 | 70 Cr. Hrs. |
| Total | | 17 | 2 | 2 | 18 | |

*Non-credit

SUMMER SESSION: Internship training (3 credit hours)

## SEVENTH SEMESTER

| Course No. | Course Name | Contact Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec. | Tut. | Lab. | Cr. Hrs. | |
| 212523 | Digital Data Communications | 3 | 0 | 1* | 3 | 214441 |
| 310466 | Computer Security | 3 | 0 | 0 | 3 | 311381 |
| 311451 | Operating Systems | 3 | 2 | 0 | 3 | 312245 |
| 312348 | Microprocessor Systems | 3 | 0 | 2 | 4 | 312245 |
| 312531 | Project I | 1 | 0 | 4 | 3 | 90 Cr. Hrs. |
| 312545 | Computer Ethics | 1 | 0 | 0 | 1 | 70 Cr. Hrs. |
| Total | | 14 | 2 | 7 | 17 | |

*Non-credit*

## EIGHTH SEMESTER

| Course No. | Course Name | Contact Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec. | Tut. | Lab. | Cr. Hrs. | |
| 312415 | Integrated Circuit Design | 3 | 0 | 1* | 3 | 312302 |
| 312441 | Embedded Systems | 2 | 0 | 2 | 3 | 312348 |
| 312532 | Project II | 1 | 0 | 4 | 3 | 312531 |
| xxxxxx | Major Elective II | 3 | 0 | 0 | 3 | 70 Cr. Hrs. |
| xxxxxx | Major Elective III | 3 | 0 | 0 | 3 | 70 Cr. Hrs. |
| xxxxxx | Major Elective IV | 3 | 0 | 0 | 3 | 70 Cr. Hrs. |
| Total | | 15 | 0 | 7 | 18 | |

*Non-credit*

# Department of Information Systems

## Introduction

The Department of Information Systems offers a Bachelor of Science in Information Systems degree which is a 4-years program that requires the completion of 126 credit hours and a Master program in Information Systems which requires the completion of 33 credit hours. Both programs are accredited by the Ministry of Higher Education.

## Bachelor of Science in Information Systems

### Mission

Provide quality education in Information Systems that allows graduates of the program to pursue a rewarding career and adapt to evolving technologies in the IS field.

### Program Educational Objectives

The objectives of the program are:

- Provide students with quality education to understand, design, implement, use and manage Information Systems.
- Prepare students for professional career in Information Systems.
- Offer broad and in-depth curriculum that prepare the students to pursue graduate studies.

## Program Outcomes

- Acquire, convert, store and retrieve data and information.
- Understand and solve critical problems.
- Understand organizational processes and data.
- Define, Design and Implement technical solutions and Manage projects.
- Apply both traditional and new concepts and skills to develop applications.
- Integrate IS in different organizational levels and business functions.
- Work both individually/independently and as team members.
- Communicate effectively orally, written and listening.
- Apply ethical and legal codes of conduct.
- Pursue postgraduate study and research.

## Admission Requirements

The normal entry requirements for an applicant are the UAE Secondary School Certificate or an equivalent qualification with:

1. A minimum average grade of 60% for scientific sections.
2. A minimum average grade of 65% for arts sections.

## Career Opportunities

Information Systems Graduates of Ajman University of Science & Technology are in great demand and targeted by all types of organizations using Information Technology in running their activities as well as software companies developing Information Systems. They can take a variety of careers & job after graduation, such: Development of Information Systems, Management of Information Systems,

Information Systems teacher or trainer, Development of Database Applications, Development of Web affiliations, Marketing of Information Systems software, and pursuance of graduates studies & research.

## Graduation requirements

Students at Ajman University of Science & Technology (AUST) are eligible for a bachelor in Information Systems after completion of 123 credits hours, which normally takes eight semesters. In addition, students must undertake 12 weeks of industrial training during summer sessions which is equivalent to 3 credit hours. The minimum cumulative grade point average for graduation is 2.0 for 126 total credits hours.

## Degree requirement

The B.Sc. degree in Information Systems requires the completion of a 126 Cr. Hrs. distributed according to the following plan:

| Type of Courses | Credit/hour |
|---|---|
| 1. University General Education Requirements | |
| (a) University Required Courses | 15 |
| (b) University Elective Courses | 9 |
| 2. College Requirements | |
| (a) College General Education Requirements | 6 |
| (b) College Specializations Requirements | 18 |
| 3. Specialization Requirements | |
| (a) Specialization Requirements - College Courses | 57 |
| (b) Specialization Requirements- Non-College Courses | 9 |
| (c) Specialization Electives - College Courses | 12 |
| Total Credit Hours | 126 |

# UNIVERSITY GENERAL EDUCATION REQUIREMENTS

## (a) University Required Courses ( 15 Cr.Hrs.)

| Course No. | Course Title | Th. | Lab. | Tut. | Cr. Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 101000 | Orientation \CS | 1 | 0 | 0 | 0 | - |
| 102110 | Islamic Culture | 3 | 0 | 1 | 3 | - |
| 102140 | Communication Skills in Arabic Language | 3 | 0 | 0 | 3 | - |
| 103110- | Statistics | 2 | 2 | 0 | 3 | - |
| 104110 | Computer Applications | 2 | 2 | 0 | 3 | - |
| 117140 | Environmental Sciences | 3 | 0 | 0 | 3 | - |

## (b)University Elective Courses ( 9 Cr.Hrs.)

| Course No. | Course Title | Th. | Lab. | Tut. | Cr. Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 102120 | The Miraculousness of the Holy Koran | 3 | 0 | 0 | 3 | - |
| 103130 | Research Methodology | 3 | 0 | 0 | 3 | - |
| 112110 | Principles of Architecture & Art | 3 | 0 | 0 | 3 | - |
| 112120 | Principles of Interior Design | 3 | 0 | 0 | 3 | - |
| 112130 | Modern Technology and Society | 3 | 0 | 0 | 3 | - |
| 113110 | Internet Concepts | 3 | 0 | 0 | 3 | - |
| 113120 | Introduction to Information Systems | 3 | 0 | 0 | 3 | - |
| 114110 | Economic Concepts | 3 | 0 | 0 | 3 | - |
| 114120 | Entrepreneurship Development | 3 | 0 | 0 | 3 | - |
| 115110 | History of science in Islam | 3 | 0 | 0 | 3 | - |
| 115120 | Scientific pioneering | 3 | 0 | 0 | 3 | - |
| 115130- | General psychology | 3 | 0 | 0 | 3 | - |
| 115140 | Principle of mathematics | 3 | 0 | 0 | 3 | - |
| 115150 | The Art of Expression and writing | 3 | 0 | 0 | 3 | - |
| 115160 | Emirates Society | 3 | 0 | 0 | 3 | - |
| 115170 | Education Technology | 3 | 0 | 0 | 3 | - |
| 117110 | General chemistry | 3 | 0 | 0 | 3 | - |
| 117120 | Fundamental of Human Nutrition | 3 | 0 | 0 | 3 | - |
| 117130 | First Aid | 3 | 0 | 0 | 3 | - |
| 117150 | Applications of Remote sensing | 3 | 0 | 0 | 3 | - |
| 118110 | Principles of Ethics | 3 | 0 | 0 | 3 | - |
| 118120 | General Biology | 3 | 0 | 0 | 3 | - |
| 118130 | Oral Health | 3 | 0 | 0 | 3 | - |

| Course No. | Course Title | Th. | Lab. | Tut. | Cr. Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 118140 | General principles of Epidemiology | 3 | 0 | 0 | 3 | - |
| 118150 | CPR-Cardio Pulmonary Resuscitation | 3 | 0 | 0 | 3 | - |
| 119110 | Communication Skills | 3 | 0 | 0 | 3 | - |
| 119120 | Introduction to Communication Sociology | 3 | 0 | 0 | 3 | - |
| 119130 | Information Society | 3 | 0 | 0 | 3 | - |
| 120115 | Legal  Culture | 3 | 0 | 0 | 3 | - |

# COLLEGE REQUIREMENTS

## (a) College General Education Requirements *(6 Cr. Hrs.)*

| Course No. | Course Title | Th. | Tut. | Lab. | Cr. Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 300100-1 | Mathematics I / IS | 3 | 2 | 0 | 3 | - |
| 300200-1 | Mathematics II / Discrete Structure | 3 | 2 | 0 | 3 | 300100 |

## (b) College Specializations Requirements (*18 Cr. Hrs.)*

| Course No. | Course Title | Th. | Tut. | Lab. | Cr. Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 310112 | Programming I | 2 | 2 | 2 | 3 | - |
| 310211 | Programming II | 2 | 2 | 2 | 3 | 310112 |
| 311223 | Data Structures & Algorithms | 3 | 0 | 0 | 3 | 310211 |
| 311335 | Software Engineering I | 3 | 0 | 0 | 3 | 310211 |
| 311381 | Computer Networks I | 2 | 0 | 2 | 3 | 104110 & 40 Cr. Hrs. |
| 311382 | Computer Networks II | 3 | 2 | 0 | 3 | 311381 |

# SPECIALIZATION REQUIREMENTS

## (a) College Courses (57 Cr. Hrs.)

| Course No. | Course Title | Th. | Tut. | Lab. | Cr. Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 310115 | Financial Accounting | 3 | 0 | 0 | 3 | - |
| 310134 | Information Systems for Business | 2 | 0 | 2 | 3 | 104110 |
| 310217 | Human Resources | 3 | 0 | 0 | 3 | 400291 |
| 310234 | Management Information Systems | 3 | 0 | 0 | 3 | 310134 |
| 310300 | Training (Information Systems) | - | - | - | 3 | 60 Cr. Hrs. |
| 310314 | Computer Ethics | 3 | 0 | 0 | 3 | 45  Cr. Hrs. |
| 310334 | IS Theory & Practice | 3 | 0 | 0 | 3 | 310234 |
| 310344 | Computer Operating Systems | 3 | 2 | 0 | 3 | 60 Cr. Hrs. |
| 310438 | IS Project Management | 3 | 0 | 0 | 3 | 311335 |
| 310440 | IS Project | 1 | 0 | 4 | 3 | 100 Cr. Hrs. |
| 310455 | E-Commerce | 3 | 0 | 0 | 3 | 314231 |
| 310466 | Computer Security | 3 | 0 | 0 | 3 | 311381 |
| 310471 | Knowledge Based Systems | 2 | 0 | 2 | 3 | 60 Cr. Hrs. |
| 311332 | Database Management Systems | 2 | 0 | 2 | 3 | 310211 |
| 311336 | Software Engineering II | 3 | 0 | 0 | 3 | 311335 |
| 311422 | Organization of Programming Languages | 3 | 0 | 0 | 3 | 311223 |
| 311435 | Human Computer Interaction | 3 | 0 | 0 | 3 | 310211 |
| 311463 | Database Design & Implementation | 2 | 0 | 2 | 3 | 311332 |
| 314231 | Internet Programming | 2 | 0 | 2 | 3 | 310112 |

## (b) Specialization Requirements - Non-College courses (9 Cr. Hrs.)

| Course No. | Course Title | Th. | Tut. | Lab. | Cr.Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 400291 | Introduction to Management | 3 | 0 | 0 | 3 | - |
| 400393 | Microeconomics | 3 | 0 | 0 | 3 | - |
| 400395 | Principles of Marketing | 3 | 0 | 0 | 3 | - |

## c) Specialization Electives - College courses (12 Cr. Hrs.)

| Course No. | Course Title | Th. | Tut. | Lab. | Cr.Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 310335 | Data Mining | 3 | 0 | 0 | 3 | 311332 |
| 310445 | Selected Topics in Programming   Languages | 2 | 0 | 2 | 3 | 310211 |
| 310450 | Selected Topics in Information Systems | 2 | 0 | 2 | 3 | 60 Cr.Hrs. |
| 311321 | Computer Graphics | 2 | 0 | 2 | 3 | 310211 |
| 311473 | Computer Simulation | 2 | 0 | 2 | 3 | 310 211 & 60 Cr. Hrs. |
| 311475 | Expert Systems and Applications | 2 | 0 | 2 | 3 | 310471 |
| 314232 | Web Development | 2 | 0 | 2 | 3 | 314231 |
| 314241 | Multimedia Technology | 2 | 0 | 2 | 3 | 310112 |
| 314242 | Multimedia Authoring | 2 | 0 | 2 | 3 | 310241 |
| 314370 | Wireless Programming | 2 | 0 | 2 | 3 | 310211 & 60 Cr. Hrs. |
| 314477 | Game Programming | 2 | 0 | 2 | 3 | 310211 & 60 Cr. Hrs. |

*Note: A student may take one elective course from Computer Science or Multimedia curricula.*

# Course Sequencing Plan

## FIRST SEMESTER

| Course Code | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Tut | Lab | Cr. Hrs. | |
| 111000 | Orientation | 1 | 0 | 0 | 0 | - |
| 102110 | Islamic Culture | 3 | 1 | 0 | 3 | - |
| 102120 | Communication Skills in Arabic Language | 3 | 0 | 0 | 3 | - |
| 104110 | Computer Applications | 2 | 0 | 2 | 3 | - |
| 300100 | Mathematics I  / IS | 3 | 2 | 0 | 3 | - |
| 103130 | Research Methodology | 3 | 0 | 0 | 3 | - |
| TOTAL | | 14 | 4 | 2 | 15 | |

## SECOND SEMESTER

| Course Code | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Tut | Lab | Cr. Hrs. | |
| 300200 | Mathematics II / Discrete Structure | 3 | 2 | 0 | 3 | 300100 |
| 103110 | Statistics | 2 | 0 | 2 | 3 | - |
| 310112 | Programming I | 2 | 2 | 2 | 3 | - |
| xxxxxx | University Elective I | 3 | 0 | 0 | 3 | - |
| xxxxxx | University Elective II | 3 | 0 | 0 | 3 | - |
| TOTAL | | 13 | 2 | 4 | 15 | |

## THIRD SEMESTER

| Course Code | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Tut | Lab | Cr. Hrs. | |
| 310134 | Information Systems for Business | 3 | 0 | 2 | 3 | 104110 |
| 310211 | Programming II | 2 | 2 | 2 | 3 | 310112 |
| 314231 | Internet Programming | 2 | 0 | 2 | 3 | 310112 |
| 310115 | Financial Accounting | 3 | 0 | 0 | 3 | - |
| 400291 | Introduction to Management | 3 | 0 | 0 | 3 | - |
| TOTAL | | 13 | 2 | 6 | 15 | |

## FOURTH SEMESTER

| Course Code | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Tut | Lab | Cr. Hrs. | |
| 311223 | Data Structures & Algorithms | 3 | 0 | 0 | 3 | 310211 |
| xxxxxx | University Elective III | 3 | 0 | 0 | 3 | - |
| 310234 | Management Information Systems | 3 | 0 | 0 | 3 | 310134 |
| 310217 | Human Resources | 3 | 0 | 0 | 3 | 400291 |
| 311335 | Software Engineering I | 3 | 0 | 0 | 3 | 310211 |
| 400393 | Microeconomics | 3 | 0 | 0 | 3 | - |
| TOTAL | | 18 | 0 | 0 | 18 | |

*Summer session: Industrial training for six weeks (1.5 Cr. Hrs.)*

## FIFTH SEMESTER

| Course Code | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Tut | Lab | Cr.Hrs. | |
| 310455 | E-Commerce | 3 | 0 | 0 | 3 | 314231 |
| 311332 | Database Management Systems | 2 | 0 | 2 | 3 | 310211 |
| 311422 | Organization of Programming Languages | 3 | 0 | 0 | 3 | 311223 |
| 311336 | Software Engineering II | 3 | 0 | 0 | 3 | 311335 |
| 311381 | Computer Networks I | 2 | 0 | 2 | 3 | 104110 & 40 Cr. Hrs. |
| TOTAL | | 13 | 0 | 4 | 15 | |

## SIXTH SEMESTER

| Course Code | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Tut | Lab | Cr. Hrs. | |
| 311463 | Database Design & Implementation | 2 | 0 | 2 | 3 | 311332 |
| 310438 | IS Project Management | 3 | 0 | 0 | 3 | 311335 |
| 400395 | Principles of Marketing | 3 | 0 | 0 | 3 | - |
| 310334 | IS Theory & Practice | 3 | 0 | 0 | 3 | 310234 |
| 311382 | Computer Networks II | 3 | 2 | 0 | 3 | 311381 |
| TOTAL | | 14 | 2 | 2 | 15 | |

*Summer Session: Industrial training for six weeks (1.5 Cr. Hrs.)*

## SEVENTH SEMESTER

| Course Code | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Tut | Lab | Cr. Hrs. | |
| 310344 | Computer Operating Systems | 3 | 2 | 0 | 3 | 60  Cr. Hrs. |
| 310466 | Computer Security | 3 | 0 | 0 | 3 | 311381 |
| 311435 | Human Computer Interaction | 3 | 0 | 0 | 3 | 310211 |
| 310471 | Knowledge Based Systems | 2 | 0 | 2 | 3 | 60  Cr. Hrs. |
| xxxxxx | Major Elective I | x | x | x | 3 | - |
| TOTAL | | x | x | x | 15 | |

## EIGHTH SEMESTER

| Course Code | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Tut | Lab | Cr. Hrs. | |
| 310440 | IS Project | 1 | 0 | 4 | 3 | 100 Cr. Hrs. |
| 310314 | Computer Ethics | 3 | 0 | 0 | 3 | 45  Cr.Hrs. |
| xxxxxx | Major Elective II | x | x | x | 3 | - |
| xxxxxx | Major Elective III | x | x | x | 3 | - |
| xxxxxx | Major Elective IV | x | x | x | 3 | - |
| TOTAL | | x | x | x | 15 | |

*The minimum number of credit required for Bachelor of Science in Information Systems degree is 123 Cr. Hrs.*

*In addition the student must complete a 12-week training period (3 Cr. Hrs.).*

# Department of Multimedia and Web Development

## Introduction

The Department of Multimedia and Web Development offers a Bachelor degree in Multimedia and Web Development which is normally a 4-year course that requires the completion of 126 credit hours. The program is accredited by the Ministry of Higher Education.

## Bachelor of Science in Multimedia and Web Development

### Mission

Provide quality education in field of multimedia and web development that allows graduates of the program to pursue a professional career in the use and development of multimedia and web technologies and adapt to evolving technologies in this area of computing

### Program Educational Objectives

The objectives of the program are:

- Produce graduate with knowledge and skills that enable them to specialize in multimedia.
- Produce graduate with knowledge and skills that enable them to specialize in web development.

- Provide graduates with problem solving skills, communication skills and the ability to work in a team.
- Provide an environment in which students are exposed to the ethical and legal issues associated with the IT field.
- Prepare the student for graduate study and research

### Program Outcomes

The Bachelor of Science in Multimedia and Web Development program aims to create graduates with the capability to:

- Analyze user needs, integrate the available technology, design and implement multimedia computing systems.
- Specify, develop multimedia system for a wide range of applications like the World Wide Web, imaging systems, animation and user interface.
- Develop, design and publish a web design project using industry standard software and applying overall industry design standards.
- Create a professional web site with e-commerce elements built in.
- Develop teamwork ability, communication skills, problem solving and design skills through projects presentations and assignments.
- Develop multimedia & web applications on a network-based system.
- Understand and practice computer ethics.
- Store, retrieve and manipulate multimedia objects.
- Write programs that manipulate multimedia objects.
- Pursue postgraduate studies.

## Admission Requirements

The normal entry requirement for an applicant is the UAE Secondary School  Certificate (scientific section) or an equivalent qualification with a minimum average grade of 70%.

## Career Opportunities

Multimedia and web Development graduates of Ajman University of Science & Technology can undertake a variety of careers & jobs after graduation in the following fields: web site design, animation programming, web authoring systems, multimedia programming, system design (integration of software and hardware components), video and audio processing, teaching & training, marketing of multimedia software & hardware products, and pursuance of graduates studies & research.

## Graduation requirements

Students at Ajman University of Science & Technology (AUST) are eligible for a Bachelor in Multimedia and Web Development after completion of 126 credits hours, which normally takes eight semesters. In addition, students must undertake 12 weeks of industrial training in a summer session, which is equivalent to 3 credit hours. The minimum a cumulative grade point average for graduation is 2.0.

## Degree requirements

The B.Sc. degree in Multimedia and Web Development requires the completion of 126 Cr. Hrs. distributed according to the following plan:

| Type of Courses | Credit/hour |
|---|---|
| 1. University General Education Requirements | |
| (a) University Required Courses | 15 |
| (b) University Elective Courses | 9 |
| 2. College Requirements | |
| (a) College General Education Requirements | 6 |
| (b) College Specializations Requirements | 18 |
| 3. Major Requirements | |
| (a) Major Requirements - College Courses | 66 |
| (b) Major Electives - College Courses | 12 |
| Total Credit Hours | 126 |

# UNIVERSITY GENERAL EDUCATION REQUIREMENTS

## (a) University Required Courses (15 Cr.Hrs.)

| Course No. | Course Title | Th. | Lab. | Tut. | Cr. Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 101000 | Orientation \CS | 1 | 0 | 0 | 0 | - |
| 102110 | Islamic Culture | 3 | 0 | 1 | 3 | - |
| 102140 | Communication Skills in Arabic Language | 3 | 0 | 0 | 3 | - |
| 103110- | Statistics | 2 | 2 | 0 | 3 | - |
| 104110 | Computer Applications | 2 | 2 | 0 | 3 | - |
| 117140 | Environmental Sciences | 3 | 0 | 0 | 3 | - |

## (b)University Elective Courses ( 9 Cr.Hrs.)

| Course No. | Course Title | Th. | Lab. | Tut. | Cr. Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 102120 | The  Miraculousness   of the Holy Koran | 3 | 0 | 0 | 3 | - |
| 103130 | Research Methodology | 3 | 0 | 0 | 3 | - |
| 112110 | Principles of Architecture & Art | 3 | 0 | 0 | 3 | - |
| 112120 | Principles of Interior Design | 3 | 0 | 0 | 3 | - |
| 112130 | Modern Technology and Society | 3 | 0 | 0 | 3 | - |
| 113110 | Internet Concepts | 3 | 0 | 0 | 3 | - |
| 113120 | Introduction to Information Systems | 3 | 0 | 0 | 3 | - |
| 114110 | Economic Concepts | 3 | 0 | 0 | 3 | - |
| 114120 | Entrepreneurship Development | 3 | 0 | 0 | 3 | - |
| 115110 | History of science in Islam | 3 | 0 | 0 | 3 | - |
| 115120 | Scientific pioneering | 3 | 0 | 0 | 3 | - |
| 115130- | General psychology | 3 | 0 | 0 | 3 | - |
| 115140 | Principle of mathematics | 3 | 0 | 0 | 3 | - |
| 115150 | The  Art of Expression and writing | 3 | 0 | 0 | 3 | - |
| 115160 | Emirates Society | 3 | 0 | 0 | 3 | - |
| 115170 | Education Technology | 3 | 0 | 0 | 3 | - |
| 117110 | General chemistry | 3 | 0 | 0 | 3 | - |
| 117120 | Fundamental of Human Nutrition | 3 | 0 | 0 | 3 | - |
| 117130 | First Aid | 3 | 0 | 0 | 3 | - |
| 117150 | Applications of Remote sensing | 3 | 0 | 0 | 3 | - |
| 118110 | Principles of Ethics | 3 | 0 | 0 | 3 | - |
| 118120 | General Biology | 3 | 0 | 0 | 3 | - |
| 118130 | Oral Health | 3 | 0 | 0 | 3 | - |

| Course No. | Course Title | Th. | Lab. | Tut. | Cr. Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 118140 | General principles of Epidemiology | 3 | 0 | 0 | 3 | - |
| 118150 | CPR-Cardio Pulmonary Resuscitation | 3 | 0 | 0 | 3 | - |
| 119110 | Communication Skills | 3 | 0 | 0 | 3 | - |
| 119120 | Introduction to Communication Sociology | 3 | 0 | 0 | 3 | - |
| 119130 | Information Society | 3 | 0 | 0 | 3 | - |
| 120115 | Legal  Culture | 3 | 0 | 0 | 3 | - |

# COLLEGE REQUIREMENTS

## College General Education Requirements (6 Cr.Hrs.)

| Course No. | Course Title | Th. | Tut. | Lab. | Cr.Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 300100 | Mathematics I / C | 3 | 2 | 0 | 3 | - |
| 300200 | Mathematics II / C | 3 | 2 | 0 | 3 | 300100 |

## (b) College Specializations Requirements (18 Cr. Hrs.)

| Course No. | Course Title | Th. | Tut. | Lab. | Cr.Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 310112 | Programming I | 2 | 2 | 2 | 3 | - |
| 310211 | Programming II | 2 | 2 | 2 | 3 | 310112 |
| 310223 | Data Structures & Algorithms | 3 | 0 | 0 | 3 | 310211 |
| 311335 | Software Engineering I | 3 | 0 | 0 | 3 | 310211 |
| 311381 | Computer Networks I | 2 | 0 | 2 | 3 | 104110, 40 Cr. Hrs |
| 311382 | Computer Networks II | 3 | 2 | 0 | 3 | 311381 |

# MAJOR REQUIREMENTS

## (a) Major Requirements -College Courses (66 Cr.Hrs)

| Course No. | Course Title | Th. | Tut. | Lab. | Cr.Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 310314 | Computer Ethics | 3 | 0 | 0 | 3 | 45 Cr. Hrs. |
| 310455 | E-Commerce | 3 | 0 | 0 | 3 | 314231 |
| 310466 | Computer Security | 3 | 0 | 0 | 3 | 311381 |
| 311321 | Computer Graphics | 2 | 0 | 2 | 3 | 310211 |
| 311332 | Database Management Systems | 2 | 0 | 2 | 3 | 310211 |
| 311435 | Human Computer Interaction | 3 | 0 | 0 | 3 | 310211 |
| 311451 | Operating Systems | 3 | 2 | 0 | 3 | 314245 |
| 314131 | Internet Technology | 2 | 0 | 2 | 3 | 104110 |
| 314210 | Writing for the Web | 3 | 0 | 0 | 3 | 60 Cr. Hrs. |
| 314231 | Internet Programming | 2 | 0 | 2 | 3 | 310112 & 314131 |
| 314232 | Web Development | 2 | 0 | 2 | 3 | 314231 |
| 314241 | Multimedia Technology | 2 | 0 | 2 | 3 | 310112 |
| 314242 | Multimedia Authoring | 2 | 0 | 2 | 3 | 314241 |
| 314245 | Computer Org. and Architecture | 2 | 0 | 2 | 3 | 310211 |
| 314300 | Training (Multimedia) | - | - | - | 3 | 60 Cr. Hrs. |
| 314332 | Web Design | 2 | 0 | 2 | 3 | 314232 |
| 314336 | Web Server Administration | 2 | 0 | 2 | 3 | 311381 |
| 314345 | Audio & Image Processing | 2 | 0 | 2 | 3 | 314241 & 300200 |
| 314347 | Computer Animation | 2 | 0 | 2 | 3 | 314242 |
| 314370 | Wireless Programming | 2 | 0 | 2 | 3 | 310211 |
| 314430 | Web Design Project | 1 | 0 | 4 | 3 | 314332 & 80 Cr. Hrs. |
| 314440 | Multimedia Project | 1 | 0 | 4 | 3 | 80 Cr. Hrs. |

## (b) Major Electives - College courses (12 Cr.Hrs.)

| Course No. | Course Title | Th. | Tut. | Lab. | Cr.Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 310335 | Data Mining | 3 | 0 | 0 | 3 | 311332 |
| 311336 | Software Engineering II | 3 | 0 | 0 | 3 | 311335 |
| 311463 | Database Design and Implementation | 2 | 0 | 2 | 3 | 311332 |
| 311473 | Computer Simulation | 2 | 0 | 2 | 3 | 310211 & 60 Cr. Hrs. |
| 314436 | Advance Web Administration | 2 | 0 | 2 | 3 | 314336 |
| 314445 | Digital Photography | 2 | 0 | 2 | 3 | 314242 & 314345 |
| 314447 | Digital Video Production | 2 | 0 | 2 | 3 | 314242 & 314345 |
| 314450 | Selected Topics in Multimedia | 2 | 0 | 2 | 3 | 60 Cr.Hrs. |
| 580325 | Web-Based Instruction | 2 | 0 | 2 | 3 | 314332 |
| 310438 | IS Project Management | 3 | 0 | 0 | 3 | 311335 |

# Course Sequencing Plan

## FIRST SEMESTER

| Course No. | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Tut | Lab | Cr. Hrs. | |
| 111000 | Orientation | 1 | 0 | 0 | 0 | - |
| 102110 | Islamic Culture | 2 | 2 | 0 | 3 | - |
| 102140 | Communication Skills in Arabic Language | 3 | 0 | 0 | 3 | - |
| 300100 | Mathematics I / C | 3 | 2 | 0 | 3 | - |
| 104110 | Computer Applications | 2 | 0 | 2 | 3 | - |
| 117140 | Environmental Sciences | 3 | 0 | 0 | 3 | - |
| Total | | 14 | 4 | 2 | 15 | |

## SECOND SEMESTER

| Course No. | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Tut | Lab | Cr. Hrs. | |
| 310112 | Programming I | 2 | 2 | 2 | 3 | - |
| 314131 | Internet Technology | 2 | 0 | 2 | 3 | 104110 |
| 103110 | Statistics | 2 | 0 | 2 | 3 | - |

| Course No. | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| 300200 | Mathematics II / C | 3 | 0 | 0 | 3 | 300100 |
| xxxxxx | University Elective I | 3 | 0 | 0 | 3 | - |
| Total | | 12 | 2 | 6 | 15 | |

## THIRD SEMESTER

| Course No. | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Tut | Lab | Cr. Hrs. | |
| 310211 | Programming II | 2 | 2 | 2 | 3 | 310112 |
| 314231 | Internet Programming | 3 | 0 | 0 | 3 | 310112 & 314131 |
| 314241 | Multimedia Technology | 2 | 0 | 2 | 3 | 310112 |
| xxxxxx | University Elective II | 3 | 0 | 2 | 3 | - |
| xxxxxx | University Elective III | 3 | 0 | 0 | 3 | - |
| Total | | 13 | 2 | 6 | 15 | |

## FOURTH SEMESTER

| Course No. | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Tut | Lab | Cr. Hrs. | |
| 314232 | Web Development | 2 | 0 | 2 | 3 | 314231 |
| 311223 | Data Structures & Algorithms | 3 | 0 | 0 | 3 | 310211 |
| 311321 | Computer Graphics | 2 | 0 | 2 | 3 | 310211 |
| 314242 | Multimedia Authoring | 2 | 0 | 2 | 3 | 314241 |
| 311335 | Software Engineering I | 3 | 0 | 0 | 3 | 310211 |
| 314245 | Computer Organization and Architecture | 2 | 0 | 2 | 3 | 310211 |
| Total | | 12 | 0 | 6 | 18 | |

*Summer session: Industrial training for six weeks (1.5 Cr. Hrs.)*

## FIFTH SEMESTER

| Course No. | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Tut | Lab | Cr.Hrs. | |
| 311435 | Human Computer Interaction | 3 | 0 | 0 | 3 | 310211 |
| 310455 | E-Commerce | 3 | 0 | 0 | 3 | 314231 |
| 314210 | Writing for the Web | 3 | 0 | 0 | 3 | 60 Cr. Hrs. |
| 311381 | Computer Networks I | 2 | 0 | 2 | 3 | 104110 & 40 Cr. Hrs. |
| 314332 | Web Design | 2 | 0 | 2 | 3 | 314232 |

| Course No. | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| Total | | 13 | 0 | 4 | 15 | |

## SIXTH SEMESTER

| Course No. | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Tut | Lab | Cr. Hrs. | |
| 311332 | Database Management Systems | 2 | 0 | 2 | 3 | 310211 |
| 311382 | Computer Networks II | 3 | 2 | 0 | 3 | 311381 |
| 314347 | Computer Animation | 2 | 0 | 2 | 3 | 314242 |
| 314345 | Audio & Image Processing | 2 | 0 | 2 | 3 | 314241 & 300200 |
| 310314 | Computer Ethics | 3 | 0 | 0 | 3 | 45 Cr. Hrs. |
| Total | | 12 | 2 | 6 | 15 | |

*Summer Session: Industrial training for six weeks (1.5 Cr. Hrs.)*

## SEVENTH SEMESTER

| Course No. | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Tut | Lab | Cr. Hrs. | |
| 311451 | Operating Systems | 3 | 2 | 0 | 3 | 314245 |
| 310466 | Computer  Security | 3 | 0 | 0 | 3 | 311381 |
| 314430 | Web Design Project | 1 | 0 | 4 | 3 | 314332 & 80 Cr. Hrs. |
| xxxxxx | Major Elective I | 3 | 0 | 0 | 3 | xxxxxx |
| xxxxxx | Major Elective II | 3 | 0 | 0 | 3 | xxxxxx |
| Total | | 13 | 2 | 4 | 15 | |

## EIGHTH SEMESTER

| Course No. | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Tut | Lab | Cr. Hrs. | |
| xxxxxx | Major Elective III | 3 | 0 | 0 | 3 | xxxxxx |
| xxxxxx | Major Elective IV | 3 | 0 | 0 | 3 | xxxxxx |
| 314336 | Web Server Administration | 2 | 0 | 2 | 3 | 311381 |
| 314370 | Wireless Programming | 2 | 0 | 2 | 3 | 310211 |
| 314440 | Multimedia Project | 1 | 0 | 4 | 3 | 80 Cr. Hrs. |
| Total | | 11 | 0 | 8 | 15 | |

*The minimum number of credit required for Bachelor of Science degree is 123 Cr. Hrs.  In addition the student must complete a 12-week training period (3 Cr. Hrs.)*

# Courses Descriptions

### 300100 Mathematics I /C (3-0-2-3)

This course covers the essential mathematical topics that students specialized in computer sciences are expected to know. The first part of the course deals with plane analytic geometry. The second part covers the basic knowledge about matrices and determinants. The third part is designed to provide students with notions of real functions: limits, continuity, differentiability, and integration with applications on simple derivatives and integrals. *Prerequisite: none*

### 300200 Mathematics II /C (3-0-2-3)

This course is a continuation of Mathematics (I). It is designed to extend student's background in Calculus. It covers algebraic properties of complex numbers, a detailed study of transcendental functions, an introduction to functions of two variables. A part of this course deals with methods of integration and their applications for computing areas and volumes. It also covers multiple integrals, curve length and surface areas. The last part covers numerical series with an emphasis on geometric series, tests of convergence, and Taylor series expansion of functions in the neighborhood of a point. *Prerequisite: 300100/C*

### 300100 Mathematics/IS I (3-0-2-3)

This course is designed to strengthen the knowledge of the students and gain skills in Calculus. The course deals with functions and related topics such as limits, continuity, graph and derivative. The course also provides a preliminary understanding of linear algebra and linear programming. *Prerequisite: none*

### 300200 Mathematics II/ -Discrete Structures (3-0-2-3)

This course presents the mathematics that underlies the technical aspects of computer science. It provides an introduction to the discrete mathematics and mathematical logic relevant to broad area of computing. Topics covered are: sets; relations; elementary logic; proof techniques; recursion and recurrence relations; counting; graphs and trees; cryptography; theory of computing. *Prerequisite: 300100/ IS*

### 310112 Programming I (2-2-2-3)

This course is an introduction to computer programming and object-oriented thinking in the C++ programming language. Contents include: C++ program format, compiling and running programs, basic elements of C++, standard and file input/output, conditional control structures, looping control structures, predefined and user defined functions, arrays and strings. *Prerequisite: none*

### 310115 Financial Accounting (3-0-0-3)

This course introduces students to the accounting function and how it is used within our economic society. It views accounting as an information-generating system that communicates financial data to support end users in their economic decision-making. The course includes the theory and concepts of accounting, as well as their application to the recording of financial information for the three types of business organizations: sole proprietorship, partnership, and corporation. Emphasis is on the corporate form of organization. *Prerequisite: none*

### 310134  Information Systems for Business (2-2-0-3)

In this course, students will learn ways that organizations improve their business practices through the use of computer

technology. It emphasizes systems technologies, enterprise integration, business applications and critical analysis of organizational change through Information Systems. *Prerequisite: 104110*

### 310211 Programming II (2-2-2-3)

This course extends the knowledge learned in *Programming I*. Contents include: user-defined simple data types, structures and arrays, classes and data abstractions, pointers, overloading and templates, recursion. *Prerequisite: 310112*

### 310217 Human Resources (3-0-0-3)

This course will enable a student to identify principal human resources management functions within an organization. Included among the topics are the following: personnel issues, performance appraisals, interviewing, communications, supervising, motivation, and leadership. *Prerequisite: 400291*

### 310234 Management Information Systems (3-0-0-3)

The aim of the course is to familiarize the student with tools necessary to design, develop, and implement a management information system within an organization. The course also aims to show how management Information Systems can provide an information network necessary to achieve competitive advantage and an effective planning.

*Prerequisite: 310134*

### 310300 Training -Information Systems (3-0-0-3)

Training familiarizes students with actual working environments. It gives them the opportunity to integrate their knowledge and skills learned by applying them to real world problems encountered in business and industry.

Training also gives the student a feeling of what is involved in working on actual Information Technology problems and develop communication skills. *Prerequisite: 60 credit hours*

### 310314 Computer Ethics (3-0-0-3)

The course is intended to teach students to become effective professionals in the computer field by examining many of the challenging legal, social and ethical issues surrounding computer technology and its use. *Prerequisite: 45 credit hours*

### 310334 IS Theory & Practice (3-0-0-3)

This course provides an understanding of organizational systems, planning, and decision process, and their support by information system. It covers the concepts of Information system and organization systems, roles of information and information technology; roles of people using, developing and managing systems, network and telecommunication system management, quality control and reengineering, management and development of systems, end-user computing, and the social and ethical issues related to Information Systems development and use. *Prerequisite: none*

### 310335  Data Mining (3-0-0-3)

This course aims to introduce students to concepts and techniques of Data Warehousing and Data Mining. Topics covered include: data warehouse architecture, development life cycle, logical data modeling for a data warehouse, physical data design; Data mining concepts and tasks, data preprocessing and reduction, classification techniques, association analysis and algorithms, clustering analysis and algorithms, anomaly detection methods, and web mining. *Prerequisite: 311332*

## 310344 Computer Operating Systems (3-0-2-3)

The principles and concepts of modern computer organization are studied as a hierarchy of levels. The course covers the basics of computer architecture (using examples such as the Pentium II, Ultra SPARC II and Java Virtual Machine) and operating systems concepts (process management, memory management, file systems, Input/output and device control). Distributed systems are also explored.
*Prerequisite: 60 credit hours*

## 310438 IS Project Management (3-0-0-3)

Development of Information Systems is characterized by rapidly changing environments and technologies, high cost, and a high degree of uncertainty. Furthermore, the actual value of these efforts is difficult to measure in most situations. These conditions have created a business environment in which project management is one of the fastest growing career fields. Today, powerful software is required to manage the tradeoff between time, cost, and quality for a continuous array of development projects within all industries; even in "low-tech" industries, Information Systems projects demand a continuous flow of resources.
*Prerequisite: 311335*

## 310440 IS Project (1-4-0-3)

This course aims to give students the opportunity to work in a guided but independent fashion to investigate a problem by making use of Information Systems knowledge, techniques, and methodologies acquired in the previous semesters to provide a suitable software solution. The course also aims to enhance communication skills, both oral and written.

*Prerequisite: 100 credit hours*

## 310445 Selected Topics in Programming Languages (2-2-0-3)

Designing Track. CIW is an information technology job curriculum and certification for the knowledge economy; designed to help career changers enter the IT industry and experienced and vendor-certified professionals build on existing IT skills.

*Prerequisite: 310211*

## 310450 Selected Topics in Information Systems ((2-2-0-3)

This course aims at introducing new developments in Information Systems not specifically covered in the curriculum and in which the instructor has developed interest and proficiency. The intention is to provide a rapid response to current trends and to widen student's knowledge in Information Systems field. Course content may change from time to time.

*Prerequisite: 60 credit hours*

## 310455 E-Commerce (2-2-0-3)

Electronic Commerce is one of the most demanding disciplines now days in the area of information Technology. This course covers the core ideas for electronic commerce infrastructure, Role of Intranet and Extranet in Commerce Transactions, security issues, electronic payment mechanism, advertisement and direct marketing over the net, and some latest techniques for developing ecommerce base websites by using ASP and ASP.net.

*Prerequisite: 314231*

## 310466 Computer Security (3-0-0-3)

Computer Security is the process through which information stored in a computer or in transit through a computer network or communication channels, is secured

against internal and external threats of various forms: viruses, hackers, eavesdropping and fraud. The security is implemented to protect information confidentiality, authenticity, availability and integrity using encryption, firewalls and back up techniques.

*Prerequisite: 311381*

## 310471 Knowledge Based Systems (2-2-0-3)

This course introduces the concepts, principles, and techniques of knowledge base systems, with a focus on implementation of a working expert system. It covers knowledge representation, search methodologies, prepositional and predicate logic, Inference and resolution for problem solving, and rules and expert systems.

*Prerequisite: 60 credit hours*

## 311221 Discrete Structures (3-0-2-3)

This course presents the mathematics underlying the technical aspects of computer science. It provides an introduction to the discrete mathematics and mathematical logic relevant to the area of computing. Topics include: introduction to set theory; prepositional calculus; predicate calculus; induction; functions; and relations, finite state automata, counting, graphs and trees.

*Prerequisite: 300100 & 104110*

## 311223 Data Structures & Algorithms (3-0-0-3)

The course covers concepts of program performance (time and space complexity); abstract data types; recursion; abstract data structures: lists, stacks, queues, graphs, trees, binary search trees, priority queues, heaps, and operations on them and their applications; sorting; searching and hashing.

*Prerequisite: 310211*

## 311242  Digital Logic Design (3-0-2-3)

This course focuses on all techniques necessary to design digital circuits for a wide range of applications, including computer systems. Considerations such as cost and speed of the circuit realizations are essential to take into account. Topics include: combination logic; functional decomposition; circuit analysis and synthesis; logic arrays; sequential circuit analysis and memory devices.

*Prerequisite: 104110*

## 311248 Micro-Processor Systems & Design (2-2-0-3)

This course examines the concepts in microprocessor and embedded system design, microprocessor applications, and development techniques. Coverage includes microprocessor hardware, software, and architecture. 80x 86 Intel family, memory real and protected mode and interrupts will be considered. Advanced microprocessor systems as the Intel Pentium will be examined for this purpose.

*Prerequisite: 312245*

## 311300 Training CS (3-0-0-3)

Training familiarizes students with actual working environments. It gives students the opportunity to integrate their knowledge and skills learned in the course by applying it to real world problems encountered in business and industry. Training also gives the student a feeling of what is involved in working on actual information technology problems and develop communication skills.

*Prerequisite: 60 credit hours*

## 311311 Computational Mathematics (2-2-0-3)

Introduction to numerical methods and concepts used in problem solving, solution of linear systems, vector spaces and subspaces, linear transformations, Eigenvalues and

Eigenvectors, solution of first and second order differential equations and conic sections.

*Prerequisite: 300200/C*

### 311319  Introduction To Formal Languages & Automata
### (3-0-0-3)

This course provides an introduction to the theory of formal languages and machines. We start by defining the 3 concepts: grammars, automata and languages. We present different classes of grammars with the Chomsky hierarchy of languages and corresponding machines. The first half of the course, up through the midterm is centered on regular languages and finite state automata. The second half will be spent mostly on context free languages of various types, but we will define push down automata. Turing machines and linear bound automata is introduced for context sensitive languages.

*Prerequisite: 311221*

### 311321 Computer Graphics (2-2-0-3)

This course is designed to give the students an understanding of computer graphics concepts, algorithms, and application. Topics include: Basic concepts, 2-D and 3-D modeling and transformations, viewing transformations, projections, clipping, and animation.  Students will use OpenGL graphics API to reinforce concepts and implement graphics algorithms and applications in the lab.

*Prerequisite: 310211*

### 311323 Operations Research (3-0-0-3)

The aim of the course is to introduce the students to the techniques of operational research. Topics include: Linear mathematical models, graphical solution of LP models, simplex method, post-optimality analysis transportation model, statistical decision making , network analysis , and non-linear-programming.

*Prerequisite: 103110*

### 311332 Database Management Systems (2-2-0-3)

This course is designed to give a theoretical and practical background in database techniques. It covers: database concepts, data models, data dictionary, entity relationship diagrams, relational data model, converting E-R models to relational model, relational algebra, SQL language, and normalization.

The Oracle software is used in the Lab.

*Prerequisite: 310211*

### 311335 Software Engineering I (3-0-0-3)

Software engineering course is concerned with the theories, methods and tools which are needed to develop the software for these computers. It presents a broad perspective on software systems engineering, concentrating on widely-used techniques for developing large-scale software systems. The course covers a wide spectrum of software processes from initial requirements elicitation through design and development to system evolution.  Graphical system models are described in the standard UML. Many case studies are provided.

*Prerequisite: 310211*

### 311336 Software Engineering II (3-0-0-3)

Computer software is the product that software engineers design and build. This is an intermediate course on software engineering topics. It is a continuation for the course of Software Engineering I. It covers Software Validation and Testing Strategies and Tactics, Software Evolution, Software Reuse, and other Advanced Topics such as Web Engineering, Formal methods, Component-Based Development, and

Reengineering. Students will be prepared to engineer high-quality Web applications. Many case studies are provided.

*Prerequisite: 311335*

## 311342 Computer Architecture (3-0-0-3)

This course deals with design alternatives in computer architecture: basic computer components and their functions, including central processing unit, arithmetic & logic unit, control unit, memory system organization (internal, external, and cache memories), Input /Output techniques (programmed I/O, interrupt I/O, and DMA).

*Prerequisite: 312245*

## 311381 Computer Networks I (2-2-0-3)

This course introduces the basic components of computer networks from software and hardware point of view. The role of physical components like network interface adapters, modems, cables, hubs and switches is explained. Basic network design using structured cabling and transmission of digital data as electronic signals is presented. The layered structure of network protocols is discussed. It emphasis on protocol and interface specifications, in particular those adhering to OSI and TCP/IP reference models. The application layer protocols of TCP/IP such as HTTP, FTP, Telnet, and SMTP will be studied.

*Prerequisite: 310211*

## 311382 Computer Networks II (3-0-2-3)

This course covers wide area networks and its applications in detail. WAN protocols, Virtual Private Networks, Web Technologies, Web server installation and support are discussed. Wireless and mobile computing principles are introduced; Mobile data access and software for mobile computing are covered in detail. Emerging technologies and performance evaluation of networks is also discussed.

*Prerequisite: 311381*

## 311422 Organization of Programming Languages (3-0-0-3)

This course is an investigation of the design and implementation of multi-purpose High-Level programming languages. It looks at concepts, not complete languages, touching on many programming languages. Students will learn what contributions each has made to the state of the art in language design. They will also learn about a variety of paradigms and be able to make critical evaluation of language features within those paradigms.

*Prerequisite: 311223*

## 311431 Project CS (1-4-0-3)

This course aims to give students the opportunity to work in a guided but independent fashion to investigate a problem by making use of computer science knowledge, techniques, and methodologies acquired in the previous semesters to provide a suitable software solution. The course also aims to enhance communication skills, both oral and written.

*Prerequisite: 100 credit hours*

## 311435 Human Computer Interaction (3-0-0-3)

The course highlights human-computer interaction strategies from a number of perspectives including that of the engineer, cognitive psychologist, and end-user. Major subjects include the design and evaluation of usable interfaces, matching computer systems with the cognitive capabilities of users, and an investigation of novel paradigms in HCI.

*Prerequisite: 310211*

## 311442 Design And Analysis Of Algorithms (3-0-0-3)

This course will discuss fundamental concepts and techniques for designing efficient algorithms and analyzing

their performance. Topics include the basic classes of algorithms: Divide & conquer greedy methods, tree and graph traversals, backtracking, and dynamic programming. Some advanced topics in algorithms may be selected from other areas of computer science. Types of problems such as satisfiability, traveling salesman, knapsack, vertex cover and others will be studied. Understanding of the inherent complexity of problems: polynomial time, NP-completeness and approximation algorithms. The course provides proofs of NP completeness of some problems.

*Prerequisite: 311223*

## 311450 Selected Topics In Computer Science (2-2-0-3)

The purpose of this course is to introduce the student to new technologies and developments in the computer science field. Topics vary according to the area of computing considered for the course.

*Prerequisite: 60 credit hours*

## 311451 Operating Systems (3-0-2-3)

The course covers the principles and concepts of modern operating systems. Topics include: operating system services: processes and process management, memory management, file systems, Input/Output and device control, deadlocks. Case studies. Distributed systems.

*Prerequisite: 312245*

## 311453 Parallel Processing (3-0-0-3)

Basic concepts of Parallel Processing techniques, forms of parallelism, algorithms and architectures for various parallel processing applications, case studies of parallel machines and their performance measures, software tools for parallel machines.

*Prerequisite: 311342*

## 311463 Database Design & Implementation (2-2-0-3)

This course is designed to give students theoretical and practical knowledge concerning the design of database information systems. Topics include: extended E-R diagrams, physical design, and implementation aspects of databases (PL/SQL, forms & reports), Client-server models, and database connectivity. Managing multi-user databases: Concurrency, Recovery, and Security; Query optimization; Distributed databases.

*Prerequisite: 311332*

## 311471 Artificial Intelligence (2-2-0-3)

The course aims to introduce the concepts and techniques of artificial intelligence. Topics include: intelligent systems, logic, prolog programming, search techniques, knowledge representation schemes (predicate logic, frames, and production rules), knowledge manipulation and inference, agents and multi-agents, machine planning, and machine learning.

*Prerequisite: 60 credit hours*

## 311472  Compiler Theory & Design (3-0-0-3)

The purpose of this course is to cover the underlying concepts and techniques used in compiler design. The notion of grammar is introduced to develop deterministic finite automata for scanning and top down or bottom up for parsing. The semantic analysis and IR are introduced. The translation phase generates the assembly languages as a tool to design the object code. The main objective of this course is to understand how most computer languages and software are designed. The project in course introduces the idea of software development. The student can implement any phase using   any high level language.

*Prerequisite: 311223 & 311319*

### 311474 Computer Simulation (2-2-0-3)

This course aims to introduce students to elements and methodology of simulation. Topics include: basic concepts and types of simulation, discrete-event simulation, a review of probability and statistics relating to simulation, selecting input probability distributions, generation of random variants, design of simulation experiments and output analysis, verification and validation of simulation models. Students are expected to submit a simulation project.

*Prerequisite: 310211*

### 311475 Expert Systems (2-2-0-3)

The course provides an understanding of the principles, design, development and operation of expert systems; Topics covered include: Knowledge representation with production rules; Inference using forward chaining and backward chaining; Uncertainty handling: Frame based expert systems; Fuzzy expert systems; Knowledge acquisition and data mining; Agents and multi-Agents systems. Practical assignments are used to emphasize these topics.

*Prerequisite: 311471*

### 311478 Fault Tolerant Computing (3-0-0-3)

Introduction to functions of fault tolerance, fault detection techniques, fault prevention, roll-back mechanisms, roll-forward mechanisms, hardware redundancy, handling exceptions, estimation of reliability of systems, case studies.

*Prerequisite: 311342*

### 312201 Electric Circuit Analysis (3-1-0-3)

Fundamental concepts for DC and AC circuit analysis, Impedance and Admittance, Mesh, Nodal, Superposition, Thevenin's and Norton's theorem, transient response of RC and RLC circuits., sinusoidal steady state response, RMS values, phasor diagrams, resonance.

*Prerequisite: 121132*

### 312242 Digital Logic Design (3-2-0-4)

Boolean algebra and Boolean expressions, K-Map minimization, function realization, Techniques of designing digital circuits for a wide range of applications, including combinational circuits, sequential circuits and computer arithmetic systems. Considerations such as cost and speed of the circuit realization are discussed.

*Prerequisite: 104110*

### 312245 Computer Organization (2-2-0-3)

Organization of von Neumann machine, explains how instructions are fetched from memory and executed, how numerical values are represented in digital computers, identifies the main types of memory used and design of simple computer interface.

*Prerequisite: 310211 & 312242*

### 312302 Electronics I (3-2-0-4)

Fundamental concepts of semiconductor devices (Diodes and Transistors) and their applications to: Rectifiers, Bipolar Transistor Electronic Switch, Field Effect Transistor (FET) Electronic Switch, Transistor (Bipolar, FET & MOS) Logic Gates, Logic families.

*Prerequisite: 312201*

### 312303 Electronics II (2-2-0-3)

Introduction to the theory and applications of transistors as amplifiers, Both BJT and FET amplifiers are discussed and analyzed. It is followed by a detailed coverage of operational amplifiers. Linear and non-linear circuits are discussed. Use of Op-amps for summing, integration, differentiation, waveform generation, filters and oscillators is explained. Analog to digital and digital to analog converters, Thyristors and regulated power supply circuits are also covered.

*Prerequisite: 312302*

### 312305 Electrical & Electronic Measurements and Instrumentation (2-2-0-3)

Basic concepts of measurements, accuracy, tolerance, errors, measurement techniques used with a wide range of sensors, dc and ac measuring devices, electronic multi-meters, frequency generators, oscilloscopes, logic analyzers, automatic test equipment.

*Prerequisite: 312302*

### 312348 Microprocessor Systems (3-2-0-4)

Concepts in microprocessor system design, microprocessor applications, and development techniques. Coverage includes microprocessor hardware, software, architecture and buses. 80x86 Intel families, real and protected mode, interrupts and interfacing techniques are explained. Advanced microprocessor system architectures such as the Intel Pentium are covered.

*Prerequisite: 312245*

### 312415 Integrated Circuit Design

Introduction to various integrated circuit families and VLSI design technology, semiconductor memory circuits, IC design flow, fabrication steps of CMOS process, VLSI design abstractions.

*Prerequisite: 312302*

### 312441 Embedded Systems (2-2-0-3)

Comprehensive understanding of the technologies behind embedded systems, particularly those using computing elements (microprocessor, microcontroller, DSP). The students develop an appreciation of the technology capabilities and limitations of the hardware, software components for building embedded systems using a microcontroller, and methods to evaluate design tradeoffs between different technology choices.

*Prerequisite: 312348*

### 312530 Selected Topics in computer Engineering (3-0-0-3)

This course covers some advanced topics related to computer science and engineering that are not covered in any of the above mentioned courses and are considered useful additional learning material for students majoring in computer engineering. Course contents are approved by the departmental and College curriculum committees.

*Prerequisite: 70 credit hours*

### 312531 Project I (1-4-0-3)

All students must undertake a team project related to software engineering, hardware design or research. A software engineering project is one whose main purpose is to design and implement a software system that solves a well-understood problem. A hardware design project is one whose main purpose is to design and implement a hardware system. A research project is one whose main purpose is experimentation or investigation into a (possibly) ill-understood problem. The team is required to submit a formal project report along with a presentation of the software/hardware product developed. In case of a research project, results of experimentation or theoretical analysis and simulation must be presented.

*Prerequisite: 90 credit hours*

### 312532 Project II (1-4-0-3)

All students must undertake a second team project related to software engineering, hardware design or research. It could be a follow-up of the work done in Project I or a new topic or type of research. A software engineering project is one whose main purpose is to design and implement

a software system that solves a well-understood problem. A hardware design project is one whose main purpose is to design and implement a hardware system. A research project is one whose main purpose is experimentation or investigation into a (possibly) ill-understood problem. The team is required to submit a formal project report along with a presentation of the software/hardware product developed. In case of a research project, results of experimentation or theoretical analysis and simulation must be presented.

*Prerequisite: 312531*

### 312545 Computer Ethics (1-0-0-1)

The course addressed the legal, social and ethical issues relating to the use of information technology. It covers public policy, professional and ethical responsibilities, risks and liabilities, intellectual property rights, privacy and civil liberties and economic issues in computing.

*Prerequisite: 70 credit hours*

### 312552 Performance Evaluation of Computer Systems (3-0-0-3)

Complexity of systems architectures and applications make benchmarking a difficult task. The objective of this course is to teach fundamental techniques to characterize computer systems and applications in order to analyze their performance. A sound understanding of the main techniques used in performance evaluation: statistical techniques, simulation, analytical modeling of processors, development of benchmarks and experiments for performance evaluation. characterization of processors and applications with adequate performance metrics.

*Prerequisite: 311342*

### 312560  Digital Image Processing (3-1-0-3)

Image representation, Sampling , Quantization, Color representation, Image transforms; DFT, DCT, Image Enhancement, spatial domain methods, Histogram processing, Linear and nonlinear filters, frequency domain methods, Image restoration, Wiener filter, Constrained least square filters, Image Compression, Lossless predictive coding, Transform coding, JPEG, MPEG.

*Prerequisite: 70 credit hours*

### 312570 Fuzzy Logic and Neural Networks (3-0-0-3)

Theory and applications of artificial neural networks and fuzzy logic: multi-layer perceptron, self-organization map, radial basis network, Hopfield network, recurrent network, fuzzy set theory, fuzzy logic control, adaptive fuzzy neural network, genetic algorithm, and evolution computing. Applications in control, pattern recognition, nonlinear system modeling, speech and image processing.

*Prerequisite: 311471*

### 314131 Internet Technology (2-2-0-3)

This course teaches students how to use Web browsers to access the services available on the Internet. Topics covered in this course are the World Wide Web, Internet, electronic mail, Telnet, Gopher, FTP, legal issues, ethical issues, privacy, security, and etiquette. Students will also learn how to create simple basic Web pages.

*Prerequisite: 104110*

### 314210 Writing for the Web (3-0-0-3)

The course will teach students to adapt the written and oral communication skills they have already acquired to the challenge of electronic communications where elements of expression and forms are blended in new ways.

*Prerequisite: 60 credit hours*

### 314231 Internet Programming (2-2-0-3)

This course is an introduction to the programming tools and skills required to create Web applications. After reviewing the basic fundamentals of the Internet and the World Wide Web, some of the common Web programming tools are studied. These are markup languages: XHTML and XML, and scripting languages: JavaScript.

*Prerequisite: 310112, 314131*

### 314232 Web Development (2-2-0-3)

The main aim of the module is to continue on Web development by introducing the students to programming tools and skills required to maintain the server side on the Web. These tools include: Perl, Java Server Pages, PHP, ASP. Net and ways to access a database.

*Prerequisite: 314231*

### 314241 Multimedia Technology (2-2-0-3)

In this course, students will be introduced to principles and current technologies of multimedia systems and gain hands-on experience in this area. Issues in effectively representing, processing, and retrieving multimedia data such as sound and music, graphics, image and video will be addressed.

*Prerequisite: 310112*

### 314242 Multimedia Authoring (2-2-0-3)

This course is designed to give students a fundamental understanding of computer authoring techniques used in multimedia and hypermedia production. Students will develop authoring skills using Flash, Macromedia Director and the Lingo authoring language. The emphasis of the course is on applying media design and development techniques to authoring systems and to nonlinear content presentations. Students are required to develop a multimedia authoring application.

*Prerequisite: 314241*

### 314245 Computer Organization and Computer Architecture (2-2-0-3)

This course is an introduction to the organization and design of hardware and software of digital computers. The course also includes coverage of some low level topics such as data representations.

*Prerequisite: 310211*

### 314300 Training (0-0-0-3)

Training familiarizes students with real world working environments. It prepares students to step into the industrial enterprise to integrate and apply their knowledge and skills to Multimedia/Web Development applications learned throughout the courses. Training gives the student a feeling of what is involved in working on actual IT problems. It also gives the student an opportunity to develop communication skills, and develop ability to work with team members.

*Prerequisite: 60 credit hours*

### 314332 Web Design (2-2-0-3)

This course teaches students the basics of the Web page and Web site design. The following topics will be covered. Designing WWW page layout, organization, and basic typography. Studying visual design theory and working with graphic tools Hypertext Markup (HTML) & XML. Cascading style sheet (CSS) design for accessibility.

*Prerequisite: 314232*

### 314336 Web Server Administration (2-2-0-3)

This course teaches foundational Web Server Competencies. Students will learn how to install, configure and administer

Web Server Products and Services, including Security, in both Microsoft and UNIX environment. User management concepts, Domain Name System (DNS) services, Microsoft WINS, Samba, Telnet, and FTP will be addressed. Students also learn about choosing appropriate Internet system platforms and receive training on how to calculate throughput, choose appropriate Internet connections. By the end of this course, students will be able to provide essential TCP/IP services for any business interested in establishing an effective e-commerce presence.

*Prerequisite: 311381*

### 314345 Audio and Image processing (2-2-0-3)

Audio Processing: Introduction to Analogue and Digital Audio Systems, Sampling and transformation, Time stretching, Delay Lines, Sound Filtering and Composition, Audio File Format and Storage Devices. Image Processing: Digital Images, image Filtering, Image representation and transformation, enhancement techniques, segmentation, Image File Format and storage devices, and image coding.

*Prerequisite: 314241 & 300200*

### 314347 Computer Animation (2-2-0-3)

This course covers the concepts and techniques of 2D and 3D computer animation. The topics covered include modeling 2D and 3D objects; rendering; animation techniques; composition and special effects and recording. Students will learn how to develop a story board on a computer-animated sequence using various modeling and animation tools. The course includes small projects leading to the production of a short computer animation by each student.

*Prerequisite: 314242*

### 314370 Wireless Programming (2-2-0-3)

The aim of the course is to develop programming skills for wireless devices using Java 2 Micro Edition, or J2ME, through the Mobile Information Device Profile, or MIDP. The course begins with a description of the J2ME architecture, focusing on wireless programming via the Connected, Limited Device Configuration, or CLDC, and the MIDP. Topics include: user-interface design; high- and low-level UI frameworks; using commands and events; MIDP Record Management System for limited persistent storage on the device; mobile networking; multithreading, both using the basic Thread/Runnable model and the CLDC's Timer and TimerTask classes.

*Prerequisite: 310211*

### 314430 Web Design Project (1-4-0-3)

The aim of the course is to give students the opportunity to create a Web application by integrating all knowledge and skills which will be learned by working as a member of a group of 2-3 students under the supervision of a faculty. Projects can be undertaken in the area of Web Site design and development, Data warehousing and data mining, e-commerce, and other related areas.

*Prerequisite: 80 credit hours + 314332*

### 314436 Advanced Web Admin (2-2-0-3)

This course teaches students how to implement mission-critical services on the Windows and Linux platforms. Students install and configure Web related product, Newsgroup, e-mail and proxy servers; receive in-depth understanding of how to connect e-commerce databases to Web servers; and learn how to enable CGI on Windows and Linux. Students also learn about backup and load balancing issues, and receive foundational knowledge concerning Internet security.

*Prerequisite: 314336*

### 314440 Multimedia Project (1-4-0-3)

This course aims at integrating all knowledge and skills learned in the major to further develop the experience in the production of a multimedia product. Projects can be undertaken in the area of presentations, short animations, multimedia databases, audio and image processing, authoring, and other related areas. Students will work as members of small groups of 2-3 students under the supervision of a faculty.

*Prerequisite: 80 credit hours*

### 314445 Digital Photography (2-2-0-3)

This course concentrates on capturing and processing of digital images. Included in this course a survey of digital still cameras and other hybrid imaging devices; preparing of imagery for print via color management procedures; Immersive Imaging (QuickTime VR). It also includes advance techniques and issues related to still digital images.

*Prerequisite: 314242 & 314345*

### 314447 Digital Video Production (2-2-0-3)

This course aims to introduce students to the necessary technical skills required to originate basic digital video material for multimedia. It incorporates production and editing procedures for multimedia. Students will learn to produce and edit a short video sequence, including basic titling, superimpositions and effects for output to multimedia/CD/Web environments. The tools used may change each semester depending upon the latest trends in the digital video production community.

*Prerequisite: 314242 & 314345*

### 314450 Selected Topics in Multimedia ( 2-2-0-3)

This course aims at introducing new developments in Multimedia not specifically covered in the curriculum and in which the instructor has developed interest and proficiency. The intention is to provide a rapid response to current trends and to widen student's knowledge in Multimedia field. Course content may change with department approval.

*Prerequisite: 60 credit hours*

### 315101 Calculus for Information Technology (3-0-2-3)

This course covers the essential mathematical topics, that students specialized in information technology needs. The first part of the course deals with plane analytic geometry. The second part covers the basic knowledge about matrices and determinants. The third part is designed to provide students with notions of real functions: limits, continuity, differentiability, and integration with applications on simple derivatives and integrals.

*Prerequisite: -*

### 315207 Principles of Accounting (3-0-0-3)

This course is a fundamental study of the principles and procedures of accounting as applied to sole proprietorships, partnership and corporations. The main objective of this course is to introduce the student to the basic concepts and practices of financial accounting. More specifically, it discusses the nature of financial accounting, which document to use and what and how information should be presented. Throughout the course, the emphasis will be on discussion of generally accepted accounting principles (GAAP)

*Prerequisite: -*

### 315208  Computerized Accounting (2-2-0-3)

The Computerized accounting information system joins together the skill sets of  accounting and information technology. Information technology has created new challenges and opportunities for accountants who also

have expertise in information systems. Many traditional accounting functions are now embodied in systems that require a different combination of technical and financial knowledge. The CAIS course is designed to provide this combination of knowledge and skill sets to meet the new challenges and opportunities of the information technology world. The main objective of the course is to introduce students to the design and implementation of a systematic structure for providing information for decision-making.

*Prerequisite: 315207*

### 315209 Principles of Management (3-0-0-3)

This introductory course provides an overview of the field of management. The topics covered are designed around the key functions of management: planning, organizing, leading, and controlling. Students are exposed to the development of management theories and approaches, managerial decision-making, business environment, business ethics and social responsibility.

*Prerequisite: -*

### 315102 Algorithms and Problem Solving (2-2-0-3)

This course provides knowledge of problem solving and programming concepts using pseudocode code and a computer programming language. Topics covered: the problem- solving process; data types; variables, constants, and memory locations; simple sequential programs; basic input/output; selection and control structures, file input/output; arrays and strings; and user defined functions.

*Prerequisite: -*

### 315103 Information Technology in Business (2-2-0-3)

This course aims to cover a range of general information technology topics that will make the student appreciate

the role of IT in business. Topics include: information technology fundamentals; information technologies; business applications; development processes; and ethical, societal and security issues.

*Prerequisite: 104110*

### 315201 Object Oriented Programming (2-2-0-3)

The primary objective of this course is to introduce the concepts of object-oriented programming: classes, objects, methods, object interaction, encapsulation, inheritance, abstraction, and polymorphism. Core sections of the Java language related to object oriented programming are introduced.  This course is **not** meant as a comprehensive introduction to all of Java, the primary objective is to use Java to introduce concepts of object-oriented programming.

*Prerequisite: 315102*

### 315304 Fundamentals of Web Systems (2-2-0-3)

This course introduces the basics of Web systems and how it differs from desktop systems. Students will learn client-server architecture, and how it evolves to multitier system. The course will allow student to learn and use essential Web languages and technologies including XHTML, CSS, and XML. Students will apply this knowledge to generate essential web components like basic browser controls (buttons, links, and menus), forms and frames. They will also understand how these components are managed on the server side.

*Prerequisite: 315201*

### 315307 Information Technology Project Management (2-2-0-3)

This course aims   cover: characteristics of IT Project management, initiating an IT project; project planning; defining and managing project scope, structuring a project, project schedule and budget, managing project risk, project

communication, tracking, and reporting, IT project quality management, ethics and professional practices, and project implementation.

*Prerequisite: 315305*

### 315308 Enterprise Systems  (3-0-0-3)

This course introduces students to the new concept of enterprise systems and show its  role in the industry as used by medium and large enterprises. Students will understand the main architectural components of today's enterprise and its infrastructure. The course also introduce different business domain concepts and workflow management and will help student make the link between development and implementation issues on one side and  practical enterprise applications on the other side.

*Prerequisite: 315206*

### 315401 Information Technology Project (1-4-0-3)

The course aims to give students the opportunity to work in a guided but independent fashion to investigate a problem by making use of information technology knowledge, techniques, and methodologies acquired in the previous semesters to provide a suitable solution to an IT problem. The course also aims to enhance team work and communication skills, both oral and written.

*Prerequisite: 315307 & 99 Cr. Hrs.*

### 315402 Information Technology Internship (3-0-0-3)

Internship familiarizes students with actual working environments. It gives students the opportunity to integrate their knowledge and skills learned in the course by applying it to real world problems encountered in business and industry. Internship also gives the student a feeling of what is involved in working on actual information technology

problems and develop communication and team-work skills as well as ethical issues relation to IT.

*Prerequisite: -117 Cr. Hrs.*

### 315311 Advanced Computer Networks (2-2-0-3)

This course will cover the principles of networking with a focus on algorithms, protocols, and implementations for advanced networking services.  We will examine a variety of ideas that were proposed to enhance the Internet, why some of these enhancements were successful while others were not. The emphasis in this course is on topics such as routing protocols, advanced routing and switching. It covers Internet architecture, congestion control, QoS, IPv6, and voice over IP. The student will use network simulators for some network models.

*Prerequisite: 315205*

### 315312 Network Security (2-2-0-3)

This course introduces students to main security concepts related  to the protection of a network from known threats and attacks.  This includes digital signatures, authentication protocols, IP & Web security and e-mail security. It also emphasizes the importance of using firewalls in order to secure a network. Packet-filtering routers, application and circuit-level gateways are presented. Advanced cryptographic algorithms are also discussed in details such AES, MAC & hash operations and cipher modes.

*Prerequisite: 315303*

### 315411 Network Design & Implementation (2-2-0-3)

The aim of the course is for the student to design a LAN solution detailing structured cabling components, desktop and server hardware, network operating systems, and network administration tools. He can document the design solution with materials and equipment lists, cable

installation drawings, telecommunications and server room layouts, software versions and compatibility lists, and budget requirements. Also he demonstrates design feasibility by implementing a LAN prototype with all required functionality including servers, workstations and network infrastructure. Defining a technical project plan and timeline for implementation, and discussing overall project benefits, possible technical issues and required resources to complete the project in this course.

*Prerequisite: 315311*

### 315412 Wireless and Mobile Computing (2-2-0-3)

This course presents the student with the latest in wireless technologies. The first part includes wireless networks such as, cellular and short range wireless technologies, protocols for wireless and wireless resources management. The second part includes mobile computing such as, VoIP on wireless, computing & programming over wireless. The student will study the legal and the private issues associated with wireless.

*Prerequisite: 315312*

### 315413 Network Operating Systems (2-2-0-3)

This course introduces network operating system NOS, which is the software that allows multiple computers to communicate, share files and hardware devices with one another. The course aims to provide the student with theoretical and practical knowledge of network operating systems. The student is exposed to some of the most commonly used network operating systems. The student will reinforce their theoretical knowledge in practical sessions where they will install configure , manage and trouble-shoot network operating systems.

*Prerequisite: 315301*

### 315414 Enterprise Security (3-0-0-3)

This course aims at introducing students to enterprise security concepts, related risks and cost. It mainly presents a deep coverage of intrusion detection and prevention concepts, including architectures and a survey of most popular IDS implementations and deployments. Students are also introduced to the need of having proper security policies and procedures in order to handle threats properly in addition to forensics techniques to thwart computer attacks.

*Prerequisite: 315312*

### 315415 Network Management (2-2-0-3)

The course discusses typical architectures for network management including the management console, aggregators and device agents. This course introduces management paradigms and protocols (SNMP). Remote Monitoring (RMON), Network Management Tools and Systems are examined. The Web-Based Management and Network Management Applications are covered. Configuration of basic network resources and management of multiple servers' network and troubleshooting.

*Prerequisite: 315311*

### 315321 Database Administration (2-2-0-2)

This course prepares students to administer and maintain databases by applying best practices and procedures to any database platform. With general, platform independent approach, students will be able to work as database administrators to any of the major industrial databases including Oracle, IBM BD2, Sybase, Microsoft and MySQL. Students will become familiar with DBA roles and responsibilities, be able to create a database environment with modeling and normalization as well as reporting while maintaining data integrity.

*Prerequisite: 315302*

### 315322 Web Technologies (2-2-0-3)

This course will introduce students to different Web technologies, languages, and frameworks. The student will review the dynamics of these technologies, their advantages and disadvantages. Students will also learn the applicability of each of these technologies in different Web application settings and environment. Students will also learn how to mix and match these technologies and investigate their compatibility and integration challenges.

*Prerequisite: 315304*

### 315421 Web Application Design and Development (2-2-0-3)

This course prepares students to apply different web technologies and integrate them into a web application. Topics covered include: Web applications and Rich Internet Applications (RIA), programmable Web applications, working with proxies, Yahoo and Google mash up services, Creating a Web application, model view controller pattern, from design, validation and usability, User Interaction Effects and Animation, and Tagging and Rating the Web Application.

*Prerequisite: 315322*

### 315422 Information Architecture (2-2-0-3)

Information is the heart of knowledge and one of the main pillars of information systems. This course introduces fundamental concepts and methods of understanding and modeling data as well as extracting information out of it. It also shows how to represent large volume of information and allow users to comprehend and interact with it in an effective way. The course focuses on data modeling and architecture approaches allowing student to build effective information architecture. Then the student will learn how to interact with information using different labeling, navigation, and search strategies. Students will finally learn about information architecture in practice and its applications in large organizations.

*Prerequisite: 315302*

### 315423 Advanced Database Design & Implementation (2-2-0-3)

This course builds on top of the first DBMS course by introducing advanced database concepts to allow students to effectively design and implement industrial quality database. The course revisits SQL in a deeper, more practical approach, with a focus on its PL/SQL extension. The student will learn database in a client-server setting, and see how to manage multi-user databases. Students will be able to design and implement functional databases that include major components of an industrial database.

*Prerequisite: 315302*

### 315425 Distributed and Object Databases (2-2-0-3)

This course discusses new and emerging issues in the field of distributed database. It focuses on principles of db distribution from both data distribution approach and network technologies role in distribution. Students will have in depth coverage of advanced transaction model and workflow as well as parallel databases, distributed object DBMS, push-based technology, and mobile DBMS; all of which are pillars of enterprise information technology of today.

*Prerequisite: 315423*

### 315403 Selected Topics in Information Technology (3-0-0-3)

This course aims to introduce students to new developments in the area of information technology not specifically covered in the curriculum and in which a faculty member has developed interest and proficiency. The intention is to provide a rapid response to current trends and to widen

student's knowledge in areas such as but not limited to: information storage, retrieval, security, processing, or transition. Specific content of the course will depend on the particular area taught at the time.

*Prerequisite: 315307*

### 315404  Individual Project  (2-2-0-3)

This course aims to give students the opportunity to work **alone** in a guided but independent fashion to investigate a problem by making use of information technology knowledge, techniques, and methodologies acquired in the previous semesters to provide a suitable solution to an IT problem. The course also aims to develop communication skills, both oral and written.

*Prerequisite: 315307*

### 315416 Data Compression (2-2-0-3)

The aim of this course is to introduce the theoretical underpinnings of data compression and cover many fundamental algorithms. Topics covered include: fundamentals of digital communication, communication channel, measure of information, encoding of source output, shannon's algorithms. discrete and continuous channel entropy coding, variable length code, channel noise, compression & codes, lossless compression algorithms, lossy compression algorithms, audio compression, image and video compression.

*Prerequisite: 315303*

### 315417 Distributed Systems (3-0-0-3)

The aims of this course are to study the fundamental characteristics of distributed systems.  Topics covered will include: low-level basics including sockets, internet-based inter-process communications, and threading; remote-procedure-calls and remote-method-invocations; modern synchronous and asynchronous style client server systems and supporting processes; messaging and transactional

systems; peer-to-peer and grid technologies; supporting systems such as naming and directory services.

*Prerequisite: 315311*

### 315418  Wireless Network Security (3-0-0-3)

This course introduces students to modern wireless technologies (802.11, Bluetooth, RFID, ZIGBEE, and Infrared). It covers most aspects related to radio communication and various physical phenomenon in a wireless environment. It also surveys most wireless security issues across the OSI layers and technologies (1G, 2G, 2.5G and 3G). Students will also be introduced to basic and advanced security implementations (filtering by MAC, WAP, WAP2, VPN, RADIUS), including setting proper security procedures and policies.

*Prerequisite: 315312*

### 315426 Knowledge Management (3-0-0-3)

This aim of this course is to introduce basic concepts, terminology, and techniques of Knowledge Management (KM).  Topics covered include: the origins and units of organizational knowledge; evolution of knowledge management; implementation and utilization of knowledge management systems, and how to measure their impact, outputs, and benefits.

*Prerequisite: 315308*

### 315427 Advanced Web Topics (2-2-0-3)

This course introduces students to the latest trends and technologies as used by today's information technology industry. The course focuses on advanced Web technologies that are strongly adapted as the next generation IT. Students will learn the role of Web 2.0 and Web 3.0 with special focus on Web services and Service-Oriented Architecture. The course will allow students to understand the current evolution from Personal Computing (1980s) to Network Computing (1990s) to Internet and Windows (2000s) to

today's trends of cloud computing, Web tool kits, mashups, and social networking.

*Prerequisite: 315322*

### 315428 Data Warehousing and Data Mining (3-0-0-3)

Today's IT deals with gigantic amount of information. The success of any organization greatly depends on ts ability to process and understand its information and extract essential knowledge to help managers take well informed decisions. This course aims to introduce students to concepts and techniques of Data Warehousing and Data Mining. Topics covered include: data warehouse architecture, development life cycle, logical data modeling for a data warehouse, physical data design; Data mining concepts and tasks, data preprocessing and reduction, classification techniques, association analysis and algorithms, clustering analysis and algorithms, anomaly detection methods, and web mining.

*Prerequisite: 315308*

# College of Information Technology
# List of Faculty

| Name | Country | Degree | University | Academic Rank |
|------|---------|--------|-----------|---------------|
| AJMAN CAMPUS | | | | |
| Dr. H. Khali, Dean | Canada | PhD - Electrical Engineering | Ecole Polytechnique / Canada / 2000 | Assoc. Professor |
| Dr. A. Araar | Algeria | PhD - Computer Science | Case Western Reserve Univ. /USA / 1991 | Assoc. Professor |
| Dr. R. A. Mehdi | Iraq | PhD - Computer Science | Liverpool Univ. / UK / 1990 | Assoc. Professor |
| Dr. S. Abbas Ali | Pakistan | PhD - Computer Engineering | London Univ. / UK / 1988 | Assist. Professor |
| Dr. M. A. R. Al Hnaity | Jordan | PhD, Computer Information Systems | The Arab Academy of Banking & Financial Sciences / Jordan / 2008 | Assist. Professor |
| Dr. K. A.S. Ammar | Libya | PhD - Computer Engineering | Univ. of Sherbrooke / Canada /2001 | Assist. Professor |
| Dr. M. M. El Khatib | Palestine | PhD - Mgt & Technology | University of Glamorgan / UK / 2005 | Assist. Professor |

| Name | Country | Degree | University | Academic Rank |
|---|---|---|---|---|
| Dr. M. Nachouki | Lebanon | PhD - Computer Science | Toulouse Univ.  France / 1995 | Assist. Professor |
| Mr. A. A. Mahmood | Iraq | Master - Electrical Engineering | Baghdad Univ. / Iraq / 1982 | Lecturer |
| Mr. T. Mechraoui | Australia | Master - Networking | Univ. of Western Sydny / Australia / 2003 | Lecturer |
| Mr. H. A. Sahyoun | Canada | Master - Computer Science | Univ. of Pittsburgh / USA / 1988 | Lecturer |
| A. W.  Abou Sharkh | Palestine | Bachelor - Computer  Science | Ajman University/UAE/ 1995 | Teach. Assistant |
| R. N. AlRae | Syria | Bachelor - Computer Engineering | Sharjah Uni./UAE/2007 | Teach. Assistant |
| FUJAIRA CAMPUS | | | | |
| Dr. M. A. Al- Ahmar | Syria | PhD.  Expert Database Systems | Middle East Technical University /Turkey / 2001 | Assist. Professor |
| Dr. A. Al- Nassiri | Iraq | PhD. Computer Science | Basrah- University/ Iraq,/ 1996 | Assist. Professor |
| Mr. S. I.  Ali Rizvi | Pakistan | MS computer science | International Islamic University Islamabad June/Pakistan / 2000 | Lecturer |

COLLEGE OF
# DENTISTRY

The College of Dentistry (COD) was established in academic year 1997-1998 as the first oral and dental health teaching institution in the United Arab Emirates. The college's programs are tailored to meet the oral and dental health needs of the UAE community, focusing on the prevention of oral and dental disease.

# Mission

The College of Dentistry reflects the mission of Ajman University of Science and Technology to provide dental educational programs in the UAE, to initiate and develop basic and clinical research and to offer high quality oral healthcare to meet the needs of the region. The College of Dentistry aims to prepare graduates who are highly qualified in dental sciences to deliver compassionate and ethical orofacial healthcare services.

# Objectives

*The College of Dentistry aims to:*

- educate and train a new generation of oral health professionals to world-class standards
- implement a comprehensive oral healthcare program with emphasis on prevention
- provide community dentistry services that meet world-class standards
- initiate scientific research in oral health in collaboration with prestigious international dental and medical institutions, and companies related to dentistry

# Degree Programs

The College of Dentistry currently offers two undergraduate dental programs, and a Master Program which are accredited by the UAE Ministry of Higher Education and Scientific Research. These are:

1. Doctor of Dental Surgery (DDS) degree (5 year program)
2. Diploma in Dental Hygiene (DipDH) (2.5 year program)
3. Master of Science in Restorative Dentistry (MSRD) (3 year program)

# Facilities

The College of Dentistry is equipped to deliver world class dental education. Spacious lecture halls with audio-visual and video conferencing facilities provide students with an exciting learning experience. State-of-the-art laboratories with the latest medical and dental education equipment enhance students' knowledge and skills. The college's dental clinics have a contemporary design with modern dental units and x-ray rooms, and are provided with the latest dental materials, instruments and equipment. Free-of-charge comprehensive dental treatment for all patients ensures a regular flow of dental cases for clinical training, skills development and research requirements during the clinical phase of dental education programs.

# Doctor of Dental Surgery (DDS) Degree Program

This is a five-year undergraduate program leading to the degree of Doctor of Dental Surgery (DDS). The study program and curriculum is at par with that of renowned international universities and dental institutes.

## Program Objectives

*The DDS program aims to:*

1. educate and train a new generation of competent dental surgeons, who will be able to provide high quality comprehensive oral healthcare with emphasis on prevention
2. emphasize on the prevention and early detection of oral and dental diseases as an integral part of the curriculum
3. provide educational experiences for students using a comprehensive patient care model
4. provide community dentistry services that meet world-class standards
5. establish national recognition in term of academia by the concerned authorities and the public

## Program Outcomes

The COD has specified learning outcomes based on the three dimensions of the work of a dentist. The definition of the three essential elements of a competent and reflective practitioner are:

a) What the dentist is able to do - technical intelligence
b) How a dentist approaches his/her practice - intellectual, emotional, analytical and creative intelligence
c) The dentist as a professional - personal intelligence

Eleven domains related to the three essential elements have been identified. These are:

### A. "What the dentist is able to do":

1. Clinical information-gathering - taking a full patient history, undertaking a comprehensive patient examination and arranging and interpreting appropriate investigations
2. Treatment planning - planning a suitable course of treatment in line with the patient's needs and wishes, and recognizing when referral is appropriate

3. Treatment procedures -carrying out specific treatment interventions required to restore/maintain the patient's oral health

These tasks represent the practical aspects of patient care, but the dentist brings much more than practical skills to the patient encounter.

### B. "How a dentist approaches his/her practice" - or what a dentist brings to the treatment of each patient:

1. Application of basic clinical sciences - using knowledge of the basic medical and clinical sciences to ensure appropriate diagnosis and treatment.
2. Clinical reasoning and judgment - using knowledge, evidence and professional judgment to arrive at solutions appropriate to the patient's needs and wishes.
3. Communication - demonstrating appropriate communication skills with patients, relatives and other healthcare professionals.
4. Health promotion - recognizing the importance of disease prevention and health promotion and conveying this as appropriate to individual patients and the wider community.
5. Attitudes, ethical stance and legal responsibilities - recognizing ethical, professional and legal responsibilities and displaying appropriate attitudes and behavior.
6. Information handling - demonstrating accurate record keeping and knowing where and how to source and analyze information relevant to effective clinical practice.

### C. "The dentist as a professional":

1. Role of the dentist within the health service - understanding the different dimensions of the dental profession and accepting the responsibilities of being part of that profession.

2. Personal development - accepting responsibility for personal, career and continuing professional development.

## Admission Requirements

Admission is based on the following requirements:

1. A UAE secondary school certificate, science section, or its equivalent, with a grade of not less than B (80 percent). Priority is given to students with higher grades in the following subjects:

- Biology
- Physics
- Chemistry

2. English proficiency test (TOEFL score of 500 or above, or the equivalent)
3. Personal interview
4. Health Fitness Certificate

## Career Opportunities

Graduates of the College will have a wide range of career opportunities to choose from, in addition to continuing higher education (Masters and PhD degrees) in one of the following specialties:

- Endodontics
- Periodontics
- Prosthodontics
- Operative Dentistry
- Pediatric Dentistry
- Orthodontics
- Oral and Maxillofacial Surgery
- Oral Radiology and Oral Medicine
- Dental Public Health
- Implantology

- Aesthetic Dentistry
- Oral Pathology

Graduates may wish to take advanced courses in Oral Surgery, Implantology and other clinical specialties, or they may choose to work in research facilities.

Those who prefer to practice in UAE will be able to do so provided that they pass the UAE Licensing Exams. Graduates are subject to the regulations of the UAE licensing authorities with regard to the type of examination and certification criteria.

## Graduation Requirements

Students will be awarded the Doctor of Dental Surgery (DDS) degree upon fulfillment of the following requirements:

1. Completing successfully the required credit hours (199 Credit Hours), including the University requirement courses, with an accumulative grade point average (AGPA) not less than C, otherwise students should take, during the following semester(s), clinical subjects as suggested by the academic advisor to fulfill this graduation requirement.

2. Completing successfully the required clinical cases during the clinical phase in addition to the mandatory two months internal clinical training during summer.

3. Submitting & defending a research project before an academic committee of the College.

## Degree requirements

The Doctor of Dental Surgery (D.D.S.) degree requires the completion of 199 Credit Hours, distributed according to the following plan:

| Type of Courses | Credit hours |
|---|---|
| 1. University General Education Requirements | |
| (a) University Required Courses | 15 |
| (b) University Elective Courses | 9 |
| 2. College Requirements | 175 |
| TOTAL | 199 |

# UNIVERSITY REQUIREMENTS COURSES

## (a) University required Courses (15 cr. Hrs)

| Course Code | Course Title | Credit Hours | | | Prerequisite(s) |
|---|---|---|---|---|---|
| | | L/C | Lb/T | Cr/H | |
| 0102110 | Islamic Culture | 3 | – | 3 | xxx xxx |
| 0102140 | Communication skills in Arabic Language | 3 | – | 3 | xxx xxx |
| 0103110 | Statistics | 2 | 2 | 3 | xxx xxx |
| 0117140 | Environmental Sciences | 3 | – | 3 | xxx xxx |
| 0104110 | Computer Applications | 2 | 2 | 3 | xxx xxx |

## (b) University elective Courses (9 cr. Hrs)

The student has to register for three (03) courses, after consulting his/her academic advisor, as stated in the curriculum.

| Course No. | Course Title | Th. | Lab. | Tut. | Cr. Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 102120 | The Miraculousness of the Holy Koran | 3 | 0 | 0 | 3 | - |
| 103130 | Research Methodology | 3 | 0 | 0 | 3 | - |
| 112110 | Principles of Architecture & Art | 3 | 0 | 0 | 3 | - |
| 112120 | Principles of Interior Design | 3 | 0 | 0 | 3 | - |
| 112130 | Modern Technology and Society | 3 | 0 | 0 | 3 | - |
| 113110 | Internet Concepts | 3 | 0 | 0 | 3 | - |
| 113120 | Introduction to Information Systems | 3 | 0 | 0 | 3 | - |
| 114110 | Economic Concepts | 3 | 0 | 0 | 3 | - |
| 114120 | Entrepreneurship Development | 3 | 0 | 0 | 3 | - |
| 115110 | History of science in Islam | 3 | 0 | 0 | 3 | - |
| 115120 | Scientific pioneering | 3 | 0 | 0 | 3 | - |

| Course No. | Course Title | Th. | Lab. | Tut. | Cr. Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 115130- | General psychology | 3 | 0 | 0 | 3 | - |
| 115140 | Principle of mathematics | 3 | 0 | 0 | 3 | - |
| 115150 | The  Art of Expression and writing | 3 | 0 | 0 | 3 | - |
| 115160 | Emirates Society | 3 | 0 | 0 | 3 | - |
| 115170 | Education Technology | 3 | 0 | 0 | 3 | - |
| 117110 | General chemistry | 3 | 0 | 0 | 3 | - |
| 117120 | Fundamental of Human Nutrition | 3 | 0 | 0 | 3 | - |
| 117130 | First Aid | 3 | 0 | 0 | 3 | - |
| 117150 | Applications of Remote sensing | 3 | 0 | 0 | 3 | - |
| 118110 | Principles of Ethics | 3 | 0 | 0 | 3 | - |
| 118120 | General Biology | 3 | 0 | 0 | 3 | - |
| 118130 | Oral Health | 3 | 0 | 0 | 3 | - |
| 118140 | General principles of Epidemiology | 3 | 0 | 0 | 3 | - |
| 118150 | CPR-Cardio Pulmonary Resuscitation | 3 | 0 | 0 | 3 | - |
| 119110 | Communication Skills | 3 | 0 | 0 | 3 | - |
| 119120 | Introduction to Communication Sociology | 3 | 0 | 0 | 3 | - |
| 119130 | Information Society | 3 | 0 | 0 | 3 | - |
| 120115 | Legal  Culture | 3 | 0 | 0 | 3 | - |

## Suggested Course sequencing

### First Semester

| Course Code | Course Title | Credit Hours | | | Prerequisite(s) |
|---|---|---|---|---|---|
| | | L/C | Lb/T** | Cr/H | |
| 0103110 | Statistics | 2 | 2 | 3 | xxx xxx |
| 0104110 | Computer Applications | 2 | 2 | 3 | xxx xxx |
| 0120101 | Physics (Dentistry) * | 3 | - | 3 | xxx xxx |
| 0700126 | General Chemistry (Dentistry) * | 2 | 2 | 3 | xxx xxx |
| 0801110 | English for Special Purposes (Dentistry) | 3 | - | 3 | xxx xxx |
| 0801111 | Integrated Biological Sciences I * | 2 | 2 | 3 | xxx xxx |
| 0801112 | Histology & Cell Biology * | 2 | 2 | 3 | xxx xxx |
| Total | | 16 | 10 | 21 | |

### Second Semester

| Course Code | Course Title | Credit Hours | | | Prerequisite(s) |
|---|---|---|---|---|---|
| | | L/C | Lb/T** | Cr/H | |
| 0102140 | Communication Skills in Arabic Language | 3 | - | 3 | xxx xxx |
| 0700236 | Biochemistry (Dentistry) * | 3 | 2 | 4 | 0700126 |
| 0801121 | Integrated Biological Sciences II * | 3 | 2 | 4 | 0801111 |
| 0801122 | Oral Histology * | 3 | 2 | 4 | 0801112 |
| 0801123 | Head & Neck Anatomy I * | 2 | 2 | 3 | 0801111 |
| xxx xxx | Elective Course | 3 | - | 3 | xxx xxx |
| Total | | 17 | 8 | 21 | |

* THIS IS A FOUNDATIONAL COURSE FOR THE DDS PROGRAM. EVERY DENTAL STUDENT **MUST PASS** THIS COURSE BEFORE PROCEEDING TO THE CLINICAL COMPONENT OF THE DEGREE PROGRAM.

** Two (02) Practical Hours = 1 Credit Hour

## Third Semester

| Course Code | Course Title | Credit Hours | | | Prerequisite(s) |
|---|---|---|---|---|---|
| | | L/C | Lb/T** | Cr/H | |
| 0102110 | Islamic Culture | 3 | - | 3 | xxx xxx |
| 0700239 | Pharmacology I (Dentistry) * | 2 | - | 2 | 0801121 |
| 0801210 | Psychology & Behavioral Sciences | 3 | - | 3 | xxx xxx |
| 0801213 | Head & Neck Anatomy II * | 2 | 2 | 3 | 0801123 |
| 0801214 | Microbiology & Immunology * | 3 | 2 | 4 | xxx xxx |
| 0801215 | Pathology * | 3 | 1 | 3 | 0801112 |
| 0802213 | Biomaterials * | 2 | 1 | 2 | 0120101 |
| Total | | 18 | 6 | 20 | |

## Fourth Semester

| Course Code | Course Title | Credit Hours | | | Prerequisite(s) |
|---|---|---|---|---|---|
| | | L/C | Lb/T** | Cr/H | |
| 0700240 | Pharmacology II (Dentistry) * | 2 | - | 2 | 0700239 |
| 0801226 | General Medicine & Infectious Diseases * | 4 | 1 | 4 | 0801214, 0801215 |
| 0801227 | General Surgery & ENT * | 2 | 1 | 2 | 0801123, 0801215 |
| 0802221 | Introduction to Oral & Dental Diseases | 2 | 2 | 3 | 0801215 |
| 0802222 | Dental Anatomy & Occlusion * | 3 | 2 | 4 | 0801123 |
| 0802228 | Four Handed Dentistry & Infection Control * | 2 | - | 2 | 0801214 |
| 0804221 | Oral Radiology I * | 2 | 2 | 3 | 0120101, 0801123 |
| Total | | 17 | 8 | 20 | |

* THIS IS A FOUNDATIONAL COURSE FOR THE DDS PROGRAM. EVERY DENTAL STUDENT **MUST PASS** THIS COURSE BEFORE PROCEEDING TO THE CLINICAL COMPONENT OF THE DEGREE PROGRAM

** Two (02) Practical Hours = 1 Credit Hour

## Fifth Semester

| Course Code | Course Title | Credit Hours | | | Prerequisite(s) |
|---|---|---|---|---|---|
| | | L/C | Lb/T** | Cr/H | |
| 0802315 | Pre-Clinical Operative Dentistry I * | 2 | 3 | 3 | 0802213, 0802222 |
| 0802316 | Pre-Clinical Prosthodontics I * | 2 | 6 | 4 | 0802213, 0802222 |
| 0802317 | Pre-Clinical Endodontics I * | 1 | 3 | 2 | 0802213, 0802222 |
| 0803311 | Preventive Dentistry & Nutrition | 3 | 2*** | 4 | 0801226, 0802221 |
| 0803312 | Pre-Clinical Pediatric Dentistry I * | 2 | - | 2 | 0802221 |
| 0804312 | Pre-Clinical  Periodontics I * | 1 | 1 | 1 | 0801122 |
| 0804313 | Pre-Clinical Oral Surgery I & Pain Control * | 2 | 2 | 2 | 0700240, 0801210, 0801214, 0801227 |
| 0804314 | Oral Pathology I * | 2 | 2*** | 3 | 0801215, 0802221 |
| Total | | 15 | 19 | 21 | |

## Sixth Semester

| Course Code | Course Title | Credit Hours | | | Prerequisite(s) |
|---|---|---|---|---|---|
| | | L/C | Lb/T** | Cr/H | |
| 0802325 | Pre-Clinical Operative Dentistry II * | 2 | 3 | 3 | 0802315 |
| 0802326 | Pre-Clinical Prosthodontics II * | 2 | 3 | 3 | 0802315, 0802316 |
| 0802327 | Pre-Clinical Endodontics II * | 1 | 3 | 2 | 0802317 |
| 0803322 | Pre-Clinical Pediatric Dentistry II * | 1 | 3 | 2 | 0803312 |
| 0803323 | Pre-Clinical Orthodontics * | 1 | 3 | 2 | 0801122, 0802222 |
| 0804322 | Pre-Clinical Periodontics II * | 1 | 3 | 2 | 0804312 |
| 0804323 | Pre-Clinical Oral Surgery II & CPR * | 3 | 2 | 3 | 0801226, 0804313 |
| 0804324 | Oral Pathology II * | 2 | 2*** | 3 | 0804314 |
| Total | | 13 | 22 | 20 | |

* THIS IS A FOUNDATIONAL COURSE FOR THE DDS PROGRAM. EVERY DENTAL STUDENT **MUST PASS** THIS COURSE BEFORE PROCEEDING TO THE CLINICAL COMPONENT OF THE DEGREE PROGRAM.

** Three (03) Pre-clinical Training Hours=1 Credit Hour

*** Two (02) Practical Hours = 1 Credit Hour

## Seventh Semester

| Course Code | Course Title | Credit Hours | | | Prerequisite(s) |
|---|---|---|---|---|---|
| | | L/C | Cl/T* | Cr/H | |
| 0802415 | Clinical Operative Dentistry I | 1 | 4 | 2 | |
| 0802416 | Clinical Prosthodontics I | 1 | 4 | 2 | All |
| 0802417 | Clinical Endodontics I | 1 | 4 | 2 | |
| 0803412 | Clinical Pediatric Dentistry I | 1 | 4 | 2 | Pre-Clinical |
| 0803413 | Clinical Orthodontics I | 1 | 4 | 2 | |
| 0804410 | Oral Diagnosis / Oral Medicine | 2 | 4 | 3 | |
| 0804412 | Clinical Periodontics I | 1 | 4 | 2 | Courses |
| 0804413 | Clinical Oral Surgery I | 1 | 4 | 2 | "and 0801210 |
| 0804411 | Oral Radiology II | 1 | 2** | 2 | 0804221 |
| Total | | 10 | 34 | 19 | |

** Two (02) Practical Hours = 1 Credit Hour

## Eighth Semester

| Course Code | Course Title | Credit Hours | | | Prerequisite(s) |
|---|---|---|---|---|---|
| | | L/C | Cl/T* | Cr/H | |
| 0103130 | Research Methodology | 3 | - | 3 | 0103110 |
| 0802425 | Clinical Operative Dentistry II | 1 | 4 | 2 | 0802415 |
| 0802426 | Clinical Prosthodontics II | 1 | 4 | 2 | 0802416 |
| 0802427 | Clinical Endodontics II | 1 | 4 | 2 | 0802417 |
| 0803422 | Clinical Pediatric Dentistry II | 1 | 4 | 2 | 0803412 |
| 0803423 | Clinical Orthodontics II | 1 | 4 | 2 | 0803413 |
| 0804422 | Clinical Periodontics II | 1 | 4 | 2 | 0804412 |
| 0804423 | Clinical Oral Surgery II | 1 | 4 | 2 | 0804413 |
| Total | | 10 | 28 | 17 | |

* Four (04) Clinical Training Hours=1 Credit Hour

## In-Campus Training Program *

*This in-campus clinical training program is held at the end of the eighth semester.*

| Course Code | Course Title | Credit Hours | | | Prerequisite(s) |
|---|---|---|---|---|---|
| | | L/C | Cl/T* | Cr/H | |
| 0805435 | Internal Clinical Training Fourth Year | - | 20 | 2 | All Clinical Courses |

### Ninth Semester

| Course Code | Course Title | Credit Hours | | | Prerequisite(s) |
|---|---|---|---|---|---|
| | | L/C | Cl/T* | Cr/H | |
| 0802510 | Ethics | 1 | - | 1 | xxx xxx |
| 0802511 | Geriatric Dentistry | 1 | - | 1 | All Clinical Courses |
| 0802519 | Clinical Dentistry I | - | 24 | 6 | All Clinical Courses |
| 0803510 | Applied Biostatistics | 2 | - | 2 | 0103110 |
| 0804515 | Emergency Dental Care | 1 | 4 | 2 | All Clinical Courses |
| 0804518 | Implantology | 1 | 1 | 1 | All Clinical Courses |
| 0805511 | Treatment Planning & Seminars I | 2 | - | 2 | 0804324, 0804410 |
| xxx xxx | Elective Course | 3 | - | 3 | xxx xxx |
| Total | | 11 | 29 | 18 | |

### Tenth Semester

| Course Code | Course Title | Credit Hours | | | Prerequisite(s) |
|---|---|---|---|---|---|
| | | L/C | Cl/T* | Cr/H | |
| 0802529 | Clinical Dentistry II | - | 28 | 7 | 0802519 |
| 0804526 | Hospital Dentistry | - | 8 | 2 | 0804515 |
| 0804527 | Lasers & Modern Technology | 1 | 1 | 1 | 0804422, 0804423 |
| 0805521 | Treatment Planning & Seminars II | 2 | - | 2 | 0805511 |
| 0805522 | Research Project | 1 | - | 1 | 0803510 |
| 0805523 | Practice Management | 1 | - | 1 | xxx xxx |
| 0805524 | Equipment Maintenance | 1 | 1 | 1 | xxx xxx |

| Course Code | Course Title | Credit Hours | | | Prerequisite(s) |
|---|---|---|---|---|---|
| xxx xxx | Elective Course | 3 | - | 3 | xxx xxx |
| Total | | 9 | 38 | 18 | |

* Four (04) Clinical Training Hours= 1 Credit Hour

## Internal Training Program *

*The internal clinical training program is held at the end of the tenth semester.*

| Course Code | Course Title | Credit Hours | | | Prerequisite(s) |
|---|---|---|---|---|---|
| | | L/C | Cl/T* | Cr/H | |
| 0805535 | Internal Clinical Training Fifth Year | - | 20 | 2 | All Clinical Courses |

# Diploma in Dental Hygiene (DipDH) Program

The Diploma in Dental Hygiene (DipDH) is a two-and-a-half year program and study is undertaken in the College of Dentistry at AUST. The goal of the program is to facilitate the development of graduates with the contemporary knowledge and clinical skills required to work as hygienists in dental practice.

## Objectives

*The objectives of the program are to train students to:*

1. conduct a clinical education program which provides quality dental hygiene care for patients and to develop competency in all professional skills required for dental hygiene

2. work as oral health professionals to increase patient awareness of oral hygiene education and appreciation of efforts for improvement of the patient's oral health

3. function within the dental team at an appropriate level and carry out treatment for patients delegated by the dentist with good collaboration

4. plan, implement and evaluate oral health promotional and educational activities for groups and individuals

5. carry out procedures to measure and assess the levels of oral health, oral hygiene and loss of periodontal attachment in the mouth

## Admission Requirements

A total of forty female students will be selected based on the following criteria:

1. A UAE secondary school certificate, science section, or its equivalent, with a grade of not less than C (70

percent). Priority is given to students with a higher grade in the following subjects:

- Biology
- Physics
- Chemistry

2. English proficiency test (minimum TOEFL score of 500, or the equivalent)

3. Personal interview

4. Health Fitness Certificate

If an applicant does not meet the above requirement, an individual evaluation is performed through the personal interview in accordance with AUST/COD policies. This individual evaluation measures the following:

- Manual Dexterity: ability to use hand(s) or terminal devices with coordination

- Fine Motor: ability to manipulate small objects with fingertips or adaptive devices

- Mobility: ability to maneuver in the laboratory and around instruments in patient-care settings

- Vision: ability to distinguish red, yellow, and blue colors; distinguish clear from cloudy and see through a microscope

- Hearing: ability to adapt with assistive devices such as a telephone receiver, hearing aid, etc.

- Speech: ability to communicate effectively in spoke English

- Writing: ability to communicate effectively in written English

- Reading: ability to read, understand and follow directions printed in English

If the student is accepted he/she will be registered in five courses for the Fall semester and must achieve a grade of at least "C" in each of the courses, otherwise his/her admission will be canceled. Students must sign a declaration stating that they must maintain a GPA of not less than 2.0 (C) in the

first two academic semesters of the program. If a student fails to do so, he/she will be transferred to another program (as per AUST/COD policies) or have their registration canceled.

# Career Opportunities

The program prepares students to be dental hygienists employed in private practices, community clinics, hospitals and educational institutions. Increasingly dental hygienists find employment with specialists, for example orthodontists, periodontists and prosthodontists.

Dental hygiene is an excellent choice of profession for a woman due to the fact that the working day can be arranged according to her needs. In addition it provides a high level of job satisfaction, security and a good income.

# Graduation Requirements

Students will be awarded the Diploma in Dental Hygiene (DipDH) after fulfilling the following requirements:

1.   Successful completion of the required credit hours (84), including the university requirement courses, with a Cumulative Grade Point Average (CGPA) of not less than 2.0. Any student who fails to fulfill this graduation requirement may repeat courses during the following semester(s), as recommended by their academic advisor

2.   Successful completion of the required clinical cases during the clinical phase

# Degree requirements

The Diploma in Dental  Hygiene degree requires the completion of 84 Credit Hours, distributed according to the following plan:

| Type of Courses | Credit hours |
|---|---|
| 1. University General Education Requirements | |
| (a) University Required Courses | 15 |
| (b) University Elective Courses | 9 |
| 2. College Requirements | 60 |
| TOTAL | 84 |

# UNIVERSITY REQUIREMENTS COURSES

## (a) University required Courses (15 cr. Hrs)

| Course Code | Course Title | Credit Hours | | | Prerequisite(s) |
|---|---|---|---|---|---|
| | | L/C | Lb/T | Cr/H | |
| 0102110 | Islamic Culture | 3 | – | 3 | xxx xxx |
| 0102140 | Communication skills in Arabic Language | 3 | – | 3 | xxx xxx |
| 0103110 | Statistics | 2 | 2 | 3 | xxx xxx |
| 0117140 | Environmental Sciences | 3 | – | 3 | xxx xxx |
| 0104110 | Computer Applications | 2 | 2 | 3 | xxx xxx |

## (b University elective Courses (9 cr. Hrs)

The student has to register for three (03) courses, after consulting his/her academic advisor, as stated in the curriculum.

| Course No. | Course Title | Th. | Lab. | Tut. | Cr. Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 102120 | The Miraculousness of the Holy Koran | 3 | 0 | 0 | 3 | - |
| 103130 | Research Methodology | 3 | 0 | 0 | 3 | - |
| 112110 | Principles of Architecture & Art | 3 | 0 | 0 | 3 | - |
| 112120 | Principles of Interior Design | 3 | 0 | 0 | 3 | - |
| 112130 | Modern Technology and Society | 3 | 0 | 0 | 3 | - |
| 113110 | Internet Concepts | 3 | 0 | 0 | 3 | - |
| 113120 | Introduction to Information Systems | 3 | 0 | 0 | 3 | - |
| 114110 | Economic Concepts | 3 | 0 | 0 | 3 | - |
| 114120 | Entrepreneurship Development | 3 | 0 | 0 | 3 | - |
| 115110 | History of science in Islam | 3 | 0 | 0 | 3 | - |
| 115120 | Scientific pioneering | 3 | 0 | 0 | 3 | - |
| 115130- | General psychology | 3 | 0 | 0 | 3 | - |
| 115140 | Principle of mathematics | 3 | 0 | 0 | 3 | - |
| 115150 | The Art of Expression and writing | 3 | 0 | 0 | 3 | - |
| 115160 | Emirates Society | 3 | 0 | 0 | 3 | - |
| 115170 | Education Technology | 3 | 0 | 0 | 3 | - |
| 117110 | General chemistry | 3 | 0 | 0 | 3 | - |
| 117120 | Fundamental of Human Nutrition | 3 | 0 | 0 | 3 | - |
| 117130 | First Aid | 3 | 0 | 0 | 3 | - |
| 117150 | Applications of Remote sensing | 3 | 0 | 0 | 3 | - |
| 118110 | Principles of Ethics | 3 | 0 | 0 | 3 | - |
| 118120 | General Biology | 3 | 0 | 0 | 3 | - |

| Course No. | Course Title | Th. | Lab. | Tut. | Cr. Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 118130 | Oral Health | 3 | 0 | 0 | 3 | - |
| 118140 | General principles of Epidemiology | 3 | 0 | 0 | 3 | - |
| 118150 | CPR-Cardio Pulmonary Resuscitation | 3 | 0 | 0 | 3 | - |
| 119110 | Communication Skills | 3 | 0 | 0 | 3 | - |
| 119120 | Introduction to Communication Sociology | 3 | 0 | 0 | 3 | - |
| 119130 | Information Society | 3 | 0 | 0 | 3 | - |
| 120115 | Legal  Culture | 3 | 0 | 0 | 3 | - |

## Suggested Course sequencing

### First Semester

| Course Code | Course Title | Credit Hours | | | Prerequisite(s) |
|---|---|---|---|---|---|
| | | L/C | Lb/T* | Cr/H | |
| 117140 | Environmental Sciences | 3 | - | 3 | xxx xxx |
| 104110 | Computer Applications | 2 | 2 | 3 | xxx xxx |
| 806111 | Integrated Biological Sciences I | 2 | 2 | 3 | xxx xxx |
| 806112 | Histology & Cell Biology | 2 | 1 | 2 | xxx xxx |
| 806113 | Introduction to Biochemistry (Dental Hygiene) | 2 | - | 2 | xxx xxx |
| 806114 | Microbiology | 1 | 2 | 2 | xxx xxx |
| Total | | 12 | 7 | 15 | |

### Second Semester

| Course Code | Course Title | Credit Hours | | | Prerequisite(s) |
|---|---|---|---|---|---|
| | | L/C | Lb/T* | Cr/H | |
| 0801110 | English for Special Purposes (Dentistry) | 3 | - | 3 | xxx xxx |
| 0806121 | Integrated Biological Sciences II | 2 | 2 | 3 | 0806111 |
| 0806122 | Oral Histology | 2 | 2 | 3 | 0806112 |
| 0806124 | Infection & Hazard Control | 2 | - | 2 | 0806114 |
| 0806125 | Dental Anatomy & Physiology | 2 | 2 | 3 | 0806111 |
| 0806126 | Pre-Clinical Dental Hygiene | 2 | 9** | 5 | xxx xxx |
| Total | | 13 | 15 | 19 | |

* Two (02) Practical Hours = 1 Credit Hour

** Three (03) Pre-Clinical Lab Hours= 1 Cr/H

## Third Semester

| Course Code | Course Title | Credit Hours | | | Prerequisite(s) |
|---|---|---|---|---|---|
| | | L/C | Lb/T* | Cr/H | |
| 0806212 | General Pathology and Clinical Dental Pharmacology | 3 | - | 3 | 0806113, 0806114 0806121 |
| 0806213 | Anesthesiology | 1 | 2 | 2 | 0806113, 0806121 |
| 0806215 | Dental Materials | 2 | 2 | 3 | xxx xxx |
| 0806216 | Clinical Dental Hygiene I | 1 | 8** | 3 | 0806126 |
| 0806217 | Periodontics | 2 | - | 2 | 0806122 |
| 0806218 | Oral Radiology | 2 | 4 | 4 | 0806121 |
| Total | | 11 | 16 | 17 | |

## Fourth Semester

| Course Code | Course Title | Credit Hours | | | Prerequisite(s) |
|---|---|---|---|---|---|
| | | L/C | Lb/T** | Cr/H | |
| 0801210 | Psychology & Behavioral Sciences | 3 | - | 3 | xxx xxx |
| 0806222 | Oral Pathology | 2 | - | 2 | 0806122, 0806212 |
| 0806223 | Dental Office Emergencies | 2 | - | 2 | 0806212, 0806213 |
| 0806224 | Prevention & Nutrition for Health Sciences | 3 | - | 3 | 0806121, 0806212 |
| 0806226 | Clinical Dental Hygiene II | 2 | 12 | 5 | 0806216 |
| 0806229 | Fundamentals of Speech & Communication | 2 | - | 2 | xxx xxx |
| Total | | 14 | 12 | 17 | |

* Two (02) Practical Hours = 1 Credit Hour

** Four (04) Clinical Training Hours = 1 Cr/H

## Fifth Semester

| Course Code | Course Title | Credit Hours | | | Prerequisite(s) |
|---|---|---|---|---|---|
| | | L/C | Lb/T* | Cr/H | |
| 0102110 | Islamic Culture | 3 | - | 3 | xxx xxx |
| 0102140 | Communication Skills in Arabic Language | 3 | - | 3 | xxx xxx |
| 0806310 | Research Project | 1 | - | 1 | 0103130, 0806217, 0806222, 0806226 |
| 0806314 | Dental Public Health & Ethics | 2 | 2 | 3 | 0806223, 0806224 |
| 0806316 | Clinical Dental Hygiene III | - | 12** | 3 | 0806226 |
| 0806317 | Treatment Planning & Seminar | 2 | - | 2 | All 1st & 2nd Year Courses |
| 0806319 | Practice Management | 1 | - | 1 | xxx xxx |
| Total | | 12 | 14 | 16 | |

* Two (02) Practical Hours = 1 Credit Hour

** Four (04) Clinical Training Hours = 1 Cr/H

# Course Descriptions for Undergraduate programs

### 120 101 Physics (Dentistry) (3-0-0-3)

The course covers the basic principles of the generation, energy, conduction and measurement of electrical and mechanical forces. Pre-requisites: None

### 700 126 General Chemistry (Dentistry) (2-2-0-3)

This course provides dental students with basic knowledge in organic and inorganic general chemistry. Laboratory sessions serve as an introduction to the principles of qualitative analysis including ionic equilibrium, ionic separation and the identification of selected simple and complexions. Pre-requisites: None

### 700 236 Biochemistry (Dentistry) (3-2-0-4)

The course covers the study of the constituents of living cells and their chemical reactions. Emphasis is placed upon intermediary metabolism and biologically important reactions of proteins, carbohydrates and lipids. The general chemistry of enzymes, blood constituents and hormones is also covered. Pre-requisite: 700 126

### 700 239 Pharmacology I (Dentistry) (2-0-0-2)

This course describes the principles of the pharmacokinetics and pharmacodynamics of biological actions, mechanism, uses, side effects, toxicity, interactions and adverse reaction of drugs acting on the autonomic nervous system, cardiovascular system, central nervous system, gastro-intestinal system, endocrine system, renal system, autocoids, antibiotics and other anti-infective agents and anticancer drugs, with an emphasis on dental applications. Pre-requisite: 801 121

### 700 240 Pharmacology II (Dentistry) (2-0-0-2)

Continuation of Pharmacology I (Dentistry). Pre-requisite: 700 239

### 801 110 English for Special Purposes (Dentistry) (3-0-0-3)

This course is taught at the intermediate level in the student's major. The course provides practice in language skills while emphasizing the structures, vocabulary and registers appropriate to the student's field. There is also a review, continuing from English I, of structures in a general setting. Pre-requisites: None

### 801 111 Integrated Biological Sciences I (2-2-0-3)

This course provides dental students with basic principles of anatomy and an introduction to embryology - a foundation that is necessary for their further dental education and clinical practice. The course is intended primarily to help students understand the fundamentals of the structure of the human body and its development. The systemic arrangement of topics helps the student to better understand the subject and to correlate the structure and function of organs. Pre-requisites: None

### 801 112 Histology and Cell Biology (2-2-0-3)

This course describes the structural organization of cells, tissues and organ systems at the microscopic level, and includes the general principles of cell biology. Students are provided with a basic knowledge of general embryology and genetics. Pre-requisites: None

### 801 121 Integrated Biological Sciences II (3-2-0-4)

Continuation of Integrated Biological Sciences I. The course is intended to help dental students understand the basic concepts of anatomy and physiology simultaneously with emphasis on topics related to dental practice. The course

covers the study of the main systems of the body with strong emphasis on practical aspects. Pre-requisite: 801 111

### 801 122 Oral Histology (3-2-0-4)

The course consists of a study of the development and structure of the oral cavity and teeth. The microscopic organization of all oral organs and tissues are studied in detail. Pre-requisite: 801 112

### 801 123 Head and Neck Anatomy I (2-2-0-3)

The students study the normal structure and function of the oral cavity, head, neck, and nervous system, with areas of clinical importance. Pre-requisite: 801 111

### 801 210 Psychology and Behavioral Sciences (3-0-0-3)

This course introduces the science of mind and behavior, clinical psychology and the psychological relations between the dentist and the patient. Pre-requisites: None

### 801 213 Head and Neck Anatomy II (2-2-0-3)

This course deals with structures in the region of the neck as well as the neuroanatomy of the head and neck as related to dentistry. Laboratory sessions help students deepen their knowledge in areas related to dentistry through dissections. Pre-requisite: 801 123

### 801 214 Microbiology and Immunology (3-2-0-4)

*The course covers:*

- The fundamentals of microbiology with emphasis on oral microbiota, pathogens and defense mechanisms in the dental environment.
- The basics of immunology including the immune system and organisms of medical and dental significance.

- Virology: virus structure and classification, viral pathogenesis and mechanisms of host defense.
- Hygiene, covering pathogenesis of bacterial, infections, etiology, clinical picture, lab diagnosis, treatment, prevention and control of diseases caused by different bacteria.

*Pre-requisites: None*

### 801 215 Pathology (3-1-0-3)

The course covers the fundamentals of the basic disease processes of the body. Gross, microscopic and biochemical features of pathologic conditions of the organ systems are studied in detail in order to establish a sound foundation for clinical practice. Pre-requisite: 801 112

### 801 226 General Medicine and Infectious Diseases (4-1-0-4)

This comprehensive course covers topics specific to the medical field, with interest to medically - compromised patient as related to dental care. It also deals with diseases caused by microorganisms and related to dentistry. It introduces students to the means of transmission, features, diagnosis, prevention and treatment of infectious diseases. Pre-requisites: 801 214, 801 215

### 801 227 General Surgery and ENT (2-1-0-2)

This course introduces students to the basic principles of surgery, with emphasis on essentials of history and physical evaluation related to maxillofacial area. This course also includes knowledge on the diseases of the ENT as related to the oral cavity with emphasis on sensitive areas (ophthalmic nerve, sinus, etc.) Pre-requisites: 801 123, 801 215

### 802 213 Biomaterials (2-1-0-2)

The course allows students to understand the mechanical and physical properties of dental materials and their

clinical applications. Biomechanical principles and latest advances in dental materials technology are integrated into appropriate dental specialties. Pre-requisite: 120 101

### 802 221 Introduction to Oral and Dental Diseases (2-2-0-3)

This is an introduction to the profession of dentistry with a summary of dental history to familiarize students with the background to enable them to understand new issues and events through the ages. In addition this course provides students with knowledge and understanding of oral and dental diseases, their etiology, pathogenesis and the different stages of these lesions and their **clinical manifestations.** Pre-requisite: 801 215

### 802 222 Dental Anatomy and Occlusion (3-2-0-4)

This course deals with nomenclature and morphology of the natural dentition and includes laboratory exercises in the wax carving of anatomically accurate teeth. Analysis of occlusal patterns and correction of occlusal disharmonies are integrated with courses in operative dentistry, prosthodontics, periodontics and orthodontics. This course, based on biological and behavioral sciences, will give students a multi-disciplinary approach. Pre-requisite: 801 123

### 802 228 Four Handed Dentistry and Infection Control(2-0-0-2)

Topics include the review of medical history, transmission and pathogenesis, and oral and systemic manifestations. Students learn the mechanisms by which infectious diseases are transmitted and the risk for transmission in dental practice, such as HIV, viral hepatitis and others. Through lectures, demonstrations and clinical practice, students are trained to effectively utilize dental auxiliaries to improve the quality of service while preventing undue stress and fatigue. Pre-requisite: 801 214

### 802 315 Pre-Clinical Operative Dentistry I (2-3-0-3)

This course introduces concepts of the carious process, diagnosis and treatment of the dental disease. The course also covers cavity design, preparation, and insertion of various restorative materials. Pre-clinical laboratory sessions and clinical demonstrations help students to develop their skills. Pre-requisites: 802 213, 802 222

### 802 316 Pre-Clinical Prosthodontics I (2-6-0-4)

Students are introduced to basic principles in treating the partially or totally edentulous patient with removable dentures with focus on understanding the physical biomechanical characteristics of the denture components. The course also teaches the basic principles and techniques related to tooth preparation, impression techniques and crown-bridge confection. Laboratory sessions and demonstrations allow the students to gain more confidence. Pre-requisites: 802 213, 802 222

### 802 317 Pre-Clinical Endodontics I (1-3-0-2)

The course provides a clear understanding of the biological foundation of the pulp and periapical disease, the etiology and progression of the endodontic pathology and the diagnosis and root canal treatment with emphasis on radiographic interpretation of the pulp and periapical disease. Laboratory sessions help students to gain practical skills in endodontic procedures. Pre-requisites: 802 213, 802 222

### 802 325 Pre-Clinical Operative Dentistry II (2-3-0-3)

Lecture series focus on differential diagnosis and management of caries with emphasis on more complete and advanced techniques. Pre-requisite: 802 315

## 802 326 Pre-Clinical Prosthodontics II (2-3-0-3)

Students learn various methods and techniques for fixed and removable prosthodontics. Pre-requisites: 802315, 802316

## 802 327 Pre-Clinical Endodontics II (1-3-0-2)

The course deals with pathology, diagnosis and treatment of the dental pulp and periapical tissues. Students perform advanced root canal treatment during the laboratory sessions. Pre-requisite: 802 317

## 802 415 Clinical Operative Dentistry I (1-4-0-2)

Students apply their newly acquired skills in diagnosing and treating patients under the supervision of qualified staff members. Pre-requisites: All Pre-Clinical Courses

## 802 416 Clinical Prosthodontics I (1-4-0-2)

The course provides the students with concepts of clinical fixed and removable prosthodontics. Students treat a number of clinical cases of partial and full dentures, and concentrate on tooth preparation procedures and laboratory techniques. Pre-requisites: All Pre-Clinical Courses

## 802 417 Clinical Endodontics I (1-4-0-2)

The course covers in depth the pathology of the pulpal tissues and their clinical manifestations. Topics include pulpal and periapical emergencies, and differential diagnosis of the pulpal pathology. Students perform non-surgical endodontic therapy and learn to relieve pain in emergencies. Pre-requisites: All Pre-Clinical Courses

## 802 425 Clinical Operative Dentistry II (1-4-0-2)

This advanced operative dentistry course focuses on a full range of challenging cases as related to other disciplines. Students develop their clinical skills, using latest techniques in cosmetic dentistry. A lecturer is provided to fourth year students to emphasize more complex and sophisticated techniques. Pre-requisite: 802 415

## 802 426 Clinical Prosthodontics II (1-4-0-2)

Lecture course on advanced procedures in fixed and removable prosthodontics, with emphasis on occlusal registration, and integration of periodontal – endodontic considerations. Students perform complex clinical cases and accomplish all assigned laboratory procedures associated with the treatment of the above clinical cases. Pre-requisite: 802 416

## 802 427 Clinical Endodontics II (1-4-0-2)

This lecture course deals with advanced endodontic concepts, including peripheral surgery and endodontic-periodontic relationship. Students perform non-surgical root canal treatment on single and multi-rooted teeth, and learn how to assess the success and failure in endodontic treatments. Pre-requisite: 802 417

## 802 510 Ethics (1-0-0-1)

Introduction to the ethical responsibilities and principles of general biomedical ethics. Discussion of professional malpractice, legal and ethical responsibilities in fulfilling the doctors' obligations to the patients, the profession and the community. Pre-requisites: None

## 802 511 Geriatric Dentistry (1-0-0-1)

This course provides a framework for assessing the ageing process with evaluation of the psychological aspects and pathological changes. Comprehensive geriatric patient care will be discussed. Pre-requisites: All Clinical Courses

## 802 519 Clinical Dentistry I (0-24-0-6)

Students are assigned patients with a comprehensive approach to the dental practice, including patient and

clinic management, stressing inter - and multidisciplinary treatment of more challenging cases. Emphasis is on comprehensive treatment planning, diagnosis and management of the medically compromised patient Pre-requisites: All Clinical Courses

## 802 529 Clinical Dentistry II (0-28-0-7)

Continuation of Clinical Dentistry I. Pre-requisite: 802 519

## 803 311 Preventive Dentistry and Nutrition (3-2-0-4)

The preventive dentistry course introduces the student to the philosophy and methods of prevention, including information on etiology on dental caries, periodontal disease and methods of preventing and controlling dental diseases through a preventive treatment plan and health education programs. This course provides the students with a basic knowledge of the essential nutrient materials in both health and disease, and discusses the role of the nutrition on the development, prevention and treatment of the oral and dental diseases. Pre-requisites: 801 226, 802 221

## 803 312 Pre-Clinical Pediatric Dentistry I (2-0-0-2)

The course focuses on development and growth of the orofacial structures of the child and adolescent and the diagnosis and treatment planning. Principles of child psychology and changing concepts in caries formation are introduced. Pre-requisite: 802 221

## 803 322 Pre-Clinical Pediatric Dentistry II (1-3-0-2)

The course introduces the principles of dentistry specific to the child and pays special attention to emotional development. Procedures and specific techniques are developed to manage dental conditions. Pre-requisite: 803 312

## 803 323 Pre-Clinical Orthodontics (1-3-0-2)

This course is an introduction to orthodontics, its terminology and scope. Topics include physiology of stomatognathic system, description of various malocclusions and systematic study of etiology of orthodontic problems. Pre-requisites: 801 122, 802 222

## 803 412 Clinical Pediatric Dentistry I (1-4-0-2)

Students develop their skills in clinical treatment of a wide variety of childhood conditions, with emphasis on tooth preparation and fabrication of the stainless steel crown. Pre-requisites: All Pre-Clinical Courses

## 803 413 Clinical Orthodontics I (1-4-0-2)

This course deals with the treatment of minor orthodontic procedures. Students learn to achieve removable orthodontic appliances for correction of minor malocclusions. Pre-requisites: All Pre-Clinical Courses

### 803 422 Clinical Pediatric Dentistry II (1-4-0-2)

Students learn clinical procedures and specific techniques to manage the dental condition of the child patient, and perform clinical treatment for pediatric patients. Pre-requisite: 803 412

### 803 423 Clinical Orthodontics II (1-4-0-2)

This course introduces the systematic methods of recognizing, classifying and treatment planning of various types of malocclusions, with emphasis on analysis of the cephalometric X-ray in diagnosing clinical cases. Pre-requisite: 803 413

### 803 510 Applied Biostatistics (2-0-0-2)

This course provides dental students with the necessary background of specific statistics relevant to the medical/dental fields. Pre-requisite: 103 110

### 804 221 Oral Radiology I (2-2-0-3)

The course deals with the basic principles of x-ray production, the biological effects of ionizing radiation and radiation safety. It places emphasis on intra-oral and extra-oral radiographic techniques. Students learn to take and interpret oral radiographs, and perform initial screening examination and diagnosis. The course is integrated with the different dental specialties. Pre-requisites: 120 101, 801 123

### 804 312 Pre-Clinical Periodontics I (1-1-0-1)

The course provides the students with a basic understanding of the normal periodontium, early pathologic changes, their etiologic factors, and basic therapeutics and preventive procedures. Students learn to probe and examine gingival tissues, and develop proficiency in the use of instruments for calculus and root planning in-patient-simulating units. Pre-requisite: 801 122

### 804 313 Pre-Clinical Oral Surgery I and Pain Control (2-2-0-3)

The course introduces the basic principles of surgery, which include the essentials of medical history and physical evaluation. Topics include fundamentals of asepsis, inflammation and repair, exodontia, and head and neck pathology. Students learn to master techniques of tooth removal and minor surgery procedures in the laboratory. It provides the understanding of pain and its management, and the academic aspects of administration of local anesthetics, nitrous oxide and intravenous sedation. Laboratory training help students to gain more practice and improve their skills. Pre-requisites: 700 240, 801210 , 801 214, 801 227

### 804 314 Oral Pathology I (2-2-0-3)

Students learn the fundamentals of basic disease process affecting the head and neck regions, and how to identify histopathological lesions. Pre-requisites: 801 215, 802 221

### 804 322 Pre-Clinical Periodontics II (1-3-0-2)

Lectures focus on the periodontal lesions, their etiologic factors, treatment planning and the management of the periodontal diseases. Pre-requisite: 804 312

### 804 323 Pre-Clinical Oral Surgery II and CPR (3-2-0-3)

Students learn the principles of tissue repair, pre-surgical health status evaluation, principles of surgical asepsis, uncomplicated and complicated exodontia. The course introduces the students to the basic life support. It focuses on the assessment and the early active management of the acute cardiac arrest. Students should be CPR certified before entering the clinical phase. Pre-requisites: 801 226, 804 313

### 804 324 Oral Pathology II (2-2-0-3)

This course provides a comprehensive clinical evaluation and management of oral mucosal diseases with emphasis on differential diagnosis and current therapeutic means. Pre-requisite: 804 314

### 804 410 Oral Diagnosis/Oral Medicine (2-4-0-3)

The course deals with training the students in developing a doctor-patient relationship and evaluating the patient, by taking a detailed case history and conducting extra- and intra-oral examination in the head and neck region. Based on discussion, students learn to arrive at a differential diagnosis, leading to the provisional diagnosis and framing the appropriate treatment plan. Pre-requisites: All Pre-Clinical Courses

### 804 411 Oral Radiology II (1-2-0-2)

The course deals with advanced techniques in dental radiology. Students learn how to assess clinical cases and make differential diagnosis. Pre-requisite: 804 221

### 804 412 Clinical Periodontics I (1-4-0-2)

Students initiate periodontal procedures on patients with gingivitis and early to moderate stages of periodontitis. Pre-requisites: All Pre-Clinical Courses

### 804 413 Clinical Oral Surgery I (1-4-0-2)

Students gain more experience in various minor surgical procedures and learn to manage emergency cases. The course introduces the student to assessment of surgery for impacted teeth, biopsies, suturing techniques and treatment of odontogenic infections. Pre-requisites: All Pre-Clinical Courses, 801210

### 804 422 Clinical Periodontics II (1-4-0-2)

This advanced clinical periodontics course focuses on objectives of periodontal therapy, treatment planning and treatment techniques, including preprosthetic surgery, reconstructive and plastic surgery. Pre-requisite: 804 412

### 804 423 Clinical Oral Surgery II (1-4-0-2)

This course covers advanced oral surgery subjects, including fractures, cysts, benign and malignant neoplasm, TMJ disorders, and its surgical/medical management. Students gain additional experience in various clinical procedures along with physical diagnosis. Pre-requisite: 804 413

### 804 515 Emergency Dental Care (1-4-0-2)

Students gain experience in diagnosing and managing patients with acute dental emergencies, including placement of temporary restorations and performing emergency treatments. Pre-requisites: All Clinical Courses

### 804 518 Implantology (1-1-0-1)

This comprehensive lecture course presents the scientific basis and clinical applications of modern dental implantology techniques, and covers both surgical procedures and periodontic and prosthodontic considerations in implant dentistry. Students perform implantology procedures in a laboratory setting. Pre-requisites: All Clinical Courses

### 804 526 Hospital Dentistry (0-8-0-2)

Clinical rotations allow students to gain more experience in procedures and protocol related to hospital dentistry, operating room dentistry, anesthesia for dentistry and systemic patient management. Pre-requisite: 804 515

### 804 527 Lasers and Modern Technology (1-1-0-1)

Lectures and demonstrations provide students with latest technology in dental practice, using lasers in oral surgery,

periodontics and operative dentistry. Pre-requisites: 804 422, 804 423

### 805 435 Internal Clinical Training Fourth Year (0-20-0-2)

Students are assigned patients with a comprehensive approach to the dental practice, including patient and clinic management, stressing inter- and multidisciplinary treatment of more challenging cases. Emphasis is on comprehensive treatment planning, diagnosis and management of the medically compromised patient. Pre-requisites: All Clinical Courses

### 805 511 Treatment Planning and Seminars I (2-0-0-2)

Topics covered review assessment of advanced clinical diagnosis and sequential comprehensive treatment plan, with special emphasis on the rationale for decision making. Students develop analytic skills in assessing the various treatment plans for patients seen during the comprehensive patient management sessions. Pre-requisites: 804 324, 804 410

### 805 521 Treatment Planning and Seminars II (2-0-0-2)

Topics related to advanced and newer concepts in the field are presented in a multidisciplinary series of seminars. Issues such as ethics in dentistry, health care delivery and practice management are also discussed. Pre-requisite: 805 511

### 805 522 Research Project (1-0-0-1)

Under the guidance of a college advisor, students choose, explore and develop an interest in a relevant specific field of basic sciences or dental sciences. Students learn how to read and evaluate scientific literature, gather data and subject it to critical analysis. Students present and defend their project before an academic committee. Pre-requisite: 103 130

### 805 523 Practice Management (1-0-0-1)

Review of topics essentials for new graduates, planning to establish a dental practice. Issues include referral mechanisms, recall systems, financing, purchasing equipment and government regulations which affect dental practitioners. Pre-requisites: None

### 805 524 Equipment Maintenance (1-1-0-1)

This course introduces the students to the basic knowledge of a dental unit, parts and maintenance. Pre-requisites: None

### 805 535 Internal Clinical Training Fifth Year (0-20-0-2)

Similar to internal clinical training fourth year. Dental students are encouraged to take up complex multi-problems cases and work along a comprehensive treatment plan. Pre-requisites: All Clinical Courses

### 806 111 Integrated Biological Sciences I (2-2-0-3)
### 806 121 Integrated Biological Sciences II (2-2-0-3)

These courses provide students with basic principles of anatomy, and an introduction to embryology, a foundation that is necessary for their further dental education and clinical practice. The courses are intended primarily to help the students understand the fundamentals of human body structure and development. The systemic arrangement of the topics helps the student to better understand the subject, and to correlate structure and function of different organs. Pre-requisites: For 806 111 - none; for 806 121- 806 111

### 806 112 Histology and Cell Biology (2-1-0-2)
### 806122 Oral Histology (2-2-0-3)

These courses describe the structural organization of cells, tissues, and organ systems, at microscopic level, and include the general principles of cell biology. Students are provided with a basic knowledge of general histology, cell biology and oral histology. Pre-requisites: For 806 112 - none; for 806 122 – 806 112

### 806 113 Introduction to Biochemistry (Dental Hygiene) (2-0-0-2)

The course covers the study of the constituents of living cells and their chemical reactions. Emphasis is made on intermediary metabolism and biologically important reactions of proteins, carbohydrates and lipids. Also the general chemistry of enzymes, blood constituents and hormones are studied. Pre-requisites: None

### 806 114 Microbiology (1-2-0-2)

The course covers the fundamentals of microbiology with emphasis on oral microbiota, pathogens and defense mechanisms in the dental environment. Hygiene covering pathogenesis of bacterial, infections, etiology, clinical picture, lab diagnosis, treatment, prevention and control of diseases caused by different bacteria. Pre-requisites: None

### 806 124 Infection and Hazard Control (2-0-0-2)

The course discusses the basic concepts of infectious diseases spread, emphasis on the actual practice of infection control procedures. Specific infection control procedures used, supplies and equipment needed for disease prevention and dental office safety are explained. Pre-requisite: 806 114

### 806 125 Dental Anatomy and Physiology (2-2-0-3)

This course deals with nomenclature and morphology of the natural dentition and includes laboratory exercises in the wax carving of anatomically accurate teeth. Analysis of occlusal patterns and correction of occlusal disharmonies are integrated with courses in operative dentistry, prosthodontics, periodontics and orthodontics. Pre-requisite: 806 111

### 806 126 Pre-Clinical Dental Hygiene (2-9-0-5)

This course deals with an introduction to dental hygiene care. Laboratory instruction examines the use of instruments, develops instrumentation techniques and introduces clinical experience. Pre-requisites: None

### 806 212 General Pathology and Clinical Dental Pharmacology (3-0-0-3)

The course describes the principles of the pharmacokinetics and pharmacodynamics of biological actions, mechanism, uses, side effects, toxicity, interactions and adverse reactions of drugs acting on the autonomic nervous system, cardiovascular system, central nervous system, gastro-intestinal system, endocrine system, renal ystem, autacoids, antibiotics and other anti-infective agents and anticancer drugs, with an emphasis on dental applications. Pre-requisites: 806 113, 806 114, 806 121

### 806 215 Dental Materials (2-2-0-3)

The course allows students to understand the mechanical and physical properties of dental materials and their clinical applications. Biomechanical principles and the latest advances in dental material technology are integrated into appropriate dental specialties. Pre-requisites: None

### 806 216 Clinical Dental Hygiene I (1-8-0-3)

Lectures and clinical practice in the area of preventive dentistry are offered. Students study the principles and procedures for prevention of oral disease including dietary control, oral hygiene measures and the use of fluorides and sealants. The principles and application of root planning are also emphasized. Pre-requisite: 806 126

### 806 217 Periodontics (2-0-0-2)

The course provides students with a basic understanding of the normal periodontium, early pathologic changes, their etiologic factors and basic therapeutics and preventive procedures. Students learn to probe and examine gingival tissues and develop proficiency in the use of instruments for calculus and root planning in-patientsimulating units. Pre-requisite: 806 122

### 806 218 Oral Radiology (2-4-0-4)

The course deals with the basic principles of x-ray production, the biological effects of ionizing radiation and radiation safety, with special emphasis on intra-oral and extra-oral radiographic techniques. Students learn to take and interpret oral radiographs and perform initial screening examination and diagnosis. The course is integrated with the different dental specialties. Pre-requisite: 806 121

### 806 222 Oral Pathology (2-0-0-2)

Students learn the fundamentals of basic disease process affecting the head and neck regions, and how to identify the histopathological lesions. Pre-requisites: 806 122, 806 212

### 806 223 Dental Office Emergencies (2-0-0-2)

Students gain experience in diagnosing and managing patients with acute dental emergencies, including placement of temporary restorations and performing emergency treatments under the supervision of college members. Pre-requisites: 806 212, 806 213

### 806 224 Prevention and Nutrition for Health Sciences (3-0-0-3)

This course provides students with a basic knowledge of the essential nutrient materials in both health and disease and discusses the role of the nutrition on the development, prevention and treatment of oral and dental diseases. Pre-requisites: 806 121, 806 212

### 806 226 Clinical Dental Hygiene II (2-12-0-5)

Advanced lectures and demonstrations in the clinical practice of dental hygiene with clinic time devoted to experience in rendering preventive care are provided. Lectures emphasize patients with special needs. Pre-requisite: 806 216

### 806 229 Fundamentals of Speech and Communication (2-0-0-2)

The course covers communication theory, interviewing, proficiency in speaking and listening, and the development of informative and persuasive presentations. Theory, preparation, appropriate form and delivery techniques are studied and evaluated. Pre-requisites: None

### 806 314 Dental Public Health and Ethics (2-2-0-3)

This preventive dentistry course introduces the student to the philosophy and methods of prevention, providing information on etiology of dental caries, periodontal disease and methods of preventing and controlling dental disease through a preventive treatment plan and health education programs. There is also an introduction to the ethical responsibilities and principles of general biomedical ethics, as well as a discussion of professional malpractice, and the legal and ethical responsibilities of fulfilling the doctors'

obligations to patients, the profession and the community.
Pre-requisites: 806 223, 806 224

### 806 316 Clinical Dental Hygiene III (0-12-0-3)

Demonstrations are provided in advanced clinical skills with enhancement in clinics and hospitals. Pre-requisite: 806 226

### 806 319 Practice Management (1-0-0-1)

Review of topics essentials for new graduates planning to establish a dental practice. Issues include referral mechanisms, recall systems, financing, purchasing equipment and government regulations which affect dental practitioners. Pre-requisites: None

# List of Faculty

## Ajman Campus

| No | Name | Rank | Specialization | Degree | Year | University |
|----|------|------|----------------|--------|------|------------|
| 1 | Abu – Fanas S. H. | Professor and Dean | Perio | Ph.D | 1989 | Manchester University |
| 2 | Alhadi D | Lecturer | Resto | M.D.S | 1999 | University of Leeds |
| 3 | AL Sammerrae A. A. R | lecturer | Prosth | M. Sc. | 1995 | Baghdad University |
| 4 | Al Taki A. A. | Assistant Prof. | Ortho | Ph.D | 2002 | Marmara University |
| 5 | Desai S. | Lecture | Oral Patho | M.D.S | 1994 | Karnataka University |
| 6 | Desai V. | Lecture | Perio | M.D.S | 1994 | Karnataka University |
| 7 | Elkaseh A. M. A. | Assistant Prof. | Oral Surg | Facharzt | 1997 | Vienna University |
| 8 | Elmahdi A-b. M. | Lecture | Oral Medicine | M. Sc | 1995 | Belfast University |
| 9 | El sayed M. A-A. M. | Assistant Prof. | Cons. & Endo | PhD | 2002 | Mainz University |
| 10 | Hamdi M. J. | Lecture | Cons. | M. Sc | 2000 | Baghdad University |
| 11 | Hashim, R. | Assistant Prof. | Prev. | PhD | 2005 | Otago University, New Zealand |
| 12 | Hussain A. S. | Lecture | Pedo | M.Sc | 1993 | Baghdad Universiy |
| 13 | Ismail A. I. | Associate Prof. | Prosth | PhD | 1973 | Dundee University |
| 14 | Jaber M. A. | Professer | Oral Surg. | PhD | 1998 | Eastman Dental Institute, University of London |
| 15 | Judeh A | Lecture | Prosth. | MScD | 2006 | Jordan University of Science and Technology |
| 16 | Khair Al-M. B. | Assistant Prof. | Biol. | PhD | 1989 | Russian Academy of Sciences |
| 17 | Naqi S. Z. | Lecture | H. Anatomy | M.D. | 2001 | Aligarh Muslim University |
| 18 | Radhi A.R. A.H. | Assistant Prof. | Physio. | PhD | 1983 | Southampton University |
| 19 | Saeed M. H. | Assistant Prof. | Cons. | PhD | 2003 | Baghdad University |
| 20 | Suliman A-H. A-M | Professor | Oper. | PhD | 1992 | University of Iowa |
| 21 | Thomas S. | Associate Prof. | Oral Surg | M.D.S. | 1998 | Manipal Academy of Higher Education |
| 22 | Saleh A. M. | Assistant Prof. | Endo. | PhD | 2005 | Baghdad University |
| 23 | El-Masmari Hussein | Lecture | Resto. | MSC | 1993 | University of Sheffield |
| 24 | Hussain F. N. | Lecture | Oral Radiolgy | MSc | 1991 | Baghdad University |

| No | Name | Rank | Specialization | Degree | Year | University |
|----|------|------|----------------|--------|------|------------|
| 25 | Alshayeb M | Lecture | Oral Surg | MSc | 2006 | Jordan University of Science and Technology |
| 26 | Rashid F. M. | Lecture | Dental Research | MSc | 2008 | Mcgill University |
| 27 | Gaballah K | Assistant Prof. | Oral Surg | PhD | 2007 | King's College London, University of London |
| 28 | Nouralla H. | Lecture | Prosth | MSc | 1987 | Georgetown University, USA |
| 29 | Walia T. | Assistant Prof. | Pedo | PhD | 2003 | Royal College of Surgeons in England, UK |
| 30 | Khalil I | Professor | Prosth | DSO | 1984 | Paris 7 University, French |
| 31 | Kumar Sathish | Lecture | Oral Medicine | MD | 2006 | Annamalai University, India |
| 32 | Luck Alexander. | Lecture | Oral Medicine | MDS | 2001 | Rajivgandhi University, India. |
| 33 | Al-Mudaris Ban. | Assistant Prof. | Prosth | PhD | 2006 | Baghdad University |
| 34 | Abu -Fanas Ayman | Lecture | Ortho | MSC | 2010 | Jordan University of Science and Technology |

## Fujairah Campus

| No | Name | Rank | Specialization | Degree | Year | University |
|----|------|------|----------------|--------|------|------------|
| 1 | Al-Khafagy H. H. J. | Assistant Prof. | Cons. | PhD | 2005 | Baghdad University |
| 2 | Almuddaris M. F. | Associate Prof. | Anatomy | PhD | 1978 | McGill University |
| 3 | Altaher.A. R. H. M. | Associate Prof. | Physio | PhD | 1987 | University of London |
| 4 | Bhaskar S. | Lecture | Pedo | M.D.S | 1999 | Rajiv Gandhi University of Health Sciences |
| 5 | Fathy E. M. | Professor | Biol. | PhD | 1983 | Alexandria University |
| 6 | Shaban K.K | Assistant Prof. | Oral Surg | PhD | 1987 | University of Bordeaux I |
| 7 | Ur-rahman M. M. | Associate Prof. | Perio | PhD | 1989 | Hacettepe University |
| 8 | Razooki A.A. | Assistant Prof. | Cons. | PhD | 2005 | University of Baghdad |
| 9 | Mathew Asok | Lecture | Oral Medicine | MDS | 2003 | Nagpur University-India |

# COLLEGE OF
# ENGINEERING

Engineering is the profession of applying theories and fundamentals of pure science to solve practical problems and develop new equipment, instruments and techniques to meet the needs of society in a variety of areas such as electrical power, communication, control, IT, architecture, medicine, transportation and agriculture.

## Mission

In line with the University's mission, the College of Engineering provides high quality engineering education. College programs focus on teaching students how the fundamental principles of engineering can be applied in real-world situations. Programs place special emphasis on developing the technical as well as generic skills of students so that they are well qualified for immediate employment in their area of specialization and are able to contribute effectively to the advancement of the community. The programs also seek to prepare students for graduate study in their area of specialization.

## Objectives

 The academic programs of the College of Engineering are designed to produce graduates who are:

- Competent engineers with sound knowledge and professional attitude
- Capable of applying theoretical knowledge to solve practical problems
- Equipped with skills required for productive engineering careers
- Able to perform as individuals and team members
- Proficient in oral and written communication
- Motivated for life-long learning throughout their careers
- Capable of pursuing graduate studies

## Departments

- Department of Electrical Engineering
- Department of Biomedical Engineering
- Department of Architectural Engineering
- Department of Interior Design

## Programs Offered

The College of Engineering offers the following programs:

### Undergraduate Programs:

1.  Bachelor of Science in Electrical Engineering (Electronics)
2.  Bachelor of Science in Electrical Engineering (Communication)
3.  Bachelor of Science in Electrical Engineering (Instrumentation and Control)
4.  Bachelor of Science in Biomedical Engineering
5.  Bachelor of Science in Architectural Engineering
6.  Bachelor in Interior Design

### Graduate Program:

- Master of Science in Architecture and Urban Studies

## Admission Requirements to Undergraduate Programs

Admission to the College of Engineering requires a UAE secondary school certificate (science major) or its equivalent with a minimum grade of 70 percent for Electrical Engineering (electronics, communication, instrumentation and control), Biomedical Engineering and Architectural Engineering programs. For admission to the Interior Design program, the minimum acceptable grade is 60 percent (science or arts major).

For further information please refer to the University admissions policy.

# Facilities

## 1- Academic Staff

College members hold terminal degrees from internationally-recognized universities and are well versed in their areas of specialization.

## 2- Laboratories

The College of Engineering has well-equipped laboratories which provide practical hands-on experience to engineering students of all specializations.

*The specialized laboratories in the College are as follows:*

- Electronics Laboratory
- Communication Laboratory
- Biomedical Laboratory
- Computer Aided Design Laboratory
- Power Electronics Laboratory
- Electromechanical Energy Conversion Laboratory
- Measurements Laboratory
- Digital Design Laboratory
- Instrumentation and Control Laboratory
- Projects Laboratory

## 3-Studios

The College accommodates modern studios equipped with a variety of drawing, drafting and printing instruments and tools for architectural engineering and interior design students.

## 4- Lecture Rooms

Lecture rooms are equipped to facilitate the use of audiovisual aids such as overhead projectors, slide projectors, computer projection devices and video players. Many lecture rooms are also connected to the university computer network.

## 5- Other Facilities

College of Engineering students have access to a wide range of university facilities including computer labs, learning and information resources, a bookshop, sports and recreation facilities, cafeteria and clinics.

# Training

External training is an essential part of the curriculum of all College of Engineering programs. Students are required to complete external training lasting from three to four months (depending on the program). The College has extensive links with local organizations such as engineering companies, hospitals, power plants, interior design companies and telecommunication firms, who offer on-site external training to AUST students. The aim of the external training program is to enable students to acquire practical skills, gain an understanding of the work environment and improve their communication skills.

Prior to the external training, students of Electrical and Biomedical Engineering programs take part in an internal training program to enhance their practical and professional skills. The internal training program for Architecture and Interior Design students is designed to enhance students' skills in free-hand drawing, coloring and rendering.

# Bachelor of Science in Electrical Engineering (Electronics)

Modern life has become increasingly dependent on electronic devices and systems. Electronics Engineering plays a major role in a wide range of industries and is one of the fastest developing specialization fields. Competent electronics engineers are needed in a wide range of industries involving electronic equipment and systems. The electronics engineering program equips its graduates with technical knowledge and skills in areas such as electronic circuit design, microcontroller-based systems, digital systems, instrumentation, control systems, CAD and integrated circuit applications.

## Mission

The mission of the electronics engineering program is to provide high quality electronic engineering education to its students. It places special emphasis on developing the technical as well as generic skills of its students so that they are well qualified for immediate employment in their area of specialization and are able to contribute effectively to the advancement of the community. The program also aims to prepare its students for graduate study in electronics engineering.

## Objectives

The electronics engineering program is designed to produce graduates who have:

1.  strong foundation of basic sciences and mathematics and are able to apply this knowledge to analyze and solve engineering problems
2.  broad theoretical as well as practical knowledge related to electronics engineering specialization
3.  skills needed for designing, analyzing and trouble-shooting electronic circuits or systems
4.  proficiency in computer-aided design tools and software packages to design projects or systems to meet specified requirements
5.  good communication skills and ability to work effectively as team members
6.  the generic skills needed to function in the multidisciplinary, diverse, competitive and fast-changing engineering environment of the UAE
7.  abilities for critical thinking, lifelong learning, and updating of technical knowledge while working as professional engineers.

## Admission Requirements

Admission to the electronics engineering specialization requires a UAE secondary school certificate (science major) or its equivalent with a minimum grade of 70 percent. For further information please refer to the university admissions policy.

## Career Opportunities

Graduates of the electronics engineering specialization pursue careers in a wide range of industries and services, including the electronic and computer industries, industrial manufacturing plants, security control systems, design automation companies, product design and development companies and major service companies for electronic appliances.

## Graduation Requirements

The Bachelor of Science Degree is awarded upon the fulfillment of the following:

1. Successful completion of all courses in the program curriculum (138 credit hours)
2. Successful completion of 2 weeks of internal training and 12 weeks of external training at engineering companies (4 credit hours)
3. The cumulative grade points average CGPA is at least 2.0

## Degree requirement

The B.Sc. degree in Electrical Engineering (Electronics) requires the completion of 138 Cr. Hrs of course work, distributed according to the following plan, plus 4 credit hours of training (total of 142 credit hours):

| Type of Courses | Credit hours |
|---|---|
| 1. University General Education Requirements | |
| (a) University Required Courses | 15 |
| (b) University Elective Courses | 9 |
| 2. College Required Courses | 31 |
| 3. EE Required Courses | 53 |
| 4. Specialization Required Courses | 23 |
| 5 Graduation Projects I & II | 7 |
| Total Credit Hours (course work) | 138 |

# University General Education Requirements

## (a) University Required Courses ( 15 Cr.Hrs.)

| Course No. | Course Title | Th. | Lab. | Tut. | Cr. Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 101000 | Orientation | 1 | 0 | 0 | 0 | - |
| 102110 | Islamic Culture | 3 | 0 | 1 | 3 | - |
| 102140 | Communication Skills in Arabic Language | 3 | 0 | 0 | 3 | - |
| 103110 | Statistics | 2 | 1 | 0 | 3 | - |
| 104110 | Computer Applications | 2 | 2 | 0 | 3 | - |
| 103120 | Environmental Sciences | 3 | 0 | 0 | 3 | - |

## (b)University Elective Courses *( 9 Cr.Hrs.)*

| Course No. | Course Title | Th. | Lab. | Tut. | Cr. Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 102120 | The  Miraculousness   of the Holy Koran | 3 | 0 | 0 | 3 | - |
| 103130 | Research Methodology | 3 | 0 | 0 | 3 | - |
| 112110 | Principles of Architecture & Art | 3 | 0 | 0 | 3 | - |
| 112120 | Principles of Interior Design | 3 | 0 | 0 | 3 | - |
| 112130 | Modern Technology and Society | 3 | 0 | 0 | 3 | - |
| 113110 | Internet Concepts | 3 | 0 | 0 | 3 | - |
| 113120 | Introduction to Information Systems | 3 | 0 | 0 | 3 | - |
| 114110 | Economic Concepts | 3 | 0 | 0 | 3 | - |
| 114120 | Entrepreneurship Development | 3 | 0 | 0 | 3 | - |
| 115110 | History of Science in Islam | 3 | 0 | 0 | 3 | - |
| 115120 | Scientific Pioneering | 3 | 0 | 0 | 3 | - |
| 115130- | General Psychology | 3 | 0 | 0 | 3 | - |
| 115150 | The  Art of Expression and Writing | 3 | 0 | 0 | 3 | - |
| 115160 | Emirates Society | 3 | 0 | 0 | 3 | - |
| 115170 | Education Technology | 3 | 0 | 0 | 3 | - |
| 117120 | Fundamental of Human Nutrition | 3 | 0 | 0 | 3 | - |
| 117130 | First Aid | 3 | 0 | 0 | 3 | - |
| 117150 | Applications of Remote Sensing | 3 | 0 | 0 | 3 | - |
| 118110 | Principles of Ethics | 3 | 0 | 0 | 3 | - |
| 118120 | General Biology | 3 | 0 | 0 | 3 | - |
| 118130 | Oral Health | 3 | 0 | 0 | 3 | - |
| 118140 | General Principles of Epidemiology | 3 | 0 | 0 | 3 | - |
| 118150 | CPR-Cardio Pulmonary Resuscitation | 3 | 0 | 0 | 3 | - |

| Course No. | Course Title | Th. | Lab. | Tut. | Cr. Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 119110 | Communication Skills | 3 | 0 | 0 | 3 | - |
| 119120 | Introduction to Communication Sociology | 3 | 0 | 0 | 3 | - |
| 119130 | Information Society | 3 | 0 | 0 | 3 | - |
| 120115 | Legal Culture | 3 | 0 | 0 | 3 | - |

## 1. College Required Courses (31 Cr. Hrs.)

| Course No. | Course Title | Th. | Lab. | Tut. | Cr. Hrs. | Prerequisite(s) |
|---|---|---|---|---|---|---|
| 217101 | Engineering Mathematics I | 3 | 0 | 2 | 3 | --- |
| 217121 | Engineering Physics I | 3 | 2 | 2 | 4 | --- |
| 217141 | Chemistry for Engineers | 2 | 2 | 0 | 3 | --- |
| 213 145 | Programming I | 2 | 2 | 0 | 3 | 104110 |
| 217102 | Engineering Mathematics II | 3 | 0 | 0 | 3 | 217101 |
| 217122 | Engineering Physics II | 3 | 2 | 2 | 4 | --- |
| 217150 | Introduction to Engineering | 1 | 0 | 0 | 1 | --- |
| 217200 | Report Writing & Presentation | 1 | 0 | 2 | 1 | 217150 |
| 217203 | Engineering Mathematics III | 3 | 0 | 2 | 3 | 217102 |
| 217204 | Engineering Mathematics IV | 3 | 0 | 2 | 3 | 217203 |
| 217305 | Engineering Mathematics V | 3 | 0 | 0 | 3 | 217203 &103110 |

## 2. EE Required Courses ( 53 Cr. Hrs.)

| Course No. | Course Title | Th. | Lab. | Tut. | Cr. Hrs. | Prerequisite (s) |
|---|---|---|---|---|---|---|
| 213235 | Logic Design | 3 | 2 | 2 | 4 | 104110 |
| 213246 | Programming II | 2 | 2 | 0 | 3 | 213145 |
| 215211 | Circuit Analysis I | 3 | 2 | 2 | 4 | 217101 & 217122 |
| 211251 | Electronic Devices & Circuits I | 3 | 2 | 2 | 4 | 215211 |
| 212221 | Signal and Systems | 3 | 0 | 2 | 3 | 217203 |
| 215212 | Circuit Analysis II | 3 | 2 | 2 | 4 | 215211 & 217203 |
| 211352 | Electronic Devices & Circuits II | 3 | 2 | 2 | 4 | 211251 |
| 212315 | Principles of Communications | 3 | 2 | 2 | 4 | 212221 |
| 212385 | Electromagnetic Fields & Wave Propagation | 3 | 0 | 2 | 3 | 217122 & 217204 |
| 214352 | Control Systems | 3 | 2 | 2 | 3 | 212315 |
| 211367 | Design with Integrated Circuits | 3 | 3 | 0 | 4 | 211352 |
| 213334 | Microprocessors | 3 | 2 | 2 | 4 | 213235 & 213246 |

| Course No. | Course Title | Th. | Lab. | Tut. | Cr. Hrs. | Prerequisite (s) |
|---|---|---|---|---|---|---|
| 214322 | Instrumentation and Measurements | 3 | 2 | 0 | 4 | 211352, & 215212 |
| 216335 | Electrical Machines & Power Systems | 3 | 2 | 0 | 4 | 217122 & 215212 |

## (b) Specialization Required Courses & Graduation Projects (18 Cr.Hrs.)

| Course No. | Course Title | Th. | Lab. | Tut. | Cr. Hrs. | Prerequisite (s) |
|---|---|---|---|---|---|---|
| 211429 | Power Electronics | 3 | 2 | 0 | 4 | 211352 & 215212 |
| 213 440 | Digital System Design | 3 | 2 | 0 | 4 | 213235 |
| 211 418 | VLSI Design | 3 | 0 | 0 | 3 | 211352 & 213235 |
| 211491 | Graduation Project I | 1 | 4 | 0 | 3 | Advisor's approval |
| 211492 | Graduation Project II | 1 | 6 | 0 | 4 | 211491 |

## (c) Specialization Electives Courses (12 Cr.Hrs.)

The student will take four of the following Specialization Electives as approved by the academic advisor. At least three of these courses must have the course code as 211 4xx.

| Course No. | Course Title | Th. | Lab. | Tut. | Cr. Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 211412 | Computer-Aided Circuit Design | 3 | 0 | 0 | 3 | 211352 |
| 211415 | Digital Integrated Circuits | 3 | 0 | 0 | 3 | 211352 & 213235 |
| 211433 | Communication Electronics | 3 | 0 | 0 | 3 | 211352,& 212315 |
| 211437 | Microwave Electronics | 3 | 0 | 0 | 3 | 211352 & 212385 |
| 211444 | Optoelectronics | 3 | 0 | 0 | 3 | 211352 & 212385 |
| 211462 | Solid-State Electronics | 3 | 0 | 0 | 3 | 211352 |
| 211485 | Nanodevices & Technology | 3 | 0 | 0 | 3 | 211352 |
| 211490 | Selected Topics in Electronics | 3 | 0 | 0 | 3 | Senior standing |
| 212434 | Digital Signal Processing | 3 | 0 | 2 | 3 | 212221 |
| 212 456 | Communication & Switching Networks | 3 | 2 | 0 | 4 | 212315 |
| 213451 | Fuzzy Logic and Neural Networks | 3 | 0 | 0 | 3 | 213235&, 214352 |
| 213458 | Microcontrollers and Applications | 3 | 2 | 0 | 4 | 213334 |
| 214443 | Industrial Control Systems | 3 | 2 | 0 | 4 | 214322 & 214352 |

## Study Plan

### FIRST SEMESTER

| Course Code | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Lab | Tut | Cr.Hrs. | |
| 101 000 | Orientation | 1 | -- | -- | 0 | --- |
| 217 101 | Engineering Mathematics I | 3 | -- | 2 | 3 | --- |
| 217 121 | Engineering Physics I | 3 | 2 | 2 | 4 | --- |
| 217 141 | Chemistry for Engineers | 2 | 2 | -- | 3 | --- |
| 104 110 | Computer Applications | 2 | 2 | -- | 3 | --- |
| 102 140 | Communication Skills in Arabic Language | 3 | -- | -- | 3 | --- |
| TOTAL | | 14 | 6 | 4 | 16 | |

### SECOND SEMESTER

| Course Code | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Lab | Tut | Cr.Hrs. | |
| 213 145 | Programming I | 3 | -- | 2 | 3 | 104 110 |
| 217 102 | Engineering Mathematics II | 3 | -- | 2 | 3 | 217 101 |
| 217 122 | Engineering Physics II | 3 | 2 | 2 | 4 | --- |
| 217 150 | Introduction to Engineering | 1 | -- | 1 | 1 | --- |
| 102 110 | Islamic Culture | 3 | -- | 1 | 3 | --- |
| xxx xxx | University Elective I | 3 | 0 | -- | 3 | Advisor›s Approval |
| TOTAL | | 16 | 2 | 8 | 17 | |

### THIRD SEMESTER

| Course Code | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Lab | Tut | Cr.Hrs. | |
| 213 235 | Logic Design | 3 | 2 | 2 | 4 | 104 110 |
| 213 246 | Programming II | 3 | -- | 2 | 3 | 213 145 |
| 215 211 | Circuit Analysis I | 3 | 2 | 2 | 4 | 217101&217122 |
| 217 203 | Engineering Mathematics III | 3 | -- | 2 | 3 | 217 102 |
| 103 110 | Statistics | 2 | 1 | -- | 3 | --- |
| TOTAL | | 14 | 5 | 8 | 17 | |

## FOURTH SEMESTER

| Course Code | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Lab | Tut | Cr.Hrs. | |
| 211 251 | Electronic Devices & Circuits I | 3 | 2 | 2 | 4 | 215211 |
| 212 221 | Signals and Systems | 3 | -- | 2 | 3 | 217203 |
| 215 212 | Circuit Analysis II | 3 | 2 | 2 | 4 | 215211& 217203 |
| 217 204 | Engineering Mathematics IV | 3 | -- | 2 | 3 | 217203 |
| xxx xxx | University Elective II | 3 | -- | -- | 3 | Advisor›s Approval |
| 217 200 | Report Writing & Presentation | 1 | -- | 2 | 1 | 217150 |
| TOTAL | | 16 | 4 | 10 | 18 | |

## FIFTH SEMESTER

| Course Code | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Lab | Tut | Cr.Hrs. | |
| 211 352 | Electronic Devices & Circuits II | 3 | 2 | 2 | 4 | 211 251 |
| 212 315 | Principles of Communication | 3 | 2 | 2 | 4 | 212 221 |
| 212 385 | Electromagnetic Fields and Wave Propagation | 3 | -- | 2 | 3 | 217122 &217204 |
| 214 352 | Control Systems | 3 | 2 | 2 | 4 | 212 221 |
| 217 305 | Engineering Mathematics V | 3 | -- | -- | 3 | 217203 & 103110 |
| TOTAL | | 15 | 6 | 8 | 18 | |

## SIXTH SEMESTER

| Course Code | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Lab | Tut | Cr.Hrs. | |
| 211 367 | Design with Integrated Circuits | 3 | 2 | -- | 4 | 211352 |
| 213 334 | Microprocessors | 3 | 2 | 2 | 4 | 21335 & 213246 |
| 214 322 | Instrumentation and Measurements | 3 | 2 | -- | 4 | 211352 &215212 |
| 216 335 | Electrical Machines and Power Systems | 3 | 2 | -- | 4 | 217122 &215212 |
| 103120 | Environmental Sciences | 3 | -- | -- | 3 | ------- |
| TOTAL | | 15 | 8 | 2 | 19 | |

*Summer Session: Training I ( 210400)  for six weeks period*

## SEVENTH SEMESTER

| Course Code | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Lab | Tut | Cr.Hrs. | |

| Course Code | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| 211 429 | Power Electronics | 3 | 2 | -- | 4 | 211 352<br>215 212 |
| 213 440 | Digital System Design | 3 | 2 | -- | 4 | 213 235 |
| 211 491 | Graduation Project I | 1 | 4 | -- | 3 | Advisor›s Approval |
| 211 4xx | Specialization Elective I | 3 | -- | -- | 3 | Advisor›s Approval |
| 211 4xx | Specialization Elective II | 3 | -- | -- | 3 | Advisor›s Approval |
| TOTAL | | 13 | 8 | -- | 17 | |

## EIGHTH SEMESTER

| Course Code | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Lab | Tut | Cr.Hrs. | |
| 211 418 | VLSI Design | 3 | -- | -- | 3 | 211352&213235 |
| 211 492 | Graduation Project II | 1 | 6 | -- | 4 | 211491 |
| 211 4xx | Specialization Elective III | 3 | -- | -- | 3 | Advisor›s Approval |
| 21x 4xx | Specialization Elective IV | 3 | -- | -- | 3 | Advisor›s Approval |
| xxx xxx | University Elective III | 3 | -- | -- | 3 | Advisor›s Approval |
| TOTAL | | 13 | 6 | -- | 16 | |

*Summer Session: Training II (210400) for six weeks period*

# Bachelor of Science in Electrical Engineering (Communication)

Communication engineering is concerned with modern techniques of transmitting various forms of information. The information can be digital or analog and transmitted by wired or wireless media, for example radio waves, cables and optical fibers. Radio, television, telephone and computer networks are examples of communication systems. The widespread use of modern communication systems demands qualified communication engineers to deal with the various technical aspects of these systems. The communication engineering program equips its graduates with technical knowledge and skills in areas such as communication systems, digital data communication, microwave engineering, satellite communication, mobile communication and computer networks.

## Mission

The mission of the Communication Engineering program is to provide high quality communication engineering education to its students. It places special emphasis on developing the technical as well as generic skills of its students so that they are well qualified for immediate employment in their area of specialization and can contribute effectively to the advancement of the community. It also aims to prepare its students for graduate study in communication engineering.

## Objectives

*The communication engineering program aims to produce graduates who have:*

1. strong foundation of basic sciences and mathematics and are able to apply this knowledge to analyze and solve engineering problems

2. broad theoretical as well as practical knowledge related to communication engineering specialization

3. skills needed for designing, analyzing, and trouble-shooting communication circuits or systems

4. proficiency in computer aided design tools and software packages to design projects or systems to meet specified requirements

5. good communication skills and ability to work effectively as team members

6. the generic skills needed to function in the multidisciplinary, diverse, competitive and fast-changing engineering environment of the UAE

7. abilities for critical thinking, lifelong learning, and updating of technical knowledge while working as professional engineers

## Admission Requirements

Admission to the communication engineering program requires a UAE secondary school certificate (science major) or its equivalent with a minimum grade of 70 percent. For further information please refer to the university admission policy.

## Career Opportunities

Graduates of the communication engineering specialization can pursue careers in a wide range of areas, such as:

- local or international telecommunication companies to work as design, maintenance or marketing engineers
- digital data communication industry including computer networks
- mobile telephone industry
- television and radio stations

## Graduation Requirements

The Bachelor of Science Degree is awarded upon the fulfillment of the following:

1. Successful completion of all courses in the program curriculum (138 credit hours)
2. Successful completion of two weeks of internal training and 12 weeks of external training in engineering companies (4 credit hours)
3. The cumulative grade points average CGPA is at least 2.0

## Degree requirement

The B.Sc. degree in Electrical Engineering (Communication) requires the completion of 138 Cr. Hrs of course work, distributed according to the following plan, plus 4 credit hours of training (total of 142 credit hours):

| Type of Courses | Credit hours |
|---|---|
| 1. University General Education Requirements | |
| (a) University Required Courses | 15 |
| (b) University Elective Courses | 9 |
| 2. College Required Courses | 31 |
| 3.   EE  Required  Courses | 53 |
| 4. Specialization Required Courses | 23 |
| 5  Graduation Projects I & II | 7 |
| Total Credit Hours (course work) | 138 |

## UNIVERSITY GENERAL EDUCATION REQUIREMENTS

### (a) University Required Courses *(15 Cr.Hrs.)*

| Course No. | Course Title | Th. | Lab. | Tut. | Cr. Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 101000 | Orientation | 1 | 0 | 0 | 0 | - |
| 102110 | Islamic Culture | 3 | 0 | 1 | 3 | - |
| 102140 | Communication Skills in Arabic Language | 3 | 0 | 0 | 3 | - |
| 103110- | Statistics | 2 | 1 | 0 | 3 | - |
| 104110 | Computer Applications | 2 | 2 | 0 | 3 | - |
| 103120 | Environmental Sciences | 3 | 0 | 0 | 3 | - |

## (b)University Elective Courses (9 Cr.Hrs.)

| Course No. | Course Title | Th. | Lab. | Tut. | Cr. Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 102120 | The Miraculousness of the Holy Koran | 3 | 0 | 0 | 3 | - |
| 103130 | Research Methodology | 3 | 0 | 0 | 3 | - |
| 112110 | Principles of Architecture & Art | 3 | 0 | 0 | 3 | - |
| 112120 | Principles of Interior Design | 3 | 0 | 0 | 3 | - |
| 112130 | Modern Technology and Society | 3 | 0 | 0 | 3 | - |
| 113110 | Internet Concepts | 3 | 0 | 0 | 3 | - |
| 113120 | Introduction to Information Systems | 3 | 0 | 0 | 3 | - |
| 114110 | Economic Concepts | 3 | 0 | 0 | 3 | - |
| 114120 | Entrepreneurship Development | 3 | 0 | 0 | 3 | - |
| 115110 | History of Science in Islam | 3 | 0 | 0 | 3 | - |
| 115120 | Scientific Pioneering | 3 | 0 | 0 | 3 | - |
| 115130- | General Psychology | 3 | 0 | 0 | 3 | - |
| 115150 | The Art of Expression and Writing | 3 | 0 | 0 | 3 | - |
| 115160 | Emirates Society | 3 | 0 | 0 | 3 | - |
| 115170 | Education Technology | 3 | 0 | 0 | 3 | - |
| 117120 | Fundamental of Human Nutrition | 3 | 0 | 0 | 3 | - |
| 117130 | First Aid | 3 | 0 | 0 | 3 | - |
| 117150 | Applications of Remote Sensing | 3 | 0 | 0 | 3 | - |
| 118110 | Principles of Ethics | 3 | 0 | 0 | 3 | - |
| 118120 | General Biology | 3 | 0 | 0 | 3 | - |
| 118130 | Oral Health | 3 | 0 | 0 | 3 | - |
| 118140 | General Principles of Epidemiology | 3 | 0 | 0 | 3 | - |
| 118150 | CPR-Cardio Pulmonary Resuscitation | 3 | 0 | 0 | 3 | - |
| 119110 | Communication Skills | 3 | 0 | 0 | 3 | - |
| 119120 | Introduction to Communication Sociology | 3 | 0 | 0 | 3 | - |
| 119130 | Information Society | 3 | 0 | 0 | 3 | - |
| 120115 | Legal Culture | 3 | 0 | 0 | 3 | - |

## 1. College Required Courses (31 Cr. Hrs.)

| Course No. | Course Title | Th. | Lab. | Tut. | Cr. Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 217101 | Engineering Mathematics I | 3 | 0 | 2 | 3 | ---- |
| 217121 | Engineering Physics I | 3 | 2 | 2 | 4 | ---- |
| 217141 | Chemistry for Engineers | 2 | 2 | 0 | 3 | ---- |
| 213 145 | Programming I | 2 | 2 | 0 | 3 | 104110 |
| 217102 | Engineering Mathematics II | 3 | 0 | 0 | 3 | 217101 |

| Course No. | Course Title | Th. | Lab. | Tut. | Cr. Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 217122 | Engineering Physics II | 3 | 2 | 2 | 4 | ---- |
| 217150 | Introduction to Engineering | 1 | 0 | 0 | 1 | ---- |
| 217200 | Report Writing & Presentation | 1 | 0 | 2 | 1 | 217150 |
| 217203 | Engineering Mathematics III | 3 | 0 | 2 | 3 | 217102 |
| 217204 | Engineering Mathematics IV | 3 | 0 | 2 | 3 | 217203 |
| 217305 | Engineering Mathematics V | 3 | 0 | 0 | 3 | 217203 &103110 |

## 2. EE Required Courses ( 53  Cr. Hrs.)

| Course No. | Course Title | Th. | Lab. | Tut. | Cr. Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 213235 | Logic Design | 3 | 2 | 2 | 4 | 104110 |
| 213246 | Programming II | 2 | 2 | 0 | 3 | 213145 |
| 215211 | Circuit Analysis I | 3 | 2 | 2 | 4 | 217101 & 217122 |
| 211251 | Electronic Devices & Circuits I | 3 | 2 | 2 | 4 | 215211 |
| 212221 | Signal and Systems | 3 | 0 | 2 | 3 | 217203 |
| 215212 | Circuit Analysis II | 3 | 2 | 2 | 4 | 215211 & 217203 |
| 211352 | Electronic Devices & Circuits II | 3 | 2 | 2 | 4 | 211251 |
| 212315 | Principles of Communications | 3 | 2 | 2 | 4 | 212221 |
| 212385 | Electromagnetic Fields & Wave Propagation | 3 | 0 | 2 | 3 | 217122 & 217204 |
| 214352 | Control Systems | 3 | 2 | 2 | 3 | 212315 |
| 211367 | Design with Integrated Circuits | 3 | 3 | 0 | 4 | 211352 |
| 213334 | Microprocessors | 3 | 2 | 2 | 4 | 213235 & 213246 |
| 214322 | Instrumentation and Measurements | 3 | 2 | 0 | 4 | 211352 & 215212 |
| 216335 | Electrical Machines & Power Systems | 3 | 2 | 0 | 4 | 217122 & 215212 |

## (b) Specialization Required Courses & Graduation Projects *(18 Cr.Hrs.)*

| Course No. | Course Title | Th. | Lab. | Tut. | Cr. Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 212433 | Digital Communication | 3 | 2 | 0 | 4 | 212315 |
| 212434 | Digital Signal Processing | 3 | 0 | 0 | 3 | 212221 |
| 211 418 | Microwave Engineering | 3 | 2 | 0 | 4 | 212385 |
| 212491 | Graduation Project I | 1 | 4 | 0 | 3 | Advisor's approval |
| 211492 | Graduation Project II | 1 | 6 | 0 | 4 | 212491 |

## (c) Specialization Electives Courses *(12 Cr.Hrs.)*

The student will take four of the following Specialization Electives as approved by the academic advisor. At least three of these courses must have the course code as 212 4xx.

| Course No. | Course Title | Th. | Lab. | Tut. | Cr. Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 211433 | Communication Electronics | 3 | 0 | 0 | 3 | 211352,& 212315 |
| 211437 | Microwave Electronics | 3 | 0 | 0 | 3 | 211352 & 212385 |
| 212444 | Antenna Theory and Design | 3 | 0 | 0 | 3 | 212385 |
| 212445 | Radar Systems | 3 | 0 | 0 | 3 | 212315 & 212385 |
| 212456 | Communication & Switching Networks | 3 | 2 | 0 | 4 | 212315 |
| 212463 | Satellite Communications | 3 | 0 | 0 | 3 | 212315 &212385 |
| 212467 | Wireless Communications | 3 | 0 | 0 | 3 | 212315 & 212385 |
| 212471 | Optical Communications | 3 | 0 | 0 | 3 | 212315 & 212385 |
| 212483 | Information Theory and Coding | 3 | 0 | 0 | 3 | 212315 |
| 212490 | Selected Topics in Communication | 3 | 0 | 0 | 3 | Senior standing |
| 213440 | Digital System Design | 3 | 2 | 0 | 4 | 213285 |
| 213451 | Fuzzy Logic and Neural Networks | 3 | 0 | 0 | 3 | 213235&, 214352 |
| 213458 | Microcontrollers and Applications | 3 | 2 | 0 | 4 | 213334 |
| 214443 | Industrial Control Systems | 3 | 2 | 0 | 4 | 214322 & 214352 |

## Study Plan

### FIRST SEMESTER

| Course Code | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Lab | Tut | Cr.Hrs. | |
| 101000 | Orientation | 1 | -- | -- | 0 | --- |
| 217101 | Engineering Mathematics I | 3 | -- | 2 | 3 | --- |
| 217121 | Engineering Physics I | 3 | 2 | 2 | 4 | --- |
| 217141 | Chemistry for Engineers | 2 | 2 | -- | 3 | --- |
| 104110 | Computer Applications | 2 | 2 | -- | 3 | --- |
| 102140 | Communication Skills in Arabic Language | 3 | -- | -- | 3 | --- |
| TOTAL | | 14 | 6 | 4 | 16 | |

### SECOND SEMESTER

| Course Code | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Lab | Tut | Cr.Hrs. | |
| 213145 | Programming I | 3 | -- | 2 | 3 | 104 110 |
| 217102 | Engineering Mathematics II | 3 | -- | 2 | 3 | 217 101 |
| 217122 | Engineering Physics II | 3 | 2 | 2 | 4 | --- |
| 217150 | Introduction to Engineering | 1 | -- | 1 | 1 | --- |
| 102110 | Islamic Culture | 3 | -- | 1 | 3 | --- |
| Xxxxxx | University Elective I | 3 | 0 | -- | 3 | Advisor›s Approval |
| TOTAL | | 16 | 2 | 8 | 17 | |

### THIRD SEMESTER

| Course Code | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Lab | Tut | Cr.Hrs. | |
| 213235 | Logic Design | 3 | 2 | 2 | 4 | 104 110 |
| 213246 | Programming II | 3 | -- | 2 | 3 | 213 145 |
| 215211 | Circuit Analysis I | 3 | 2 | 2 | 4 | 217101&217122 |
| 217203 | Engineering Mathematics III | 3 | -- | 2 | 3 | 217 102 |
| 103110 | Statistics | 2 | 1 | -- | 3 | --- |
| TOTAL | | 14 | 5 | 8 | 17 | |

## FOURTH SEMESTER

| Course Code | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Lab | Tut | Cr.Hrs. | |
| 211251 | Electronic Devices & Circuits I | 3 | 2 | 2 | 4 | 215211 |
| 212221 | Signals and Systems | 3 | -- | 2 | 3 | 217203 |
| 215212 | Circuit Analysis II | 3 | 2 | 2 | 4 | 215211& 217203 |
| 217204 | Engineering Mathematics IV | 3 | -- | 2 | 3 | 217203 |
| Xxxxxx | University Elective II | 3 | -- | -- | 3 | Advisor›s Approval |
| 217200 | Report Writing & Presentation | 1 | -- | 2 | 1 | 217150 |
| TOTAL | | 16 | 4 | 10 | 18 | |

## FIFTH SEMESTER

| Course Code | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Lab | Tut | Cr.Hrs. | |
| 211352 | Electronic Devices & Circuits II | 3 | 2 | 2 | 4 | 211 251 |
| 212315 | Principles of Communication | 3 | 2 | 2 | 4 | 212 221 |
| 212385 | Electromagnetic Fields and Wave Propagation | 3 | -- | 2 | 3 | 217122 &217204 |
| 214352 | Control Systems | 3 | 2 | 2 | 4 | 212 221 |
| 217305 | Engineering Mathematics V | 3 | -- | -- | 3 | 217203 & 103110 |
| TOTAL | | 15 | 6 | 8 | 18 | |

## SIXTH SEMESTER

| Course Code | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Lab | Tut | Cr.Hrs. | |
| 211367 | Design with Integrated Circuits | 3 | 2 | -- | 4 | 211352 |
| 213334 | Microprocessors | 3 | 2 | 2 | 4 | 21335 & 213246 |
| 214322 | Instrumentation and Measurements | 3 | 2 | -- | 4 | 211352 &215212 |
| 216335 | Electrical Machines and Power Systems | 3 | 2 | -- | 4 | 217122 &215212 |
| 103120 | Environmental Sciences | 3 | -- | -- | 3 | ------- |
| TOTAL | | 15 | 8 | 2 | 19 | |

*Summer Session: Training I ( 210400)  for six weeks period*

## SEVENTH SEMESTER

| Course Code | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Lab | Tut | Cr.Hrs. | |
| 212433 | Digital Communication | 3 | 2 | -- | 4 | 212315 |
| 212434 | Digital Signal Processing | 3 | 0 | 2 | 3 | 212221 |
| 212491 | Graduation Project I | 1 | 4 | -- | 3 | Advisor›s Approval |
| 2124xx | Specialization Elective I | 3 | -- | -- | 3 | Advisor›s Approval |
| 2124xx | Specialization Elective II | 3 | -- | -- | 3 | Advisor›s Approval |
| TOTAL | | 13 | 6 | 2 | 16 | |

## EIGHTH SEMESTER

| Course Code | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Lab | Tut | Cr.Hrs. | |
| 212466 | Microwave Engineering | 3 | 2 | -- | 4 | 212385 |
| 212492 | Graduation Project II | 1 | 6 | -- | 4 | 212491 |
| 2124xx | Specialization Elective III | 3 | -- | -- | 3 | Advisor›s Approval |
| 21x4xx | Specialization Elective IV | 3 | -- | -- | 3 | Advisor›s Approval |
| Xxxxxx | University Elective III | 3 | -- | -- | 3 | Advisor›s Approval |
| TOTAL | | 13 | 8 | -- | 17 | |

*Summer Session: Training II (210400) for six weeks period*

# Bachelor of Science in Electrical Engineering (Instrumentation and Control)

Considering the recent significant developments in the fields of instrumentation and control and the rapid industrialization of the UAE, the demand for engineers specializing in instrumentation and control engineering is on the rise. Instrumentation and control engineering has applications in modern industries which manufacture a variety of products. It also has extensive applications in various control systems encountered in everyday life. The Instrumentation and Control Engineering program prepares students to deal with modern techniques used in instrumentation and control systems. In addition to developing a strong theoretical basis, it provides students with the laboratory experience they need to enhance their practical skills. It also develops their generic skills so that upon graduation they are well prepared to start their professional careers.

## Mission

To provide students with a broad theoretical knowledge base and equip them with strong practical application skills so that they can meet the competitive requirements of the job market in instrumentation and control engineering, and are well prepared to pursue higher study in this fast-developing field.

## Objectives

The instrumentation and control engineering program aims to produce graduates who have:

1. strong foundation of basic sciences and mathematics and are able to apply this knowledge to analyze and solve engineering problems

2. broad theoretical as well as practical knowledge related to related to instrumentation and control specialization

3. skills needed for designing, analyzing, and trouble-shooting circuits or systems utilized in instrumentation and control fields

4. proficiency in computer aided design tools and software packages to design projects or systems to meet specified requirements

5. good communication skills and ability to work effectively as team members

6. the generic skills needed to function in the multidisciplinary, diverse, competitive and fast-changing engineering environment of the UAE

7. abilities for critical thinking, lifelong learning, and updating of technical knowledge while working as professional engineers.

## Admission Requirements

Admission to the instrumentation and control engineering program requires a UAE secondary school certificate (science major) or its equivalent with a minimum grade of 70 percent. For further information please refer to the university admissions policy.

## Career Opportunities

Graduates of the instrumentation and control engineering specialization can pursue careers in a wide range of areas, for example the petroleum industry, the chemical industry, power plants, the auto industry, robotics, the manufacturing industry and in engineering companies designing control systems for industry and smart homes.

## Graduation Requirements

The Bachelor of Science Degree is awarded upon the fulfillment of the following:

1. Successful completion of all courses in the program curriculum (138 credit hours)
2. Successful completion of two weeks of internal training and 12 weeks of external training in engineering companies (4 credit hours)
3. The cumulative grade points average CGPA is at least 2.0

## Degree requirement

The B.Sc. degree in Electrical Engineering (Instrumentation and Control) requires the completion of 138 Cr. Hrs of course work, distributed according to the following plan, plus 4 credit hours of training (total of 142 credit hours):

| Type of Courses | Credit hours |
|---|---|
| 1. University General Education Requirements | |
| (a) University Required Courses | 15 |
| (b) University Elective Courses | 9 |
| 2. College Required Courses | 31 |
| 3.  EE  Required  Courses | 53 |
| 4. Specialization Required Courses | 23 |
| 5  Graduation projects I & II | 7 |
| Total Credit Hours (course work) | 138 |

# UNIVERSITY GENERAL EDUCATION REQUIREMENTS

## (a) University Required Courses ( 15 Cr.Hrs.)

| Course No. | Course Title | Th. | Lab. | Tut. | Cr. Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 101000 | Orientation | 1 | 0 | 0 | 0 | - |
| 102110 | Islamic Culture | 3 | 0 | 1 | 3 | - |
| 102140 | Communication Skills in Arabic Language | 3 | 0 | 0 | 3 | - |
| 103110- | Statistics | 2 | 1 | 0 | 3 | - |
| 104110 | Computer Applications | 2 | 2 | 0 | 3 | - |
| 103120 | Environmental Sciences | 3 | 0 | 0 | 3 | - |

## (b)University Elective Courses ( 9 Cr.Hrs.)

| Course No. | Course Title | Th. | Lab. | Tut. | Cr. Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 102120 | The Miraculousness of the Holy Koran | 3 | 0 | 0 | 3 | - |
| 103130 | Research Methodology | 3 | 0 | 0 | 3 | - |
| 112110 | Principles of Architecture & Art | 3 | 0 | 0 | 3 | - |
| 112120 | Principles of Interior Design | 3 | 0 | 0 | 3 | - |
| 112130 | Modern Technology and Society | 3 | 0 | 0 | 3 | - |
| 113110 | Internet Concepts | 3 | 0 | 0 | 3 | - |
| 113120 | Introduction to Information Systems | 3 | 0 | 0 | 3 | - |
| 114110 | Economic Concepts | 3 | 0 | 0 | 3 | - |
| 114120 | Entrepreneurship Development | 3 | 0 | 0 | 3 | - |
| 115110 | History of Science in Islam | 3 | 0 | 0 | 3 | - |
| 115120 | Scientific Pioneering | 3 | 0 | 0 | 3 | - |
| 115130- | General Psychology | 3 | 0 | 0 | 3 | - |
| 115150 | The Art of Expression and Writing | 3 | 0 | 0 | 3 | - |
| 115160 | Emirates Society | 3 | 0 | 0 | 3 | - |
| 115170 | Education Technology | 3 | 0 | 0 | 3 | - |
| 117120 | Fundamental of Human Nutrition | 3 | 0 | 0 | 3 | - |
| 117130 | First Aid | 3 | 0 | 0 | 3 | - |
| 117150 | Applications of Remote Sensing | 3 | 0 | 0 | 3 | - |
| 118110 | Principles of Ethics | 3 | 0 | 0 | 3 | - |
| 118120 | General Biology | 3 | 0 | 0 | 3 | - |
| 118130 | Oral Health | 3 | 0 | 0 | 3 | - |
| 118140 | General Principles of Epidemiology | 3 | 0 | 0 | 3 | - |
| 118150 | CPR-Cardio Pulmonary Resuscitation | 3 | 0 | 0 | 3 | - |

| Course No. | Course Title | Th. | Lab. | Tut. | Cr. Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 119110 | Communication Skills | 3 | 0 | 0 | 3 | - |
| 119120 | Introduction to Communication Sociology | 3 | 0 | 0 | 3 | - |
| 119130 | Information Society | 3 | 0 | 0 | 3 | - |
| 120115 | Legal Culture | 3 | 0 | 0 | 3 | - |

## 1. College Required Courses (31 Cr. Hrs.)

| Course No. | Course Title | Th. | Lab. | Tut. | Cr. Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 217101 | Engineering Mathematics I | 3 | 0 | 2 | 3 | ---------- |
| 217121 | Engineering Physics I | 3 | 2 | 2 | 4 | ---- |
| 217141 | Chemistry for Engineers | 2 | 2 | 0 | 3 | ------- |
| 213 145 | Programming I | 2 | 2 | 0 | 3 | 104110 |
| 217102 | Engineering Mathematics II | 3 | 0 | 0 | 3 | 217101 |
| 217122 | Engineering Physics II | 3 | 2 | 2 | 4 | ---- |
| 217150 | Introduction to Engineering | 1 | 0 | 0 | 1 | ------ |
| 217200 | Report Writing & Presentation | 1 | 0 | 2 | 1 | 217150 |
| 217203 | Engineering Mathematics III | 3 | 0 | 2 | 3 | 217102 |
| 217204 | Engineering Mathematics IV | 3 | 0 | 2 | 3 | 217203 |
| 217305 | Engineering Mathematics V | 3 | 0 | 0 | 3 | 217203 & 103110 |

## 2. EE Required Courses ( 53 Cr. Hrs.)

| Course No. | Course Title | Th. | Lab. | Tut. | Cr. Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 213235 | Logic Design | 3 | 2 | 2 | 4 | 104110 |
| 213246 | Programming II | 2 | 2 | 0 | 3 | 213145 |
| 215211 | Circuit Analysis I | 3 | 2 | 2 | 4 | 217101 & 217122 |
| 211251 | Electronic Devices & Circuits I | 3 | 2 | 2 | 4 | 215211 |
| 212221 | Signal and Systems | 3 | 0 | 2 | 3 | 217203 |
| 215212 | Circuit Analysis II | 3 | 2 | 2 | 4 | 215211 & 217203 |
| 211352 | Electronic Devices & Circuits II | 3 | 2 | 2 | 4 | 211251 |
| 212315 | Principles of Communications | 3 | 2 | 2 | 4 | 212221 |
| 212385 | Electromagnetic Fields & Wave Propagation | 3 | 0 | 2 | 3 | 217122 & 217204 |
| 214352 | Control Systems | 3 | 2 | 2 | 3 | 212315 |
| 211367 | Design with Integrated Circuits | 3 | 3 | 0 | 4 | 211352 |
| 213334 | Microprocessors | 3 | 2 | 2 | 4 | 213235 & 213246 |

| Course No. | Course Title | Th. | Lab. | Tut. | Cr. Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 214322 | Instrumentation and Measurements | 3 | 2 | 0 | 4 | 211352 & 215212 |
| 216335 | Electrical Machines & Power Systems | 3 | 2 | 0 | 4 | 217122 & 215212 |

## (b) Specialization Required Courses & Graduation Projects (18 Cr.Hrs.)

| Course No. | Course Title | Th. | Lab. | Tut. | Cr. Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 214443 | Industrial Control Systems | 3 | 2 | 0 | 4 | 214352 |
| 214455 | Computer Interfacing for Instrumentation& Control | 3 | 2 | 0 | 4 | 213334 &211367 |
| 214466 | Process Control and Instrumentation | 3 | 0 | 0 | 3 | 214322 &214352 |
| 214491 | Graduation Project I | 1 | 4 | 0 | 3 | Advisor's approval |
| 214492 | Graduation Project II | 1 | 6 | 0 | 4 | 214491 |

## (c) Specialization Electives Courses (12 Cr.Hrs.)

The student will take four of the following Specialization Electives as approved by the academic advisor. At least three of these courses must have the course code as 214 4xx.

| Course No. | Course Title | Th. | Lab. | Tut. | Cr. Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 211429 | Power Electronics | 3 | 2 | 0 | 4 | 211352 & 212315 |
| 212434 | Digital Signal Processing | 3 | 0 | 0 | 3 | 212221 |
| 212485 | Data Communication & Telemetry | 3 | 0 | 0 | 3 | 212315 |
| 214426 | Intelligent Systems & Robotics | 3 | 0 | 0 | 3 | 213334 & 211352 |
| 214445 | Digital Control Systems | 3 | 0 | 0 | 3 | 214352 &212221 |
| 214464 | Virtual Instrumentation | 3 | 0 | 0 | 3 | 214322 &211367 |
| 214472 | Biomedical Instrumentation | 3 | 0 | 0 | 3 | 214322 |
| 214488 | Instrumentation & Control Applications | 3 | 0 | 0 | 3 | 214322 |
| 214490 | Selected Topics in Instrumentation & Control | 3 | 0 | 0 | 3 | Senior standing |
| 213440 | Digital System Design | 3 | 2 | 0 | 4 | 213285 |
| 213451 | Fuzzy Logic and Neural Networks | 3 | 0 | 0 | 3 | 213235 & 214352 |
| 213458 | Microcontrollers and Applications | 3 | 2 | 0 | 4 | 213334 |
| 214443 | Industrial Control Systems | 3 | 2 | 0 | 4 | 214322 & 214352 |

## Study Plan

### FIRST SEMESTER

| Course Code | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Lab | Tut | Cr.Hrs. | |
| 101000 | Orientation | 1 | -- | -- | 0 | --- |
| 217101 | Engineering Mathematics I | 3 | -- | 2 | 3 | --- |
| 217121 | Engineering Physics I | 3 | 2 | 2 | 4 | --- |
| 217141 | Chemistry for Engineers | 2 | 2 | -- | 3 | --- |
| 104110 | Computer Applications | 2 | 2 | -- | 3 | --- |
| 102140 | Communication Skills in Arabic Language | 3 | -- | -- | 3 | --- |
| TOTAL | | 14 | 6 | 4 | 16 | |

### SECOND SEMESTER

| Course Code | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Lab | Tut | Cr.Hrs. | |
| 213145 | Programming I | 3 | -- | 2 | 3 | 104 110 |
| 217102 | Engineering Mathematics II | 3 | -- | 2 | 3 | 217 101 |
| 217122 | Engineering Physics II | 3 | 2 | 2 | 4 | --- |
| 217150 | Introduction to Engineering | 1 | -- | 1 | 1 | --- |
| 102110 | Islamic Culture | 3 | -- | 1 | 3 | --- |
| Xxxxxx | University Elective I | 3 | 0 | -- | 3 | Advisor›s Approval |
| TOTAL | | 16 | 2 | 8 | 17 | |

### THIRD SEMESTER

| Course Code | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Lab | Tut | Cr.Hrs. | |
| 213235 | Logic Design | 3 | 2 | 2 | 4 | 104 110 |
| 213246 | Programming II | 3 | -- | 2 | 3 | 213 145 |
| 215211 | Circuit Analysis I | 3 | 2 | 2 | 4 | 217101&217122 |
| 217203 | Engineering Mathematics III | 3 | -- | 2 | 3 | 217 102 |
| 103110 | Statistics | 2 | 1 | -- | 3 | --- |
| TOTAL | | 14 | 5 | 8 | 17 | |

## FOURTH SEMESTER

| Course Code | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Lab | Tut | Cr.Hrs. | |
| 211251 | Electronic Devices & Circuits I | 3 | 2 | 2 | 4 | 215211 |
| 212221 | Signals and Systems | 3 | -- | 2 | 3 | 217203 |
| 215212 | Circuit Analysis II | 3 | 2 | 2 | 4 | 215211& 217203 |
| 217204 | Engineering Mathematics IV | 3 | -- | 2 | 3 | 217203 |
| Xxxxxx | University Elective II | 3 | -- | -- | 3 | Advisor›s Approval |
| 217200 | Report Writing & Presentation | 1 | -- | 2 | 1 | 217150 |
| TOTAL | | 16 | 4 | 10 | 18 | |

## FIFTH SEMESTER

| Course Code | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Lab | Tut | Cr.Hrs. | |
| 211352 | Electronic Devices & Circuits II | 3 | 2 | 2 | 4 | 211 251 |
| 212315 | Principles of Communication | 3 | 2 | 2 | 4 | 212 221 |
| 212385 | Electromagnetic Fields and Wave Propagation | 3 | -- | 2 | 3 | 217122 &217204 |
| 214352 | Control Systems | 3 | 2 | 2 | 4 | 212 221 |
| 217305 | Engineering Mathematics V | 3 | -- | -- | 3 | 217203 & 103110 |
| TOTAL | | 15 | 6 | 8 | 18 | |

## SIXTH SEMESTER

| Course Code | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Lab | Tut | Cr.Hrs. | |
| 211367 | Design with Integrated Circuits | 3 | 2 | -- | 4 | 211352 |
| 213334 | Microprocessors | 3 | 2 | 2 | 4 | 21335 & 213246 |
| 214322 | Instrumentation and Measurements | 3 | 2 | -- | 4 | 211352 &215212 |
| 216335 | Electrical Machines and Power Systems | 3 | 2 | -- | 4 | 217122 &215212 |
| 103120 | Environmental Sciences | 3 | -- | -- | 3 | ------- |
| TOTAL | | 15 | 8 | 2 | 19 | |

*Summer Session: Training I ( 210400)  for six weeks period*

## SEVENTH SEMESTER

| Course Code | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Lab | Tut | Cr.Hrs. | |
| 214443 | Industrial Control Systems | 3 | 2 | -- | 4 | 214352 |
| 214455 | Computer Interfacing for Instrumentation & Control | 3 | 2 | -- | 4 | 213334 &211367 |
| 214491 | Graduation Project I | 1 | 4 | -- | 3 | Advisor›s Approval |
| 214 4xx | Specialization Elective I | 3 | -- | -- | 3 | Advisor›s Approval |
| 214 4xx | Specialization Elective II | 3 | -- | -- | 3 | Advisor›s Approval |
| TOTAL | | 13 | 8 | -- | 17 | |

## EIGHTH SEMESTER

| Course Code | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Lab | Tut | Cr.Hrs. | |
| 214466 | Process Control & Instrumentation | 3 | 0 | -- | 3 | 214322 & 214352 |
| 214492 | Graduation Project II | 1 | 6 | -- | 4 | 212491 |
| 214 4xx | Specialization Elective III | 3 | -- | -- | 3 | Advisor›s Approval |
| 21x 4xx | Specialization Elective IV | 3 | -- | -- | 3 | Advisor›s Approval |
| Xxxxxx | University Elective III | 3 | -- | -- | 3 | Advisor›s Approval |
| TOTAL | | 13 | 6 | -- | 16 | |

*Summer Session: Training II (210400)  for six weeks period*

# Course Descriptions

### 211 251 Electronic Devices and Circuits I (3-2-2:4)

Basic properties of semiconductor materials. Theory of operation and applications of p-n junction diodes, Zener diodes and photodiodes. Theory of operation, biasing circuits, and small signal analysis of bipolar junction transistor and junction field effect transistor. Transistor configurations and two-port network representation of transistor AC equivalent circuits. Analysis and design of transistor amplifier circuits. Pre-requisite: 215 211

### 211 352 Electronic Devices and Circuits II (3-2-2:4)

MOSFETs: theory of operation and characteristics of depletion and enhancement type MOSFETs, analysis of various biasing circuits. Small-signal model and AC analysis of amplifiers. Frequency response of amplifiers. Multistage amplifiers. Operational amplifiers and their applications. Feedback amplifiers and oscillator circuits. Power amplifiers. Pre-requisite: 211 251

### 211 367 Design with Integrated Circuits (3-2-0:4)

Design of power supplies using IC regulators. Design of analog signal conditioning circuits. Applications of ADC, DAC, and counter ICs. Optoisolators, triacs and control of high-voltage systems and actuators. Design of signal generators. Applications of commonly used ICs such as VCO, PLL, Timer IC, F/V and V/F ICs. Introduction to microcontrollers. Pre-requisite: 211 352

### 211 412 Computer-Aided Circuit Design (3-0-0:3)

CAD types, Pspice overview, Pspice design center, Pspice in designing DC/AC & transient circuits, OpAmp circuits design with Pspice, frequency analysis with Pspice. Devices, models and parts. Communication application designs with Pspice. Digital circuits design with Pspice, CAD Windows platforms, CAD analyses, Monte Carlo, worst case and performance analyses, CAE packages, HDL programming languages in designing PLD and FPGA. Pre-requisite: 211 352

### 211 415 Digital Integrated Circuits (3-0-0:3)

Properties and definitions of digital ICs, ideal inverter. Logic families: RTL, DTL, TTL, STTL, ECL, I2L. Implementing different gates from logic families, CMOS and nMOS technologies and their applications,

Astable, monostable, bistable, FF, Schmitt trigger. Interfacing between logic families, and their comparison, BiCMOS technology, error detection in gates, signal transmission in gates. Pre-requisites: 211 352, 213 235

### 211 418 VLSI Design (3-0-0:3)

Silicon layers manufacturing process and lithography, PLD, CPLD and FPGA chips. CMOS, nMOS, pMOS, BiCOMS design. Pass transistors, TGs and MUXs building units, buffers and latches. CMOS configurations: dynamic CMOS, C2MOS. Stick diagrams, pattern diagrams, floor-planning and routing, DRAM, SRAM, ROM designs, microprocessor, ALU and micro control circuits, VHDL and Verilog in prototyping. Pre-requisites: 211 352, 213 235

### 211 429 Power Electronics (3-2-0:4)

Introduction to power electronics and power electronic devices. Power diodes and power transistors BJTs, MOSFETs, IGBTs, and SITs. Thyristor, thyristor firing circuits, triggering circuits using UJTs and PUTs. Analysis and design of single-phase/three-phase half-wave/full wave uncontrolled/controlled rectifiers with resistive and inductive loads. AC voltage controllers: Principles of on-off and phase control, single-phase controllers with resistive load/inductive load. DC choppers: step-down and step-up operations. Three-phase inverters, DC and AC drives. Pre-requisites: 211352, 215 212

### 211 433 Communication Electronics (3-0-0:3)

Introduction to communication systems. Types of electronic communications. Amplitude Modulation (AM) systems, Frequency Modulation (FM) systems, Transmitters, Receivers. Oscillators, Power amplifiers, Mixers, Modulators and Demodulators. Typical transmitter and receiver circuits. TV systems. TV cameras, TV signal, TV transmitter, TV receiver. Color TV. Pre-requisites: 211 352, 212 315

### 211 437 Microwave Electronics (3-0-0:3)

Interaction between electrons and fields. Microwave linear beam tubes-"0" type: conventional tubes, Klystrons, traveling wave tubes. Microwave crossed field tubes-"M" type, magnetrons. Microwave transistors. Microwave diodes. Pre-requisites: 211 352, 212 385

### 211 444 Optoelectronics (3-0-0:3)

Fundamental concepts of optoelectronics. Interferometry and methods of testing optical systems. Optical detectors and electrooptical imaging systems. Light sources, principles of operation and applications of common lasers. Linear optics and electromagnetic propagation. Basic non-linear optics issues. Design of complete optical systems. Pre-requisites: 211 352, 212 385

### 211 462 Solid-State Electronics (3-0-0:3)

Basic physics and transport mechanisms inside semiconductors. Bipolar and Field Effect devices: I-V characteristics, dependence of performance limits on device and circuit parameters. Metal-semiconductor devices: physic of operation and high frequency performance enhancement. Optoelectronic devices: illumination-current relation, dependence of the performance on device structure and material parameters. Pre-requisite: 211 352

### 211 485 Nanodevices and Technology (3-0-0:3)

Overview of microelectronics evolution and materials, physical, chemical and biological properties and phenomena and processes, MOSFET structures and DRAM/SRAM layouts. Scaling technologies: 6.5um, 0.13um, 90nm, 22nm systems. Small scale measurements, nano measurement devices, carbon nanotubes, quantum wires, thin films, DNA-based structures, laser emitters, MEMS overview, MEMS applications, MEMS simulation with Simulink. Special devices: biochips, Aharonov Bohm interferometer, Y-branch switch, Josephson junction, single electron transistor SET. Pre-requisite: 211 352

### 212 221 Signals and Systems (3-0-2:3)

Continuous- and discrete-time signals and systems. Basic system properties. Linear Time-Invariant (LTI) systems. Properties of LTI systems. Convolution sum. Fourier series of periodic signals. Amplitude, phase, and power spectra. Fourier transform of non-periodic signals. Laplace transform, analysis of continuous-time LTI systems using Laplace transform. Z-Transform. Pre-requisite: 217 203

### 212 315 Principles of Communication (3-2-2:4)

Amplitude Modulation (AM): Modulation index, spectrum of AM signals, AM circuits. Single side band modulation, frequency division multiplexing. Frequency Modulation (FM): spectrum of FM signals, FM circuits. FM versus AM. Sampling, quantization, coding, pulse code modulation, delta modulation, time division multiplexing. Pre-requisite: 212 221

### 212 385 Electromagnetic Fields and Wave Propagation (3-0-2:3)

Time-varying fields and Maxwell's equations: Faraday's law, displacement current, Maxwell's equations in point and integral forms, interaction between fields and materials, boundary conditions. Uniform plane wave propagation:

propagation in perfect dielectric, lossy dielectric, and conductors, Poynting vector and average power, polarization, reflection, and refraction of EM waves, input impedance for a medium of propagation, and SWR. Radio wave propagation: propagation paths, diffraction, and fading. Pre-requisites: 217 122, 217 204

### 212 433 Digital Communication (3-2-0:4)

Random processes. Baseband Pulse Transmission: Analog Pulse Modulation (PAM, PWM and PPM), and TDM. Digital signaling over channels without and with ISI and AWGN. Pulse shaping, equalization, and eye-pattern. Noise in digital modulation techniques and error probability analysis. Matched filter and optimum receivers. Passband Digital Transmission: Signal and system models of binary and M-level ASK, FSK, PSK. Signal space representation and receiver model. Spread Spectrum Communication. Pre-requisite: 212 315

### 212 434 Digital Signal Processing (3-0-2:3)

Introduction: Review of discrete-time signals and systems. Transform-domain representations of signals: Discrete-time Fourier Transform, Fast-Fourier Transform, applications of Z-Transform. Transform-domain representations of LTI systems: Types of transfer functions, stability condition and test. Frequency response of a Rational Transfer Function. Concept of filtering: Finite Impulse Response (FIR) and Infinite Impulse Response (IIR) Filters. Pre-requisite: 212 221

### 212 444 Antenna Theory and Design (3-0-0:3)

Fundamental parameters of antennas: radiation pattern, radiation zones, radiation power, directivity, gain, efficiency, beamwidth, polarization, bandwidth, radiation resistance, effective area, Friis transmission equation. Analysis of wire antenna: electric and magnetic potentials, infinitesimal dipole, small magnetic loops, integral technique of radiation, short, half-wave, and long dipole antennas. Theory and features of common antennas: folded dipoles, monopole antennas, different types of antenna arrays, and microwave antennas. Pre-requisite: 212 385

### 212 445 Radar Systems (3-0-0:3)

Radar fundamentals: Radar frequencies, radar cross section, radar equation. Surveillance radar, PRF, RCS, clutter, noise. Tracking radar. Radar studies of the atmosphere: scattering mechanisms, Mesosphere-stratosphere-troposphere, meteor wind radar. Over the horizon radar: surface wave radar, Skywave radar, the over-thehorizon radar equation. Electronic warfare. Pre-requisites: 212 315, 212 385

### 212 456 Communication and Switching Networks (3-2-0:4)

Introduction to computer networks, protocol architecture and OSI reference model. Local Area Network (LAN): Topologies and transmission media. high-speed LAN. Token-Ring, FDDI. Circuit switching and packet switching, ISDN, DSL, packet switching network, X.25, frame relay, ATM. Internetworking devices. UDP, TCP architecture, basic protocol functions, Internet protocols, TCP/IP. Application Layer: client-server model, socket interface, SMTP, FTP, HTTP, and WWW. Wireless LAN. Pre-requisite: 212 315

### 212 463 Satellite Communications (3-0-0:3)

Communication satellite systems, satellite signal processing, satellite channel, carrier-to-noise ratio, satellite link analysis. Multiple access techniques: Frequency division multiple access, time division multiple access, direct sequence code division multiple access. Modern satellite technologies, global positioning system, very small aperture technology. Pre-requisites: 212 315, 212 385

### 212 466 Microwave Engineering (3-2-0:4)

Microwave transmission lines: Transmission line equations and solutions, reflection coefficient and transmission coefficient, standing wave and S.W. ratio, line impedance

and line admittance, Smith chart, impedance matching. Microwave waveguides and components: Rectangular and circular waveguides, microwave cavities, microwave hybrid circuits, directional couplers, circulators, and isolators. Strip lines: Microstrip lines, parallel, coplanar, and shielded strip lines. Pre-requisite: 212 385

### 212 467 Wireless Communications (3-0-0:3)

Introduction to cellular mobile radio systems: Cellular-concept system design fundamentals, trunking and grade of service. Mobile channel, large scale and small scale fading. Multiple access techniques for mobile communication. Modern wireless communication systems: Second-generation (2G) cellular networks, Third-generation (3G) and Fourth generation (4G) wireless systems. Pre-requisites: 212 315, 212 385

### 212 471 Optical Communications (3-0-0:3)

Optical principles: Reflection and refraction, refractive index, angle of reflection. Fiber optic cables properties: Numerical aperture, single-mode and multi-mode cables, graded and step index cables, propagation through optical fiber, optical dispersion, losses, bit rate, power budget. Optical transmitters and receivers: Light sources and light detectors, wavelength-division multiplexing, complete digital optical communication systems. Pre-requisites: 212 315, 212 385

### 212 483 Information Theory and Coding (3-0-0:3)

Discrete sources and entropy. Coding: Source coding, Huffman coding, dictionary coding and Lempel-Ziv coding, arithmetic coding. Channels and channel capacity, channel capacity and the binary symmetric channel. Block coding and Shannon's second theorem, linear block error-correcting codes, Hamming codes, cyclic codes, convolutional codes. The Viterbi Algorithm, hard-decision and soft-decision decoding of Viterbi code. Pre-requisite: 212 315

### 212 485 Data Communication and Telemetry (3-0-0:3)

Telecommunications technology fundamentals, types of networks, electromagnetic spectrum, bandwidth, analog transmission, digital transmission. Multiplexing: FDM, TDM, STDM, and WDM. Transmission media characteristic and applications, microwave links, satellite networks, fiber optics and optical networks. Public Switching Terminal Network (PSTN), circuit switched network and packet-switched networks. Internet basics, telemetry engineering, industrial telemetry systems, telemetry sensing systems. Emerging trends and developments. Pre-requisite: 212 315

### 213 145 Programming I (3-0-2:3)

Problem solving using flowcharts, structure of a C++ program, data types, operators, variables and constants. Input and output, output formatting. IF and SWITCH, WHILE, DO-WHILE and FOR. Function definition and calling, library functions, arrays and strings, pointers, pointers and functions/arrays. Structures: accessing structure members, structures and functions. Enumeration, macros, file input/output. Pre-requisite: 104 110

### 213 235 Logic Design (3-2-2:4)

Basic theorems and properties of Boolean Algebra and boolean functions. Simplification of Boolean Functions: Karnaugh Map and Tabulation (Quine-McCluskey) Method. Product of Sums (POS) and Sum of Products (SOP) forms. Combinational logic circuits: Design and analysis procedures. Decoders, encoders, multiplexers, demultiplexers, ROM, PLA and PAL. Sequential logic circuits: Flip Flops (RS, D, JK, T), design procedure for clocked sequential circuits, counters. Registers and shift registers. Pre-requisite: 104 110

### 213 246 Programming II (3-0-2:3)

Classes and objects, encapsulation of data and functions in classes, inheritance, recursion, dynamic memory allocation,

linked lists, graphics and GUI, computer interfacing using C++, root finding using bisection and secant methods, numerical integration using trapezoidal and Simpson's rules, linear system solvers, Gauss elimination, finite difference method for partial differential equations. Pre-requisite: 213 145

### 213 334 Microprocessors (3-2-2:4)

8086 basic architecture. 8086, 80286, 80386, 80486, 80586 and Pentium versions. Bus interfacing modules, memory mapping, memory interfacing, memory addressing, partial, biased and complete addressing, addressing with gates, DECs and PLDs. 8255 PPI structure and programming modes, applications on I/O interfacing, interrupts and 8259 module, interrupt types applications, UART and communication interfacing, DMA modules. Pre-requisites: 213 235, 213 246

### 213 440 Digital System Design (3-2-0:4)

SSI, MSI, LSI overview, timing diagrams, TT, ST, FT. Expansion of DEC, MUX, ENC, DMUX, applications on combinational digital systems, counters types, counters expansion, synchronous and asynchronous counters, cascading counters, registers types, series and parallel registers. PIPO, SISO, PISO, SIPO, FIFO registers. Applications on sequential circuits, PLD and FPGA systems, PAL, PLA and PROM, HDL languages. Pre-requisite: 213 235

### 213 451 Fuzzy Logic and Neural Networks (3-0-0:3)

Fuzzy logic fundamentals, fuzzy sets, types of membership functions, linguistic variables, creation of fuzzy logic rule base, fuzzy logic operations, neural network fundamentals, neural type learning process, single layer perceptron, artificial neural networks architectures, training algorithms, genetic algorithms and evolution computing, neuro-fuzzy technology, fuzzy control systems and applications. Pre-requisites: 213 235, 214 352

### 213 458 Microcontrollers and Applications (3-2-0:4)

Overview of embedded systems, microcontroller architectures, standard microcontroller specifications, instruction sets, addressing and configuring ports and registers, program development and assembly, PIC and Intel microcontrollers programming, interrupt control and synchronization, timing, testing and verification, microcontroller interfacing methods, smart sensors and remote sensing, design applications. Pre-requisite: 213 334

### 214 322 Instrumentation and Measurements (3-2-0:4)

Basic measurement concepts, sources and types of measurement errors, sources of noise and interference. DC and AC Bridges and their applications. Analog DC and AC meters. Oscilloscopes: types, specifications, operation, measurements with oscilloscopes. Electronic voltmeters, digital multimeters, electronic counters. Transducers and their applications. Pre-requisites: 211 352, 215 212

### 214 352 Control Systems (3-2-2:4)

Introduction to Control Systems: Characteristics, time response, steady-state error. Open loop and closed loop concepts, transfer function, time domain, frequency domain, stability of linear feedback control systems, Root Locus method, Bode diagram. Design of feedback control systems: principles of design, design with the PD, PI, and PID controllers. Performance evaluation of feedback control systems. Compensation: phase-lead, phase-lag and lead-lag compensation. Pre-requisite: 212 221

### 214 426 Intelligent Systems and Robotics (3-0-0:3)

Introduction to robotics, applications of robots in industry and other workplaces, block diagram representation and explanation of various parts of a robot. Robot kinematics: Position and motion analysis of a robot with different degrees

of freedom. Different types of sensors, characteristics and comparison of actuating systems, vision and voice systems, some commonly used programming languages for robots. Artificial Intelligence: the use of artificial intelligence in robots. Fuzzy logic and its applications in robotics. Pre-requisites: 211 352, 213 334

### 214 443 Industrial Control Systems (3-2-0:4)

Predictive, adaptive, optimal control and automation. Distributed Control Systems, intelligent automation systems, intelligent controllers. Controller communications. SCADA systems. PLCs: architecture, sequential programming, ladder diagrams, programming practice. Safety, security, reliability, and environment control of industrial systems. Industrial power supplies. Case studies from various industries. Pre-requisites: 214 322, 214 352

### 214 455 Computer Interfacing for Instrumentation and Control (3-2-0:4)

PC based instrumentation and control, industrial instrumentation and control, Buss interfacing. Standard bus types: ISA, EISA, PCI, PXI. IEEE 488 and RS-232 standards. Hardware and software interrupts, interrupt service routines, DMA control and controllers, parallel port interfacing, serial port interfacing, ADC/DAC interfacing, data acquisition and SCADA systems, PLC interfacing systems and distributed controls, applications. Pre-requisites: 211 367, 213 334

### 214 464 Virtual Instrumentation (3-0-0:3)

Virtual instrumentation and control basics and applications, industry standard LabVIEW system, front panel and block diagram, building VI and sub-VI, structures, clusters, arrays and cases, DAQ systems and hardware, RS-233 and GPIP interfacing, signal processing with LabVIEW, remote control instrumentation, data visualization and report generation, VI control over the networks, Internet and web browser, examples and projects. Pre-requisites: 211 367, 214 322

### 214 466 Process Control and Instrumentation (3-0-0:3)

Introduction: process control principles, identification of process control elements, block diagram representation of process control. Signal conditioning: Principles of analog signal conditioning, design of analog signal conditioning circuits, principles of digital signal conditioning. Sensors and actuators in process control, actuators in process control, application examples. Computers in process control: data logging, supervisory control, computer-based controller. Process control networks: Foundation Fieldbus and Profibus. Pre-requisites: 214 322, 214 352

### 214 488 Instrumentation and Control Applications (3-0-0:3)

Instrumentation in the oil extraction industry, on-shore and off-shore, instrumentation in the oil refineries, instrumentation in the chemical industry, instrumentation in electrical power stations, instrumentation in the car industry, instrumentation in the steel and aluminum industry, instrumentation and control in mechatronics, antenna control, Boring machine control, vehicle cruise control, robot control systems, orbiting satellite control, industrial turntable speed control, Insulin delivery control system, printer belt drive control, X-Y plotter control, engraving machine control system. Pre-requisite: 214 322

### 215 211 Circuit Analysis I (3-2-2:4)

Basic quantities: charge, current, voltage, resistance, energy and power. Analysis of series, parallel and series-parallel DC resistive circuits using Ohm's law, power law and Kirchoff's voltage and current laws. Operational amplifiers: characteristics and circuit analysis. Analysis of more complex circuits using loop and nodal methods, superposition, Thevenin's and Norton theorems. Transient analyses of RC, RL, and RLC circuits. Pre-requisites: 217 101, 217 122

## 215 212 Circuit Analysis II (3-2-2:4)

AC circuits: introduction, impedance and admittance, phasors and phasor diagrams, series and parallel circuits, power and power factor correction. Steady-state response using phasor method. Nodal and loop analysis, application of circuit theorems. Frequency response, series and parallel resonance. Two-port networks. Magnetically-coupled circuits. Analysis of balanced three-phase circuits. Pre-requisites: 215 211, 217 203

## 216 335 Electrical Machines and Power System (3-2-0:4)

Introduction to electrical machines and energy conversion, magnetic circuits, deal and practical transformers, instrument and autotransformers, DC motors and generators and their characteristics, DC motors speed control, voltage regulation, performance and efficiency, AC machines, induction motors characteristics, synchronous generators, AC machines frequency and speed control, linear machines, power systems formulation, transmission and distribution systems, control of voltage, power frequency control, load flow and stability. Pre-requisites: 215 212, 217 122

## 217 101 Engineering Mathematics I (3-0-2:3)

Limit of function, theorems about limits, evaluation of limit at point and infinity, continuity, derivatives of algebraic/trigonometric functions, maxima/minima, applications of derivatives in engineering, definite integral, area between two curves, volumes, indefinite integral, applications of integration in engineering. Functions: differentiation/integration of trigonometric functions, inverse trigonometric functions, logarithmic functions, exponential functions, hyperbolic/inverse hyperbolic functions. Pre-requisites: None

## 217 102 Engineering Mathematics II (3-0-2:3)

Integration by parts, integration using powers of trigonometric functions, integration using trigonometric substitution, integration by partial fractions, integration of improper integrals, integration using software packages, double/triple integrals in rectangular/polar coordinates, applications of multiple integrals in engineering. Matrices/determinants, solution of linear equations, eigenvalues/eigenvectors, infinite series, tests for convergence, power series expansion of functions. Taylor, Laurent and Fourier series. Pre-requisite: 217 101

## 217 121 Engineering Physics I (3-2-2:4)

Conservation of momentum, rotation of rigid bodies, dynamics of rotational motion. Equilibrium and elasticity. Stress and strain. Periodic motion. Fluid mechanics and its engineering applications. Thermodynamics with engineering applications. Pre-requisites: None

## 217 122 Engineering Physics II (3-2-2:4)

Electric charge and electric field. Coulomb's law and Gauss's law with applications. Capacitance and dielectrics. DC circuits. Magnetic fields. Ampere's law and its applications. Electromagnetic induction, Faraday's law, Lenz's law, induced electric fields. Self- and mutual-inductance. Electromagnetic waves and Maxwell's equations. Optics and its engineering applications. Pre-requisites: None

## 217 150 Introduction to Engineering (1-0-1:1)

Engineering profession and the role of engineers in modern developments, engineering ethics, and engineering disciplines. Electrical engineering, importance of math and science to engineers. Engineering design and analysis, lab skills for engineers, computer skills for engineers. Engineering curriculum, curriculum planning and management. Critical thinking, soft skills for engineers, creativity, engineering communications. Pre-requisites: None

### 217 203 Engineering Mathematics III (3-0-2:3)

First order Differential Equations (DE): Homogeneous linear second-order DE, non-homogeneous linear second-order DE, higher-order linear DE, power series solution of DE, applications of ordinary DE in engineering. Laplace transform: Inverse transform, Laplace transform of derivatives/integrals. Transformation of ordinary DE, partial fractions, unit step function, periodic functions, table of Laplace transforms. Pre-requisite: 217 102

### 217 204 Engineering Mathematics IV (3-0-2:3)

First- and second-order Partial Differential Equations. Boundary value problems, vectors in plane, dot and cross products, lines and planes in space, polar coordinate system. Line integrals, Green's theorem, surface integrals, line integration in complex plane. Cauchy's integral theorem, Cauchy's integral formula. Derivatives of analytic functions, Taylor/Laurent's series, review of sets and relations. *Pre-requisite: 217 203*

### 217 305 Engineering Mathematics V (3-0-2:3)

Special functions: Gamma, beta, Green's, Bessel's. Polynomials: Legendre, Hermite, Laguerre and Chebyshev. Sturm-Liouville equations, Eigen functions, orthogonality, root finding by iterative methods, interpolation and extrapolation, numerical integration/differentiation, numerical solution of linear equations, numerical solution of differential equations, stationary/non-stationary random processes, auto-correlation and cross-correlation functions, power spectral density function, white random processes, narrowband random processes. Pre-requisites: 103 110, 217 203

### 217 200 Report Writing and Presentation (1-0-2:1)

Writing of technical reports, brief reports and progress reports. Business communication: business letters and memos, executive summary, business reports. Oral presentation: planning, preparation of visuals and delivering of an oral presentation. Pre-requisite: 217 150

### 21x 491 Graduation Project I (1-4-0:3)

Teams of three to four students shall design, implement, test, and demonstrate their graduation project in two semesters. Graduation Project I is to be completed in first semester and includes a literature survey, action plan, design of complete project taking into account realistic constraints, computer simulation (if applicable), partial implementation and testing. Report writing and oral presentation. Pre-requisite: Advisor's Approval

### 21x 492 Graduation Project II (1-6-0:4)

It is continuation of Graduation Project I in the second semester. Students will complete the implementation and testing of remaining part of their design. They will integrate the complete project, test it and prepare a PCB. Report writing, oral presentation, poster presentation and project demonstration. Pre-requisite: 21x 491

# Bachelor of Science in Biomedical Engineering

## Mission

The mission of the biomedical engineering program is to produce graduates equipped with the theoretical knowledge and practical skills necessary for pursuing a successful professional career in the healthcare industry. The program also prepares its students for graduate studies.

## Objectives

The objective of the biomedical engineering program is to produce graduate who are equipped with:

a) knowledge and skills in engineering and life sciences which will enable them to bridge the gap between conventional engineering and life science for applications in healthcare and medicine

b) technical skills required for using modern engineering tools necessary for engineering practice.

c) skills to communicate effectively

d) skills to work with professionals from a variety of backgrounds in multidisciplinary teams

e) a strong sense of professional ethics

f) skills and knowledge which will enable them to engage in life-long learning

## Admission Requirements

Admission to the biomedical engineering program requires a UAE secondary school certificate (science major) or its equivalent with a minimum grade of 70 percent. For more information please refer to the university admissions policy.

## Career Opportunities

Graduates will be qualified to work in the following areas:

- **Healthcare facilities**: biomedical engineering graduates are ideally suited to work as design and maintenance engineers for healthcare facilities such as hospitals and clinics

- **Manufacturer's representatives and sales engineers**: biomedical graduates have the technical knowledge required to communicate with a variety of health-care professionals, which enables them to act as representatives for manufacturers and suppliers of medical equipment and services

- **Design and development**: biomedical engineering graduates can work in companies on the design, development and testing of medical devices and systems.

- **Management**: program engineering graduates background in technology will allow them to be trained as managers in organizations dealing with healthcare and biological products

- **Consultancy**: biomedical engineering graduates are able to join consultancy agencies which provide advice for healthcare authorities regarding standards and quality evaluation of clinical facilities and services.

# Graduation Requirements

The Bachelor of Science Degree is awarded upon the fulfillment of the following:

1. Successful completion of all courses in the curriculum

2. Successful completion of the equivalent of four months of engineering training

3. Cumulative Grade Point Average CGPA of at least 2.

## Degree Requirement

The B.Sc. degree in biomedical engineering requires the completion of 135Cr. Hrs. classified as follows:

| Type of Courses | Credit hours |
|---|---|
| 1. University General Education Requirements | |
| (a) University Required Courses | 15 |
| (b) University Elective Courses | 9 |
| 2. College Required Courses | 23 |
| 4. Specialization Required Courses | 72 |
| 4. Specialization Elective Courses | 6 |
| 5 Biomedical Design Projects I & II | 6 |
| 6. Engineering Training | 4 |
| Total Credit Hours | 135 |

# UNIVERSITY GENERAL EDUCATION REQUIREMENTS

## (a) University Required Courses (15 Cr.Hrs.)

| Course No. | Course Title | Th. | Lab. | Tut. | Cr. Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 101000 | Orientation | 1 | 0 | 0 | 0 | - |
| 102110 | Islamic Culture | 3 | 0 | 1 | 3 | - |
| 102140 | Communication Skills in Arabic Language | 3 | 0 | 0 | 3 | - |
| 103110 | Statistics | 2 | 2 | 0 | 3 | - |
| 104110 | Computer Applications | 2 | 2 | 0 | 3 | - |
| 103120 | Environmental Sciences | 3 | 0 | 0 | 3 | - |

## (b)University Elective Courses ( 9 Cr.Hrs.)

| Course No. | Course Title | Th. | Lab. | Tut. | Cr. Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 102120 | The Miraculousness of the Holy Koran | 3 | 0 | 0 | 3 | - |
| 103130 | Research Methodology | 3 | 0 | 0 | 3 | - |
| 112110 | Principles of Architecture & Art | 3 | 0 | 0 | 3 | - |
| 112120 | Principles of Interior Design | 3 | 0 | 0 | 3 | - |
| 112130 | Modern Technology and Society | 3 | 0 | 0 | 3 | - |
| 113110 | Internet Concepts | 3 | 0 | 0 | 3 | - |
| 113120 | Introduction to Information Systems | 3 | 0 | 0 | 3 | - |
| 114110 | Economic Concepts | 3 | 0 | 0 | 3 | - |
| 114120 | Entrepreneurship Development | 3 | 0 | 0 | 3 | - |
| 115110 | History of science in Islam | 3 | 0 | 0 | 3 | - |
| 115120 | Scientific pioneering | 3 | 0 | 0 | 3 | - |
| 115130- | General psychology | 3 | 0 | 0 | 3 | - |
| 115140 | Principle of mathematics | 3 | 0 | 0 | 3 | - |
| 115150 | The Art of Expression and writing | 3 | 0 | 0 | 3 | - |
| 115160 | Emirates Society | 3 | 0 | 0 | 3 | - |
| 115170 | Education Technology | 3 | 0 | 0 | 3 | - |
| 117110 | General chemistry | 3 | 0 | 0 | 3 | - |
| 117120 | Fundamental of Human Nutrition | 3 | 0 | 0 | 3 | - |
| 117130 | First Aid | 3 | 0 | 0 | 3 | - |
| 117150 | Applications of Remote sensing | 3 | 0 | 0 | 3 | - |
| 118110 | Principles of Ethics | 3 | 0 | 0 | 3 | - |
| 118120 | General Biology | 3 | 0 | 0 | 3 | - |
| 118130 | Oral Health | 3 | 0 | 0 | 3 | - |

| Course No. | Course Title | Th. | Lab. | Tut. | Cr. Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 118140 | General principles of Epidemiology | 3 | 0 | 0 | 3 | - |
| 118150 | CPR-Cardio Pulmonary Resuscitation | 3 | 0 | 0 | 3 | - |
| 119110 | Communication Skills | 3 | 0 | 0 | 3 | - |
| 119120 | Introduction to Communication Sociology | 3 | 0 | 0 | 3 | - |
| 119130 | Information Society | 3 | 0 | 0 | 3 | - |
| 120115 | Legal  Culture | 3 | 0 | 0 | 3 | - |
| 103130 | Research Methodology | 3 | 0 | 0 | 3 | |

## 1. College Required Courses (23 Cr. Hrs.)

| Course No. | Course Title | Th. | Lab. | Tut. | Cr. Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 217101 | Engineering Mathematics I | 3 | 0 | 2 | 3 | ---------- |
| 217121 | Engineering Physics I | 3 | 2 | 2 | 4 | ---- |
| 217141 | Chemistry for Engineers | 2 | 2 | 0 | 3 | ------- |
| 217150 | Engineering Mathematics II | 3 | 0 | 2 | 3 | 217101 |
| 217122 | Engineering Physics II | 3 | 2 | 2 | 4 | ---- |
| 217203 | Engineering Mathematics III | 3 | 0 | 2 | 3 | 217150 |
| 217204 | Engineering Mathematics IV | 3 | 0 | 2 | 3 | 217203 |

## (b) Specialization Required Courses  (78 Cr.Hrs.)

| Course No. | Course Title | Th. | Lab. | Tut. | Cr. Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 218391 | Biomedical Design | 1 | 2 | 2 | 2 | 218 361 |
| 218141 | Biology | 3 | 2 | 0 | 4 | |
| 218151 | Introduction to Biomedical Engineering | 1 | 0 | 2 | 1 | |
| 217229 | Circuit Analysis | 3 | 2 | 2 | 4 | 217 122 |
| 213235 | Logic Design | 3 | 2 | 0 | 3 | 104 110 |
| 218221 | Computer Programming | 2 | 2 | 2 | 3 | 104 110 |
| 218242 | Human Anatomy | 2 | 2 | 0 | 3 | 218 141 |
| 218243 | Human Physiology I | 2 | 2 | 0 | 3 | 218 242 |
| 218233 | Electronic Circuits | 3 | 2 | 2 | 4 | 218 229 |
| 218337 | Microprocessors and Computer Interfacing | 3 | 2 | 0 | 4 | 213 235 |
| 218361 | Medical Electronics | 2 | 2 | 2 | 3 | 218 233, 218 243 |
| 218356 | Bio-mechanics | 3 | 0 | 2 | 3 | 217 121, 218 242 |
| 218118 | Biochemistry | 2 | 2 | | 3 | 217 116 |
| 218375 | Signals and Systems | 3 | 0 | 2 | 3 | 217 204 |
| 218365 | Medical Instrumentation I | 3 | 0 | | 3 | 218 361, 218 344 |

| Course No. | Course Title | Th. | Lab. | Tut. | Cr. Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 218354 | Bio-Materials | 3 | 0 | 2 | 3 | 217 116, 218 242 |
| 218476 | Bio-Signal Processing | 3 | 2 | 2 | 4 | 218 375, 218 344 |
| 218466 | Medical Instrumentation II | 3 | 2 | 0 | 4 | 218 365 |
| 218495 | Biomedical Design Project I | 1 | 4 | 0 | 3 | 100 C. Hr. |
| 218492 | Directed Study in Biomedical Engineering | 0 | 0 | 2 | 2 | Advisor's approval |
| 218496 | Biomedical Design Project II | 1 | 4 | 0 | 3 | 218 495 |
| 218471 | Biomedical Imaging Systems. I | 3 | 0 | 2 | 3 | 217 122, 218 242 |
| 218472 | Biomedical Imaging Systems. II | 3 | 2 | 0 | 4 | 218 471 |
| 218458 | Biomedical Safety | 2 | 0 | 2 | 2 | 218 466 |
| 218344 | Human Physiology II | 2 | 2 | 0 | 3 | 218 243 |

## c) Specialization Electives Courses (6 Cr. Hrs.)

The student will take two of the following Specialization Electives as approved by the academic advisor.

| Course No. | Course Title | Th. | Lab. | Tut. | Cr. Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 218512 | Physiological Modeling and Control Systems | 3 | 0 | 2 | 3 | 218 344 |
| 218518 | Tissue Engineering | 3 | 0 | 2 | 3 | 218 254 |
| 218515 | Bio-fluid Mechanics | 3 | 0 | | 3 | 218 356 |
| 218513 | IT and Computer Networks in Health-care | 3 | 0 | 2 | 3 | 218 337 |
| 218516 | Artificial Neural Networks and Fuzzy Logic | 3 | 0 | 2 | 3 | 217 204 |
| 218517 | Biomedical Image Processing | 2 | 2 | 0 | 3 | 218 375 |
| 218511 | Artificial Organs | 3 | 0 | 0 | 3 | 218 344 |
| 218519 | Selected topics in Biomedical Engineering | 3 | 0 | 0 | 3 | Senior Standing |
| 218514 | Rehabilitation Engineering | 3 | 0 | 0 | 3 | 218 365 |

# Course Sequencing Plan

## First Semester

| Course Code | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Lab | Tut | Cr.Hrs. | |
| 101000 | Orientation | 1 | 0 | 0 | 0 | --- |
| 217101 | Engineering Mathematics I | 3 | 0 | 2 | 3 | --- |
| 217121 | Engineering Physics I | 3 | 2 | 2 | 4 | --- |
| 217141 | Chemistry for Engineers | 2 | 2 | 0 | 3 | --- |
| 218141 | Biology | 3 | 2 | 0 | 4 | |
| 104110 | Computer Applications | 2 | 2 | 0 | 3 | --- |
| TOTAL | | 14 | 8 | 4 | 17 | |

## Second Semester

| Course Code | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Lab | Tut | Cr.Hrs. | |
| 103130 | Environmental science | 3 | 0 | 0 | 3 | |
| 217102 | Engineering Mathematics II | 3 | 0 | 2 | 3 | 217 101 |
| 217122 | Engineering Physics II | 3 | 2 | 2 | 4 | --- |
| 218118 | Biochemistry | 2 | 2 | 0 | 3 | 217116 |
| 218151 | Introduction to Biomedical Eng. | 1 | 0 | 0 | 1 | ---- |
| | University Elective | 3 | 0 | 0 | 3 | |
| TOTAL | | 15 | 4 | 6 | 17 | |

## Third Semester

| Course Code | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Lab | Tut | Cr.Hrs. | |
| 103110 | Statistics | 2 | 2 | 0 | 3 | |
| 213235 | Logic Design | 3 | 2 | 2 | 4 | 104 110 |
| 217203 | Engineering Mathematics III | 3 | 0 | 2 | 3 | 217 102 |
| 218229 | Circuit Analysis | 3 | 2 | 2 | 4 | 217122 |
| 218242 | Human Anatomy | 2 | 2 | 0 | 3 | 218141 |
| TOTAL | | 13 | 8 | 6 | 17 | |

## Fourth Semester

| Course Code | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Lab | Tut | Cr.Hrs. | |
| 212221 | Signals and systems | 3 | 0 | 2 | 3 | 217203 |
| 213145 | Computer Programming | 3 | 0 | 2 | 3 | 104110 |
| 217204 | Engineering Mathematics IV | 3 | 0 | 2 | 3 | 217203 |
| 218233 | Electronic Circuits | 3 | 2 | 2 | 4 | 218229 |
| 218243 | Human Physiology I | 2 | 2 | 0 | 3 | 218242 |
| TOTAL | | 14 | 4 | 8 | 16 | |

## Fifth Semester

| Course Code | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Lab | Tut | Cr.Hrs. | |
| 102110 | Islamic  Culture | 3 | 0 | 1 | 3 | 218 225 |
| 102140 | Communication Skills in Arabic Language | 3 | 0 | 0 | 3 | --- |
| 218344 | Human Physiology II | 2 | 2 | 0 | 3 | |
| 218 356 | Biomechanics | 3 | 0 | 2 | 3 | 217 121&218 242 |
| 218 361 | Medical Electronics | 2 | 2 | 2 | 3 | 218 333&218 243 |
| | University Elective | 3 | 0 | 0 | 3 | |
| TOTAL | | 16 | 4 | 5 | 18 | |

*Internal Training ( 2 weeks) in Winter Break*

## Sixth Semester

| Course Code | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Lab | Tut | Cr.Hrs. | |
| 218 354 | Biomaterials | 3 | 0 | 2 | 3 | 217141 & 218242 |
| 218365 | Medical Instrumentation I | 3 | 0 | 0 | 3 | 218361 & 218344 |
| 213334 | Microprocessors and Computer Interface | 3 | 2 | 0 | 4 | 213235 |
| 218 391 | Biomedical Design | 1 | 2 | 0 | 2 | 218 361 |
| | University Elective | 3 | 0 | 0 | 3 | |
| TOTAL | | 13 | 4 | 2 | 15 | |

*Summer Session: training I (210400) for six weeks period*

## Seventh Semester

| Course Code | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Lab | Tut | Cr.Hrs. | |
| 218466 | Medical Instrumentation II | 3 | 2 | 0 | 4 | 218 365 |
| 218471 | Biomedical Imaging Systems I | 3 | 0 | 2 | 3 | 218 243 |
| 218476 | Bio-Signal Processing | 3 | 2 | 2 | 4 | 218 375 |
| 218498 | Biomedical Design Project-I | 1 | 4 | 0 | 3 | 218 391 |
| xxx xxx | BME Specialization Elective I | 3 | 0 | 0 | 3 | Advisor›s Approval |
| TOTAL | | 13 | 8 | 4 | 17 | |

## Eighth Semester

| Course Code | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Lab | Tut | Cr.Hrs. | |
| 218 472 | Biomedical Imaging Systems II | 3 | 2 | 0 | 4 | 218 471 |
| 218 499 | Biomedical Design Project II | 1 | 4 | 0 | 3 | 218 498 |
| 218 458 | Biomedical Safety | 2 | 0 | 2 | 2 | 218 466 |
| xxx xxx | BME Specialization Elective II | 3 | 0 | 0 | 3 | Advisor›s Approval |
| 218 497 | Directed Study in Biomedical Engineering | 2 | 0 | 0 | 2 | 218 466 |
| TOTAL | | 11 | 6 | 4 | 14 | |

*Summer Session: training II (210400) for six weeks period*

# Course Descriptions

### 218 141 Biology (3-2-0,4)

Cell biology, cell membrane, mediated transport system, bulk transport, cytoplasm and nuclear cell biology, cell cycle and cell division, meiosis and gameto-genesis, primary tissues, connective tissues, muscle tissues, nerve tissues.

### 218 151 Introduction to Biomedical Engineering (1: 0: 2, 1)

History of biomedical engineering, disciplines of biomedical engineering, role of biomedical engineers in health care sector, challenges and future directions in biomedical engineering, moral and ethical issues in biomedical engineering, visits to hospitals, student seminars Pre-

### 218 229 Circuit Analysis (3: 2: 2,4)

Basic circuit variables, elements and Kirchoff's law, resistive circuit analysis and theorems, network theorems, time domain analysis, AC analysis, frequency characteristics of electric circuits, magnetic coupled circuits and two port elements. Pre-requisite: Engineering Physics II

### 104 110 Computer Application (2: 2: 0,3)

Introduction to information technology, operating systems, information systems, graphics and multimedia, networks and their uses, internet and information retrieval, electronic mail and news, computers and society, ethical issues, computer security issues.

### 213 235 Logic Design (3: 2: 2,4)

Basic theorems and properties of Boolean Algebra and boolean functions. Simplification of Boolean Functions: Karnaugh Map and Tabulation (Quine-McCluskey) Method. Product of Sums (POS) and Sum of Products (SOP) forms. Combinational logic circuits: design and analysis procedures. Decoders, encoders, multiplexers, demultiplexers, ROM, PLA and PAL. Sequential logic circuits: Flip Flops (RS, D, JK, T), design procedure for clocked sequential circuits, counters. Registers and shift registers. Pre-requisite: Computer Applications

### 218 221 Computer Programming (3: 0: 2,3)

Flow charts and problem solving, data types, input output statements, C++ basics, functions, arrays and strings, pointers structures and unions, C++ preprocessor, MATLAB programming. Pre-requisite: Computer Applications

### 218 242 Human Anatomy (2: 2: 0,3)

An Introduction to the human body, the skeletal system, the axial skeleton and ribs, the appendicular skeleton, joints, the muscular system, thorax, abdomen, upper limb, lower limb Pre-requisite: Biology

### 218 243 Human Physiology i (2: 2: 0,3)

Cell physiology, nervous system, muscles, cardiovascular systems, respiratory system, digestive system, urinary system, endocrine system. Pre-requisite: Human Anatomy

### 218 344 Human Physiology ii (2: 2: 0,3)

Basics of electro-physiology, membrane models, resting potential, action potential, bio electrodes, the electrophysiology of bio potential signals- ECG, EEG, EMG, EOG, ERG etc. Pre-requisite: Human Physiology I

### 218 233 Electronics Circuits (3,2: 2,4)

Semiconductors and PN Junction, bipolar junction transistor (BJT) DC analysis, bipolar Junction Transistor (BJT) AC analysis, junction field effect transistor (JFET), biasing and amplifiers circuits. Pre-requisite: Circuit Analysis

### 218 337 Microprocessors and Microcontrollers (3: 2: 0,4)

The 8086 architecture and programming modes, assembly programming, the 8086 microprocessor instruction set, memory interface and I/O interface, interrupt processing, microcontrollers and applications. Pre-requisite: Logic Design

### 218 361 Medical Electronics (2: 2: 2,3)

Amplifiers and filters, bio-potential amplifiers, design of power system in medical electronics, oscillator circuits, Analog to digital converter (ADC), digital to analog converter (DAC) and data acquisition circuits. Pre-requisite: Electronic Circuits, Human Physiology I

### 218 356 Biomechanics (3: 0: 2,3)

Basics of anatomy and mechanics, applications involving forces and moments, statics and dynamics, Applications to human joints, Properties of deformable bodies, kinematics and kinetics, applications from real-life problems, contemporary issues: Motion analysis. Pre-requisite: Engineering Physics I, Human Anatomy

### 218 118 Biochemistry  (2: 2: 0,3)

Structural organization and function of the major components of living cells, metabolism and energy production, and biosynthesis of small molecular weight compounds and macromolecules. Pre-requisite: Chemistry for Engineers

### 218 375 Signals and Systems (3: 0: 2,3)

Continuous- and discrete-time signals and systems. Basic system properties. Linear Time-Invariant (LTI) systems. Properties of LTI systems. Convolution sum. Fourier series of periodic signals. Amplitude, phase, and power spectra. Fourier transform of non-periodic signals. Laplace transform, analysis of continuous-time LTI systems using Laplace transform. Z-Transform. Pre-requisite: Engineering Mathematics III

### 218 365 Biomedical Instrumentation I (3: 0: 0,3)

Introduction to biomedical instrumentation, biomedical sensors and transducers, basic concepts of measurements and instrumentation, bio potential electrodes, clinical laboratory instrumentation. Pre-requisite: Medical Electronics, Human Physiology II

### 218 254 Biomaterials  (3: 0: 2,3)

Introduction to biomaterials, structure and properties of materials, crystalline and non-crystalline materials, properties of biologic materials, biocompatibility, Metallic implant materials, ceramic implant materials, polymeric implant materials, composite implant materials. Pre-requisite: Chemistry for Engineers, Human Anatomy

### 218 376 Bio-signal Processing (3: 2: 2,4)

Nature of biomedical signals, frequency response, DFT, FFT, DCT, design of digital filters, nonlinear models of biomedical signals, DSP applications of bio-signals. Pre-requisite: Signals and Systems, Human Physiology II

### 218 466 Medical Instrumentation II (3: 2: 0,4)

Design procedure of medical equipment, bio-potential recording systems, blood pressure, flow and volume instrumentation systems, blood gas analyzers, pace-makers and defibrillators, electro-surgical, physiotherapy instruments, respiratory systems instruments Pre-requisite: Medical Instrumentation I

### 218 391 Biomedical Design (1: 2: 2,2)

Amplifiers and filters, bio-potential amplifiers, design of power supplies, oscillator circuits, and biomedical data

acquisition circuits, mini projects related to biomedical engineering applications. Pre-requisite: Medical Electronics

### 218 498 Biomedical Design Project I  (1: 4: 0,3)

Teams of three to four students shall design, implement, test and demonstrate their graduation project in two semesters. Biomedical design Project I is to be completed in one semester and includes a literature survey, action plan, design of complete project taking into account realistic constraints, computer simulation (if applicable). Pre-requisite: Completion of 100 Credit Hours

### 218 499 Biomedical Design Project II (1: 4: 0,3)

It is continuation of biomedical design project I in the second semester. Students will complete the implementation and testing of remaining part of their design. They will integrate the complete project, test it, and prepare a PCB. Report writing, oral presentation, poster presentation, and project demonstration. Pre-requisite: Biomedical Design Project I

### 218 471 Biomedical Imaging System I (3: 0: 2,3)

Radioactivity, X -ray physics and imaging techniques, Computed tomography (CT imaging), introduction to SPECT and PET imaging techniques, biological effects of radiation and safe handling. Pre-requisite: Engineering Physics II, Human Anatomy

### 218 472 Biomedical Imaging System II (3: 2: 0,4)

Medical ultrasound imaging techniques, modes of operation, magnetic resonance imaging techniques (MRI), principles of operation, components of MRI machines, computer based reconstruction, biological effects of magnetic fields, static magnetic fields, radio frequency fields, gradient magnetic fields. Pre-requisite: Medical Imaging System I

### 218 458 Biomedical Safety (2: 0: 2,2)

Introduction to the types of hazards in hospitals and clinics, electrical hazards safety requirements of power distribution in hospitals, biological, safety codes and standards for biomedical equipments and facilities, test instruments for checking safety parameters of medical instruments. Pre-requisite: Medical Instrumentation II

### 210 400 Engineering Training: 4Cr. Hrs

Pre-requisite: Approval of Academic Advisor

### 218 512 Physiological Modeling and Control (2: 2: 0,3)

Physiological modeling, static analysis of physiological systems, time domain analysis, frequency domain analysis, stability analysis. Pre-requisite: Human Physiology II

### 218 518 Tissue Engineering (3: 0: 0, 3)

Tissue engineering principles, cell, Intracellular signaling, control of cell growth, scaffolds, cell traction and migration, tissue regeneration and replacement, artificial organs, orthopedic tissue engineering, bioreactors and bio expansion. Pre-requisite: Biomaterials

### 218 511 Artificial Organs  (3: 0: 0, 3)

Major types of artificial organs, artificial blood. artificial skin and dermal equivalents. artificial pancreas. Prosthetics and orthotics; artificial limbs, major joint implants, dental implants. Pre-requisite: Human Physiology II

### 218 515 Bio-fluid Mechanics (3: 0: 0, 3)

Fundamentals of fluid mechanics. Flow properties of blood, applications describing flow of air in the airways and flow of blood in large arteries. Pre-requisite: Biomechanics

### 218 513 IT and Computer Networks in Health-care (2: 2: 0,3)

Types and classification of computer networks, networks topology and wiring type, OSI layering model, design process of computer network, hospital information system, and modern application of computer networks in health-care. Pre-requisite: Microprocessors and Computer Interfacing

### 218 514 Rehabilitation Engineering  (3: 0: 0, 3)

Introduction to rehabilitation engineering, disability, rehabilitation engineering technology, assistive devices, physiological and biomedical measurement techniques, disability assessment, application of rehabilitation engineering, prosthetics and orthotics. Pre-requisite: Medical Instrumentation I

### 218 516 Artificial Neural Networks and Fuzzy Logic (3: 0: 0,3)

Fuzzy logic fundamentals, fuzzy sets, types of membership functions, linguistic variables, creation of fuzzy logic rule base, fuzzy logic operations, neural network fundamentals, neural type learning process, single layer perception, artificial neural networks architectures, training algorithms, genetic algorithms and evolution computing, neuro-fuzzy technology, fuzzy control systems and applications related to biomedical engineering. Pre-requisite: Engineering Mathematics I

### 218 517 Biomedical Image Processing (2: 2: 0,3)

Digital image fundamentals, image transforms image enhancement, image restoration, image segmentation, representation and description, recognition and interpretation, image compression. Pre-requisite: Signals and Systems

# Bachelor of Science in Architectural Engineering

## Mission

Architecture is the science and art of shaping the built environment and establishing habitable and enjoyable communities. The architectural engineering program is a five-year course designed to equip students with a sound knowledge and understanding of building design, landscape design, structure, construction, history of architecture, heritage conservation as well as many other related subjects.

## Objectives

The main objectives of the architectural engineering curriculum are to provide its students with:

a.  a strong foundation in basic skills to apply in their design process and presentations

b.  a broad theoretical and practical knowledge related to their practice of architectural design and building construction

c.  the skills and abilities for required for data collection, analysis, design and evaluation of architectural design projects

d.  the information and ability required to produce building construction drawings and working details

e.  the ability to utilize modern technology, for example computer aided design and other software application packages for architectural design, working drawings and presentation purposes in the field of architecture, urban design and urban planning

f.  good oral and written communication skills

g.  the ability to work effectively as members of a multidisciplinary team

h.  the ability to compete professionally and function successfully in the diverse and fast-developing architectural engineering environment of the UAE

i.  the knowledge to preserve both the built and natural environments, and the sensibility to understand the impact of architecture on its broader physical and cultural contexts, fulfilling both their professional as well as their ethical responsibilities

j.  the ability for critical thinking and lifelong self-learning, so that they are capable of updating their technical knowledge while working as professional architects

## Admission Requirements

Admission to the Architectural Engineering program requires a UAE secondary school certificate (science major), or its equivalent, with a minimum acceptable grade of 70 percent. For more information please refer to the university admissions policy.

## Career Opportunities

Because of the multidisciplinary nature of the curriculum, graduates are qualified for employment in a variety of areas. They can work, for example, as designers and construction managers, or join city planning or community agencies and governmental authorities. Alternatively they can become building contractors. As graduates are trained in problem-solving they are able to adapt to a range of jobs in both the public and private **sector.**

## Graduation Requirements

The Bachelor of Science in Architectural engineering is awarded upon fulfillment of the following:

1. Successful completion of all courses in the prescribed curriculum
2. Successful completion of four months' engineering training
3. The Cumulative Grade Point Average CGPA is at least 2.0.

## Degree Requirement

The B.Sc. degree in Architectural Engineering requires the completion of 169 Cr. Hrs. circulated according to the following plan:

| Type of Courses | Credit hours |
|---|---|
| 1. University General Education Requirements | |
| (a) University Required Courses | 15 |
| (b) University Elective Courses | 9 |
| 2. College Required  courses | 9 |
| 4. Specialization required courses | 117 |
| 4. Specialization Elective courses | 9 |
| 5  Graduation projects I & II | 10 |
| Total Credit Hours | 169 |

# UNIVERSITY GENERAL EDUCATION REQUIREMENTS

## (a) University Required Courses *(15 Cr.Hrs.)*

| Course No. | Course Title | Th. | Lab. | Tut. | Cr. Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 101000 | Orientation | 1 | 0 | 0 | 0 | - |
| 102110 | Islamic Culture | 3 | 0 | 1 | 3 | - |
| 102140 | Communication Skills in Arabic Language | 3 | 0 | 0 | 3 | - |
| 103110- | Statistics | 2 | 2 | 0 | 3 | - |
| 104110 | Computer Applications | 2 | 2 | 0 | 3 | - |
| 103120 | Environmental Sciences | 3 | 0 | 0 | 3 | - |

## (b)University Elective Courses *(9 Cr.Hrs.)*

| Course No. | Course Title | Th. | Lab. | Tut. | Cr. Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 102120 | The Miraculousness of the Holy Koran | 3 | 0 | 0 | 3 | - |
| 103130 | Research Methodology | 3 | 0 | 0 | 3 | - |
| 112110 | Principles of Architecture & Art | 3 | 0 | 0 | 3 | - |
| 112120 | Principles of Interior Design | 3 | 0 | 0 | 3 | - |
| 112130 | Modern Technology and Society | 3 | 0 | 0 | 3 | - |
| 113110 | Internet Concepts | 3 | 0 | 0 | 3 | - |
| 113120 | Introduction to Information Systems | 3 | 0 | 0 | 3 | - |
| 114110 | Economic Concepts | 3 | 0 | 0 | 3 | - |
| 114120 | Entrepreneurship Development | 3 | 0 | 0 | 3 | - |
| 115110 | History of science in Islam | 3 | 0 | 0 | 3 | - |
| 115120 | Scientific pioneering | 3 | 0 | 0 | 3 | - |
| 115130- | General psychology | 3 | 0 | 0 | 3 | - |
| 115140 | Principle of mathematics | 3 | 0 | 0 | 3 | - |
| 115150 | The Art of Expression and writing | 3 | 0 | 0 | 3 | - |
| 115160 | Emirates Society | 3 | 0 | 0 | 3 | - |
| 115170 | Education Technology | 3 | 0 | 0 | 3 | - |
| 117110 | General chemistry | 3 | 0 | 0 | 3 | - |
| 117120 | Fundamental of Human Nutrition | 3 | 0 | 0 | 3 | - |
| 117130 | First Aid | 3 | 0 | 0 | 3 | - |
| 117150 | Applications of Remote sensing | 3 | 0 | 0 | 3 | - |
| 118110 | Principles of Ethics | 3 | 0 | 0 | 3 | - |
| 118120 | General Biology | 3 | 0 | 0 | 3 | - |
| 118130 | Oral Health | 3 | 0 | 0 | 3 | - |

| Course No. | Course Title | Th. | Lab. | Tut. | Cr. Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 118140 | General principles of Epidemiology | 3 | 0 | 0 | 3 | - |
| 118150 | CPR-Cardio Pulmonary Resuscitation | 3 | 0 | 0 | 3 | - |
| 119110 | Communication Skills | 3 | 0 | 0 | 3 | - |
| 119120 | Introduction to Communication Sociology | 3 | 0 | 0 | 3 | - |
| 119130 | Information Society | 3 | 0 | 0 | 3 | - |
| 120115 | Legal Culture | 3 | 0 | 0 | 3 | - |

## College Required Courses (*9 Cr. Hrs.*)

| Course No. | Course Title | Th. | Lab. | Tut. | Cr. Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 201102 | Engineering Graphics | 2 | 2 | 0 | 3 | --- |
| 217101 | Engineering Mathematics I | 3 | 0 | 2 | 3 | --- |
| 270101 | Building Sciences | 3 | 0 | 0 | 3 | --- |

## (b) Specialization Required Courses & Graduation Projects *(127 Cr.Hrs.)*

| Course No. | Course Title | Th. | Lab. | Tut. | Cr. Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 200101 | Introduction to Design | 1 | 4 | 0 | 3 | |
| 200102 | Perspective, Shade & Shadows | 1 | 4 | 0 | 3 | 201102 |
| 210300 | Engineering Training | 4 | 0 | 0 | 4 | |
| 270102 | Architectural Design I | 2 | 4 | 0 | 4 | 200101 |
| 270203 | Architectural Design II | 2 | 4 | 0 | 4 | 270102 |
| 270204 | Architectural Design III | 2 | 6 | 0 | 5 | 270203 |
| 270213 | History & Theory of Arch. I | 3 | 0 | 0 | 3 | |
| 270214 | History & Theory of Arch. II | 3 | 0 | 0 | 3 | 270213 |
| 270234 | CAAD I | 1 | 4 | 0 | 3 | 104110 & 201102 |
| 270335 | CAAD II | 1 | 4 | 0 | 3 | 270234 |
| 270305 | Architectural Design IV | 2 | 6 | 0 | 5 | 270204 |
| 270306 | Architectural Design V | 2 | 6 | 0 | 5 | 270305 |
| 270315 | History & Theory of Arch. III | 3 | 0 | 0 | 3 | 270214 |
| 270316 | History & Theory of Arch. IV | 3 | 0 | 0 | 3 | 270315 |
| 270346 | Housing Design & Theory | 3 | 0 | 0 | 3 | 270204 |
| 270356 | Landscape Architecture | 2 | 2 | 0 | 3 | 270203 |
| 270407 | Architectural Design VI | 2 | 6 | 0 | 5 | 270306 |
| 270447 | Active Thermal Control | 2 | 0 | 0 | 2 | 270101 |
| 270458 | Urban Planning | 3 | 0 | 0 | 3 | 270356 |
| 270459 | Urban Design | 2 | 6 | 0 | 5 | 270407 |

| Course No. | Course Title | Th. | Lab. | Tut. | Cr. Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 270460 | Environmental Behavior | 3 | 0 | 0 | 3 | |
| 270468 | Heritage Conservation | 3 | 0 | 0 | 3 | 270214 |
| 273511 | Sustainable Architecture | 3 | 0 | 0 | 3 | 270447 |
| 270559 | Architectural Practice | 3 | 0 | 0 | 3 | |
| 270589 | Graduation Project I | 3 | 4 | 0 | 5 | 270346&270459 |
| 270590 | Graduation Project II | 1 | 8 | 0 | 5 | 270589 |
| 271223 | Building Construction I | 2 | 2 | 0 | 3 | 201102 |
| 271224 | Building Construction II | 2 | 2 | 0 | 3 | 271223 |
| 271325 | Building Construction & Technology | 3 | 0 | 0 | 3 | 271224&275204 |
| 271326 | Working Drawing I | 1 | 4 | 0 | 3 | 271325 |
| 271327 | Building Services | 3 | 0 | 0 | 3 | 271325 |
| 271427 | Working Drawing II | 1 | 4 | 0 | 3 | 271326 |
| 271448 | Lighting & Acoustics | 3 | 0 | 0 | 3 | 270101 |
| 275203 | Surveying for Architects | 1 | 2 | 0 | 2 | |
| 275204 | Structural Design for Architects I | 3 | 0 | 0 | 3 | 270101&217101 |
| 275305 | Structural Design for Architects II | 3 | 0 | 0 | 3 | 275204 |
| 290103 | Freehand Drawing | 2 | 4 | 0 | 4 | |

## (c) Specialization Electives courses (9 Cr.Hrs.)

The student will take three of the following Specialization Electives as approved by the academic advisor.

| Course No. | Course Title | Th. | Lab. | Tut. | Cr. Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 273500 | Selected Topics in Architecture | 3 | 0 | 0 | 3 | |
| 273501 | Interior Design & Coloring | 1 | 4 | 0 | 3 | |
| 273502 | Real Estate Development | 3 | 3 | 0 | 3 | |
| 273504 | Photography | 1 | 4 | 0 | 3 | |
| 273506 | Advanced CAAD Applications | 1 | 4 | 0 | 3 | 270335 |
| 273507 | Research & Design Methods | 3 | 0 | 0 | 3 | |
| 273508 | Geographic Information Systems | 1 | 4 | 0 | 3 | 270335 |
| 273509 | Contemporary Arab Architecture | 3 | 0 | 0 | 3 | 270316 |
| 273510 | Interior Architecture | 1 | 4 | 0 | 3 | |

# Course Sequencing Plan

## FIRST SEMESTER

| Course Code | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Lab | Tut | Cr.Hrs. | |
| | Orientation | 1 | 0 | 0 | 0 | |
| 200101 | Introduction to Design | 1 | 4 | 0 | 3 | |
| 290103 | Freehand Drawing I | 2 | 4 | 0 | 4 | |
| 201102 | Engineering Graphics | 2 | 2 | 0 | 3 | |
| 270101 | Building Sciences | 3 | 0 | 0 | 3 | |
| 102140 | Communication Skills in Arabic Language | 3 | 0 | 0 | 3 | |
| 104110 | Computer Applications | 2 | 2 | 0 | 3 | |
| TOTAL | | 14 | 12 | 0 | 19 | |

## SECOND SEMESTER

| Course Code | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Lab | Tut | Cr.Hrs. | |
| 270102 | Architectural  Design I | 2 | 4 | 0 | 4 | 200101 |
| 200102 | Perspective Shades & Shadow | 1 | 4 | 0 | 3 | 201102 |
| 103120 | Environmental Sciences | 3 | 0 | 0 | 3 | |
| 217101 | Engineering Math. I | 3 | 0 | 2 | 3 | |
| xxxxxx | University Elective I | 3 | 0 | 0 | 3 | |
| TOTAL | | 12 | 8 | 2 | 16 | |

## THIRD SEMESTER

| Course Code | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Lab | Tut | Cr.Hrs. | |
| 270203 | Architectural  Design II | 2 | 4 | 0 | 4 | 270102 |
| 270213 | History & Theory of Arch. I | 3 | 0 | 0 | 3 | |
| 271223 | Building Construction I | 2 | 2 | 0 | 3 | 201102 |
| 275203 | Surveying for Architects | 1 | 2 | 0 | 2 | |
| 270234 | CAAD I | 1 | 4 | 0 | 3 | 201102&104110 |
| --------- | University Elective  II | 3 | 0 | 0 | 3 | |
| TOTAL | | 12 | 12 | 0 | 18 | |

## FOURTH SEMESTER

| Course Code | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Lab | Tut | Cr.Hrs. | |
| 270204 | Architectural Design III | 2 | 6 | 0 | 5 | 270203 |
| 270214 | History & Theory of Arch. II | 3 | 0 | 0 | 3 | 270213 |
| 271224 | Building Construction II | 2 | 2 | 0 | 3 | 271223 |
| 275204 | Structural Design for Architects I | 3 | 0 | 0 | 3 | 270101&217101 |
| 270335 | CAAD II | 1 | 4 | 0 | 3 | 270234 |
| TOTAL | | 11 | 12 | 0 | 17 | |

## FIFTH SEMESTER

| Course Code | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Lab | Tut | Cr.Hrs. | |
| 270305 | Architectural Design IV | 2 | 6 | 0 | 5 | 270204 |
| 270315 | History & Theory of Arch. III | 3 | 0 | 0 | 3 | 270214 |
| 271325 | Building Construction & Technology | 3 | 0 | 0 | 3 | 271224 275204 |
| 275305 | Structural Design for Architects II | 3 | 0 | 0 | 3 | 275204 |
| 270356 | Landscape Arch. | 2 | 2 | 0 | 3 | 270203 |
| 130130 | Statistics | 2 | 2 | 0 | 3 | |
| TOTAL | | 15 | 10 | 0 | 20 | |

## SIXTH SEMESTER

| Course Code | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Lab | Tut | Cr.Hrs. | |
| 270306 | Architectural Design V | 2 | 6 | 0 | 5 | 270305 |
| 270316 | History & Theory of Arch. IV | 3 | 0 | 0 | 3 | 270315 |
| 271326 | Working Drawings I | 1 | 4 | 0 | 3 | 271325 |
| 271327 | Building Services | 3 | 0 | 0 | 3 | 271325 |
| 102110 | Islamic Culture | 3 | 0 | 1 | 3 | |
| TOTAL | | 12 | 10 | 1 | 17 | |

## SEVENTH SEMESTER

| Course Code | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Lab | Tut | Cr.Hrs. | |
| 270407 | Architectural Design VI | 2 | 6 | 0 | 5 | 270306 |

| Course Code | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| 270458 | Urban Planning | 3 | 0 | 0 | 3 | 270356 |
| 271427 | Working Drawing II | 1 | 4 | 0 | 3 | 271326 |
| 270447 | Active Thermal Environmental Control | 2 | 0 | 0 | 2 | 270101 |
| 270346 | Housing Design & Theory | 3 | 0 | 0 | 3 | 270204 |
| TOTAL | | 11 | 10 | 0 | 16 | |

## EIGHTH SEMESTER

| Course Code | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Lab | Tut | Cr.Hrs. | |
| 270459 | Urban Design | 2 | 6 | 0 | 5 | 270407 |
| 270460 | Environmental Behavior | 3 | 0 | 0 | 3 | - |
| 271448 | Lighting & Acoustics in Architecture | 3 | 0 | 0 | 3 | 270101 |
| 270468 | Heritage Conservation | 3 | 0 | 0 | 3 | 270214 |
| xxxxxx | University Elective III | 3 | 0 | 0 | 3 | |
| TOTAL | | 14 | 6 | 0 | 17 | |

## NINTH SEMESTER

| Course Code | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Lab | Tut | Cr.Hrs. | |
| 270589 | Graduation Project I | 3 | 4 | 0 | 5 | 270346 270459 |
| 270559 | Architectural Practice | 3 | 0 | 0 | 3 | - |
| 273511 | Sustainable Architecture | 3 | 0 | 0 | 3 | 270447-0 |
| xxxxxx | Specialization Elective I | / | / | / | 3 | |
| TOTAL | | 12 | 4 | 0 | 14 | |

## TENTH SEMESTER

| Course Code | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Lab | Tut | Cr.Hrs. | |
| 270590 | Graduation project II | 1 | 8 | 0 | 5 | 270589 |
| | Specialization Elective II | / | / | / | 3 | |
| | Specialization Elective III | / | / | / | 3 | |
| 210300 | Engineering Training | / | / | / | 4 | |
| TOTAL | | / | / | / | 15 | |

# Course Descriptions
# ( B.Sc. in Architectural Engineering)

### 200 101 Introduction to Design (1, 4, 0: 3)

*pre-requisite: none*

The course covers the development of the sensory perception of abstract form and its ultimate conversion into specific architectonic configurations, relevant to a variety of solutions to a specific problem and leading to the process of selection and decision making. Basic principles of aesthetics through the study of form, space, proportion, texture analysis of color theory conditioned by different media and materials are also covered.

### 200 102 Perspective, Shades and Shadows (1, 4, 0: 3)

*pre-requisite: 201 102*

The course covers one point and two points exterior and interior perspectives, and fundamentals of drawing shades and shadows as presented in two-dimensional and three-dimensional parallel-line drawings by applying projection.

### 201 102 Engineering Graphics (2, 2, 0: 3)

*pre-requisite: none*

The course covers the basics of 2-D and 3-D architectural drawing and presentation. Parallel-line drawings and orthogonal projections are covered. Drawing of all architectural elements, renderings (abstraction, textures, and materials), and lettering are also practiced.

### 270 101 Building Sciences (3, 0, 0: 3)

*pre-requisite: none*

This course aims to familiarize students with the basic principles and means of measurement and design of technical aspects of building science. It also covers incorporating structural design, environmental principles, material science and human factors and how these topics rely upon and influence one another in architectural design.

### 270 102 Architectural Design I (2, 4, 0: 4)

*pre-requisite: 200101*

The course covers elements and principles of architectural design; form, space/volume, and function and their interrelationships, in addition to basic design requirements through a small-scale project(s) (e.g. single family house, studio).

### 270 203 Architectural Design II (2, 4, 0: 4)

*pre-requisite: 270 102*

The course covers simple and single-use architectural project(s); aspects of spatial arrangements, site, climate and traditions are to be examined. (e.g., kindergarten, small clinic, art workshop).

### 270 204 Architectural Design III (2, 6, 0: 5)

*pre-requisite: 270 203*

Design process, conceptualization, and creativity are practiced by students. The problem of space formation, and form/function interaction are also covered. Students handle design problems related to large span single-use spaces; issues of structural systems and light weight material are applied. Contextual design elements of site, topography, climate and traditional architecture are identified, and conceptual design solution(s) analyzed.

### 270 213 History and Theory of Architecture I (3, 0, 0: 3: 3)

*pre-requisite: none*

The course provides an overview of the prehistoric, early historic and classical periods. Emphasis is laid upon design concepts shaping both secular and religious buildings that made up the built environment. Comparative analysis of several buildings is presented in their contextual settings reflecting socioeconomic aspects, culture and traditions, climatic conditions, religious beliefs and building needs of societies.

## 270 214 History and Theory of Architecture II (3, 0, 0: 3)

*pre-requisite: 270 213*

The course provides an overview of the architecture of major periods of Western history, ranging from the Early Christian Period to the Renaissance. The course introduces students to the ancient philosophies relating to space, urban space and conceptual meaning in architectural design. Also presented are the concepts underlying heritage, ranging from the Early Christian era and passing through the Byzantine, Romanesque, Gothic and Renaissance eras.

## 271 223 Building Construction I (2, 2, 0: 3)

*pre-requisite: 201 102*

The course provides an overview of basic concepts and properties of building structural components and their materials. The course discusses elements and types of superstructure, substructure and foundations. It covers linear and planner, vertical and horizontal, structural systems and their members such as short–medium span roofing, flooring, walls, columns, girders and beams.

## 275 203 Surveying for Architects (1, 2, 0: 2)

*pre-requisite: none*

The course covers basic surveying, errors in surveying operations, distance measurements, chain surveying, angles measurements and bearings, coordinate geometry,

leveling of profiles and cross section contour lines, areas and volume computations. Lab work includes the use of the theodolite and planimeter for area measurement.

## 271 224 Building Construction II (2, 2, 0: 3)

*pre-requisite: 271 223*

Topics covered include wood systems and carpentry and means of vertical circulation (stairs, elevators and escalators). The course provides an insight of materials and detailing of walls, floors, false ceilings, doors, windows, thermal insulation, sound isolation, water proofing and building joints.

## 275 204 Structural Design for Architects I (3, 0, 0: 3)

*pre-requisites: 270 101 & 217 101*

The course provides an introduction to the statics of structures and structural members and deals with supports and springs. It discusses the analysis of determinate and indeterminate structures.

## 270 234 CAAD I (1, 4, 0: 3)

*pre-requisites: 104 110 & 201 102*

The course covers the advantages of CAAD over the traditional design process, mastering AutoCAD 2000 software as a tool of CAAD design, and places emphasis on the 2D AutoCAD, with an introduction of 3D AutoCAD.

## 270 315 History and Theory of Architecture III (3, 0, 0: 3)

*pre-requisite: 270 214*

The course presents the social, political, economic and religious values that have helped the evolution of the built environment and the ensuring of significant architectural development. Examples of historical Islamic buildings of various countries are selected to analyze their unique

design concepts. A study and comparative analysis is made of key elements of Islamic architecture: cities and buildings such as mosques, market, places and housing.

### 270 305 Architectural Design IV (2, 6, 0: 5)

*pre-requisite: 270 204*

The course offers a comprehensive approach to context in response to vital aspects in design process, site analysis/selection, environmental/climatic impacts, culture and tradition. Problem-solving techniques in terms of complexity, form of the circulation path, configuration of path-space interaction, structural system, and building form are manipulated by students throughout the course (e.g., recreational facilities, local library, bank).

### 271 325 Building Construction & Technology (3, 0, 0: 3)

*pre-requisites: 271 224 & 275 204*

The course covers advanced building systems and technologies, and means of deploying them in buildings. Emphasis is placed on prefabrication, modular coordination, mechanization, super structures and long spans in concrete, steel and wood.

### 275 305 Structural Design for Architects II (3, 0, 0: 3)

*pre-requisite: 275 204*

The course covers the strength of materials, the design of tension and compression members, beams and columns, with a major concentration on steel design.

### 270 335 CAAD II (1, 4, 0: 3)

*Pre-requisite: 270 234*

The course covers AutoCAD orders and tools, integrating presentation work through sharing (importing, exporting) drawing files with other presentation programs such as 3d Max and Photoshop. 3D Max and its implementation to basic architectural concepts is presented, including modeling and presentation, modeling tools, creating objects, primitives, compound objects, surfaces, modifiers, helpers, materials, textures, environmental controls, light and cameras. In addition maneuvering these capabilities and the creation of realistic images and scenes are also covered.

### 270 306 architectural Design V (2, 6, 0: 5)

*pre-requisite: 270 305*

The course introduces the manipulation of a complex multi-use/mixed-used project(s), and experimentation with the vocabulary of architectural form, space and order. Aspects of the interrelationship of architectural form and function are analyzed and evaluated to be applicable to the potential design concept. Expression in the context of traditional architecture is a considerable aspect for developing design solution(s).

### 270 316 History and Theory of Architecture IV (3, 0, 0: 3)

*pre-requisite: 270 315*

New theories in Architecture, based on revolutionary design concepts, unique built forms, the use of new materials and techniques are introduced. Emphasis is placed on understanding the process of design and building through the masterpieces of pioneering architects of selected historic eras. A review of the various early 19C revivals of historic forms and eclecticism, which triggered the rise of modern architecture, is presented. Post-modern theories and the current evolution of architectural theories are also explored.

### 271 326 Working Drawings 1 (1, 4, 0: 3)

*pre-requisite: 271 325*

The course covers the preparation of working drawings for an architectural project applying all theoretical and practical knowledge gained during the study of engineering graphics, building construction and related courses.

### 270 346 Housing Theory & Design (3, 0, 0: 3)

*pre-requisite: 270 204*

The course covers the major processes, design considerations and computations for accomplishing residential housing development projects. Other topics include phases of the development process, site evaluation considerations include those relating to boundary surveys, topographic evaluation, soil analysis, traffic evaluation, hydrographic analysis, plus environmental, aesthetic and cultural considerations.

### 270 356 Landscape Architecture (2, 2, 0: 3)

*pre-requisite: 270 203*

The course offers an introduction to the history and development of landscape architecture, and the technology and methods of landscape design. The processes of landscape design as applied to complex projects in landscape architecture, including proposal, programming, analysis, concept development and presentation are also covered.

### 271327 Building Services (3, 0, 0: 3)

*pre-requisite: 271325*

This course provides students with the knowledge of various aspects of building technical installations required. The course will cover various technical issues such as mechanical and sanitary in buildings, water and air quality, waste, fire protection and safety. In addition it will cover air conditioning systems, and electrical installations in buildings.

### 270 407 Architectural Design VI (2, 6, 0: 5)

*pre-requisite: 270 306*

The course covers process of developing a program for functional/environmental requirements of the determined project, setting up solutions for the concerned design problem and selecting the relevant site for the developed program. Taking into account the real needs of local society, students are also introduced to the process of analysis and synthesis, and evaluation of large scale design problems.

### 271 427 Working Drawings 2 (1, 4, 0: 3)

*pre-requisite: 271 326*

The course covers plans, layouts, schedules and details. Building systems such as architectural, structural, mechanical, electrical and telephone systems are also covered.

### 270 447 Active Thermal Environmental Control (2, 0, 0: 2)

*pre-requisite: 270 101*

The course covers the basics of active thermal systems and their technology, energy demand limits, heat loss and gain, calculations, measurements and applications, and offers a link up with architectural design.

### 271 448 Lighting & Acoustics in Architecture (3, 0, 0: 3)

*pre-requisite: 270 101*

The course introduces lighting and acoustic terms and means of measurement and design, characteristics of light and sound, building standards and materials.

### 270 458 Urban Planning (3, 0, 0: 3)

*pre-requisite: 270 356*

Course topics include the evolution of city form and structure, the development of order and organization in cities, theories of planning, the politics of planning, social and cultural contexts, the planning process and models, and planning management and implementation.

### 270 459 Urban Design (2, 6, 0: 5)

*pre-requisite: 270 407*

The course introduces urban design concepts and urban scale architecture, urban design structure and elements, the urban design process; surveying, analysis and evaluation. Project management and presentation are also covered.

### 270 460 Environmental Behavior ( n3,0,0:3)

The course teaches the students how to apply the psychological and aesthetic factors in the design projects. The course covers the psychological relationship between people and design. Introduction to psychology, perception in architectural elements, color psychology, space psychology, and the impact of psychology in balance, harmony, rhythm, and emphasis.

*Pre-requisite: None*

### 270 468 Heritage Conservation (3, 0, 0: 3)

*pre-requisite: 270 214*

The course introduces the history of the conservation movement, international and local conservation programs, regulatory instruments, methods and techniques. Case studies are presented, and conservation experience in the UAE is covered.

### 270 589 graduation project 1 (3, 4, 0: 5)

*pre-requisites: 270 459 & 270 346*

Students carry out a substantial work of design research presented as a short thesis report, entailing practical application to a researched topic of a specific building type

(a complex multi-use design problem). Project selection is based on the real needs of UAE society. Methodology in architectural design through a process of programming is covered, together with a literature review, data collection, statistics, case study critique, developed architectural program and schematic design concepts.

### 270 559 Architecture Practice (3, 0, 0: 3)

*Pre-requisite: None*

An overview to the professional practice in architecture in general with special emphasis on the UAE. Professionalism, the architect's role in the building process in real life, how architects work and get work, becoming and being an architect are also covered. Course topics also include code of ethics, team work, design and design approvals, decision making field investigation, engineers and other consultants, construction contractors, building contracts, bill of quantities and book of specifications, phases of construction and construction management process.

### 270 590 Graduation Project ii (1, 8, 0: 5)

*Pre-requisite: 270 589*

The course covers the development of the schematic concept formulated during Graduation Project I, the development of design preliminary drawings in accordance with the architectural design program formulated in Graduation Project I, rendering and presentation of the design final drawings, and the use of advanced CAAD application.

## Sustainable Architecture

### 273 500 Selected topics in Architecture (3, 0, 0: 3)

*Pre-requisite: None*

Selected topics are researched and discussed according to the educational needs of the students involved.

### 273 501 Interior Design and Coloring (1, 4, 0: 3)

*Pre-requisite: None*

The course covers interior design and coloring with emphasis on water color technique, poster color and pencil color and interior space coloring.

### 273 506 Advanced CAAD Application (1, 4, 0: 3)

*Pre-requisite: 270 335*

The course concentrates on scientific study basics of the architectural graphic program (ArchiCAD). Principles of electronic drafting and its capabilities comparing most available drawing programs, especially AutoCAD and ArchiCAD is also covered, as are philosophy and characters in achieving general two- and three-dimensional engineering drawings.

### 273 507 Design AND Research Methods (3, 0, 0: 3) Pre-requisite: None

The course covers a comprehensive survey of qualitative and quantitative research methods and their method-specific hypothesis formulation, data acquisition, verification and analysis.

### 273508 Geographic Information Systems (1, 4, 0: 3)

*pre requisite 270335*

The development and history of GIS, present applications of the technology. Essential elements of a Geographic Information System. Basic concepts and principles of Geographic Information Systems.

### 273504 Photography (1, 4, 0: 3)

*pre requisite none*

This is an introductory course to photography. It deals with the principles of photography such as light exposures, compositions, and film developing. Types and uses of cameras, lenses, flashes, filters, and other accessories are discussed and applied. The course also involves photographing buildings and students' projects, portfolio design, and the use of digital cameras.

### 273509 Research and Design Methods (3, 0, 0: 3)

*pre requisite 270316*

This course will introduce students with recent architectural trends and developments in the Arab World during the 20th century and the present time. Architectural changes and transformations from tradition to modernity during the 20th century are to be investigated The different architectural trends and attitudes in Arab countries are explored through analyzing examples of the pioneers of contemporary Arab architecture, such as Fathy, Badran, Makkiyyeh and Chadirji.

### 273510 Interior Architecture (1, 4, 0: 3)

*pre requisite none*

This course will enhance students' skills in interior space drawing and coloring, identify color theories and how to apply in interior spaces, color plans with different techniques, develop basic color skills for residential and public spaces, and produce 3d's drawing using water color and poster color.

### 273511 Sustainable Architecture (3,0,0:3)

The course will give the student general background about susytainable development and its application in architecture through the impact in the main principles of good design and principles of sustainable design such as sustainable construction, environmental architecture, ecological building, green building, sustainable design, and sustainable urban design.

*Pre-requisite: 270243 & 270447*

### 273502 Real Estate Development (3, 0, 0: 3)

*pre requisite none*

The course will conduct market surveys and analysis studies, site consideration and selection, financial feasibility and documentation for real estate development. The students will be introduced to carry forth a real estate development project from the proposal (project formation) stage into final proposal. Manage project more effectively. Keep a project notebook, or digital file. Develop a scope of work, diagram workflow on a timeline, and use it to plan and manage activities effectively. Also, draw upon what they have learned in other courses.

# Bachelor in Interior Design

## Mission

The program is designed to develop and enhance students' artistic abilities, knowledge and skills to be able to design, supervise, and implement interior design projects.

## Objectives

The Interior Design program aims to produce graduates who have:

a) A foundation in basic skills and the ability to apply those skills in their design process and presentation

b) skills and abilities required for data collection, analysis, design and evaluation of interior design projects including technical details

c) The ability to utilize up-to-date technology in the field of interior design, for example computer-aided design and other software applications, and working drawings and presentations

d) The ability to work as an efficient team member in multi-professional groups

e) The ability to recognize environmental factors and cultural, traditional and heritage aspects

f) ability of critical thinking and life-long learning

g) gained basic information about interior environment, with the application of lighting, acoustics and human factors.

## Admission Requirements

Admission to the Interior Design program requires a UAE Secondary School Certificate, or its equivalent, with a minimum acceptable grade of 60 percent. For more information please refer to the university admissions policy

## Career Opportunities

As a creative, imaginative and artistic professional, the interior designer can expect to be working with clients, design and architectural firms or other professionals to develop design solutions that are safe, functional and attractive, and also meet the needs of the people who will use the space. To succeed, hard work prevails. Excellence will the result of being energetic, technically proficient, visionary and dedicated to the profession.

## Graduation Requirements

The Bachelor in Interior Design will be awarded upon the fulfillment of the following:

- Successful completion of all courses in the program curriculum (130 Credit Hours)
- Successful completion of four Credit Hours of Engineering Training
- A minimum cumulative GPA of 2.0

## Degree requirement

The Bachelor degree in Interior Design  requires the completion of 134 Cr. Hrs. distributed according to the following plan:

| Type of Courses | Credit hours |
|---|---|
| 1. University General Education Requirements | |
| (a) University Required Courses | 15 |
| (b) University Elective Courses | 9 |
| 2. College Required  courses | 6 |
| 4. Specialization required courses | 95 |
| 5. Specialization Elective courses | 9 |
| Total Credit Hours | 134 |

# UNIVERSITY GENERAL EDUCATION REQUIREMENTS

## (a) University Required Courses (15 Cr.Hrs.)

| Course No. | Course Title | Th. | Lab. | Tut. | Cr. Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 101000 | Orientation | 1 | 0 | 0 | 0 | - |
| 102110 | Islamic Culture | 3 | 0 | 1 | 3 | - |
| 102140 | Communication Skills in Arabic Language | 3 | 0 | 0 | 3 | - |
| 103110- | Statistics | 2 | 2 | 0 | 3 | - |
| 104110 | Computer Applications | 2 | 2 | 0 | 3 | - |
| 103120 | Environmental Sciences | 3 | 0 | 0 | 3 | - |

## (b) University Elective Courses *(9 Cr.Hrs.)*

| Course No. | Course Title | Th. | Lab. | Tut. | Cr. Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 102120 | The Miraculousness of the Holy Koran | 3 | 0 | 0 | 3 | - |
| 103130 | Research Methodology | 3 | 0 | 0 | 3 | - |
| 112110 | Principles of Architecture & Art | 3 | 0 | 0 | 3 | - |
| 112120 | Principles of Interior Design | 3 | 0 | 0 | 3 | - |
| 112130 | Modern Technology and Society | 3 | 0 | 0 | 3 | - |
| 113110 | Internet Concepts | 3 | 0 | 0 | 3 | - |
| 113120 | Introduction to Information Systems | 3 | 0 | 0 | 3 | - |
| 114110 | Economic Concepts | 3 | 0 | 0 | 3 | - |
| 114120 | Entrepreneurship Development | 3 | 0 | 0 | 3 | - |
| 115110 | History of science in Islam | 3 | 0 | 0 | 3 | - |
| 115120 | Scientific pioneering | 3 | 0 | 0 | 3 | - |
| 115130- | General psychology | 3 | 0 | 0 | 3 | - |
| 115140 | Principle of mathematics | 3 | 0 | 0 | 3 | - |
| 115150 | The Art of Expression and writing | 3 | 0 | 0 | 3 | - |
| 115160 | Emirates Society | 3 | 0 | 0 | 3 | - |
| 115170 | Education Technology | 3 | 0 | 0 | 3 | - |
| 117110 | General chemistry | 3 | 0 | 0 | 3 | - |
| 117120 | Fundamental of Human Nutrition | 3 | 0 | 0 | 3 | - |
| 117130 | First Aid | 3 | 0 | 0 | 3 | - |
| 117150 | Applications of Remote sensing | 3 | 0 | 0 | 3 | - |
| 118110 | Principles of Ethics | 3 | 0 | 0 | 3 | - |
| 118120 | General Biology | 3 | 0 | 0 | 3 | - |
| 118130 | Oral Health | 3 | 0 | 0 | 3 | - |

| Course No. | Course Title | Th. | Lab. | Tut. | Cr. Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 118140 | General principles of Epidemiology | 3 | 0 | 0 | 3 | - |
| 118150 | CPR-Cardio Pulmonary Resuscitation | 3 | 0 | 0 | 3 | - |
| 119110 | Communication Skills | 3 | 0 | 0 | 3 | - |
| 119120 | Introduction to Communication Sociology | 3 | 0 | 0 | 3 | - |
| 119130 | Information Society | 3 | 0 | 0 | 3 | - |
| 120115 | Legal  Culture | 3 | 0 | 0 | 3 | - |

## College Required Courses (6 Cr. Hrs.)

| Course No. | Course Title | Th. | Lab. | Tut. | Cr. Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 201102 | Engineering Graphics | 2 | 2 | 0 | 3 | --- |
| 110140 | Math for Management | 3 | 0 | 2 | 3 | --- |

## (b) Specialization Required Courses & Graduation Projects (95 Cr.Hrs.)

| Course No. | Course Title | Th. | Lab. | Tut. | Cr. Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 200101 | Introduction to Design | 1 | --- | 4 | 3 | --- |
| 200102 | Perspective, Shades & Shadow | 1 | --- | 4 | 3 | 201102 |
| 270234 | CAAD I | 1 | --- | 4 | 3 | 310100 |
| 270235 | CAAD II | 1 | --- | 4 | 3 | 270234 |
| 290103 | Freehand Drawing I | 2 | --- | 4 | 4 | --- |
| 290104 | Freehand Drawing II | 1 | --- | 2 | 2 | 290103 |
| 290105 | Color in Interior Design | 2 | --- | 2 | 3 | --- |
| 290111 | Interior Design I | 1 | --- | 6 | 4 | 200101 |
| 290211 | Workshop | 1 | --- | 4 | 3 | 201102 200102 |
| 290212 | Interior Design II | 1 | --- | 6 | 4 | 290111 |
| 290213 | Interior Design III | 1 | --- | 6 | 4 | 290212 |
| 290214 | History of Interior Design I | 3 | --- | 0 | 3 | --- |
| 290215 | History of Interior Design II | 3 | --- | 0 | 3 | 290214 |
| 290216 | Interior Construction I | 2 | --- | 2 | 3 | 201102 290212 |
| 290217 | Furniture Design | 1 | --- | 4 | 3 | 290111 |
| 290222 | Lighting & Acoustics in Interior Design | 2 | --- | 2 | 3 | 290111 |
| 290257 | Psychology of Design | 3 | --- | 0 | 3 | 290212 |
| 290314 | Interior Design IV | 1 | --- | 6 | 4 | 290213 |
| 290315 | Interior Design V | 1 | --- | 6 | 4 | 290314 |
| 290316 | Textile & Accessories | 2 | --- | 2 | 3 | 290105 |

| Course No. | Course Title | Th. | Lab. | Tut. | Cr. Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 290317 | Interior Construction II | 2 | --- | 2 | 3 | 290216 |
| 290318 | Interiors in the UAE | 3 | --- | 0 | 3 | 290213 |
| 290319 | Working Drawings I | 2 | --- | 2 | 3 | 290317 |
| 290321 | Interior Landscape | 1 | --- | 4 | 3 | 290213 |
| 290323 | Practice in Interior Design | 3 | --- | 0 | 3 | 290213 |
| 290420 | Working Drawings II | 1 | --- | 2 | 2 | 290319 |
| 298490 | Graduation Project I | 2 | --- | 2 | 3 | 290315 |
| 298495 | Graduation Project II | 2 | --- | 8 | 6 | 298490 |

## (c) Specialization Electives Courses (9 Cr.Hrs.)

The student will take three of the following Specialization Electives as approved by the academic advisor.

| Course No. | Course Title | Th. | Lab. | Tut. | Cr. Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 290326 | Selected Topics in Fur. Des | 3 | 0 | 0 | 3 | 290217 |
| 290480 | Islamic Interiors | 3 | 0 | 0 | 3 | ----- |
| 290481 | Interior Photography | 1 | 4 | 0 | 3 | ----- |
| 290482 | Advanced CAAD App. | 1 | 4 | 0 | 3 | 270235 |
| 290483 | Theory of Interior Design | 3 | 0 | 0 | 3 | 290212 |
| 290484 | Selected Topics in Interior Design | 3 | 0 | 0 | 3 | ---- |
| 290485 | Sustainability for Interior Design | 3 | 0 | 0 | 3 | ---- |

# Course Sequencing Plan

## FIRST SEMESTER

| Course Code | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Lab | Tut | Cr.Hrs. | |
| | Orientation | 1 | 0 | 0 | 0 | |
| 200101 | Introduction to Design | 1 | 4 | 0 | 3 | --- |
| 201102 | Engineering Graphics | 2 | 2 | 0 | 3 | --- |
| 290103 | Freehand Drawing I | 2 | 4 | 0 | 4 | --- |
| 104110 | Computer Applications | 2 | 2 | 0 | 3 | --- |
| 102110 | Islamic culture | 3 | 0 | 1 | 3 | --- |
| xxxxxx | University Elective I | 3 | 0 | 0 | 3 | --- |
| TOTAL | | 14 | 12 | 1 | 19 | |

## SECOND SEMESTER

| Course Code | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Lab | Tut | Cr.Hrs. | |
| 290111 | Interior Design I | 1 | 6 | 0 | 4 | 200101 |
| 200102 | Perspective, Shade & Shadow | 1 | 4 | 0 | 3 | 201102 |
| 290104 | Freehand Drawing II | 1 | 2 | 0 | 2 | 290103 |
| 290105 | Color in Interior Design | 2 | 2 | 0 | 3 | --- |
| 110140 | Math. for Management | 3 | 0 | 2 | 3 | --- |
| 103120 | Environmental Sciences | 3 | 0 | 0 | 3 | ------ |
| TOTAL | | 11 | 14 | 2 | 18 | |

## THIRD SEMESTER

| Course Code | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Lab | Tut | Cr.Hrs. | |
| 290212 | Interior Design II | 1 | 6 | 0 | 4 | 290111 |
| 290214 | History of Interior Design I | 3 | 0 | 0 | 3 | --- |
| 290211 | Workshop | 1 | 4 | 0 | 3 | 201102 200102 |
| 290217 | Furniture Design | 1 | 4 | 0 | 3 | 290111 |
| 290222 | Lighting &Acoustics in Interior Design | 2 | 2 | 0 | 3 | 290111 |
| 130130 | Statistics | 2 | 2 | 0 | 3 | |
| TOTAL | | 10 | 18 | 0 | 19 | |

## FOURTH SEMESTER

| Course Code | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Lab | Tut | Cr.Hrs. | |
| 290213 | Interior Design III | 1 | 6 | 0 | 4 | 290212 |
| 290215 | History of Interior Design II | 3 | 0 | 0 | 3 | 290214 |
| 290216 | Interior Construction I | 2 | 2 | 0 | 3 | 201102 290212 |
| 290257 | Psychology of Design | 3 | 0 | 0 | 3 | 290212 |
| 270234 | CAAD I | 1 | 4 | 0 | 3 | 310100 |
| 102140 | Communication Skills in Arabic Language | 3 | 0 | 0 | 3 | --- |
| TOTAL | | 13 | 12 | 0 | 19 | |

## FIFTH SEMESTER

| Course Code | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Lab | Tut | Cr.Hrs. | |
| 290314 | Interior Design IV | 1 | 6 | 0 | 4 | 290213 |
| 290316 | Textile & Accessories | 2 | 2 | 0 | 3 | 290105 |
| 290317 | Interior Construction II | 2 | 2 | 0 | 3 | 290216 |
| 290318 | Interiors in the UAE | 3 | 0 | 0 | 3 | 290213 |
| 270235 | CAAD II | 1 | 4 | 0 | 3 | 270234 |
| 290323 | Practice in Interior Design | 3 | 0 | 0 | 3 | 290213 |
| TOTAL | | 12 | 14 | 0 | 19 | |

## SIXTH SEMESTER

| Course Code | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Lab | Tut | Cr.Hrs. | |
| 290315 | Interior Design V | 1 | 6 | 0 | 4 | 290314 |
| 290319 | Working Drawings I | 2 | 2 | 0 | 3 | 290317 |
| 290321 | Interior Landscape | 1 | 4 | 0 | 3 | 290213 |
| ---------- | Special Elective I | 3 | 0 | 0 | 3 | -- |
| ---------- | Special Elective II | 3 | 0 | 0 | 3 | -- |
| ---------- | University Elective II | 3 | 0 | 0 | 3 | --- |
| TOTAL | | 13 | 12 | 0 | 19 | |

## SEVENTH SEMESTER

| Course Code | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Lab | Tut | Cr.Hrs. | |
| 298490 | Graduation Project I | 2 | 2 | 0 | 3 | 290315 |
| 290420 | Working Drawings II | 1 | 2 | 0 | 2 | 290319 |
| xxxxxx | University Elective III | 3 | 0 | 0 | 3 | ---- |
| TOTAL | | 8 | 4 | 0 | 8 | |

## EIGHTH SEMESTER

| Course Code | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Lab | Tut | Cr.Hrs. | |
| 298495 | Graduation Project II | 2 | 8 | 0 | 6 | 298490 |
| xxxxxx | Special Elective III | 3 | 0 | 0 | 3 | ----- |
| TOTAL | | -- | -- | 0 | 9 | |

# Course Descriptions

## 200 101 Introduction to Design (1-4-0: 3)

*Pre-requisite: None*

The course covers design elements; material symbols; techniques of surface treatments; treatments of interior spaces and volumes; small project: color drawings and scale- models.

## 200 102 Perspective, Shades & Shadow (1-4-0: 3)

*Pre-requisite: Engineering Graphics - 201 102*

The course covers shade and light for 2D drawings; basics for drawing perspectives; architectural rendering and shade and light for 3D drawings.

## 270 234 CAAD I (1-4-0: 3)

*Pre-requisite: IT Fundamentals – 310 100*

The course covers the advantages of CAAD over the traditional design process, mastering AutoCAD 2000 software as a tool of CAAD design and places emphasis on the 2D AutoCAD with an introduction of 3D AutoCAD.

## 270 335 CAAD II (1- 4-0: 3)

*Pre-requisite: CAAD I – 270 234*

The course covers AutoCAD orders and tools, integrating presentation work through sharing (importing, exporting) drawing files with other presentation programs such as 3d Max and Photoshop. 3D Max and its implementation to basic architectural concepts is presented, including modeling and presentation, modeling tools, creating objects, primitives, compound objects, surfaces, modifiers, helpers, materials, textures, environmental controls, light and cameras. In addition maneuvering these capabilities and the creation of realistic images and scenes are also covered in addition to the application of key frames animation, controllers and expressions to create movies with full architectural, artistic and environmental touching.

## 290 103 Freehand Drawing I (2-4-0: 4)

*Pre-requisite: None*

An introductory studio course aimed at exploring the wide variety of concepts, methods and theories of freehand drawing. Students are taught to draw still-lifes, interiors, buildings, landscapes and the human figure in color, and black and white.

## 290 104 Freehand Drawing II (1-2-0: 2)

*Pre-requisite: Freehand Drawing I - 290 103*

This studio course will expand on representational techniques and is aimed at exploring and investigating the wide variety of concepts, methods and theories of freehand drawing studied previously. Students are taught techniques to be used in the presentation of their design concepts.

## 290 105 Color in Interior Design (2-2-0: 3)

*Pre-requisite: None*

This course is planned to provide the student with information on how color plays a role in our lives and in design by examining the properties, theories, meanings and effects of color. It offers a cross-circular approach by making connections between the art, the science, the psychology and/or sociology of each aspect of color.

## 290 111 Interior Design I (1-6-0: 4)

*Pre-requisite: Introduction to Design – 200 101*

This course introduces students to the primary elements and principles of small residential spaces. Through simple functional assignments, such as bathrooms and kitchens, students begin to understand the design of interior spaces. Students are also introduced to wall treatments, flooring, ceiling and finishing materials.

### 290 211 Workshop (1-4-0: 3)

*Pre-requisites: Engineering Graphics - 201 102 & Perspective, Shades & Shadows – 200 102*

This course is planned to train the student in the execution of scale models. It enables students to gain knowledge in different materials and the ability to use workshop tools.

### 290 212 Interior Design II (1-6-0: 4)

*Pre-requisite: Interior Design I - 290 111*

This course deals with the interior design of residential places or retail environments. Students are also introduced to external finishing and cladding, with an emphasis on wall treatments, flooring and finishing materials.

### 290 213 Interior Design III (1-6-0: 4)

*Pre-requisite: Interior Design II - 290 212*

This course deals mainly with the implementation of design concepts in the public sector. These include retail, cafés, restaurants and hair salons. Students are also encouraged to develop their knowledge in materials, wall treatments and finishes.

### 290 214 HISTORY of Interior Design I (3-0-0: 3)

*Pre-requisite: None*

This course aims to provide students with the historical background to interior design. (pre-historic art, the historic periods of Egypt and Mesopotamia, Greek structures and art, Roman structures and art, Early Christian interiors, Byzantine structures and interiors, Romanesque interiors and Islamic structures and interiors).

### 290 215 History of Interior Design II 3-0-0: 3)

*Pre-requisite: History of Interior Design I - 290 214*

The course deals with the theoretical concepts of interior design and decoration of contemporary movements and developments, which led to modern features in interior design.

### 290 216 Interior Construction I (2-2-0: 3)

*Pre-requisites: Engineering Graphics - 201 102 & Interior Design II 290 212*

This course provides an understanding of the elements and materials of interior construction and the graphic methods used to communicate this information.

### 290 217 Furniture Design (1-4-0: 3)

*Pre-requisite: Interior Design I - 290 111*

This course aims to provide students with a historical study of furniture design through historical periods, while studio time is used for design exercises and model-making projects.

### 290 222 Lighting & Acoustics for Interior Design (2-2-0: 3)

*Pre-requisite: Interior Design I - 290 111*

This theoretical course aims to provide students with the basics of lighting and acoustics in interiors. The course covers the various types of lighting and acoustics available, acoustics in interior spaces and the effect of noise on human beings.

### 290 257 Psychology of Design (3-0: 3)

*Pre-requisite: Interior Design II - 290 212*

This course deals with the psychological relationship between people and design. It explores the way design is directed at satisfying people's needs, and its impact on the creative process.

### 290 314 Interior Design IV (1-6-0: 4)

*Pre-requisite: Interior Design III - 290 213*

This course deals mainly with the implementation of design concepts in administrative buildings. These include public, private and executive offices. Students are also encouraged to develop their knowledge in creating environments suitable for high performance activities.

### 290 315 Interior Design V (1-6-0: 4)

*Pre-requisite: Interior design IV - 290 314*

This course deals mainly with the implementation of design concepts in commercial buildings. These include hotels, motels and resorts. Students are also encouraged to develop their knowledge in creating environments suitable for high performance activities, whilst acquiring knowledge in materials, wall treatments and finishes.

### 290 316 Textile & Accessories (2-2-0: 3)

*Pre-requisite: Color in Interior Design – 290 105*

The course gives the ideas and techniques needed for the use and application of textiles and accessories to create aesthetic and functional interior spaces .It also gives an understanding of dealing with different styles of textiles and accessories.

### 290 317 Interior Construction II (2-2-0: 3)

This course provides more advanced and specialized aspects of interior construction elements and systems, which define the space and provide character to interior spaces.

### 290480 Islamic interiors

A theoretical course covering major regional styles of the Islamic World, with special emphasis on the Arab World.

### 290 484 Selected Topics in Interior Design (3-2-0: 3)

*Pre-requisite: None*

This course consists of an advanced research project on problems related to interior design. The chosen topic is determined on the basis of the students' interest, under the supervision of a college member.

### 290 318 interiors in THE UAE (3-0-0: 3)

*Pre-requisite: Interior Design III - 290 213*

This theoretical course aims to provide the students with extensive knowledge on UAE traditional and contemporary interiors.

### 290 319 Working Drawings I (2-2-0: 3)

*Pre-requisite: Interior Construction II - 290 317*

This course is an introduction to construction and detail drawings. It enables students to gain knowledge of interior finishes, and to implement that knowledge in their drawings.

### 290 321 Interior Landscape (1-4-0: 3)

*Pre-requisite: Interior Design III - 290 213*

This course aims to provide students with the knowledge and skills for successful landscape design, with emphasis on planning, design, resources and technologies.

### 290 323 Practice in Interior Design (3-0-0: 3)

*Pre-requisite: Interior Design III - 290 213*

This course deals with the theoretical characteristics of business in the interior design field. Through the examination of the various factors of business practices, students would be well equipped to work successfully in the interior design field, as well as for future opportunities to set up their own design office.

### 290 420 Working Drawings II (1-2-0: 2)

*Pre-requisite: Working Drawings I - 290 319*

This course follows-up the construction and detail drawings course. It enables students to gain additional knowledge on basic interior detailing, millwork and cabinetry design. This course focuses on detailing, technical drawings, specifications and scheduling.

### 298490 Graduation Project I (2-2-0: 3)

*Pre-requisite: Interior Design V - 290 315*

This research oriented course enables the students to successfully develop in information gathering and analysis, to insure the success of their interior design graduation project.

### 298495 Graduation Project II (2-8:0: 6)

*Pre-requisite: Graduation Project I - 298490*

The course gives the student an opportunity to explore his ability and knowledge of dealing with actual existing project in interior design. By using the suitable furnishing requirements, student can create an aesthetic and functional interior design.

### 290 481 Interior Photography (1-4-0: 3)

*Pre-requisite: None*

The main goal of this course is to give students the useful tools of photography techniques necessary for documenting their work, and to enhance their artistic taste in general.

### 290 482 Advanced CAAD Application (1-4-0: 3)

*Pre-requisite: CAAD II – 270 235*

Three dimensional studies of architectural graphic programs principles of electronic drafting and its capabilities to achieve an outstanding result to student presentations, projects, and design concepts.

### 290 483 Theory of Interior Design (3-0-0: 3)

*Pre-requisite: Interior design II - 290 212*

This course is an introduction to the significant theories concerning interaction between people and their environments. It would include scientific explanatory theories about people, materials and systems in relationship to design.

### 290 326 Selected Topics in Furniture Design (1-4-0: 3)

*Pre-requisite: Furniture Design - 290 217*

This course will look at the unexplored possibilities of furniture design by means of approaching the subject in a different philosophical approach leading to the development of drawings and the construction of a scaled model or a prototype. Format includes class discussions, field trips and individual research Design of a chair and construction of half-scale prototype.

### 290 320 Interior Design Practical Training (4 Credit Hours)

*Pre-requisite: None*

The aim of this training is to enable students gaining basic professional interior design knowledge, such as; interior finishing materials, suppliers, materials specification, bill of quantity, cost estimation.

### 290 485 Sustainability for Interior Design (3 Credit Hours)

*Pre-requisite: None*

The aim of this course is to introduce the concept and principles of sustainability to interior design students. Practical examples will be considered where sustainability issues are integrated in design and in projects.

## 290484 Selected topics in interior design (3-0-0:3

This course consists of an advanced research project on problems related to interior design. The chosen topic is determined on the basis of the student's interest, under the supervision of a college member.

# Faculty members

| Name | Rank | Specialization | Degree | Year | University |
|------|------|----------------|--------|------|------------|
| Prof. Fahar G. Hayati, Dean | Ph.D | Electronics | Professor | 1971 | University of Edinburgh |
| Prof. Ali Al Amairah | Ph.D. | Interior Design | Professor | 1988 | Glasgow Univ. / UK |
| Prof. Dr. Ali Abou-Elnour | Ph.D. | Microwave Electronics | Professor | 1994 | Technical University Hamburg-Harburg (Germany) |
| Prof. Eweda I. Eweda | Ph.D. | Electrical Engineering, Communication | Professor | 1983 | D. Sc. University of Paris XI, France |
| Prof. Mustahsan Mir | Ph.D. | Electrical Engineering | Professor | 1983 | University of Michigan, USA |
| Dr. Amir Jihad Abdul-Majid | Ph.D. | Control & Power | Associate Professor | 1981 | Loughborough University (UK) |
| Dr. Jehad Awad | Ph.D. | Urban Design | Associate Professor | 1996 | University of Stuttgart , Germany |
| Dr. Abdulmounim Taha | Ph.D. | Interior Design & Decoration | Associate Professor | 1989 | Pennsylvania Uni. USA |
| Dr. Ayman Tawfiq | Ph.D. | Electrical Engineering, Communication | Associate Professor | 1995 | Ph.D. University of Victoria, Canada |

| Name | Rank | Specialization | Degree | Year | University |
|------|------|----------------|--------|------|------------|
| Dr. Mohammed Arar | Ph.D. | Architecture "Urban Environmental Studies" | Assistant Professor | 1995 | Rensselaer Polytechnic Institute, New York , USA |
| Dr. Mohsen El Fadl | Ph.D. | Interior Environment | Assistant Professor | 1993 | Helwan University, Egypt |
| Dr. Faisal Humaid | Ph.D. | Housing & Urban Design | Assistant Professor | 1990 | Oxford Brookes University, UK |
| Dr. Ahmed Imran | Ph.D. | Biomechanics | Assistant Professor | 1998 | University of Oxford, UK |
| Dr. Sahar Kharrufa | Ph.D. | Architectural Eng. | Associate Professor | 1985 | Bath University ,UK |
| Dr. Jamal El Samannodi | Ph.D. | Interior Design | Associate Professor | 2000 | Channel France & Egypt, France |
| Dr. Mazen Alsliety | Ph.D. | Systems Electrical Wireless (Communication) | Assistant Professor | 2007 | Oakland University (USA) |
| Dr. Zulfiqar Ali Memon | Ph.D. | Electrical Engineering, Robotics | Assistant Professor | 1991 | Brunel University of West London, UK |
| Dr. Emad Moshtaha | Ph.D. | Architectural Eng. | Assistant Professor | 2006 | Hokkaido Univ. Japan |
| Dr. Mohamed Nasor | Ph.D. | Biomedical Engineering | Assistant Professor | 1998 | Uni. of Dublin, Trinity Col. Dublin, Ireland |
| Dr. Hoshiar Nooredin | Ph.D. | Town & Regional Planning | Assistant Professor | 1996 | Norway Univ. of Science & Tech. |
| Dr. Majeed Pournizam | Ph.D. | Bioengineering | Assistant Professor | 1994 | University of Strathclyde, UK |
| Dr. Bassim Saleh | Ph.D. | Architecture Environmental Passive Control | Assistant Professor | 1985 | Strathclyde Glasgow, Uk |
| Dr. Najlaa Sami | Ph.D. | Interior Design | Assistant Professor | 2001 | Helwan Univ. / Egypt |
| Dr. Rabah Saoud | Ph.D. | Architectural Eng. | Assistant Professor | 1996 | University of Manchester, UK |
| Dr. Mohammed Sherzad | Ph.D. | Desert Architecture | Assistant Professor | 2006 | Oxford Brookes University, UK |
| Dr. Samir Tozin | Ph.D. | Electrical Engineering, Communication | Assistant Professor | 2004 | Syracuse University, USA |
| Dr. Hasan Zidan | Ph.D. | Electrical Engineering, Control | Assistant Professor | 2001 | Kyushu Institute of Technology (KIT), Japan |

| Name | Rank | Specialization | Degree | Year | University |
|------|------|----------------|--------|------|------------|
| Mr. Anas Najimeddin Ali | M.Sc. | Electrical Engineering | Lecturer | 1992 | Saddam University, Iraq |
| Mr.. Ahmed Al Gendi | M.phil. | Electrical Engineering, Communication | Lecturer | 2004 | University of Bradford, UK |
| Mr. Mujeeb Al Rahman | M.Sc. | Biomedical Instrumentation | Lecturer | 2002 | VTU, India |
| Dr. Buzaid Boudiaf | Ph.D. | Architectural Eng. | Lecturer | 2010 | Wolverhampton University ,UK |
| Mr. Emanuela Corti | M.Sc. | Furniture & Textile Design | Lecturer | 2005 | Milan›s Polytechnic / Italy |
| Mr. Wael Hamdan | M.Sc. | Interior Design | Lecturer | 1993 | Jordanian Univ. |
| Mr. Wael Hamdan | M.Sc. | Interior Design | Lecturer | 1993 | Jordanian Univ. |
| Mr. Sahar Makki | M.Sc. | Architectural Eng. | Lecturer | 2006 | Sudan University |
| Mr. Ivan Parati | M.Sc. | Product Design | Lecturer | 2007 | Politecnico Di Milano / Italy |
| Mr. Mona Salama | M.Sc. | Architectural Eng.(Urban & Regional Planning) | Lecturer | 2004 | Al Najah National University, Nablus, Palestine |
| Mr. Zahraa Al Sadoon | M.Sc. | Interior Design | Lecturer | 2000 | Baghdad Univ. / Iraq |
| Mr. Harpreet Seth | M.Sc. | Master in Arch.(Urban Design) | Lecturer | 1992 | School of Planning & Arch. India |
| Mr. Micheal Shwarz | M.Sc. | Architectural Eng. | Lecturer | 1991 | Art Academy Frankfurt/ Germany |

# COLLEGE OF
# INFORMATION, MASS COMMUNICATION
# & HUMANITIES

The College of Information, Mass Communication and Humanities strives to produce graduates who are able to innovate as well as develop life-long learning capacities.

## Mission

The mission of the College of Information, Mass Communication and Humanities is to provide a foundation in academic and professional education via programs designed to raise the intellectual and creative potential of students.

## Degree Programs

*The college is composed of two academic Departments:*

- Department of English Language and Translation
- Department of Mass Communication

*The College offers the following six programs, each of which requires four years of study:*

- BA in English Language and Translation
- BA in English Language and Translation (Translation for Media )
- BA in Mass Communication with four major concentrations:
- Public Relations & Advertising
- Radio & Television
- Graphic Design
- Electronic & Printed Press

Students enrolled in one of the major concentrations of BA program in Mass Communication are also required to enroll in a Minor program which must be one of the other four major concentrations listed above.

*Note:      The four BA programs in Mass Communication are taught in Arabic Language and therefore*

*their details will be given in the second part of the Catalogue which concerns Programs taught in Arabic Language.*

## Facilities

The College is equipped with the following facilities which are dedicated for teaching English Language, translation, information and mass communication courses. These facilities include:

- The Television & Radio Studios which are audio-visual labs used for multi-media purposes.
- The Multimedia labs are used for the Multi Project Unit.
- The Internet Labs are an important media source used for teaching courses for internet applications.
- The Macintosh Labs are equipped for helping to design newspapers, magazines, etc.
- The College  has also a  television channel in which students are being trained.
- The College has a television channel in which students are being trained.

## English Language and Translation Department

*The English Language & Translation Department has three main areas of responsibility:*

- to realize the University's philosophy and vision by linking theory to practice, and academic knowledge to business fields,
- to prepare cadres with constructive and innovative tools to face the challenges of communication and information age and better serve society,

- to offer students the benefits of the conventional , multi-media and virtual technologies.

# Bachelor of Arts in English Language and Translation

## Mission

The mission of the English Language and Translation program of is two-fold. Firstly, it aims to provide students with the academic and professional knowledge they need to become responsible citizens. Secondly, it seeks to bridge the gap between the academic community and society at large, thus contributing to the development of the nation.

## Program Outcomes

*By the end of the program, students are expected to*

- demonstrate proficiency in listening comprehension and communicative skills
- write essays and research papers and use critical thinking skills
- translate texts of various registers (media, legal, financial, literary, etc.) from English- Arabic- English and utilize translation software programs in the translation process
- work as consecutive interpreters and demonstrate the use of note-taking techniques, shorthand conventions, consecutive interpreting strategies and professional ethics

## Admission Requirements

- A UAE high school certificate, or its equivalent, with a minimum grade of 60 percent

- A minimum score of 500 in the Test of English as a Foreign Language (TOEFL) examination, or its equivalent

## Career Opportunities

*Graduates are equipped to take up careers which include:*

- News and conference translators and interpreters
- Public relations, personnel and executive officers
- Sworn-in legal translators/interpreters

## Graduation Requirements

The degree of Bachelor in English language and Translation is awarded upon the fulfillment of the following:

- successful completion of 126 credit hours, which normally takes eight semesters,
- a minimum cumulative grade point average  CGPA of 2.0.

## Degree Requirements

The BA degree in English Language and Translation requires the completion of 126 Credit Hours distributed according to the following plan:

| Type of Courses | Credit/hour |
|---|---|
| 1. University General Education Requirements | |
| (a) University Required Courses | 15 |
| (b) University Elective Courses | 9 |
| 2. Major Requirements | |
| (a)  Major Requirements | 93 |
| (b) Major Electives | 9 |
| Total Credit Hours | 126 |

# UNIVERSITY GENERAL EDUCATION REQUIREMENTS

## (a) University Required Courses ( 15 Cr.Hrs.)

| Course No. | Course Title | Th. | Lab. | Tut. | Cr. Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 101000 | Orientation | 1 | 0 | 0 | 0 | - |
| 102110 | Islamic Culture | 3 | 0 | 1 | 3 | - |
| 102140 | Communication Skills in Arabic Language | 3 | 0 | 0 | 3 | - |
| 103110 | Statistics | 2 | 2 | 0 | 3 | - |
| 103120 | Environmental Sciences | 3 | 0 | 0 | 3 | - |
| 104110 | Computer Applications | 2 | 2 | 0 | 3 | - |

## (b)University Elective Courses ( 9 Cr.Hrs.)

| Course No. | Course Title | Th. | Lab. | Tut. | Cr. Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 102120 | The Miraculousness of the Holy Koran | 3 | 0 | 0 | 3 | - |
| 103130 | Research Methodology | 3 | 0 | 0 | 3 | - |
| 112110 | Principles of Architecture & Art | 3 | 0 | 0 | 3 | - |
| 112120 | Principles of Interior Design | 3 | 0 | 0 | 3 | - |
| 112130 | Modern Technology and Society | 3 | 0 | 0 | 3 | - |
| 113110 | Internet Concepts | 2 | 2 | 0 | 3 | - |
| 113120 | Introduction to Information Systems | 3 | 0 | 0 | 3 | - |
| 114110 | Economic Concepts | 3 | 0 | 0 | 3 | - |
| 114120 | Entrepreneurship Development | 3 | 0 | 0 | 3 | - |
| 115110 | History of science in Islam | 3 | 0 | 0 | 3 | - |
| 115120 | Scientific pioneering | 3 | 0 | 0 | 3 | - |
| 115130 | General psychology | 3 | 0 | 0 | 3 | - |
| 115140 | Principle of mathematics | 3 | 0 | 0 | 3 | - |
| 115150 | The Art of Expression and writing | 3 | 0 | 0 | 3 | - |
| 115160 | Emirates Society | 3 | 0 | 0 | 3 | - |
| 115170 | Education Technology | 3 | 0 | 0 | 3 | - |
| 117110 | General Chemistry | 2 | 2 | 0 | 3 | - |
| 117120 | Fundamentals of Human Nutrition | 3 | 0 | 0 | 3 | - |
| 117130 | First Aid | 3 | 0 | 0 | 3 | - |
| 103120 | Energy, Water & Environment | 3 | 0 | 0 | 3 | - |
| 117150 | Applications of Remote sensing | 3 | 0 | 0 | 3 | - |
| 118110 | Principles of Ethics | 3 | 0 | 0 | 3 | - |
| 118120 | General Biology | 2 | 2 | 0 | 3 | - |

| Course No. | Course Title | Th. | Lab. | Tut. | Cr. Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 118130 | Oral Health | 3 | 0 | 0 | 3 | - |
| 118140 | General Principles of Epidemiology | 3 | 0 | 0 | 3 | - |
| 118150 | CPR-Cardio Pulmonary Resuscitation | 2 | 2 | 0 | 3 | - |
| 119110 | Communication Skills | 3 | 0 | 0 | 3 | - |
| 119120 | Introduction to Communication Sociology | 3 | 0 | 0 | 3 | - |
| 119130 | Information Society | 3 | 0 | 0 | 3 | - |
| 120115 | Legal  Culture | 3 | 0 | 0 | 3 | - |

# MAJOR REQUIREMENTS

## (a) Major Requirements (93Cr .Hrs.)

| Course No. | Course Title | Th. | Lab. | Tut. | Cr. Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 610101 | English Writing Skills | 3 | 0 | 0 | 3 | - |
| 610102 | English Listening Skills | 3 | 0 | 0 | 3 | - |
| 610103 | English Speaking Skills | 3 | 0 | 0 | 3 | - |
| 610104 | English Lexis | 3 | 0 | 0 | 3 | |
| 610105 | Arabic Grammar | 3 | 0 | 0 | 3 | 102140 |
| 610106 | English Grammar I | 3 | 0 | 0 | 3 | 610101 |
| 610208 | Advanced English Reading Skills | 3 | 0 | 0 | 3 | |
| 610209 | Advanced English Writing Skills | 3 | 0 | 0 | 3 | 610101 |
| 610210 | English Grammar II | 3 | 0 | 0 | 3 | 610206 |
| 610211 | English –Arabic Translation (I) | 3 | 0 | 0 | 3 | |
| 610212 | Introduction to Linguistics | 3 | 0 | 0 | 3 | |
| 610213 | English –Arabic Translation (II) | 3 | 0 | 0 | 3 | 610211 |
| 610214 | English Language and Culture | 3 | 0 | 0 | 3 | |
| 610215 | Arabic-English Translation (I) | 3 | 0 | 0 | 3 | 610211 |
| 610316 | Arabic-English Translation(II) | 3 | 0 | 0 | 3 | 610215 |
| 610317 | Linguistics II | 3 | 0 | 0 | 3 | 610212 |
| 610318 | Contrastive Analysis | 3 | 0 | 0 | 3 | 610212 |
| 610319 | Language of Media | 3 | 0 | 0 | 3 | 610213 |
| 610320 | Translation of Legal Texts | 3 | 0 | 0 | 3 | 610213 |
| 610321 | Discourse Analysis | 3 | 0 | 0 | 3 | 610317 |
| 610322 | Consecutive Interpreting I | 3 | 0 | 0 | 3 | 610213 |
| 610323 | Introduction to English Literary Genres | 3 | 0 | 0 | 3 | |

| Course No. | Course Title | Th. | Lab. | Tut. | Cr. Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 610324 | Translation of Financial Texts | 3 | 0 | 0 | 3 | 610211 |
| 610325 | Translation Theory | 3 | 0 | 0 | 3 | 610316 |
| 610426 | Linguistics III | 3 | 0 | 0 | 3 | 610317 |
| 610427 | Literary Translation | 3 | 0 | 0 | 3 | 610316 |
| 610428 | Consecutive Interpreting II | 3 | 0 | 0 | 3 | 610322 |
| 610429 | Introduction to Computer Assisted Translation | 3 | 0 | 0 | 3 | 610322 |
| 610431 | Translation Project | 3 | 0 | 0 | 3 | 610325 |
| 610432 | Sociolinguistics | 3 | 0 | 0 | 3 | 610321 |
| 610433 | Training | 3 | 0 | 0 | 3 | Completion of 75 Cr. Hrs. |

## (b) Major Electives (9 Cr. Hrs.)

| Course No. | Course Title | Th. | Lab. | Tut. | Cr. Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 610334 | Critical Theories in Communication & Translation | 3 | 0 | 0 | 3 | 610211 |
| 610335 | French I | 3 | 0 | 0 | 3 | |
| 610336 | Translation for Electronic Media | 3 | 0 | 0 | 3 | |
| 610437 | Translation for specialized press | 3 | 0 | 0 | 3 | - |
| 610438 | French II | 3 | 0 | 0 | 3 | 610335 |
| 610439 | Survey of 20th –Century English Literature | 3 | 0 | 0 | 3 | 610323 |

# Suggested Course sequencing

## FIRST SEMESTER

| Course Code | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Tut | Lab | Cr.Hrs. | |
| 101000 | Orientation | 1 | 0 | 0 | 0 | - |
| 102110 | Islamic Studies | 3 | 1 | 0 | 3 | - |
| 102140 | Communication Skills in Arabic Language | 3 | 0 | 0 | 3 | - |
| 103110-2 | Statistics | 2 | 0 | 2 | 3 | - |
| 104110 | Computer Applications | 2 | 0 | 2 | 3 | - |
| 103120 | Environmental Sciences | 3 | 0 | 0 | 3 | - |
| 610101 | English Writing Skills | 3 | 0 | 0 | 3 | - |
| TOTAL | | 17 | 1 | 4 | 18 | |

## SECOND SEMESTER

| Course Code | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Tut | Lab | Cr.Hrs. | |
| 610102 | English Listening Skills | 3 | 0 | 0 | 3 | - |
| 610103 | English Speaking Skills | 3 | 0 | 0 | 3 | - |
| 610104 | English Lexis | 3 | 0 | 0 | 3 | |
| 610105 | Arabic Grammar | 3 | 0 | 0 | 3 | 102140 |
| 610106 | English Grammar I | 3 | 0 | 0 | 3 | |
| TOTAL | | 15 | 0 | 0 | 15 | |

## THIRD SEMESTER

| Course Code | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Tut | Lab | Cr.Hrs. | |
| 610208 | Advanced English Reading Skills | 3 | 0 | 0 | 3 | - |
| 610209 | Advanced English Writing Skills | 3 | 0 | 0 | 3 | 610101 |
| 610210 | English Grammar II | 3 | 0 | 0 | 3 | 610206 |
| 610211 | English –Arabic Translation (I) | 3 | 0 | 0 | 3 | - |
| xxxxxx | University Elective | 3 | 0 | 0 | 3 | - |
| TOTAL | | 15 | 0 | 0 | 15 | |

## FOURTH SEMESTER

| Course Code | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Tut | Lab | Cr.Hrs. | |
| 610212 | Introduction to Linguistics | 3 | 0 | 0 | 3 | - |
| 610213 | English –Arabic Translation (II) | 3 | 0 | 0 | 3 | 0610211 |
| 610214 | English Language and Culture | 3 | 0 | 0 | 3 | - |
| 610215 | Arabic-English Translation (I) | 3 | 0 | 0 | 3 | 0610211 |
| xxxxxx | University Elective | 3 | 0 | 0 | 3 | - |
| TOTAL | | 15 | 0 | 0 | 15 | |

## FIFTH SEMESTER

| Course Code | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Tut | Lab | Cr.Hrs. | |
| 610316 | Arabic-English Translation(II) | 3 | 0 | 0 | 3 | 610215 |
| 610317 | Linguistics II | 3 | 0 | 0 | 3 | 610212 |
| 610318 | Contrastive Analysis | 3 | 0 | 0 | 3 | 610212 |
| 610319 | Language of Media | 3 | 0 | 0 | 3 | 610213 |
| 610320 | Translation of Legal Texts | 3 | 0 | 0 | 3 | 610213 |
| xxxxxx | University Elective | 3 | 0 | 0 | 3 | - |
| TOTAL | | 18 | 0 | 0 | 18 | |

## SIXTH SEMESTER

| Course Code | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Tut | Lab | Cr.Hrs. | |
| 610321 | Discourse Analysis | 3 | 0 | 0 | 3 | 610317 |
| 610322 | Consecutive Interpreting I | 3 | 0 | 0 | 3 | 610213 |
| 610323 | Introduction to English Literary Genres | 3 | 0 | 0 | 3 | - |
| 610324 | Translation of Financial Texts | 3 | 0 | 0 | 3 | 610211 |
| 610325 | Translation Theory | 3 | 0 | 0 | 3 | 610316 |
| xxxxxx | Major Elective | 3 | 0 | 0 | 3 | - |
| TOTAL | | 18 | 0 | 0 | 18 | |

## SEVENTH SEMESTER

| Course Code | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Tut | Lab | Cr.Hrs. | |
| 610426 | Linguistics III | 3 | 0 | 0 | 3 | 610317 |
| 610427 | Literary Translation | 3 | 0 | 0 | 3 | 610316 |
| 610428 | Consecutive Interpreting II | 3 | 0 | 0 | 3 | 610322 |
| 610429 | Introduction to Computer Assisted Translation | 3 | 0 | 0 | 3 | 610322 |
| xxxxxx | Major Elective | 3 | 0 | 0 | 3 | - |
| TOTAL | | 15 | 0 | 0 | 15 | |

## EIGHTH SEMESTER

| Course Code | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Tut | Lab | Cr.Hrs. | |
| 610431 | Translation Project | 3 | 0 | 0 | 3 | 0610325 |
| 610432 | Sociolinguistics | 3 | 0 | 0 | 3 | 610321 |
| 610433 | Training | 3 | 0 | 0 | 3 | Completion of 75 Hrs |
| xxxxxx | Major Elective | 3 | 0 | 0 | 3 | - |
| TOTAL | | 12 | 0 | 0 | 12 | |

# B.A. in English Language & Translation/Media Translation

## Mission

The Program mission is to participate in meeting the needs of community in providing well-educated individuals whose contribution to society will be beneficial.

## Program Educational Objectives

*The program aims to enable students to*

- acquire competence in translation and communication skills,
- acquire linguistic skills and knowledge and familiarity with the cultures of both languages,
- acquire technological and research knowledge in the field of media translation

## Program Outcomes

*By completing the program successfully the students are expected to*

- demonstrate ability to translate for various media
- apply the required translation strategies in translating media items
- utilize the linguistic skills and the cultural knowledge of both languages

## Admission Requirements

- UAE National High School Certificate with a minimum score of 60% or its equivalent.
- Test of English as a Foreign Language (TOEFL) with a minimum score of 500 or its equivalent.

## Career Opportunities

*Our graduates may take up the following jobs*

- Media Translator
- News Conference Translator
- Legal Translator

## Graduation requirements

The degree of Bachelor in English language and Translation. Media Translation is awarded upon the fulfillment of the following:

- successful completion of 126 credit hours, which normally takes eight semesters,
- a minimum cumulative grade point average CGPA of 2.0.

## Degree requirements

The B.A. degree in English Language and Translation. Media Translation requires completion of 123 Cr. Hrs. distributed according to the following plan:

| Type of Courses | Credit/hour |
|---|---|
| 1. University General Education Requirements | |
| (a) University Required Courses | 15 |
| (b) University Elective Courses | 9 |
| 2. Major Requirements | |
| (a) Major Requirements | 93 |
| (b) Major Electives | 9 |
| Total Credit Hours | 126 |

# University Requirements

## 1. University Compulsory Courses (15 Cr. Hrs.)

| No. | Course No. | Course Title | Cr. Hrs. | Prerequisite |
|-----|-----------|--------------|----------|--------------|
| 1 | 0101000 | Orientation | 0 | None |
| 2 | 0102110 | Islamic Studies | 3 | None |
| 3 | 0102140 | Communication Skills in Arabic | 3 | None |
| 4 | 0104110 | Computer Applications | 3 | None |
| 5 | 0103110 | Statistics | 3 | None |
| 6 | 0103140 | Environmental Sciences | 3 | None |

## 2. University Elective Courses (9 Cr. Hrs)

| Course No. | Course Title | Th. | Lab. | Tut. | Cr. Hrs. | Prerequisite |
|------------|--------------|-----|------|------|----------|--------------|
| 102120 | The Miraculousness of the Holy Koran | 3 | 0 | 0 | 3 | - |
| 103130 | Research Methodology | 3 | 0 | 0 | 3 | - |
| 112110 | Principles of Architecture & Art | 3 | 0 | 0 | 3 | - |
| 112120 | Principles of Interior Design | 3 | 0 | 0 | 3 | - |
| 112130 | Modern Technology and Society | 3 | 0 | 0 | 3 | - |
| 113110 | Internet Concepts | 2 | 2 | 0 | 3 | - |
| 113120 | Introduction to Information Systems | 3 | 0 | 0 | 3 | - |
| 114110 | Economic Concepts | 3 | 0 | 0 | 3 | - |
| 114120 | Entrepreneurship Development | 3 | 0 | 0 | 3 | - |
| 115110 | History of science in Islam | 3 | 0 | 0 | 3 | - |
| 115120 | Scientific pioneering | 3 | 0 | 0 | 3 | - |
| 115130 | General psychology | 3 | 0 | 0 | 3 | - |
| 115140 | Principle of mathematics | 3 | 0 | 0 | 3 | - |
| 115150 | The Art of Expression and writing | 3 | 0 | 0 | 3 | - |
| 115160 | Emirates Society | 3 | 0 | 0 | 3 | - |
| 115170 | Education Technology | 3 | 0 | 0 | 3 | - |
| 117110 | General Chemistry | 2 | 2 | 0 | 3 | - |
| 117120 | Fundamentals of Human Nutrition | 3 | 0 | 0 | 3 | - |
| 117130 | First Aid | 3 | 0 | 0 | 3 | - |
| 103120 | Energy, Water & Environment | 3 | 0 | 0 | 3 | - |
| 117150 | Applications of Remote sensing | 3 | 0 | 0 | 3 | - |
| 118110 | Principles of Ethics | 3 | 0 | 0 | 3 | - |

| Course No. | Course Title | Th. | Lab. | Tut. | Cr. Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 118120 | General Biology | 2 | 2 | 0 | 3 | - |
| 118130 | Oral Health | 3 | 0 | 0 | 3 | - |
| 118140 | General Principles of Epidemiology | 3 | 0 | 0 | 3 | - |
| 118150 | CPR-Cardio Pulmonary Resuscitation | 2 | 2 | 0 | 3 | - |
| 119110 | Communication Skills | 3 | 0 | 0 | 3 | - |
| 119120 | Introduction to Communication Sociology | 3 | 0 | 0 | 3 | - |
| 119130 | Information Society | 3 | 0 | 0 | 3 | - |
| 120115 | Legal  Culture | 3 | 0 | 0 | 3 | - |

# College Requirements

## 3. College Compulsory Courses (93 Cr. Hrs.)

| Course No. | Course Title | Th. | Lab. | Tut. | Cr. Hrs. | Pre-requisite |
|---|---|---|---|---|---|---|
| 610 101 | English Writing Skills | 3 | 0 | 0 | 3 | - |
| 610 102 | English Listening Skills | 3 | 0 | 0 | 3 | - |
| 610 103 | English Speaking Skills | 3 | 0 | 0 | 3 | - |
| 610 104 | English Lexis | 3 | 0 | 0 | 3 | - |
| 610 205 | Arabic Grammar | 3 | 0 | 0 | 3 | 102140 |
| 610 208 | Advanced English Reading Skills | 3 | 0 | 0 | 3 | - |
| 610 209 | Advanced English Writing Skills | 3 | 0 | 0 | 3 | 610101 |
| 610 211 | English-Arabic Translation 1 | 3 | 0 | 0 | 3 | - |
| 610 322 | Consecutive Interpreting 1 | 3 | 0 | 0 | 3 | 620215 |
| 610 325 | Translation Theory | 3 | 0 | 0 | 3 | 620216 |
| 610 334 | Critical Theories in Communication and Translation | 3 | 0 | 0 | 3 | 620215 |
| 610 336 | Translation for Electronic Media | 3 | 0 | 0 | 3 | - |
| 610 428 | Consecutive Interpreting 2 | 3 | 0 | 0 | 3 | 610 322 |
| 610 429 | Introduction to Computer-Assisted Translation | | | | | 620215 |
| 610 432 | Sociolinguistics | 3 | 0 | 0 | 3 | 620 318 |
| 620 101 | Study Skills | 3 | 0 | 0 | 3 | - |
| 620 107 | Advanced English Grammar | 3 | 0 | 0 | 3 | - |
| 620 210 | Introduction to Mass Communication and Public Relations | 3 | 0 | 0 | 3 | - |
| 620 212 | Readings in Mass Communication | 3 | 0 | 0 | 3 | - |
| 620 213 | Culture and Institutions of the English–Speaking World | 3 | 0 | 0 | 3 | - |
| 620 214 | Arabic-English Contrastive linguistics | 3 | 0 | 0 | 3 | - |

| Course No. | Course Title | Th. | Lab. | Tut. | Cr. Hrs. | Pre-requisite |
|---|---|---|---|---|---|---|
| 620 215 | Media Translation (English>Arabic) | 3 | 0 | 0 | 3 | 610 211 |
| 620 216 | Media Translation (Arabic>English) | 3 | 0 | 0 | 3 | - |
| 620 318 | Media Discourse | 3 | 0 | 0 | 3 | - |
| 620 322 | Interactive Multimedia | 3 | 0 | 0 | 3 | 610 211 |
| 620 323 | Advanced Issues in Translation Theory | 3 | 0 | 0 | 3 | 610 325 |
| 620 352 | Screen Translation | 3 | 0 | 0 | 3 | 610 336 |
| 620 426 | Training | 3 | 0 | 0 | 3 | 75 HRS |
| 620 427 | Media Law and Ethics | 3 | 0 | 0 | 3 | - |
| 620 430 | Project in Translation for Media | 3 | 0 | 0 | 3 | 620 323 |
| 620 431 | Mass Media in the UAE and the Gulf | 3 | 0 | 0 | 3 | 620 427 |

## 4. College Elective Courses (9 Cr. Hrs.)

| Course No. | Course Title | Cr. Hrs. | Prerequisite |
|---|---|---|---|
| 0610320 | Translation of Legal Texts | 3 | - |
| 0610321 | Discourse Analysis | 3 | - |
| 0610324 | Translation of Financial Texts | 3 | - |
| 0620435 | Special Topics in Communication and Public Relations | 3 | - |
| 0620436 | Arab and International Communication | 3 | - |

# Suggested Four-Year Study Plan

## FIRST SEMESTER

| Course Code | Course Name | Credit Hours | | | | Pre-requisite |
|---|---|---|---|---|---|---|
| | | Lec | Lab | Tut | Cr.Hrs. | |
| 101 000 | Orientation | 1 | 0 | 0 | 0 | - |
| 102 110 | Islamic Culture | 3 | 0 | 1 | 3 | - |
| 102 140 | Communication Skills in Arabic Language | 3 | 0 | 0 | 3 | - |
| 103 110-2 | Statistics | 2 | 2 | 0 | 3 | - |
| 103 120 | Environmental Science | 3 | 0 | 0 | 3 | - |
| 104 110 | Computer Applications | 2 | 2 | 0 | 3 | - |
| 620 101 | Study Skills | 3 | 0 | 0 | 3 | - |
| TOTAL | | 16 | 4 | 1 | 18 | |

## SECOND SEMESTER

| Course Code | Course Name | Credit Hours | | | | Pre-requisite |
|---|---|---|---|---|---|---|
| | | Lec | Tut | Lab | Cr.Hrs. | |
| 610 101 | English Writing Skills | 3 | 0 | 0 | 3 | - |
| 610 102 | English Listening Skills | 3 | 0 | 0 | 3 | - |
| 610 103 | English Speaking Skills | 3 | 0 | 0 | 3 | - |
| 610 104 | English Lexis | 3 | 0 | 0 | 3 | - |
| 610 105 | Arabic Grammar | 3 | 0 | 0 | 3 | 102 140 |
| 620 107 | Advanced English Grammar | 3 | 0 | 0 | 3 | - |
| TOTAL | | 18 | 0 | 0 | 18 | |

## THIRD SEMESTER

| Course Code | Course Name | Credit Hours | | | | Pre-requisite |
|---|---|---|---|---|---|---|
| | | Lec | Tut | Lab | Cr.Hrs. | |
| 610 208 | Advanced English Reading Skills | 3 | 0 | 0 | 3 | - |
| 610 209 | Advanced English Writing Skills | 3 | 0 | 0 | 3 | 610 101 |
| 620 210 | Introduction to Mass Communication and Public Relations | 3 | 0 | 0 | 3 | - |
| 610 211 | English-Arabic Translation | 3 | 0 | 0 | 3 | - |
| 620 212 | Readings in Mass Communication | 3 | 0 | 0 | 3 | - |
| xxx xxx | University Elective Course | 3 | 0 | 0 | 3 | - |
| TOTAL | | 18 | 0 | 0 | 18 | |

## FOURTH SEMESTER

| Course Code | Course Name | Credit Hours | | | | Pre-requisite |
|---|---|---|---|---|---|---|
| | | Lec | Tut | Lab | Cr.Hrs. | |
| 620 213 | Culture and Institutions of the English–Speaking World | 3 | 0 | 0 | 3 | - |
| 620 214 | Arabic-English Contrastive Linguistics | 3 | 0 | 0 | 3 | - |
| 620 215 | Media Translation (English>Arabic) | 3 | 0 | 0 | 3 | 610 211 |
| 620 216 | Media Translation (Arabic>English) | 3 | 0 | 0 | 3 | - |
| xxx xxx | University Elective Course | 3 | 0 | 0 | 3 | -- |
| TOTAL | | 15 | 0 | 0 | 15 | |

## FIFTH SEMESTER

| Course Code | Course Name | Credit Hours | | | | Pre-requisite |
|---|---|---|---|---|---|---|
| | | Lec | Tut | Lab | Cr.Hrs | |
| 620 318 | Media Discourse | 3 | 0 | 0 | 3 | 620 215 |

| Course Code | Course Name | Credit Hours | | | | Pre-requisite |
|---|---|---|---|---|---|---|
| 610 322 | Consecutive Interpreting 1 | 3 | 0 | 0 | 3 | 620215 |
| 610 325 | Translation Theory | 3 | 0 | 0 | 3 | 620 216 |
| 610 334 | Critical Theories in Communication and Translation | 3 | 0 | 0 | 3 | 620215 |
| xxx xxx | University Elective Course | 3 | 0 | 0 | 3 | |
| TOTAL | | 15 | 0 | 0 | 15 | |

## SIXTH SEMESTER

| Course Code | Course Name | Credit Hours | | | | Pre-requisite |
|---|---|---|---|---|---|---|
| | | Lec | Tut | Lab | Cr.Hrs | |
| 610 336 | Translation for Electronic Media | 3 | 0 | 0 | 3 | - |
| 610 428 | Consecutive Interpreting 2 | 3 | 0 | 0 | 3 | 610 322 |
| 610 429 | Introduction to Computer-Assisted     Translation | 3 | 0 | 0 | 3 | - |
| 610 432 | Sociolinguistics | 3 | 0 | 0 | 3 | - |
| xxx xxx | Major Elective Course | 3 | 0 | 0 | 3 | |
| | TOTAL | 15 | 0 | 0 | 15 | |

## SEVENTH SEMESTER

| Course Code | Course Name | Credit Hours | | | | Pre-requisite |
|---|---|---|---|---|---|---|
| | | Lec | Tut | Lab | Cr.Hrs | |
| 620 322 | Interactive Multimedia | 3 | 0 | 0 | 3 | 610211 |
| 620 323 | Advanced Issues in Translation Theory | 3 | 0 | 0 | 3 | 610 325 |
| 620 352 | Screen Translation | 3 | 0 | 0 | 3 | 610336 |
| 620 426 | Training | 3 | 0 | 0 | 3 | 75 HRS |
| XXXXXX | Major Elective Course | 3 | 0 | 0 | 3 | |
| | TOTAL | 15 | 0 | 0 | 15 | |

## EIGHTH SEMESTER

| Course Code | Course Name | Credit Hours | | | | Pre-requisite |
|---|---|---|---|---|---|---|
| | | Lec | Tut | Lab | Cr.Hrs | |
| 620 427 | Media Law and Ethics | 3 | 0 | 0 | 3 | 620 318 |
| 620 430 | Project in Translation for Media | 3 | 0 | 0 | 3 | 620 323 |
| 620 431 | Mass Media in the UAE and the Gulf | 3 | 0 | 0 | 3 | 620 427 |
| xxx xxx | Major Elective Course | 3 | 0 | 0 | 3 | |
| | TOTAL | 12 | 0 | 0 | 12 | |

# Course Descriptions

### 610101 English Writing Skills (3-0-0-3)

The course is designed to develop students' proficiency in writing academic essays using rhetorical modes such as analysis, classification, comparison and contrast. The course focuses on organization and logical development as well as lexical accuracy. A special emphasis is put on thesis statements and coherence.

### 610 102 English Listening Skills (3-0-0-3)

This course is designed for advanced students of English as a Foreign Language. The course uses lectures and readings on topics of universal interest in the fields of anthropology, history, sociology, communication and biology which provide stimulating content-based springboards for developing listening comprehension, note taking and academic study skills.

*Pre-requisite: None*

### 610 103 English Speaking Skills (3-0-0-3)

This course aims at expanding students' oral communication skills and fluency in using appropriate verbal and nonverbal language and conversation management techniques. Students are given ample opportunities to express their ideas (orally) in a variety of social, business and academic situations.

*Pre-requisite: None*

### 610 208 Advanced English Reading Skills (3-0-0-3)

In this course, students will examine extensive readings in a variety of styles. The vocabulary in the readings includes words students typically encounter during their university study. Students will be required to read articles and extract information from various forms of charts, graphs and illustrations.

*Pre-requisite: None*

### 610 104 English Lexis (3-0-0-3)

This course is designed to improve students' English vocabulary and help them learn how to use them in context. Strategies for enlarging students' vocabulary, organizing a vocabulary notebook and revising vocabulary are presented. Practice in the use of dictionaries is also given. Vocabulary-related concepts such as collocation, connotation, idioms, phrasal verbs, and some theme-based vocabulary are also introduced.

*Pre-requisite: None*

### 610 105 Arabic Grammar (3-0-0-3)

This course deals with the study of al-iaraab and al-binaa in Arabic in addition to the following topics: reasons for establishing grammar science, study of sentences and styles, types of sentences in Arabic and their significance, the Five Verbs, the 'Weak Verbs,' Active-passive relations and all their configurations, and Arabic numbers.

*Pre-requisite: 102 140*

### 610 106 English Grammar (I) (3-0-0-3)

This course is designed to help students at an intermediate level improve their accuracy and extend their range of expression. The course focuses on the grammatical problems encountered by students and encourages them to find their own answers. There are activities at each step, using authentic written and spoken data. Some of the concepts and ideas introduced in this course will be given more attention in "English Grammar II." Pre-requisite:610 101

## 620107 Advanced English Grammar (3-0-0-3)

This course is designed to introduce more features of English grammar appropriate to an upper-intermediate level of study with challenging exercises that engender creative, independent use of target structures. It concentrates on main lexical categories and grammatical categories. Other topics include sentences and their parts, subordination and coordination, etc.

*Pre-requisite: None*

## 610208 Advanced English Reading Skills (3-0-0-3)

In this course, students will examine extensive readings in a variety of styles. The vocabulary in the readings includes words students typically encounter during their university study. Students will be required to read articles and extract information from various forms of charts, graphs and illustrations.

*Pre-requisite: None*

## 610209 Advanced English Writing Skills (3-0-0-3)

This course builds upon the skills acquired in "English Writing Skills" to further develop students' critical thinking and academic writing competencies. The course devotes a good part of the semester to the skills of writing summaries, critiques, and syntheses; paraphrasing and using quotations. It then leads students through the process of writing a research paper.

*Pre-requisite: 610 101*

## 610 210 English Grammar (II) (3-0-0-3)

This course is designed to introduce more features of English grammar appropriate to an upper-intermediate level of study with challenging exercises that engender creative, independent use of target structures. It concentrates on main lexical categories and grammatical categories. Other topics include sentences and their parts, subordination and coordination, etc.

*Pre-requisite: 610 106*

## 610 211 English-Arabic Translation I (3-0-0-3)

This course is designed to equip students with the basic skills of translation with special focus on translating from English into Arabic. It covers various registers including social, scientific and others.

*Pre-requisite: None*

## 610 212 Introduction to Linguistics (3-0-0-3)

This course introduces students to the basic concepts and issues in linguistics, and investigates the nature of human language and its main features. It also familiarizes them with the procedures of analyzing a language at various phonetic and phonological levels taking English as an example.

*Pre-requisite: None*

## 610 213 English-Arabic Translation II (3-0-0-3)

This course is a continuation of English-Arabic Translation I. It is designed to further students' knowledge of the various translation strategies and their ability to apply them to various English text genres.

*Pre-requisite: 610 211*

## 610 214 English Language and Culture (3-0-0-3)

This course offers students an opportunity to learn about culture and daily life in countries where English is spoken as a first language. It explores topics such as geography and history, traditions and superstitions, fashion, food and drink, law and order, music and sport from the point of view of young people. Students are encouraged to compare their own culture to that in Britain, Ireland, Canada, the US, Australia and New Zealand.

*Pre-requisite: None*

## 610 215 Arabic-English Translation I (3-0-0-3)

This course is designed to equip students with the basic skills of translation with special focus on translating from Arabic into English. It covers selected text genres for translation including social, scientific, etc.

*Pre-requisite: 610 211*

## 610 316 Arabic- English Translation II (3-0-0-3)

This course is a continuation of the course Arabic – English Translation I and is designed to further students' knowledge and ability to apply the various translation strategies when faced with Arabic texts.

*Pre-requisite: 610 215*

## 0610 317 Linguistics II (3-0-0-3)

This course is a continuation of Introduction to Linguistics. Emphasis will be placed on morphology and syntax. The course covers the core areas of the subject: words and sentences, word classes, word structure, affixes, inflectional and erivational paradigms, immediate constituents of morphemes, conditioning (phonological and morphological), processes of word formation, basic sentence patterns, noun and verb phrases, parts of speech modification, etc.

*Pre-requisite: 610 212*

## 610 318 Contrastive Analysis (3-0-0-3)

This course provides students with some insights into the differences between English and Arabic at the phonological, morphological, syntactic, semantic and discourse levels. It further familiarizes students with the methodology of analyzing errors made by Arabic speakers in their attempts to learn English.

*Pre-requisite: 610 212*

## 610 319 Language of Media (3-0-0-3)

This course introduces students to the linguistic varieties used in various media. It aims to develop a reasonable command of the language of media. It also offers students the opportunity to develop an understanding of cultural differences between English and Arabic and how to tackle them when translating. Translation strategies and media skills are given a reasonable emphasis.

*Pre-requisite: 610 213*

## 610 320 Translation of Legal Texts (3-0-0-3)

This course develops students' knowledge of legal terms and matters on an international basis, and explores such topics as pollution, maritime law, civil rights, with translation of key documents. It also gives students practice in the translation of contracts from English into Arabic. The emphasis is on the overall structure of contracts and their lexical features. Pre-**requisite: 610 213**

## 610 321 Discourse Analysis (3-0-0-3)

This course introduces students to concepts in discourse analysis such as the definition of discourse analysis, text and context, schema theory speech acts, relevance theory, politeness, conversation analysis, cohesion and coherence and the differences between spoken English and written discourse.

*Pre-requisite: 610 317*

## 610 322 Consecutive Interpreting I (3-0-0-3)

This course is designed to provide students with the skills of content analysis, note-taking techniques, public speaking, presentation skills, sight translation and other skills pertinent to consecutive interpreting from English to Arabic. It is also designed to help students use standard methods of recording information when listening to source language texts. The course also aims at raising students'

awareness of the differences between the spoken and the written mode.

*Pre-requisite: 610 213*

## 610 323 Introduction to English Literary Genres (3-0-0-3)

This course introduces students to the study of English literary genres: fiction, drama and poetry, giving them insights into the nature of literary discourse. It develops the language skills and critical thinking necessary for analyzing and appreciating English literature and culture.

*Pre-requisite: None*

## 610 324 Translation of Financial Texts (3-0-0-3)

This course offers students an opportunity to understand the nature of financial texts and the related translation strategies which will help them produce cohesive translated Arabic texts. It provides students with reasonable financial and linguistic knowledge and skills deemed essential for translators of financial texts.

*Pre-requisite: 610 211*

## 610325 Translation Theory (3-0-0-3)

This course addresses itself to issues in translation theory. It deals with equivalence and context as major concepts in translation, and discusses different types and methods of translation from literal to free translations. It also deals with naturalization, cultural approximation and descriptive translation as major translation strategies. Further, it discusses certain aspects of translation from English into Arabic.

*Pre-requisite: 610316*

## 610 426 Linguistics III (3-0-0-3)

This course introduces students to linguistic notions which have immediate bearing on translation. Topics include semantics, pragmatics and stylistics. It starts with a review of basic semantic concepts notably reference, denotation, connotation, sense relations, and the role of semantics in the study of language. The course also deals with semantic fields and various types of meaning. The students will also be involved in the study of the degree of lexical equivalence in synonymy, quasi-synonymy, polysemy, etc.

*Pre-requisite: 610 317*

## 610 427 Literary Translation (3-0-0-3)

The course introduces students to the nature and problems of literary translation based on English texts from different periods and genres to highlight such issues as the nature of equivalence, English literary genres, loss and compensation, the translation of metaphors, style, culture, ideology and ethics.

*Pre-requisite: 610 316*

## 610 428 Consecutive Interpreting II (3-0-0-3)

This course is mainly geared towards developing students' skills in consecutive interpreting from English to Arabic, making full use of the skills they have already acquired from the introduction to Consecutive Interpreting.

*Pre-requisite: 610 322*

## 610 429 Introduction to Computer-Assisted Translation (3-00-3)

This course introduces students to the realm of computer-assisted translation (CAT), including the original and the latest techniques and technology. It will examine basic problems and approaches, and emphasize the way in which CAT research relies on ideas drawn from, and progress made

in, other areas such as translation theory and theoretical linguistics.

*Pre-requisite: 610 322*

## 610 431 Translation Project (3-0-0-3)

This course aims at giving students the chance to gain hands-on experience. Students choose a text of 5,000-8,000 words on an appropriate subject and carry out an annotated translation preferably from English into Arabic or from Arabic into English. Furthermore, they investigate translation problems emanating from their study of the society they live in.

*Pre-requisite: 610 325*

## 610432 Sociolinguistics (3-0-0-3)

This course is designed to familiarize students with the cultural and social settings of the English Language. The course will introduce students to the basic concepts and approaches involved in the study of the links between language and society. It provides students with theoretical and practical knowledge about linguistic variation and relates it to social variables. Students will also learn how and why language varies as it is adapted to suit the subject matter, medium, purpose or attitude.

*Pre-requisite: 620 321*

## 610 433 Training (3-0-0-3)

This course is designed to give students the opportunity for practical training in their prospective careers. Students are prepared to work as professionals, practicing interpreting and translation of various kinds, and carrying out tasks under supervision and guidance from academic and field supervisors.

*Pre-requisite: Completion of 75 Credit Hours*

## 610 334 Critical Theories in Communication and Translation (3-0-0-3)

The course surveys selected critical theories of mass communication and translation. It covers various approaches to study the nature and the impact of ideology in mass media. It specifically emphasizes sociological and philosophical bases in order to understand mechanisms of communication in multiple contexts. Among critical theories, the course discusses Marxism, psychoanalysis, structuralism, semiology, cultural studies, post-colonialism and postmodernism.

*Pre-requisite: 610 211*

## 610 335 French I (3-0-0-3)

This course targets the fundamental language needs of students and gives them the necessary tools for immediate communication at this beginner level. The four language skills are tackled in a variety of exercises and the related language functions introduced in listening comprehension are practiced in the speaking class with a particular focus on pronunciation and communication. Student CD's, the multimedia laboratory, the language resources room and the Internet are used to develop learner autonomy and communicative competence.

*Pre-requisite: None*

## 610 336 Translation for Electronic Media (3-0-0-3)

This course is designed for students who are interested in audio/visual communication and translation. It provides translation strategies, helping students to translate between Arabic and English in radio and TV. There is a functional element to the course. The multimedia laboratory, the language resource room, CD-ROMs, the Internet and other virtual technologies are used to develop learners' translation skills.

*Pre-requisite: None*

## 610 437 Translation for Specialized Press (3-0-0-3)

This course deals with the translation of items taken from press tackling special issues, for example women, cars, fishing, cooking, etc. It also covers items taken from bulletins and other regular press releases made by international, regional and local organizations.

*Pre-requisite: None*

## 610 438 French II (3-0-0-3)

This course continues from French 1. It targets the fundamental needs of students at this level and gives them the necessary tools for immediate oral and written communication. This is achieved through a gradual progression approach. The four language skills are tackled in a variety of exercises and the related language functions introduced in listening comprehension are practiced in the speaking class with a particular focus on pronunciation and communication. Student CD's, the multimedia laboratory, the language resources room and the Internet are used to develop the learner's autonomy and communicative competence.

*Pre-requisite: 610 335*

## 610 439 Survey of Twentieth Century Literature in English (3-0-0-3)

This course deals with aspects of British and American literature which reflect the events that had shaped twentieth-century literature and consciousness. It focuses on prominent writers who dealt with the concerns of the period: World War I, imagism, industrialization, modernism and the absurd.

*Pre-requisite: 610 323*

## 620101 Study Skills (3-0-0-3)

This course covers the skills which relate directly to the needs of most university students: improving reading efficiency, taking notes, preparing for seminars research techniques, how to organize and present essay, and preparing for examinations

*Pre-requisite: None*

## 620210 Introduction to Mass Communication and Public Relation (3-0-0-3)

The course is designed to provide students with a basic understanding of mass communication and public relations concepts, processes, historical development, practices and effects.   It also surveys the history of mass media forms (print, radio, TV, Cinema and internet) and their impact on human communication..

*Pre-requisite: None*

## 620212 Readings in Mass Communication (3-0-0-3)

This course is a basic introduction for familiarizing students with media texts in English in the fields of communication, journalism, radio, and TV. The course is concerned with the products of Western school in the media with various fields and branches especially American and British.

*Pre-requisite: None*

## 0620213 Culture & Institutions of the English – Speaking World (3-0-0-3)

This course offers an opportunity for students to learn about culture and daily life in the different countries around the world where English is spoken as first language. It explores topics such as geography and history, traditions and superstitions, fashion, food and drink, law and order, music and sport from the point of view of young people, and students are encouraged to compare their own cultural experience with that in Britain, Ireland, Canada, the USA, Australia and New Zealand.

*Pre-requisite: None*

## 620215 Media Translation ( English>Arabic) (3-0-0-3)

This course aims at providing students with basic strategies needed in translating various media texts to enable them to produce cohesive and coherent translated texts. It is designed  to improve the students' general knowledge, linguistic and  technological  skills in the field of communication.

*Pre-requisite: 610211*

## 620216 Media Translation (Arabic>English) (3-0-0-3)

This course aims at developing the students' skills in translating from Arabic into English with special emphasis on the field of media. The course includes the translation of more specialized texts on subjects such as economics, sports, current affairs, etc. It also includes the translation of foreign newspaper editorials, opinion articles. Students will also be trained to translate media texts taken from internet websites.

*Pre-requisite: None*

## 0620318 Media Discourse (3-0-0-3)

This course introduces students to the linguistic varieties used in the various media. It aims at developing a reasonable command of the critical analysis of  the language of media. It also offers students the opportunity to develop an understanding of cultural differences between English and Arabic and how to tackle them when translating. Translation strategies and media skills are given a reasonable emphasis.

*Pre-requisite: None*

## 0620 322 Interactive Multimedia (3-0-0-3)

This course is designed to enable students to understand and apply the interactive multimedia technology in translating into Arabic. The course focuses more on proper use of modern interactive technologies in English-Arabic Multimedia translation. The Internet laboratory and the interactive Multimedia    studio are utilized to develop the students technical skills

*Pre-requisite: 610211*

## 620 323 Advanced Issues in Translation Theory (3-0-0-3)

This course focuses on the need to provide students with the required research knowledge and skills in inter media translation and its theories. This course exposes  students to a combination of research in translation theory   and media translation    practice in issues like gender and number., culture, localization, globalization, etc.

*Pre-requisite: 610325*

## 620 352 Screen Translation (3-0-0-3)

This course deals with the translation between Arabic and English of visual media items into print material. These include the translation of TV documentaries and series, cinema and TV films, feature films and news items and commentaries on TV. The course is an initial step towards providing students with the tools required in specialized media translation.

*Pre-requisite: 610336*

## 620426 Training (3-0-0-3)

This course is designed to give students the opportunity for practical training in their prospective careers. The students are prepared to work as professionals practicing interpreting and media translation of various kinds and tasks under supervision and guidance from both the academic and the field supervisors..

*Pre-requisite: Completion of 75 Credit Hours*

## 620427 Media Law & Ethics (3-0-0-3)

This course deals with regulations and ethics that control media systems and profession, such as licensing , censorship , media criminal and civil responsibility right of personal reply, retraction and codes of ethics . The course reviews in detail models of media laws.

*Pre-requisite: None*

## 620430 Project in Translation for Media (3-0-0-3)

This course aims at giving the students the chance to gain hands on experience media and translation. The students should choose a text of about 5000-8000 words on an appropriate media subject and carry out an annotated translation preferably from English into Arabic.. Furthermore, they should investigate translation problems emerging from their media studies of the society they live in..

*Pre-requisite: 620323*

## 620335 Special Topics in Communication and Public Relations (3-0-0-3)

This course offers an experimental and temporary base to explore topics not included in the established curriculum. These courses vary from one semester to another to cover the most recent developments in communication, whether technological and/or social. Students are required to take part in data collection and discussions of communication-related topics.

*Pre-requisite: None*

## 620431 Mass Media in the UAE and the Gulf (3-0-0-3)

The course examines historical, political, and cultural conditions under which mass media has emerged in the region. It also discusses the different development phases of the media; particularly the main big newspapers, radio and TV stations, news agencies, etc.

*Pre-requisite: 620427*

## 620436 Arab and International Communication (3-0-0-3)

This course provides students with information on the history, birth, and development of Arab and foreign methods of communication. It also discusses the historical dimension of the Arab and international media and its methods, formal institutions, international resources for global communication and the role of space satellites in communication operations with emphasis on modern international media aspects such as media globalization and media methods in a society of information.

*Pre-requisite: None*

# List of Faculty

| Name | Rank | Specialization | degree | University | year |
|---|---|---|---|---|---|
| Al Khaja Khalid Abdul Rahman | Associate Professor | Applied Linguistics | PhD | Salford University - UK | 1989 |
| Al Sahab Sahab Abdul Aziz | Associate Professor | Applied Linguistics | PhD | Baghdad University- Iraq | 1998 |
| Safi El Jil Abdelaziz | Associate Professor | Arabic Language and its Literature | PhD | Um Al Qura University -Saudi Arabia | 1995 |
| Henidi Khalid Abdu Gawad | Associate Professor | Radio & Television | PhD | Cairo University- Egypt | 1994 |
| Al-Hassan Aboudi Jawad | Associate Professor | Linguistics and Translation | PhD | Salford University- UK | 1986 |
| Bin Bouza Saleh | Associate Professor | Information and Mass Communication Science | PhD | Algiers University- Algeria | 1993 |
| Al Tameemi Abdullah | Assistant Professor | Mass Media | PhD | Al Azhar University -Egypt | 2003 |
| Salama Hussam Ali | Assistant Professor | Information and Mass Communication | PhD | Zaqaziq University- Egypt | 1999 |
| Al-Nuaimi Abdulhaq Basher | Assistant Professor | English Language and Linguistics | PhD | Mosul University- Iraq | -2003 |
| Danani AbdulMalik | Assistant Professor | Journalism | PhD | Mustansiriya University- Iraq | 2004 |
| Abdullatif Tarek Ismail | Assistant Professor | Graphic Design | PhD | Helwan University Braunschweig University- Egypt-Germany | 1999 |
| Al Taee Mustafa Hameed | Assistant Professor | Mass Media | PhD | Baghdad University- Iraq | 1998 |
| Al-Nassery Shaaban Hasan | Assistant Professor | Journalism | PhD | Baghdad University- Sudan | 2005 |
| Osman Safa Mahmoud | Assistant Professor | Radio & Television | PhD | Cairo University- Egypt | 2007 |
| Al-Delimi Dawood Salman Matar | Assistant Professor | Mass Communication | PhD | Baghdad University - Sudan | 1996 |

| Name | Rank | Specialization | degree | University | year |
|---|---|---|---|---|---|
| Al Khaja Khalid Abdul Rahman | Associate Professor | Applied Linguistics | PhD | Salford University - UK | 1989 |
| Dawood Abdu Mohamed | Assistant Professor | Mass Media and Public Relations | PhD | International African University- Sudan | 2007 |
| Maryam AlAjami Mohammed | Assistant Professor | Mass Media | PhD | Omdurman University- Sudan | 2007 |
| Bin Thalab Abdul Raouf Abdulla | Lecturer | TESOL | MA | Moray House College of Education- UK | 1990 |
| Lazim Hashim | Lecturer | TEFL | MA | Basrah University- Iraq | 1981 |
| Hamid Saeed Mohammed | Lecturer | Radio & Television | MA | Omdurman Islamic University- Sudan | 2004 |
| Name | Rank | Specialization | degree | University | year |
| Abbass Yass Khudier | Professor | Mass Communication | PhD | Budapest University- Hungary | 1985 |
| Almahi Abdullah | Assistant Professor | English Literature | PhD | Exeter University- UK | 1986 |
| Hussein Basher Salih | Associate Professor | Mass Communication | PhD | Ohio University- USA | 1986 |
| Skr Ahmed | Assistant Professor | Graphic Design | PhD | Ain Shams University= Egypt | 2003 |
| Abdelwahab Abdel Basit | Assistant Professor | Mass Communication | PhD | Azhar University- Egypt | 2003 |
| El Sayed Salim Shayma | Assistant Professor | Public Relations | PhD | Ain Shams University- Egypt | 2005 |
| Adam Yassien | Assistant Professor | Mass Communication | PhD | Omdurman University- Sudan | 2007 |

# COLLEGE OF
# PHARMACY & HEALTH SCIENCES

The College of Pharmacy and Health Sciences (COPHS) was founded in accordance with the university's policy of establishing an innovative medical environment which embraces health sciences, i.e. dentistry, medical technology, nursing, etc., in addition to pharmacy. The establishment of COPHS is intended to meet the demand for pharmacists in hospitals and community pharmacies, and to provide man-power for the increasing number of private pharmacies and the growing pharmaceutical industry in the UAE and the region.

# Mission

The mission of the College of Pharmacy and Health Sciences is to create an environment that promotes excellence in pharmaceutical education, practice and research. It is committed to the continuous improvement of its programs to keep abreast with the rapid advances in the profession of pharmacy and the provision of pharmaceutical care. It strives to prepare students to become competent, reliable and ethical health care professionals.

# Degree Programs

The College offers the following two programs:

1. Bachelor of Pharmacy (BPharm)
2. Master of Science in Pharmacy

# Facilities

## Laboratory Facilities

The college has several laboratories, covering the various branches of pharmaceutical science, which have the latest equipment. These laboratories have the instrumental apparatus which will enable students to gain sound practical skills as well as integrate theoretical study with real practical methods and techniques.

## Computer Facilities

The college receives full technical support and assistance from the University Computer Center which provides its services round the year to administrators, staff and students. The computer laboratories at the center are well-equipped and are available for use throughout the day; they are administered by trained staff who assist in solving problems and answering queries.

# Bachelor of Pharmacy

## Program Objectives

1. To prepare students for the practice of pharmacy by providing them with the scientific background, clinical and technical skills that they will need to successfully complete their program of study.

2. To provide an educational environment that enables students to acquire the behavior, and moral and ethical attitudes they will need to practice the profession competently and ethically.

## Program Outcomes

The intended outcomes of the program are that students will be able to:

1. Demonstrate knowledge of the basic and clinical science background of pharmacy practice

2. Implement the processes of compounding and dispensing medications, interpreting prescription orders and applying calculations related to the compounding and dispensing of medicines

3. Demonstrate knowledge of the basic skills and techniques involved in drug manufacture and development, drug design an screening and quality assurance of pharmaceutical products

4. Demonstrate knowledge of the rational use of herbal supplements, fundamentals of phytotherapy and the hazards of poisonous and abused natural products

5. Participate in patient care by influencing optimal drug choice and dosage through effective communication with health care providers and patients

6. Display legal, moral and ethical attitudes and behaviors consistent with the standards of the profession

7. Demonstrate the ability to lead and to function both independently and as a member of a team

8. Develop self-learning skills, problem solving and critical thinking abilities and the ability to retrieve, evaluate and manage information in the literature

9. Demonstrate the ability to write clear and organized reports, and to present oral communications

10. Develop the necessary skills in information use and management to educate health care professionals and the public in optimal drug therapy

## Admission Requirements

Prospective candidates seeking admission to the Bachelor of Pharmacy (BPharm) program should fulfill the following requirements:

- Secondary school certificate (science section), or its equivalent, with a minimum grade of 70 percent, approved by the UAE Ministry of Education
- A score of 500 or higher in the TOEFL English proficiency test, or the equivalent
- Personal interview
- Demonstration of good conduct and maturity

*Please see the university admission requirements for more detail.*

## Career Opportunities

The curriculum is designed and continuously improved with the aim of preparing graduates to be able to effectively deliver pharmaceutical services in the private sector as well as in governmental agencies. Pharmacy graduates have

the opportunity to work in different placements related to pharmacy profession:

- Community pharmacies
- Hospital pharmacies
- Pharmaceutical industry
- Pharmaceutical scientific laboratories
- Wholesale drug stores
- Medical representations
- Pharmaceutical administration
- Food control and analysis
- Pharmaceutical education and research

| Type of Courses | Credit/hour |
|---|---|
| 1. University General Education Requirements | |
| (a) University Required Courses | 15 |
| (b) University Elective Courses | 9 |
| 2. College Requirements | |
| (a) College Required Courses | 108 |
| (b) College Required Training Courses | 15 |
| (c) College Electives Courses | 3 |
| Total Credit Hours | 150 |

# Graduation Requirements

The degree of Bachelor of Pharmacy (BPharm) will be awarded after successful completion of least one hundred and fifty credit hours (150 Credit Hours), including the university requirement courses. The period of study normally takes eight regular semesters and two-three summer semesters. In addition, every student should have field training in community pharmacies, hospital pharmacies and pharmaceutical industry of not less than 600 contact hours which is equivalent to 15 credit hours. The minimum cumulative grade point average (CGPA) for graduation is 2.0.

# Degree Requirements

The pharmacy student will be awarded the degree of Bachelor of Pharmacy (BPharm) after the successful completion of at least 150 Credit Hours, including the university requirement courses, distributed according to the following plan:

# UNIVERSITY GENERAL EDUCATION REQUIREMENTS

## (a) University Required Courses ( 15 Cr.Hrs.)

| Course No. | Course Title | Th. | Lab. | Tut. | Cr. Hrs. | Prerequisite |
|------------|--------------|-----|------|------|----------|--------------|
| 101000-0 | Orientation | 1 | 0 | 0 | 0 | - |
| 102110-0 | Islamic Culture | 3 | 0 | 1 | 3 | - |
| 102140-0 | Communication Skills in Arabic Language | 3 | 0 | 0 | 3 | - |
| 103110-1 | Statistics | 2 | 2 | 0 | 3 | - |
| 103120 | Environmental Sciences | 3 | 0 | 0 | 3 | - |
| 104110-0 | Computer Applications | 2 | 2 | 0 | 3 | - |

## (b) University Elective Courses ( 9 Cr.Hrs.)

| Course No. | Course Title | Th. | Lab. | Tut. | Cr. Hrs. | Prerequisite |
|------------|--------------|-----|------|------|----------|--------------|
| 102120 | The miraculousness of the holy Koran | 3 | 0 | 0 | 3 | - |
| 103130 | Research Methodology | 3 | 0 | 0 | 3 | - |
| 112110 | Principles of Architecture & Art | 3 | 0 | 0 | 3 | - |
| 112120 | Principles of Interior Design | 3 | 0 | 0 | 3 | - |
| 112130 | Modern Technology and Society | 3 | 0 | 0 | 3 | - |
| 113110 | Internet Concepts | 3 | 0 | 0 | 3 | - |
| 113120 | Introduction to Information Systems | 3 | 0 | 0 | 3 | - |
| 114110 | Economic Concepts | 3 | 0 | 0 | 3 | - |
| 114120 | Entrepreneurship Development | 3 | 0 | 0 | 3 | - |
| 115110 | History of science in Islam | 3 | 0 | 0 | 3 | - |
| 115120 | Scientific pioneering | 3 | 0 | 0 | 3 | - |
| 115130 | General psychology | 3 | 0 | 0 | 3 | - |
| 115140 | Principle of mathematics | 3 | 0 | 0 | 3 | - |
| 115150 | The Art of Expression and writing | 3 | 0 | 0 | 3 | - |
| 115160 | Emirates Society | 3 | 0 | 0 | 3 | - |
| 115170 | Education Technology | 3 | 0 | 0 | 3 | - |
| 117110 | General chemistry | 3 | 0 | 0 | 3 | - |
| 117120 | Fundamental of Human Nutrition | 3 | 0 | 0 | 3 | - |
| 117130 | First Aid | 3 | 0 | 0 | 3 | - |
| 117140 | Energy, Water & Environment | 3 | 0 | 0 | 3 | - |
| 117150 | Applications of Remote sensing | 3 | 0 | 0 | 3 | - |
| 118110 | Principles of Ethics | 3 | 0 | 0 | 3 | - |
| 118120 | General Biology | 3 | 0 | 0 | 3 | - |

| Course No. | Course Title | Th. | Lab. | Tut. | Cr. Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 118130 | Oral Health | 3 | 0 | 0 | 3 | - |
| 118140 | General principles of Epidemiology | 3 | 0 | 0 | 3 | - |
| 118150 | CPR-Cardio Pulmonary Resuscitation | 3 | 0 | 0 | 3 | - |
| 119110 | Communication Skills | 3 | 0 | 0 | 3 | - |
| 119120 | Introduction to Communication Sociology | 3 | 0 | 0 | 3 | - |
| 119130 | Information Society | 3 | 0 | 0 | 3 | - |
| 120115 | Legal Culture | 3 | 0 | 0 | 3 | - |

# COLLEGE REQUIREMENTS

## (a) Required Courses:

### 1. Department of Pharmaceutics

| Course No. | Course Title | Th. | Lab. | Tut. | Cr. Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 700111 | Introduction to Pharmacy | 2 | 2 | 0 | 3 | xxxxx |
| 700112 | Physical Pharmacy I | 2 | 2 | 0 | 3 | 700111 |
| 700212 | Physical Pharmacy II | 2 | 2 | 0 | 3 | 700112 |
| 700213 | Pharmaceutical Dosage Forms I | 2 | 2 | 0 | 3 | 700112 |
| 700214 | Pharmaceutical Dosage Forms II | 2 | 2 | 0 | 3 | 700213 |
| 700311 | Biopharmaceutics and Pharmacokinetics I | 2 | 2 | 0 | 3 | 700214+ 700422 |
| 700312 | Biopharmaceutics and Pharmacokinetics II | 2 | 2 | 0 | 3 | 700311 |
| 700413 | Pharmaceutical Technology | 3 | 2 | 0 | 4 | 700212 + 700214 |
| 700415 | Pharmaceutical Technology Training | 2 | 2 | 0 | 3 | 700413 |

### 2. Department of Pharmaceutical Chemistry and Pharmacognosy

| Course No. | Course Title | Th. | Lab. | Tut. | Cr. Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 700124 | Pharmaceutical Botany | 2 | 2 | 2 | 3 | xxxxx |
| 700127 | General Pharmacognosy | 3 | 2 | 0 | 4 | 700124 |
| 700128 | Pharmaceutical Organic Chemistry I | 2 | 2 | 0 | 3 | xxxxx |
| 700129 | Pharmaceutical Organic Chemistry II | 2 | 2 | 0 | 3 | 700128 |
| 700222 | Pharmaceutical Analytical Chemistry I | 2 | 2 | 0 | 3 | 700128 |
| 700223 | Pharmaceutical Analytical Chemistry II | 2 | 2 | 0 | 3 | 700222 |
| 700321 | Phytochemistry | 3 | 2 | 0 | 4 | 700127+700425 |
| 700323 | Medicinal and Pharmaceutical Chemistry I | 2 | 2 | 0 | 3 | 700129+700333 |

| Course No. | Course Title | Th. | Lab. | Tut. | Cr. Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 700324 | Medicinal and Pharmaceutical Chemistry II | 2 | 2 | 0 | 3 | 700323 |
| 700422 | Instrumental Analysis I | 2 | 2 | 0 | 3 | 700223 |
| 700425 | Instrumental Analysis II | 2 | 2 | 0 | 3 | 700422 |

## 3. Department of Pharmacology and Toxicology

| Course No. | Course Title | Th. | Lab. | Tut. | Cr. Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 700135 | Principles of Human Anatomy and Physiology I | 3 | 2 | 0 | 4 | xxxxx |
| 700136 | Principles of Human Anatomy and Physiology II | 2 | 2 | 0 | 3 | 700135 |
| 700231 | Biochemistry I | 2 | 2 | 0 | 3 | 700129 |
| 700232 | Biochemistry II | 2 | 2 | 0 | 3 | 700231 |
| 700235 | Pharmacology and Therapeutics I | 2 | 2 | 0 | 3 | 700136 |
| 700238 | Pharmacology and Therapeutics II | 2 | 2 | 0 | 3 | 700235 |
| 700331 | Pharmacology and Therapeutics III | 2 | 2 | 0 | 3 | 700238 |
| 700333 | Pharmaceutical Microbiology and Immunology | 3 | 2 | 0 | 4 | 700231 |
| 700432 | Toxicology and Chemotherapy | 3 | 0 | 0 | 3 | 700331+801318 |
| 700434 | Bioassays and Drug Screening | 2 | 2 | 0 | 3 | 130130+700331 |
| 801318 | Pathology / Pharmacy | 2 | 0 | 0 | 2 | 700333 |

## 4. Department of Clinical Pharmacy

| Course No. | Course Title | Th. | Lab. | Tut. | Cr. Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 700314 | Community Pharmacy Training I | 0 | 0 | 0 | 3 | Completion of 30 CH |
| 700315 | Hospital Pharmacy Training | 0 | 0 | 0 | 3 | 700331 |
| 700316 | Community Pharmacy Training II | 0 | 0 | 0 | 3 | 700314+700442 |
| 700317 | Clinical Pharmacy Training | 0 | 0 | 0 | 3 | 700442+700418 |
| 700416 | Pharmaceutical Legislations | 1 | 0 | 0 | 1 | 700432 |
| 700417 | Marketing and Sales | 1 | 0 | 0 | 1 | 700442 |
| 700418 | OTC Drugs and Products | 2 | 2 | 0 | 3 | 700331 |
| 700442 | Clinical Pharmacy I | 2 | 2 | 0 | 3 | 700312+700331 |
| 700443 | Clinical Pharmacy II and First Aid | 2 | 2 | 0 | 3 | 700442 |

## (b) College Elective Courses:

**Students have to study one course of the following (3 Cr. Hrs)**

| Course No. | Course Title | Th. | Lab. | Tut. | Cr. Hrs. | Prerequisite |
|---|---|---|---|---|---|---|
| 700515 | Pharm. Biotechnology | 2 | 2 | 0 | 3 | 700232 |
| 700522 | Phytotherapy | 2 | 2 | 0 | 3 | 700321 |
| 700527 | Nuclear Pharmacy | 2 | 2 | 0 | 3 | 700331 |
| 700534 | Clinical Microbiology | 2 | 2 | 0 | 3 | 700333 |
| 700535 | Gene Therapy | 2 | 2 | 0 | 3 | 700232 + 700333 |

# Suggested Study Plan

## First Year:

### Fall Semester:

| Course No. | Course Title | Th. | Lab. | Tut. | Cr.Hrs | Pre-req. |
|---|---|---|---|---|---|---|
| 104110 | Computer Applications | 2 | 2 | 0 | 3 | xxxxx |
| 700111 | Introduction to Pharmacy | 2 | 2 | 0 | 3 | xxxxx |
| 700124 | Pharmaceutical Botany | 2 | 2 | 2 | 3 | xxxxx |
| 700128 | Pharmaceutical Organic Chemistry-I | 2 | 2 | 0 | 3 | xxxxx |
| 700135 | Principles of Human Anatomy and Physiology-I | 3 | 2 | 0 | 4 | xxxxx |
|  | Total | 11 | 10 | 0 | 16 |  |

### Spring Semester:

| Course No. | Course Title | Th. | Lab. | Tut. | Cr.Hrs | Pre-req. |
|---|---|---|---|---|---|---|
| 700112 | Physical Pharmacy-I | 2 | 2 | 0 | 3 | 700111 |
| 700127 | General Pharmacognosy | 3 | 2 | 0 | 4 | 700124 |
| 700129 | Pharmaceutical Organic Chemistry-II | 2 | 2 | 0 | 3 | 700128 |
| 700136 | Principles of Human Anatomy & Physiology-II | 2 | 2 | 0 | 3 | 700135 |
| 700222 | Pharmaceutical Analytical Chemistry I | 2 | 2 | 0 | 3 | 700128 |
|  | Total | 11 | 10 | 0 | 16 |  |

## Summer Semester:

| Course No. | Course Title | Th. | Lab. | Tut. | Cr.Hrs | Pre-req. |
|---|---|---|---|---|---|---|
| 102130 | Environmental Sciences | 3 | 0 | 0 | 3 | - |
| xxxxxx | University Elective course I | 3 | 0 | 0 | 3 | - |
| | Total | 6 | 0 | 0 | 6 | |

# Second Year:

### Fall Semester:

| Course No. | Course Title | Th. | Lab. | Tut. | Cr.Hrs | Pre-req. |
|---|---|---|---|---|---|---|
| 700212 | Physical Pharmacy II | 2 | 2 | 0 | 3 | 700112 |
| 700213 | Pharmaceutical Dosage Forms I | 2 | 2 | 0 | 3 | 700112 |
| 700223 | Pharmaceutical Analytical Chemistry II | 2 | 2 | 0 | 3 | 700222 |
| 700231 | Biochemistry I | 2 | 2 | 0 | 3 | 700129 |
| 700235 | Pharmacology and Therapeutics I | 2 | 2 | 0 | 3 | 700136 |
| 700314 | Community Pharmacy Training-I | 0 | 0 | 0 | 3 | after 30 Crd.Hrs+700111 |
| | Total | 10 | 10 | 0 | 18 | |

### Spring Semester:

| Course No. | Course Title | Th. | Lab. | Tut. | Cr.Hrs | Pre-req. |
|---|---|---|---|---|---|---|
| 700214 | Pharmaceutical Dosage Forms II | 2 | 2 | 0 | 3 | 700213 |
| 700232 | Biochemistry II | 2 | 2 | 0 | 3 | 700231 |
| 700238 | Pharmacology and Therapeutics II | 2 | 2 | 0 | 3 | 700235 |
| 700333 | Pharmaceutical Microbiology and Immunology | 3 | 2 | 0 | 4 | 700231 |
| 700422 | Instrumental Analysis I | 2 | 2 | 0 | 3 | 700223 |
| | Total | 11 | 10 | 0 | 16 | |

### Summer Semester:

| Course No. | Course Title | Th. | Lab. | Tut. | Cr.Hrs | Pre-req. |
|---|---|---|---|---|---|---|
| 103110 | Statistics | 3 | - | 0 | 3 | Xxxxx |
| 102110 | Islamic Culture | 3 | 0 | 0 | 3 | Xxxxx |
| | Total | 6 | 0 | 0 | 6 | |

## Third Year:

### Fall Semester:

| Course No. | Course Title | Th. | Lab. | Tut. | Cr.Hrs | Pre-req. |
|---|---|---|---|---|---|---|
| 700311 | Biopharmaceutics & Pharmacokinetics I | 2 | 2 | 0 | 3 | 700214+ 700422 |
| 700323 | Medicinal and Pharmaceutical Chemistry I | 2 | 2 | 0 | 3 | 700129+700333 |
| 700331 | Pharmacology and Therapeutics III | 2 | 2 | 0 | 3 | 700238 |
| 700425 | Instrumental Analysis II | 2 | 2 | 0 | 3 | 700422 |
| 801318 | Pathology / Pharmacy | 2 | 0 | 0 | 2 | 700333 |
| xxxxxx | University elective course II | 3 | 0 | 0 | 3 | Xxxxx |
| | Total | 13 | 8 | 0 | 17 | |

### Spring Semester:

| Course No. | Course Title | Th. | Lab. | Tut. | Cr.Hrs. | Pre-req. |
|---|---|---|---|---|---|---|
| 102140 | Communication skills in Arabic Language | 3 | 0 | 0 | 3 | Xxxxx |
| 700312 | Biopharmaceutics and Pharmacokinetics II | 2 | 2 | 0 | 3 | 700311 |
| 700321 | Phytochemistry | 3 | 2 | 0 | 4 | 700127+700425 |
| 700324 | Medicinal and Pharmaceutical Chemistry II | 2 | 2 | 0 | 3 | 700323 |
| 700413 | Pharmaceutical Technology | 3 | 2 | 0 | 4 | 700212 + 700214 |
| | Total | 12 | 10 | 0 | 17 | |

### Summer Semester:

| Course No. | Course Title | Th. | Lab. | Tut. | Cr.Hrs | Pre-req. |
|---|---|---|---|---|---|---|
| xxxxxx | University Elective course III | 3 | 0 | 0 | 3 | Xxxxx |
| | Total | 3 | 0 | 0 | 3 | |

## Fourth Year:

### Fall Semester:

| Course No. | Course Title | Th. | Lab. | Tut. | Cr.Hrs | Pre-req. |
|---|---|---|---|---|---|---|
| 700315 | Hospital Pharmacy Training | 0 | 0 | 0 | 3 | 700331 |
| 700415 | Pharmaceutical Technology Training | 0 | 0 | 0 | 3 | 700413 |
| 700418 | OTC Drugs and Products | 2 | 2 | 0 | 3 | 700331 |
| 700432 | Toxicology & Chemotherapy | 3 | 0 | 0 | 3 | 700331+801318 |
| 700442 | Clinical Pharmacy I | 2 | 2 | 0 | 3 | 700312+700331 |
| xxxxxx | College Elective course | 2 | 2 | 0 | 3 | after 115 Crd.Hrs |
| | Total | 9 | 6 | 0 | 18 | |

### Spring Semester:

| Course No. | Course Title | Th. | Lab. | Tut. | Cr.Hrs | Pre-req. |
|---|---|---|---|---|---|---|
| 700316 | Community Pharmacy Training-II | 0 | 0 | 0 | 3 | 700314+700442 |
| 700317 | Clinical Pharmacy Training | 0 | 0 | 0 | 3 | 700442+700418 |
| 700416 | Pharmaceutical Legislations | 1 | 0 | 0 | 1 | 700432 |
| 700417 | Marketing & Sales | 1 | 0 | 0 | 1 | 700442 |
| 700421 | Project | 2 | 2 | 0 | 3 | after 115 Crd.Hrs |
| 700434 | Bioassays and Drug Screening | 2 | 2 | 0 | 3 | 130130+700331 |
| 700443 | Clinical Pharmacy-II & First Aid | 3 | 0 | 0 | 3 | 700442 |
| | Total | 9 | 4 | 0 | 17 | |

# Course Descriptions

## Department of Pharmaceutics

### 700 111 Introduction to Pharmacy (2-2-3)

This course provides an introduction to prescriptions, general dispensing procedures, dosage forms with special emphasis on pharmaceutical solutions and basic techniques of compounding simple solutions. The course also includes definitions, Latin terms, weighing and measuring and basic pharmaceutical calculations.

*Pre-requisite: None*

### 700 112 Physical Pharmacy I (2-2-3)

The course comprises the application of physicochemical principles to pharmaceutical systems. It covers basic physical pharmacy concepts: solubility distribution phenomena, buffers, isotonic solution, phase equilibria and phase rule.

*Pre-requisite: 700 111*

### 700 212 Physical Pharmacy II (2-2-3)

This course aims to provide students with basic knowledge of physicochemical principal in pharmacy and their possible applications in explaining characteristics and behavior of pharmaceutical dispersed systems such as colloids, suspensions, emulsions, ointments, pastes, creams and aerosols.

*Pre-requisite: 700 112*

### 700 213 Pharmaceutical Dosage Forms I (2-2-3)

The course comprises principles and techniques involved in the formulation, preparation and evaluation of solid dosage forms. It covers physical properties of powders, preparation of bulk and divided powders, as well as effervescent and non- effervescent granules and method of tablet and capsule manufacture. The course also covers rectal drug absorption, formulation and evaluation of suppositories.

*Pre-requisite: 700 112*

### 700 214 Pharmaceutical Dosage Forms II (2-2-3)

This course covers sterile products including parenterals and ophthalmic preparations; their advantages and disadvantages formulations, quality control tests and various sterilization procedures. In addition to aseptic techniques applied during the preparations of sterile products. The course also includes an introduction to sustained released products, packaging as well as basic principles of drug stability, and routes of drug degradation and various means of avoiding them.

*Pre-requisite: 700 213*

### 700 311 Bio-pharmaceutics and Pharmacokinetics I(2-2-3)

This course provides the basic principles required for understanding the concentration-time course of a drug in the body and hence prepares students to understand various factors that can influence it. It is important to be aware of the factors which can influence this concentration–time course and hence modify the effectiveness and safety of the drug. Factors involved include physicochemical, pharmaceutical ones, or those such as physiological or pathological factors related to the patient's condition. It also provides basic methods for assessing bio-availability and bio-equivalency of drug products which are considered vital tools for quality control tests. Bio-pharmaceutical aspects of new drug delivery systems will also be highlighted.

*Pre-requisites: 700 214, 700 422*

### 700 312 Bio-pharmaceutics and Pharmacokinetics II(2-2-3)

The course will introduce the student to the changes in drug absorption, distribution and elimination with time following one compartment IV bolus, oral absorption and IV infusion. The lectures will provide students with principles of the linear and non-linear pharmacokinetic models and their application. The principles of clinical pharmacokinetics are also introduced in order to be able to formulate or modify drug dose-regimens according to the need of patients.

*Pre-requisite: 700 311*

### 700 413 Pharmaceutical Technology (3-2-4)

This course comprises the design of pharmaceutical plants as well as the design and operation of clean rooms with special emphasis on quality assurance and good manufacturing practice guidelines. The course also covers theoretical background and practical demonstration of different manufacturing unit processes: heat transfer, filtration, particle size reduction, particle size analysis, mechanisms of mixing, powder flow, granulation, drying, tableting and capsulation. In addition the course covers packaging materials used in pharmacy. Pre-requisite: 700 212, 700 214.

### 700 415 Pharmaceutical Technology Training (3-3)

The course provides the student with basic training in large scale manufacturing of pharmaceutical dosage forms and quality control tests conducted for such dosage forms. It also covers quality assurance and good manufacturing practice guidelines followed during large scale manufacturing of various pharmaceutical dosage forms. Pre-requisite: 700 413

### 700 515 Pharmaceutical Bio-technology (College Elective Course) (3-3)

The course introduces the student to the background of biotechnology and its application in various scientific fields. The course also covers the different methods adopted for preparation of biotechnology products and their evaluation, handling and storage.

*Pre-requisite: 700 232*

# DEPARTMENT of PHARMACEUTICAL CHEMISTRY and PHARMACOGNOSY

### 700 124 Pharmaceutical Botany (2-2-3)

This course deals with the study of the medicinal plants and their botanical structure such as cell differentiation, cell contents and the general study of the plant organs macroscopically and microscopically.

*Pre-requisite: None*

### 700 127 General Pharmacognosy (3-2-4)

Pharmacognosy is the subject that deals with the general study of important medicinal plants. The study includes their origin, morphology, histology, constituents and use. The drugs are classified into groups according to their main therapeutic values.

*Pre-requisite: 700 124*

### 700 128 Pharmaceutical Organic Chemistry I (2-2-3)

This course presents the fundamental of certain topics in organic chemistry. It covers some important areas in organic chemistry, which include aliphatic and aromatic hydrocarbons, alkyl and aryl halides, alcohols, ethers and

epoxides. It emphasizes the pharmaceutical importance of these functional groups.

*Pre-requisites: None*

## 700 129 Pharmaceutical Organic Chemistry II (2-2-3)

This course is a continuation of Pharm. Organic Chemistry I. The course includes basic chemical reactions and mechanisms, Stereo-chemistry, phenols, aldehydes, ketones, and carboxylic acid and acid derivatives, properties and reactions of dysfunctional compounds, amines, aromatic and heterocyclic compounds, and introduction to organic natural products. Laboratory work concerns specific chemical reactions, organic synthesis and identification of organic compounds.

*Pre-requisite: 700 128*

## 700 222 Pharmaceutical Analytical Chemistry I (2-2-3)

The course covers chemical purity and its control; pharmacopoeial standards and specifications, theoretical basis and practical applications of quantitative analysis of pharmaceutical compounds applying volumetric methods based on acid-base, diazotization, complexation and non-aqueous titrations.

*Pre-requisite: 700 128*

## 700 223 Pharmaceutical Analytical Chemistry II (2-2-3)

A continuation of Pharmaceutical Analytical Chemistry I, this course covers volumetric analysis based on oxidation-reduction and precipitation as well as gravimetric analysis.

*Pre-requisite: 700 222*

## 700 321 Phytochemistry (3-2-4)

This course covers the study of the chemistry of crude drugs such as volatile oils, glycosides, alkaloids bitter Principles, resins and saponins, etc. The study covers the biosynthesis, the chemical and physical properties, identification tests, and methods of isolation and methods of assays.

*Pre-requisites:700 127, 700 425*

## 700 323 Medicinal and Pharmaceutical Chemistry I(2-2-3)

This course covers the basic principles of medicinal chemistry. It deals with the relationship between chemical structure and biologic activity. Topics covered include the effect of physicochemical properties on biologic response, the effect of molecular modification on receptor binding, and drug metabolism. The second part of the course is devoted to the study of chemotherapeutic agents including antibiotics, synthetic antibacterial agents and antifungal and antiviral agents.

*Pre-requisites: 700 129, 700 333*

## 700 324 Medicinal and Pharmaceutical Chemistry II(2-2-3)

This course covers the chemistry, structural features and structure – activity relationships of the major classes of pharmacotherapeutic agents. The course adopts a pharmacological classification, but within each class the emphasis is on the chemical basis of drug action. Topics covered include adrenergic and cholinergic drugs, CNS depressants, analgesics, antihistamines, local anesthetics and cardiovascular drugs.

*Pre-requisite: 700 323*

### 700 422 Instrumental Analysis I (2-2-3)

The course provides an introduction to the instrumental methods of analysis including spectroscopic methods of analysis such as UV – VIS and flourimetry; in addition to the following electro chemical methods: conductometry, potentiometry, amperometry and polarography. Pre-requisite: 700 223

### 700 425 Instrumental Analysis II (2-2-3)

This course aims to introduce students to application of the concept of applying instrumentation for the separation of mixtures as well as the qualitative and quantitative analysis of medicinal and pharmaceutical formulations. The course covers different chromatographic methods and techniques (PC, TLC, IEC, CC, GPC, GC, HPLC) in addition to infra-red spectroscopy, nuclear magnetic resonance and mass spectroscopy. Pre-requisite: 700 422

### 700 522 Phytotherapy (College Elective Course) (3-3)

The course covers medicinal plants and other naturally-occurring medicinal compounds intended for treatment of different ailments of the human body. The study includes knowledge of active constituents of these natural products, suggested pharmacokinetic and pharmacodynamic effects of these constituents, as well as the appropriate dosage forms for administration of their preparations. Monographs on Materia Medica of selected medicinal herbs are also included in the study. Pre-requisite: 700 321 after 115 Credit Hours

### 700 527 Nuclear Pharmacy (College Elective Course)(3-3)

The course provides a comprehensive discussion of the fundamentals of the field of nuclear pharmacy. It covers the formulation and application of radiopharmaceuticals. Topics include the preparation, and quality control of clinically useful radiopharmaceuticals. Procedures and techniques involved in handling, disposition, and use of radioisotopes in nuclear pharmacy practice will be discussed. Diagnostic and therapeutic uses of radiopharmaceuticals and their adverse reaction are included. Pre-requisite: 115 Credit Hours

# DEPARTMENT of PHARMACOLOGY and TOXICOLOGY

### 700 135 Principles of Anatomy and Physiology I (3-2-4)

This course provides students with a broad knowledge of the structure and functions of the human body. The course includes the structure and function of the normal cell; tissues in general, their different types, microscopic characteristics, locations, distribution and functions in the human body and of the different organ system and their respective roles and function in the organization of the body. Gross anatomy is treated in its broadest aspects and includes the human skull and the different systems; muscular, respiratory, digestive, cardiovascular, nervous and reproductive. The physiology is integrated with anatomy for each system of the human body. Topics which are covered in detail include the organization, regulation and function of the muscular, gastrointestinal, respiratory, cardiovascular, renal, endocrine, nervous and reproductive systems. Clinical applications related to these systems are mentioned.

*Pre-requisite: None*

### 700 136 Principles of Human Anatomy and Physiology II(2-2-3)

Continuation of Principles of Anatomy and Physiology I (700 135) Pre-requisite: 700 135

## 700 231 Biochemistry I (2-2-3)

The course covers the study of the structure and function of the biological constituents of living cells and their chemical reactions. Emphasis is made on the structure and function of carbohydrates, proteins, nucleic acids, lipids and vitamins. Enzyme kinetics and enzyme-catalyzed reactions are also covered. Pre-requisite: 700 129

## 700 232 Biochemistry II (2-2-3)

The study of the metabolism and biochemical energetics is covered in the course with emphasis on intermediary metabolism of proteins, carbohydrates and lipids. The course also includes the biosynthesis of biologically important macromolecules such as proteins, lipids, and nucleic acids. Special topics including hormones, nutrition, starvation, obesity, and molecular basis of human diseases are also covered. Pre-requisite: 700 231

## 700 235 Pharmacology and Therapeutics I (2-2-3)

The course covers General Pharmacology: Principles of drug action, routes of administration of drugs, passage of drugs across cell membranes and factors affecting the dosage and action of drugs. The autonomic nervous system: Introduction, sympathomimetics, sympathetic depressants, parasympathomimetics, parasympathetic depressants and drugs acting on autonomic ganglia. Skeletal muscle relaxants. Drugs acting on respiratory system. Autacoids and local hormones are also covered. Pre-requisite: 700 136

## 700 238 Pharmacology and Therapeutics II (2-2-3)

This course covers the action of drugs on the cardiovascular system (CVS), rental system, haematopoitic system and in the gastrointestinal tract (G.I.T). Pre-requisite: 700 235

## 700 331 Pharmacology and Therapeutics III (2-2-3)

The course covers the action of drugs on the central nervous system and the endocrine system. Pre-requisite: 700 238

## 700 333 Pharmaceutical Microbiology and Immunology(3-2-4)

This course covers five areas: General microbiology: sterilization of pharmaceuticals, preservatives and preservation of pharmaceutical dosage forms and industrial microbiology. Topics covered include: immunology - mainly immunity and infection, immune system and hypersensitivity; hygiene - pathogenesis of bacterial infections, etiology, clinical picture, lab diagnosis, treatment, prevention and control of diseases caused by the different bacteria; virology - general properties of viruses; food microbiology - microorganisms associated with food and water. Pre-requisite: 700 231

## 700 432 Toxicology and Chemotherapy (2-2-3)

This course covers the adverse and toxic effects of drugs and many other chemicals that may be responsible for household, environmental and industrial intoxication. It also covers heavy metals toxicity and its management, common poisons and their antidotes, air pollutants, solvents and vapours and toxicity of pesticides. Chemotherapy covers the classification mechanism of action, clinical indications and adverse effects of anti-infective agents. These include antimicrobials, antiviral, antifungal, anthelimentics, antitubercular and antileprotic agents. Pre-requisites: 700 311, 801 318

## 700 434 Bioassays and Drug Screening (2-2-3)

This course covers the collection, classification and summarization of data, graphical presentation and the survey of basic distribution, estimations and significance tests. The course covers general methods of bioassay and drug screening of local hormones and drugs acting on ANS, CNS, CVS, NMJ, GIT and the respiratory system. It also deals with the design and analysis of pharmacological experiments.

*Pre-requisites: 700 331, 103 110*

### 801 318 Pathology (2-2)

The course covers the fundamentals of the basic disease processes of the body: gross, microscopic and biochemical features of pathologic conditions of the organ systems are studied in detail in order to establish a sound foundation for pharmaceutical and clinical practice.

*Pre-requisite: 700 333*

### 700 534 Clinical Microbiology (College Elective Course)(2-2-3)

The course provides students with basic knowledge of the important signs, symptoms and etiology of diseases as well as mechanisms of preventing infection and the means of identifying and diagnosing causative agents.

*Pre-requisite: 700 333*

### 700 535 Gene Therapy (College Elective Course) (3-3)

The course is designed to provide students with a clear understanding of how human genes causing disease can be identified, and the impact of this on diagnosis, prevention and treatment. Methods used to isolate genes involved in disease and types of gene therapy treatment will also be discussed. The course deals with the basic science of gene therapy, gene delivery vectors, expression of transferred genes, and current gene therapy protocols in humans. Regulatory issues concerning biomaterials will also be addressed. Recognition of the advantages, disadvantages and limitations of gene therapy will be included.

*Pre-requisites: 700 232, 700 333 after 115 Credit Hours*

# DEPARTMENT of CLINICAL PHARMACY

### 700 442 Clinical Pharmacy I (2-2-3)

The course builds on the prior knowledge gained in pharmacology, biopharmaceutics and kinetics. The overall aim of the module is to develop the skills that students require to understand new aspects of pharmacy practice and the concept of pharmaceutical care. Upon completion of the course, students should be able to demonstrate sound knowledge and understanding of the pathophysiology of major organ diseases, namely, the cardiovascular, respiratory, and endocrine systems. Furthermore, the course is designed to enable students to: analyze and review a patient's case history in the light of pathophysiology of disease; critically evaluate literature and data relating to the clinical use of medicines; identify independently different medical abbreviation and terminology and acquire effective skills in reading, writing, speaking and listening to enable them to communicate effectively with doctors and other healthcare professionals.

*Pre-requisites: 700 312 and 700 331*

### 700 443 Clinical Pharmacy II and First Aid (2-2-3)

The course builds on the prior knowledge gained in Clinical Pharmacy I. The overall aim of the module is to help students to access the knowledge base and skills required for assessment of pharmaceutical needs of patients in either primary or secondary healthcare settings and to understand how major diseases are managed, including the options available for drug therapy. The importance of establishing therapeutic goals for the patient will be emphasized throughout the course. The first aid section of this course is designed to educate students as to the correct procedures to be followed in the emergency care of a sick or injured person. The course is designed with great

emphasis on the skills and knowledge critical to saving life and minimizing the severity of injury or sudden illness. Safety awareness and accident prevention are emphasized throughout the course.

*Pre-requisite: 700 442*

## 700 418 OTC Drug and Products (2-2-3)

The course is designed to provide the student with a solid knowledge of OTC drugs in all aspects with the objective of graduating a patient-oriented pharmacist. This will include monitoring, screening and evaluating drug treatment regimens either in community or hospital settings. In particular, symptoms associated with common diseases will be considered with respect to: possible causes; symptoms and signs; treatment available; counseling points; and when to refer to doctors. This course is also designed to enable students to decide on the diagnosis of a complaint through the use of questioning techniques; recognize and evaluate the symptoms of minor ailments; select a suitable treatment, if any, and give appropriate advice; assess "danger symptoms" and judge when it is appropriate to refer the patient; and choose an effective level of communication with patients and other healthcare professionals.

*Pre-requisites: 700 312 and 700 331*

## 700 416 Pharmaceutical Legislations (1-1)

This course is designed to acquaint students with the legal and ethical basis of pharmacy practice. The course emphasizes the pharmacist's responsibility to care for patients and to respect patients as autonomous individuals. A detailed presentation of the laws that govern and affect the practice of pharmacy in UAE is included. Major topics include general legal principles, non-controlled and controlled prescription requirements and over-the-counter drug requirements.

*Pre-requisite: 700 416*

## 700 417 Marketing and Sales (1-1)

This course is designed to provide pharmacy students with the basic principles and theories of marketing as well as the principles of management and administration of a pharmacy in community and institutional settings. The course will cover all aspects of selling including applying standard criteria to evaluate the quality of selling, retail selling and product planning.

*Pre-requisite: 700 442*

## 700 314 Community Pharmacy Training I (3-3)

## 700 316 Community Pharmacy Training II (3-3)

Through the utilization of selected community pharmacies and competency based objectives, the student will gain an appreciation for the profession of pharmacy as practiced in the community and develop the professional attitudes, judgment and skills needed to function in this setting. These courses are designed to enable students to: acquire advanced knowledge and proficiency in community pharmacy management, process prescriptions in an efficient manner compatible with advanced skills, acquire additional exposure to pharmacy operations and to different practitioners' disease approach, develop the skills necessary to provide pharmaceutical care services and acquire increased proficiency in counseling patients on health and drug-related matters.

*Pre-requisites: for 700 314:700 111, 30 hours Pre-requisites: for 700 316: 700 314, 700 442*

## 700 315 Hospital Pharmacy Training (3-3)

This training is designed to provide students with the principles of pharmacy practice in a hospital setting. The training program aims to enable the students to acquire practice experience in various areas of hospital pharmacy including: understanding the basic layout of the pharmacy department in a hospital setting; understanding the sys-

tem of referral, identifying and reporting any possible drug interactions and mastering the administrative part of hospital pharmacy services.

*Pre-requisite: 700 333*

### 700 317 Clinical Pharmacy Training (3-3)

This course is designed to provide the students with professional practice experience in clinical pharmacy. This includes acquiring the following competencies: independently reviewing and analyzing a patient's case history and identifying possible problems associated with the use of medicines, actively participating in drug choice and in the design of dosage regimens to ensure optimal drug therapy.

*Pre-requisites: 700 418, 700 442*

### 700 421 Project (2-2-3)

This course is designed to acquaint the student with the techniques involved in the development of a project in the basic, pharmaceutical or clinical sciences. The project will be assigned and the student will be expected to perform literature reviews and other work deemed necessary by the college instructor to produce an acceptable final written report

*Pre-requisite: 115 Credit Hours*

# LIST OF FACULTY

## Ajman Campus

| No | Name | Rank | Specialization | Degree | Year | University |
|---|---|---|---|---|---|---|
| 1 | Prof. Dr. Omer Ali A. Attef | Dean, Professor | Pharmaceutical Chemistry | PhD | 1989 | Ernst-Moritz-Arndt University, Germany |
| 2 | Prof. Dr. Abdel Azim Ahmed Ali | Head of Dept. of Pharmaceutics, Professor | Pharmaceutics | PhD | 1973 | Bradford University, UK |
| 3 | Prof. Dr. Nageeb Abdul Galil Mohamed Hassan | Head, Dept. of Pharmacology and Toxicology, Professor | Clinical Pharmacology | PhD | 1994 | University of Manchester, UK |
| 4 | Dr. Yasser El-Shabrawy | Head of Dept. of Chemistry & Pharmacognosy, Assistant Professor | Analytical Chemistry | PhD | 1995 | University of Georgia, USA, and Mansoura University, Egypt |
| 5 | Prof. Dr. Zakeya Metwally Mohamed | Professor | Microbiology | PhD | 1976 | Alexandria University, Alexandria, Egypt |
| 6 | Dr. Abduelmula R. Abduelkarem | Head of Dept. of Clinical Pharmacy, Associate Professor | Clinical Pharmacy | PhD | 2003 | University of Sunderland, UK |
| 7 | Dr. Abdul Azim Elsheikh Madani | Associate Professor | Med. Chemistry | PhD | 1974 | University of London, UK |
| 8 | Dr. Samir Issa Bloukh | Assistant Professor | Virology | PhD | 1991 | University of Manchester, UK |
| 9 | Dr. Farah Hamad Farah Ahmed | Assistant Professor | Pharmaceutics | PhD | 1982 | University of Nottingham, UK |
| 10 | Dr. Elhadi Noureldayem Mahmoud | Assistant Professor | Pharmacognosy, Phytochemistry | PhD | 1985 | University of Strathclyde Glasgow, UK |
| 11 | Dr. Moyad Jamal Said Shahwan | Assistant Professor | Clinical Biochemistry | PhD | 2000 | Aligarh University, India |

| No | Name | Rank | Specialization | Degree | Year | University |
|---|---|---|---|---|---|---|
| 12 | Dr. Yaseen Khalid Al Hariri | Lecturer | Clinical Pharmacy | MSc | 2007 | University of Science Malaysia, Malaysia |
| 13 | Dr. Nihal Abdulla Ibrahim | Lecturer | Medical Physiology | MSc | 1990 | Tanta University, Egypt |
| 14 | Dr. Zelal Jaber Kharaba | Lecturer | Envirofood-Nutritional Medicine and Protection | MSc | 2008 | Hohenheim University, Germany |
| 15 | Mr. Medhat Mohamed Mostafa | Lecturer | Chemistry | MSc | 1997 | Mansoura University, Egypt |
| 16 | Dr. Iman saeed Salman | Chairman, Central Training Committee, Lecturer | Clinical Pharmacy | PharmD | 2008 | Purdue University, USA |
| 17 | Ms. Sundos Qassim Alebrahim | Teaching Assistant | Pharmacy | B.Pharm | 2003 | AUST |
| 18 | Ms. Sawsan Deeb Mohammed Shanableh | Teaching Assistant | Pharmacy | B.Pharm | 2004 | AUST |
| 19 | Ms. Lina Eqwteen Sarhan | Teaching Assistant | Pharmacy | B.Pharm | 2000 | Petra University, Jordan |
| 20 | Mr. Ibrahim Mohamed Taher | Teaching Assistant | Pharmacy | B.Pharm | 1983 | Al Mansoura University, Egypt |
| 21 | Mr. Hamed Abu Sara | Lab Technician | Microbiology, Chemistry & Zoology | B.Sc. | 1998 | Bangalore University, India |
| 22 | Mr. Basil Hassan Alemam | Lab Technician | Chemistry | B.Sc. | 1980 | Damascus University, Syria |
| 23 | Mr. Mamduh Mohamad Eldmerdash | Lab Technician | Quality Production | B.Sc. | 1987 | Zagazig University, Egypt |
| 24 | Mr. Mohammed Siddiq Mohajir | Lab Technician | Chemistry | B.Sc. | 1984 | Osmania University, India |
| 25 | Mr. Ahmed Raheem | Lab Technician | Chemistry | B.Sc. | 1989 | Almosul University, Iraq |

# Fujairah Campus

| No | Name | Rank | Specialization | Degree | Year | University |
|----|------|------|----------------|--------|------|------------|
| 1 | Dr. Sumia Sir-Elkhatim Mohamed Ibrahim | Deputy Dean, Associate Professor | Pharmaceutical Sciences | PhD | 1991 | University of Florida, USA |
| 2 | Dr. Ibrahim Mohammed Abu Al Futuh | Associate Professor | Pharmacognosy | PhD | 1975 | University of Bath, UK |
| 3 | Dr. Babiker Mohamed Ahmed El-Haj | Assistant Professor | Pharmaceutical Chemistry | PhD | 1982 | University of London, UK |
| 4 | Dr. Mohamed Nabil Khalid | Assistant Professor | Pharmaceutics | PhD | 2002 | University of Paris/Montreal, France/Canada |
| 5 | Dr. Husnia Marrif | Assistant Professor | Neuro-pharmacology | PhD | 2002 | University of Saskatchewan, Canada |
| 6 | Dr. Moayyad Jamal Abdel Jabbar Al Omar | Lecturer | Clinical Pharmacy | M.Pharm | 2002 | University Sains Malaysia, Malaysia |
| 7 | Nader A.H. Abu Mukhaimer | Teaching Assistant | Pharmacy | B.Sc | 1998 | University o f Applied Science and Technology, Jordan |
| 8 | Hacer Ahmedoglu | Teaching Assistant | Pharmacy | B.Pharm | 2005 | AUST |
| 9 | Miran Abdel Ghani Al-Halabi | Teaching Assistant | Pharmacy | B.Pharm | 2001 | AUST |
| 10 | Mohamed Abdel Gadir | Teaching Assistant | Chemical Engineering Technology | B.Sc | 1993 | Algazeera University, Sudan |

COLLEGE OF
EDUCATION & BASIC SCIENCES

# Introduction

The College of Education and Basic Sciences offers four Bachelor Programs in Education, a Professional Graduate Diploma in Teaching, and service courses in Basic Sciences such as Mathematics, Physics, and Statistics for students enrolled in the other colleges of the University.

In this part, we cover only the two bachelor programs that are taught in English Language. These are:

- Bachelor of Education in Teaching English as a Foreign Language
- Bachelor in Educational Technology

The programs which are taught in Arabic Language will be covered in Arabic in the second part of this Catalogue. These programs are:

- Bachelor of Education/Teacher of Arabic & Islamic Studies
- Bachelor of Education/Teacher of Mathematics & Science
- Professional Graduate Diploma in Teaching (different concentrations)

# Department of TEFL

The Department of Teaching English as a Foreign Language (TEFL) offers a four-year accredited Bachelor Degree program in Education in Teaching English as a Foreign Language.

## Mission

The mission of the TEFL program is to provide local society and the various educational institutions with qualified English language teachers and to promote relations with other English departments and language centers in the UAE and the region to exchange ideas, information, experience and research findings.

## Objectives

The TEFL program, through a host of carefully studied and analyzed courses, aims to achieve the following objectives:

1. Develop students' language proficiency skills
2. Develop students' knowledge of language and linguistics
3. Develop students' educational and instructional skills
4. Develop students' research skills
5. Develop students' awareness of the native and target culture and literature

## Program Outcomes

At the end of the program, students are expected to:

1. Use English language proficiently
2. Create suitable conditions for teaching/learning a foreign language
3. Evaluate current theories, methods, and issues in the field of language learning, teaching and testing
4. Evaluate EFL course books, learning activities and/or other supplementary materials
5. Use a variety of teaching aids and modern technology in the language classroom
6. Identify and analyze the characteristics of the learner's language development
7. Analyze and identify learners' learning strategies
8. Base classroom teaching practices on theoretical principles

9. Analyze various systems (sound, grammar, etc.) of the English language
10. Show an awareness of English literature and culture
11. Carry out basic research in English language teaching
12. Write and implement effective lesson plans
13. Associate with Arabic and Islamic culture and literature

## Admission Requirements

To be admitted to the program, each applicant should have a certified UAE secondary school certificate, or its equivalent, with a minimum average grade of 60 percent. In addition the applicant should hold an English proficiency certificate with a minimum score of 500 for TOEFL or 5.0 for IELTS. Admission is also dependent upon the successful outcome of an interview during which the applicant's physical and personal capabilities for joining the teaching profession are assessed

## Career Opportunities

In today's globalized world there is an increasing demand for English language teachers across the UAE and the region. The AUST bachelor degree in TEFL provides students with a thorough grounding in many areas of teaching English as a foreign language and prepares them for a career in a variety of educational environments.

## Graduation Requirements

- The completion of 126 credit hours listed in the study plan.
- Cumulative GPA of at least 2.0.

## Degree Requirements

The Bachelor in Education in Teaching English as a Foreign Language degree requires students to successfully complete 126 credit hours: University Required Courses (24 credit hours), College Required Courses (27 credit hours), and Major Required Courses (75 credit hours), as follows:

| Type of Courses | Credit hours |
|---|---|
| 1. University General Education Requirements | |
| (a) University Required Courses | 15 |
| (b) University Elective Courses | 9 |
| 2. Faculty Requirements | |
| (a) Faculty General Education Courses | 6 |
| (b) Faculty Required Courses | 18 |
| (c) Faculty Elective Courses | 3 |
| 3. Major Requirements | |
| (a) Major Required Courses | 63 |
| (b) Major Elective Courses | 12 |
| Total Credit Hours | 126 |

## a. University Required Courses (15 Credit hours)

| Course Number | Course Title | Credit hrs | Prerequisites |
|---|---|---|---|
| 0101000 | Orientation | 0 | None |
| 0102110 | Islamic Culture | 3 | None |
| 0102140 | Communication Skills in Arabic Language | 3 | None |
| 0104110 | Computer Applications | 3 | None |
| 0103110 | Statistics/Arts | 3 | None |
| 0103120 | Environmental Sciences | 3 | None |

## b. University Elective Courses (9 Cr. Hrs.)

| Course Number | Course Title | Credit hrs | Prerequisites |
|---|---|---|---|
| 102120-1 | The Miraculousness of the Holy Koran | 3 | None |
| 0103130 | Research Methodology | 3 | None |
| 112110-0 | Principles of Architecture & Art | 3 | None |
| 112120-0 | Principles of Interior Design | 3 | None |
| 112130-0 | Modern Technology and Society | 3 | None |
| 113110-0 | Internet Concepts | 3 | None |
| 113120-0 | Introduction to Information Systems | 3 | None |
| 114110-0 | Economic Concepts | 3 | None |
| 114120-0 | Entrepreneurship Development | 3 | None |
| 115110-0 | History of science in Islam | 3 | None |
| 115120-0 | Scientific Pioneering | 3 | None |
| 115130-0 | General Psychology | 3 | None |
| 115140-0 | Principle of Mathematics | 3 | None |
| 115150-0 | The Art of Expression and Writing | 3 | None |
| 115160-0 | Emirates Society | 3 | None |
| 115170-0 | Education Technology | 3 | None |
| 117110-0 | General Chemistry | 3 | None |
| 117120-0 | Fundamental of Human Nutrition | 3 | None |
| 117130-0 | First Aid | 3 | None |
| 117140-0 | Energy, Water & Environment | 3 | None |
| 117150-0 | Applications of Remote Sensing | 3 | None |
| 118110-0 | Principles of Ethics | 3 | None |
| 118120-0 | General Biology | 3 | None |
| 118130-0 | Oral Health | 3 | None |

| Course Number | Course Title | Credit hrs | Prerequisites |
|---|---|---|---|
| 118140-0 | General Principles of Epidemiology | 3 | None |
| 118150-0 | CPR-Cardio Pulmonary Resuscitation | 3 | None |
| 119110-0 | Communication Skills | 3 | None |
| 119120-0 | Introduction to Communication Sociology | 3 | None |
| 119130-0 | Information Society | 3 | None |
| 120115-0 | Legal  Culture | 3 | None |

## c. Faculty General Education Courses (6 Credit hours)

| Number | Course Title | Credit hrs | Prerequisites |
|---|---|---|---|
| 0500222 | Technology in Education | 3 | 0104110 |
| 0560102 | Study Skills | 3 | None |

## d. Faculty Required Courses (18 Credit hours)

| Number | Course Title | Credit hrs | Prerequisites |
|---|---|---|---|
| 0512101 | Developmental Psychology | 3 | None |
| 0511102 | Const. and Dev. of Curriculum | 3 | None |
| 0511101 | Educational Foundation | 3 | None |
| 0511308 | School/Class Management | 3 | None |
| 0512203 | Educational Psychology | 3 | 0512101 |
| 0511309 | Educational Evaluation | 3 | 0511102 |

## e. Faculty Elective Courses (3 Credit hours)

| Number | Course Title | Credit hrs | Prerequisites |
|---|---|---|---|
| 0511204 | Teaching Profession and Teacher Role | 3 | None |
| 0511205 | Education and Society Problems | 3 | None |

## f. Major Required Courses (63 Credit hours)

| Course Number | Course Title | Credit hrs | Prerequisites |
|---|---|---|---|
| 560201 | 2nd  Language Acquisition | 3 | None |
| 560202 | Methodology I | 3 | None |
| 560208 | Grammar of  English | 3 | None |
| 560301 | Contrastive and Error Analysis | 3 | 560201 |
| 560302 | Methodology II | 3 | 560202 |
| 560303 | Applied Linguistics | 3 | 560201 |

| Course Number | Course Title | Credit hrs | Prerequisites |
|---|---|---|---|
| 560304 | Pedagogical Grammar | 3 | 560302 |
| 560305 | Children's Literature (TEFL) | 3 | None |
| 560306 | Discourse Analysis for Language Teachers | 3 | None |
| 560308 | Phonetics and Phonology | 3 | 610212 |
| 560401 | Introduction to Textbook Analysis | 3 | 560202 |
| 560402 | Methodology III | 3 | 560302 |
| 560403 | Testing in EFL | 3 | 511309 |
| 511410 | Practical Training | 9 | 560302 |
| 610101 | English Writing Skills | | None |
| 610209 | Advanced  English Writing Skills | 3 | 610101 |
| 610212 | Introduction to Linguistics | 3 | None |
| 610323 | Introduction to English Literary Genres | 3 | None |
| 610439 | Survey of 20th –Century English Literature | 3 | 610323 |

## g. Major Elective Courses (12 Credit hours)

| Number | Course Title | Credit hrs | Prerequisites |
|---|---|---|---|
| 560203 | Integrating Technology in EFL Classroom | 3 | 104110 |
| 560204 | Islamic Heritage | 3 | None |
| 560205 | Advanced English Listening and Speaking | 3 | None |
| 560206 | Readings in L2 Culture | 3 | None |
| 560207 | Short Stories | 3 | 610323 |
| 560307 | Language Learning and Teaching Strategies | 3 | 560202 |
| 610204 | Advanced English Reading Skills | 3 | None |
| 610412 | Arabic-English Translation I | 3 | None |

# Proposed Sequence of Study

## FIRST SEMESTER

| Course Code | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Tut | Lab | Cr.Hrs. | |
| 101000 | Orientation | 1 | 0 | 0 | 0 | None |
| 102110 | Islamic Culture | 3 | 0 | 1 | 3 | None |
| 102140 | Communication Skills in Arabic Language | 3 | 0 | 0 | 3 | None |
| 104110 | Computer  Applications | 2 | 2 | 0 | 3 | None |

| Course Code | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| 511101 | Foundational Education | 3 | 0 | 0 | 3 | None |
| xxxxxx | University Elective Course I | 3 | 0 | 0 | 3 | None |
| TOTAL | | 15 | 2 | 1 | 15 | |

## SECOND SEMESTER

| Course Code | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Tut | Lab | Cr.Hrs. | |
| 103110 | Statistics | 2 | 2 | 0 | 3 | None |
| 500102 | Study Skills | 3 | 0 | 0 | 3 | None |
| 512101 | Developmental Psychology | 3 | 0 | 0 | 3 | None |
| 610101 | English Writing Skills | 3 | 0 | 0 | 3 | None |
| Xxxxxx | University Elective Course II | 2 | 2 | 0 | 3 | None |
| Xxxxxx | University Elective Course III | 3 | 0 | 0 | 3 | None |
| TOTAL | | 16 | 4 | 0 | 18 | |

# Second Year  (First Semester)

## THIRD SEMESTER

| Course Code | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Tut | Lab | Cr.Hrs. | |
| 511102 | Construction and Development of Curriculum | 3 | 0 | 0 | 3 | 511101 |
| 560202 | Methodology I | 3 | 0 | 0 | 3 | None |
| 610209 | Advanced English Writing Skills | 3 | 0 | 0 | 3 | 610101 |
| 610307 | Grammar of English | 3 | 0 | 0 | 3 | None |
| 610323 | Introduction to English Literary Genres | 3 | 0 | 0 | 3 | None |
| ******* | Major Elective Course I | 3 | 0 | 0 | 3 | - |
| TOTAL | | 18 | 0 | 0 | 18 | |

## FOURTH SEMESTER

| Course Code | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Tut | Lab | Cr.Hrs. | |
| 102130 | Environmental Sciences | 3 | 0 | 0 | 3 | None |
| 512203 | Educational Psychology | 3 | 0 | 0 | 3 | 512101 |
| 500222 | Technology in Education | 2 | 0 | 2 | 3 | 104110 |
| 560201 | 2nd Language Acquisition | 3 | 0 | 0 | 3 | None |

| Course Code | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| 610212 | Introduction to Linguistics | 3 | 0 | 0 | 3 | None |
| ******* | University Elective Course IV | 3 | 0 | 0 | 3 | None |
| TOTAL | | 17 | 0 | 2 | 18 | |

## FIFTH SEMESTER

| Course Code | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Tut | Lab | Cr.Hrs. | |
| 511308 | Schools-Classroom Management | 3 | 0 | 0 | 3 | None |
| 560301 | Contrastive and Error Analysis | 3 | 0 | 0 | 3 | 560201 |
| 560305 | Children Literature (TEFL) | 3 | 0 | 0 | 3 | None |
| 560302 | Methodology II | 3 | 0 | 0 | 3 | 560202 |
| 560303 | Applied Linguistics | 3 | 0 | 0 | 3 | 560201 |
| Xxxxxx | Faculty r Elective  I | 3 | 0 | 0 | 3 | None |
| TOTAL | | 18 | 0 | 0 | 18 | |

## SIXTH SEMESTER

| Course Code | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Tut | Lab | Cr.Hrs. | |
| 511309 | Educational Evaluation | 3 | 0 | 0 | 3 | 511102 |
| 560304 | Pedagogical Grammar | 3 | 0 | 0 | 3 | 560302 |
| 560306 | Discourse Analysis for Language Teachers | 3 | 0 | 0 | 3 | None |
| 560308 | Phonetics and Phonology | 3 | 0 | 0 | 3 | 610212 |
| 610439 | Survey of 20th –Century English Literature | 3 | 0 | 0 | 3 | 610323 |
| Xxxxxx | Major Elective II | 3 | 0 | 0 | 3 | - |
| TOTAL | | 18 | 0 | 0 | 18 | |

## SEVENTH SEMESTER

| Course Code | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Tut | Lab | Cr.Hrs. | |
| 560401 | Introduction to Textbook Analysis | 3 | 0 | 0 | 3 | 560202 |
| 560402 | Methodology III | 3 | 0 | 0 | 3 | 560302 |
| 560403 | Testing in EFL | 3 | 0 | 0 | 3 | 511309 |
| Xxxxxx | Major I Elective III | 3 | 0 | 0 | 3 | - |
| TOTAL | | 12 | 0 | 0 | 12 | |

## EIGHTH SEMESTER

| Course Code | Course Name | Credit Hours | | | | Prerequisite |
| --- | --- | --- | --- | --- | --- | --- |
| | | Lec | Tut | Lab | Cr.Hrs. | |
| Xxxxxx | Major I Elective IV | 3 | 0 | 0 | 3 | - |
| 511410 | Training | 0 | 0 | 18 | 9 | 560302 |
| TOTAL | | 3 | 0 | 0 | 12 | |

# Course Descriptions

## 560 102  Study Skills

This course covers the skills that relate directly to the needs of most university students such as: improving reading efficiency, taking notes, managing their studies, doing basic research, organizing and preparing assignments, and learning through discussions.

## 560 201  Second Language Acquisition (SLA)

The course reviews the different theories of second language acquisition and their application to classroom practices. It also examines some of the major factors that influence the acquisition of English as a second language. It further examines the strategies employed by the second language learners in the process of learning. The learners' errors and the second language students' specific learning situations are the main topics for detailed discussions in this course of study.

## 560 202  Methodology 1

The course touches upon the underlying principles of current language learning theories and shows their influence on classroom practices. At the same time, the course provides students with a historical and theoretical background about the major approaches and methods of teaching foreign languages and their classroom applications. Attention is directed at the communicative and eclectic approaches. Students are exposed to practical applications of major teaching methods through microteaching. Towards the end of the course, students are introduced to lesson planning.

## 560 203  Integrating Technology in EFL Classroom

This course develops the students' skills in using modern technologies in learning and teaching English as a foreign language. Students are expected to use such tools to access materials, do projects, and create a good language learning context to meet their potential students' individual language needs.

## 560 204  Islamic Heritage

This course aims at developing the students' understanding of the *Islamic civilization*. It also familiarizes students with the Islamic concepts and values and encourages them to apply these educational concepts to their life. The course focuses on the Islamic ethics and the life and works of some prominent Muslim scholars who have left a great impact not only on the Islamic civilization but also on the global civilizations, as a whole.

### 560 205   Advanced English Listening and Speaking

Advanced Speaking and Listening is a course designed for upper-intermediate to advanced students. The course aims at developing students' fluency and accuracy in oral communication. Students learn how to take notes as well as prepare and organize good presentations. Students are expected to master various oral skills such as expressing positive and/or negative views, debating, negotiating, etc. Students are also exposed to complex listening materials. This includes longer conversations and academic lectures in which students practice academic note-taking, outlining, and summarizing ideas while listening.

### 560 206   Readings in L2 Culture

Readings in L2 Culture helps L2 learners to widen their horizons of thinking and sharpen their views of the world through the study of some aspects of English culture and the culture of some other countries. The course is an integration of advanced reading skills, culture, and methodology. Through target reading passages, students are acquainted with various aspects of L2 culture and language and, hence, students are expected to develop an awareness of and sensitivity towards the values and traditions of other people across the globe.

### 560 207   Short Stories

This course builds on its prerequisite "Introduction to English Literary Genres" which introduces students to short story as one such genre. It provides further understanding of the elements of short story and the characteristics which distinguish it from long fiction. As it deals exclusively with this particular genre, the course allows students the opportunity to read a good number of English short stories that vary in complexity and techniques. Discussion will focus on the analysis of the elements of short fiction, language, and cultural issues.

### 560 208  Grammar of English

This course is designed to help students improve their linguistic accuracy and extend their range of expressions. It focuses on the grammatical problems encountered by students and encourages them to find their own answers. It also focuses on various features of English grammar with challenging exercises that engender creative, independent use of target structures.

### 560 301 Contrastive and Error Analysis

This course provides students with some insights into the differences between English and Arabic at the phonological, morphological, syntactic, semantic, and discourse levels. It further familiarizes students with the methodology of analyzing errors made by Arabic speakers in their attempt to learn English.

### 560 302  Methodology II

This course is a continuation of Methodology I. It gives students first hand experience of lesson planning with an emphasis on the nature of presentation, practice, and interactive activities. The primary objective of this course is to focus on both the theoretical and the practical aspects of teaching the four basic language skills (listening, speaking, reading, and writing) in addition to other aspects of teaching English as a foreign language. The course focuses on classroom-related issues such as error correction, asking questions in the classroom, etc.

### 560 303 Applied Linguistics

This course introduces students to the field of applied linguistics. It familiarizes students with applied linguistic investigation of some issues in the areas of language teaching and learning. It further familiarizes students with some key terms and concepts in these areas.

### 560 304 Pedagogical Grammar

This course aims at developing students' understanding of the role of English grammar in language development. It focuses on acquainting students with various techniques, methods, and approaches to teaching grammar. The course also reviews some basic grammar concepts that are likely to be taught in schools. It further helps students develop comprehensive lesson plans.

### 560 305 Children's Literature

This course deals with the nature of children's literature and the specific ways of making children's narratives and poems interesting and appealing. Students are exposed to many examples of children's literature such as poems, folktales, fantasies, realistic stories and biographies. The literary samples chosen for this course reflect the type of literature taught in Grades 1 - 9. The literary samples help students understand Western society and its cultural, moral, religious and aesthetic values as they are reflected in stories, poems, fairy tales, etc.

### 560 306 Discourse Analysis for Language Teachers

In this course, students are introduced to the field of discourse analysis and its relevance to language teaching. The course covers interesting issues such as the nature and scope of discourse analysis, spoken language, written language, differences between speech and grammar, cohesion, and coherence. The course gives special attention to the implications of discourse analysis in teaching English as a foreign language.

### 560 307   Language Learning and Teaching Strategies

This course aims at giving students the opportunity to learn, practice, and apply different learning and teaching strategies. The strategies comprise direct strategies (memory, cognitive, compensation strategies) and indirect strategies (metacognitive, affective, and social strategies). The students also learn how to apply these strategies to learning and teaching of the four language skills, and how further enhance their learning and teaching experiences by considering learner differences.

### 560 308 Phonetics and Phonology

This course introduces students to the analysis of English pronunciation and the scientific study of speech sounds. Theoretical principles underlying the articulation of speech sounds and their organization into syllables and words are combined with practical exercises designed to improve students' knowledge.

### 560 401 Introduction to Textbook Analysis

In this course, students are acquainted with the analysis of EFL textbooks in order to be able to identify their strengths, pitfalls, relevance, appropriateness, degree of complexity, etc. with a particular emphasis on school textbooks. Students are also familiarized with a variety of textbook analysis systems and checklists used in material evaluation.

### 560 402 Methodology III

The course gives students a good background on how children learn language and how to support children in their endeavor to learn a second language. It presents explicit instructions in selecting, adapting, creating, and evaluating classroom activities.

### 560 403 Testing in EFL

The course examines different types of English tests including vocabulary, grammar, pronunciation, reading, writing, speaking, and listening. It also considers such related issues as concepts of validity and reliability, principles of test administration, etc.

## 511 410 Practical Training

This course takes the form of an extensive practicum in schools. The focus in this course is, primarily, on learning from the practical experience of preparing and teaching lessons. The course also introduces trainees to core skills involved in teaching English as a foreign language. Students are expected to observe classes, teach lessons, and participate in professional activities under the supervision of university supervisors and cooperating teachers.

## 610 101 English Writing Skills

The course is designed to develop students' proficiency in writing academic essays using rhetorical modes such as analysis, classification, comparison, and contrast. The course focuses on the organization and logical development of ideas as well as on language accuracy. A special emphasis is put on cohesion and coherence.

## 610 204 Advanced English Reading Skills

In this course, students examine extensive readings in a variety of styles. The vocabulary in the readings includes words students typically encounter during their university study. Students are required to read articles and extract information from various forms of charts, graphs, and illustrations.

## 610 209 Advanced English Writing Skills

This course builds upon the skills acquired in the English Writing Skills course to further develop students' critical thinking and academic writing competencies. The course devotes part of the semester to the skills required to write summaries, critiques, and syntheses. It also focuses on writing a research paper with special attention to paraphrasing, using quotation, referencing, etc.

## 610 212 Introduction to Linguistics

This course introduces students to the basic concepts and issues in linguistics. It also focuses on the nature of human language and its main features. The course familiarizes students with the procedures of analyzing a language at various phonetic and phonological levels taking English as an example.

## 610 323 Introduction to English Literary Genres

This course introduces students to the study of English literary genres, fiction, drama, and poetry, giving them insights into the nature of literary discourse. It develops the language skills and critical thinking necessary for analyzing and appreciating English literature and culture.

## 610 412 Arabic-English Translation I

This course is designed to equip students with the basic skills of translation with special focus on translating from Arabic into English. It covers various registers including the social, scientific, etc.

## 610 439 Survey of 20th English Literature

This course deals with aspects of British and American literature that reflect the events that have shaped twentieth-century literature and consciousness. It focuses on prominent writers who dealt with the concerns of the periods: World War I, imagism, industrialization, modernism, and the absurd.

# Department of Educational Technology

### Bachelor of Educational Technology Degree

The Bachelor of Educational Technology program seeks to provide its students with the knowledge and skills necessary for promoting instruction and training. The new technologies pose challenges and yet offer opportunities for rethinking education. The Department of Educational Technology (DET) will enable its graduates to participate effectively and efficiently in reshaping public and private organizations to face the technological and socio-cultural challenges of the 21st century

## Mission

It is the philosophy of the DET to involve its stakeholders in evaluating and developing the program's mission, goals and learning outcomes, and determining the level of importance of professional competencies recognized by the Association for Educational Communications and Technology (ACET) Stakeholders are also encouraged to participate in and offer real-life experience to the department's students through the practicum courses and field training. In addition they are involved in the process of graduate performance assessment where their feedback is used for program development and/or modifications when required.

The DET program gives special attention to practical experience. Integration of theory with practice is of great importance when designing, developing and implementing each course. The department places emphasis on the application of knowledge and skills acquired in instruction and training contexts. In addition, the department observes the practice of sharing students' comprehensive portfolios of educational technology projects and materials with organizations and agencies, for the benefit of both parties.

## Objectives

DET graduates are expected to master the professional competencies in design, development, utilization, management and evaluation within the instructional and work environments. The objectives enable students to:

- Analyze learner needs and performance in learning and work environments
- Design optimal conditions for learning and performance in instructional and working settings
- Design and develop technology-based instructional and professional products including multimedia-based projects, Web-Based Instruction (WBI) and Web-Based Training (WBT) courses and performance aids.
- Make decisions concerning the selection of technologies most appropriate to support learning using their knowledge of the strengths and weaknesses, costs and development time required by various instructional technologies
- Plan and manage instructional design projects, resource support systems and services, delivery systems, web based learning management systems and information sources in various learning and training contexts
- Evaluate learner performance, the quality of instructional and training programs, instructional technology projects and technology-based learning materials
- Use techniques and strategies to facilitate appropriate use of innovations in selected organizations and to integrate these innovations within the structure and behavior of the organizations
- Recognize technology policies and regulations adopted by society and evaluate their impact on

utilization, applications and integration of instructional technologies

- Teach productivity tools for the production of professional and instructional materials

## Admission Requirements

To be admitted at the educational technology program, applicants must have a UAE secondary school certificate, or its equivalent, with a minimum grade of not less than 60 percent. English is the medium of instruction and applicants are required to satisfy the TOEFL requirements. For further information please refer to the university admissions policy.

## Career Opportunities

Graduates of the program are qualified to utilize their knowledge and competencies in the following areas:

- Higher education institutions, including universities and community colleges
- Private and government training agencies
- Schools and school districts
- Industry, health, army and government agencies, and business corporations
- Training and educational software development agencies
- Media centers
- Learning resource centers, including libraries
- Evaluation, performance assessment and quality assurance agencies Graduates are qualified to assume responsibility in the following positions:
- Instructional designer
- Training program designer and manager
- Performance technology specialist
- Training and educational software designer and developer

- Multimedia professional materials developer and designer
- Distance learning program designer and manager
- Computer instructor
- School district technology expert and coordinator
- Media specialist
- Technology project manager
- Software, technology and program evaluator

## Graduation and Degree Requirements

The Bachelor Degree in Educational Technology is awarded upon the fulfillment of the following:

- A minimum of 120 credits, including the following, are required:
1. A minimum of general education courses (30 credits).
   a. University required courses (15 credits).
   b. University elective courses (9 credits).
2. Faculty Required Courses (15)
   a. College general education (6 credits).
   b. A minimum of college required courses (9 credits).
   c. A minimum of department courses (81 credits).
   d. Department required courses (69 credits).
   e. Department elective courses (12 credits).
- Successful completion of a practicum course (3 credits)
- A final CGPA (Cumulative Grade Point Average) of not less than 2.0

# Degree Requirements

The Bachelor Of Educational Technology requires students to successfully complete 120 credit hours: University Required Courses (24 credit hours), College Required Courses (27 credit hours), and Major Required Courses (75 credit hours), as follows:

| Type of Courses | Credit hours |
|---|---|
| 1. University General Education Requirements | |
| (a) University Required Courses | 15 |
| (b) University Elective Courses | 9 |
| 2. Faculty Requirements | |
| (a) Faculty General Education Courses | 6 |
| (b) Faculty Required Courses | 9 |
| 3. Major Requirements | |
| (a)  Major Required Courses | 69 |
| (b)  Major Elective Courses | 12 |
| Total Credit Hours | 120 |

## a. University Required Courses (15 Credit hours)

| Course Number | Course Title | Credit hrs | Prerequisites |
|---|---|---|---|
| 0101000 | Orientation | 0 | None |
| 0102110 | Islamic Culture | 3 | None |
| 0102140 | Communication Skills in Arabic Language | 3 | None |
| 0104110 | Computer Applications | 3 | None |
| 0103110 | Statistics/Arts | 3 | None |
| 0120130 | Environmental Sciences | 3 | None |

## b. University Elective Courses (9 Cr. Hrs.)

| Course Number | Course Title | Credit hrs | Prerequisites |
|---|---|---|---|
| 102120-1 | The Miraculousness of the Holy Koran | 3 | None |
| 0103130 | Research Methodology | 3 | None |
| 112110-0 | Principles of Architecture & Art | 3 | None |
| 112120-0 | Principles of Interior Design | 3 | None |
| 112130-0 | Modern Technology and Society | 3 | None |
| 113110-0 | Internet Concepts | 3 | None |
| 113120-0 | Introduction to Information Systems | 3 | None |
| 114110-0 | Economic Concepts | 3 | None |
| 114120-0 | Entrepreneurship Development | 3 | None |
| 115110-0 | History of science in Islam | 3 | None |
| 115120-0 | Scientific Pioneering | 3 | None |
| 115130-0 | General Psychology | 3 | None |
| 115140-0 | Principle of Mathematics | 3 | None |
| 115150-0 | The Art of Expression and Writing | 3 | None |
| 115160-0 | Emirates Society | 3 | None |
| 115170-0 | Education Technology | 3 | None |
| 117110-0 | General Chemistry | 3 | None |
| 117120-0 | Fundamental of Human Nutrition | 3 | None |
| 117130-0 | First Aid | 3 | None |
| 117140-0 | Energy, Water & Environment | 3 | None |
| 117150-0 | Applications of Remote Sensing | 3 | None |
| 118110-0 | Principles of Ethics | 3 | None |
| 118120-0 | General Biology | 3 | None |
| 118130-0 | Oral Health | 3 | None |
| 118140-0 | General Principles of Epidemiology | 3 | None |
| 118150-0 | CPR-Cardio Pulmonary Resuscitation | 3 | None |
| 119110-0 | Communication Skills | 3 | None |
| 119120-0 | Introduction to Communication Sociology | 3 | None |
| 119130-0 | Information Society | 3 | None |
| 120115-0 | Legal Culture | 3 | None |

## c. Faculty General Education Courses (6 Credit hours)

| Number | Course Title | Cr. hrs | Prerequisites |
|---|---|---|---|
| 314112 | Programming 1/ Educational Technology | 3 | |

| Number | Course Title | Cr.  hrs | Prerequisites |
|---|---|---|---|
| 500102 | Study Skills | 3 | |

## d. Faculty Required Courses (9 Credit hours)

| Number | Course Title | Credit hrs | Prerequisites |
|---|---|---|---|
| 0511102 | Const. and Dev. of Curriculum | 3 | |
| 0511309 | Educational Evaluation | 3 | |
| 512203 | Educational Psychology | 3 | |

## f. Major Required Courses (69 Credit hours)

| Number | Course Title | Credit hrs | Prerequisites |
|---|---|---|---|
| 580111 | Instructional Print and Audio Media | 3 | - |
| 580112 | Modern Educational Technology | 3 | - |
| 580121 | Introd. to Instructional System Analysis & Design | 3 | - |
| 580122 | Introduction to Distance Education | 3 | - |
| 580123 | Instructional Visual Media | 3 | 580111 |
| 580211 | Instructional System Analysis And Design | 3 | 580121 |
| 580212 | Interactive Multimedia Development | 3 | 580123 |
| 580213 | Educational Technology and Training | 3 | - |
| 580221 | Multimedia for Learning | 3 | 580212 |
| 580222 | Training Strategies | 3 | 580213 |
| 580223 | Individualized learning Models | 3 | - |
| 580224 | Networks & Communication Sys. in Distance Learning | 3 | 580122 |
| 580225 | Application Of Psychology  In Instruction &Training | 3 | 514212 |
| 580311 | Learning Resource Center Development &Evaluation | 3 | - |
| 580312 | Evaluation in Educational Technology | 3 | 580211 |
| 580314 | Selection & evaluation of Comp-Based Instruction Software | 3 | 580212 |
| 580315 | Web Page Design | 3 | 580224 |
| 580321 | Instructional Design Project | 3 | 580312 |
| 580322 | Learning Resource Center Administration | 3 | 580311 |
| 580325 | Web-based Instruction | 3 | 580315 |
| 580412 | Integration of Technology into Instruction &Training | 3 | 580222+580312 |
| 580421 | Practicum | 3 | - |
| 580422 | Graduation Project | 3 | - |

## g. Major Elective Courses (12 Credit hours)

*A: INSTRUCTIONAL MEDIA DEVELOPMENT DOMAIN*

| Number | Course Title | Credit hrs | Prerequisites |
|---|---|---|---|
| 580510 | Instructional Graphic Design | 3 | 580111<br>580123<br>580212<br>580314 |
| 580511 | Instructional Videography | 3 | |
| 580512 | Animation in Multimedia | 3 | |
| 580521 | Simulation and Games | 3 | |

*B: TEACHING AND LEARNING WITH COMPUTER BASED TECHNOLOGIES DOMAIN*

| Number | Course Title | Credit hrs | Prerequisites |
|---|---|---|---|
| 580520 | Database Application for Educational Management | 3 | 580221<br>580323<br>580325 |
| 580521 | Simulation and Games | 3 | |
| 580522 | Computer Based Training | 3 | |
| 580323 | Computer-Based Collaborative Instruction | 3 | |

*C: DISTANCE LEARNING DOMAIN*

| Number | Course Title | Credit hrs | Prerequisites |
|---|---|---|---|
| 580530 | Instructional Web Authoring Systems | 3 | 580122 |
| 580531 | Web Programming Languages | 3 | 580224 |
| 580532 | Inform. Management & Distance Learning Technologies | 3 | 580315 |
| 580323 | Computer-Based Collaborative Instruction | 3 | 580212+580312+580224<br>580212+580312+580224 |

*D: TRAINING AND EDUCATIONAL TECHNOLOGY DOMAIN*

| Number | Course Title | Credit hrs | Prerequisites |
|---|---|---|---|
| 580540 | Educational Technology & Human Resource Development | 3 | 280213<br>580222 |
| 580541 | Design and Management of Training Projects | 3 | |
| 580522 | Computer-Based Training | 3 | |
| 580532 | Inform. Management & Distance Learning Technologies | 3 | |

## Suggested study plan

### FIRST SEMESTER

| Course Code | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Tut | Lab | Cr.Hrs. | |
| 101000 | Orientation | 1 | 0 | 0 | 0 | - |
| 102140 | Communication Skills in Arabic Language | 3 | 0 | 0 | 3 | - |
| 104110 | Computer Applications | 2 | 0 | 2 | 3 | - |
| 102110 | Islamic Studies | 3 | 0 | 0 | 3 | - |
| xxxxxx | University electives-1 | 3 | 0 | 0 | 3 | - |
| 500102 | Study Skills | 3 | 0 | 0 | 3 | - |
| TOTAL | | 15 | 0 | 2 | 15 | |

### SECOND SEMESTER

| Course Code | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Tut | Lab | Cr.Hrs. | |
| 103110 | Statistics | 2 | 0 | 2 | 3 | - |
| xxxxxx | University electives-2 | 3 | 0 | 0 | 3 | - |
| xxxxxx | University electives-3 | 3 | 0 | 0 | 3 | |
| 580111 | Instructional Print and Audio Media | 1 | 0 | 4 | 3 | |
| 580112 | Modern Educational Technology | 3 | 0 | 0 | 3 | |
| TOTAL | | 12 | 0 | 6 | 15 | |

### THIRD SEMESTER

| Course Code | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Tut | Lab | Cr.Hrs. | |
| 314112 | Programming 1 / Educational Technology | 3 | 0 | 0 | 3 | - |
| 512203 | Educational Psychology | 3 | 0 | 0 | 3 | - |
| 580121 | Introd. to Instructional System Analysis & Design | 3 | 0 | 3 | 3 | - |
| 580122 | Introduction to Distance Education | 3 | 0 | 0 | 3 | - |
| 580123 | Instructional Visual Media | 1 | 0 | 4 | 3 | 580111 |
| TOTAL | | 13 | 0 | 4 | 15 | |

## FOURTH SEMESTER

| Course Code | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Tut | Lab | Cr.Hrs. | |
| 511101 | Curriculum Construction & Development | 3 | 0 | 0 | 3 | - |
| 580211 | Instructional System Analysis And Design | 3 | 0 | 0 | 3 | 580121 |
| 580212 | Introduction to Interactive Multimedia Development | 1 | 0 | 4 | 3 | 580123 |
| 580213 | Educational Technology and Training | 3 | 0 | 0 | 3 | - |
| 580224 | Networks & Communication Sys. in Distance Learning | 2 | 0 | 2 | 3 | 580122 |
| TOTAL | | 12 | 0 | 6 | 15 | |

## FIFTH SEMESTER

| Course Code | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Tut | Lab | Cr.Hrs. | |
| 511309 | Educational Evaluation | 3 | 0 | 0 | 3 | 512218 |
| 580221 | Multimedia for Learning | 2 | 0 | 2 | 3 | 580212 |
| 580225 | Application of Psychology in Instruction &Training | 3 | 0 | 0 | 3 | - |
| 580311 | Learning Resource Center Development & Evaluation | 2 | 0 | 2 | 3 | - |
| 580315 | Web Page Design | 2 | 0 | 2 | 3 | 580224 |
| xxxxxx | Departmental Elective course I | 2 | 0 | 2 | 3 | Required Domain courses |
| TOTAL | | 14 | 0 | 8 | 18 | |

## SIXTH SEMESTER

| Course Code | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Tut | Lab | Cr.Hrs. | |
| 102130 | Environmental Sciences | 3 | 0 | 0 | 3 | - |
| 580222 | Training Strategies | 3 | 0 | 0 | 3 | 580213 |
| 580223 | Individualized learning Models | 3 | 0 | 0 | 3 | - |
| 580312 | Evaluation in Educational Technology | 3 | 0 | 0 | 3 | 511309 |
| 580325 | Web-based Instruction | 2 | 0 | 2 | 3 | 580315 |
| xxxxxx | Department Elective course  II | 2 | 0 | 2 | 3 | Required Domain courses |
| TOTAL | | 16 | 0 | 4 | 18 | |

## SEVENTH SEMESTER

| Course Code | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Tut | Lab | Cr.Hrs. | |
| 580314 | Selection & evaluation of Comp.-Based Instruction Software | 3 | 0 | 0 | 3 | 580212 |
| 580321 | Instructional Design Project | 3 | 0 | 0 | 3 | 580211 |
| 580322 | Learning Resource Center Administration | 3 | 0 | 0 | 3 | 580311 |
| 580412 | Integration of Technology into Instruction & Training | 3 | 0 | 0 | 3 | 580222+580312 |
| xxxxxx | Department Elective  course III | 2 | 0 | 2 | 3 | Required Domain courses |
| TOTAL | | 14 | 0 | 2 | 15 | |

## EIGTTH SEMESTER

| Course Code | Course Name | Credit Hours | | | | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lec | Tut | Lab | Cr.Hrs. | |
| 580421 | Practicum | 3 | 0 | 0 | 3 | - |
| 580422 | Graduation Project | 3 | 0 | 0 | 3 | - |
| xxxxxx | Department Elective  course IV | 2 | 0 | 2 | 3 | Required Domain courses |
| TOTAL | | 8 | 0 | 2 | 9 | |

# Course Descriptions

## 580 111 Instructional Print and Audio Media

This entry-level course will introduce students to the design and development of effective print and presentation instructional materials. Students will develop advanced skills in word processing, desktop publishing and electronic presentation application software.

## 580 112 Modern Educational Technology

This introductory course surveys the field of educational technology through the historical development of computer technology, an overview of modern classroom applications and an examination of trends and issues surrounding the use of computer technology for teaching and learning.

## 580 121 Introduction to Instructional System Analysis and Design

This course serves to introduce and provide experience in the concepts and processes of instructional systems analysis and design. The major components of instructional design models, along with their respective functions, will be presented. This is an introductory course which provides both the information for and application of skills and techniques necessary in the analysis, design, development and evaluation of effective instructional products.

## 580 122 Introduction to Distance Education

The purpose of this course is to investigate principles for distance education, strategies for delivering content online and tools for delivery. The course explores the central issues involved in distance education, from print-based correspondence courses to more contemporary, digital approaches. The primary focus will be on the use of Internet, e-mail, authoring instruction for the World Wide Web, electronic bulletin boards, conferencing systems and video teleconferencing.

## 580 123 Instructional Visual Media

Students will acquire and create digital still and motion visuals that meet instructional needs. They will learn about visual literacy and fair use guidelines and develop skills with hardware, software and design techniques.

## 580 211 Instructional System Analysis and Design

This course represents a mix of theory and practical development. Students will examine components of a predominant ISD model and implement it in the development of self-based instructional units. To accomplish this goal, students will participate in the instructional design process: identifying the need for instruction, examining learner characteristics, conducting task analysis, writing instructional objectives, determining the instructional sequence and objectives, selecting instructional messages and conducting formative evaluation.

## 580 212 Introduction to Interactive Multimedia Development

Students will be actively involved in learning and designing dynamic multimedia products using presentation programs. The course will encourage hands-on participation and group learning as students research the internet and peripherals such as CD-ROM, camcorder, scanner and digital photography.

## 580 213 Educational Technology and Training

This introductory course provides experience in the concepts of process training and analysis of various aspects of training systems. Students will have the opportunity to experience the major components of training systems and models. The course provides both introductory information and practice in the application of skills and techniques

necessary in analysis, design, development and evaluation of effective training procedures.

## 580 221 Multimedia for Learning

This course focuses on the design and evaluation of multimedia in learning and teaching environments, aspects related to human learning, and the design of interactive multimedia technology to support learning and knowledge construction. It examines different types of interactive multimedia learning environments, strategic approaches to education multimedia design and presentation design. The course involves a practical component in which students design a scaled-down educational multimedia environment.

## 580 222 Training Strategies 580 312 Evaluation in Educational Technology

This course builds upon concepts gained in the "Educational Technology and Training" course and focuses on determining training strategies that: 1) align with an organization's business needs and 2) are based on the characteristics and effective utilization of various training methods.

## 580 223 Individualized Learning Models

In this course students explore the history, purpose and learning theory basis of individualized learning. They compare and contrast expository and inquiry approaches, evaluate instruction based on both approaches, consider design and development issues and explore current issues and emerging trends in individualized learning.

## 580 224 Networks and Communication Systems in Distance Learning

This course presents the design of distance-learning networking and data communications via a combination of live TV lectures, web labs, web lectures posted on the web and e-mail.

## 580 225 Application of Psychology in Instruction and Training

This course will examine the theories of learning and the practical application of these theories in instruction and training. Drawing upon the main themes of these theories, the role of media and technology in teaching and learning, and the planning, design and delivery of technology-based instruction will be explored.

## 580 311 Learning Resource Center Development and Evaluation

This course is designed to provide students with the knowledge and skills necessary for the development and evaluation processes of learning resource centers. Students will be introduced to the concept of the learning resource center, its philosophy, objectives, levels, planning, development and evaluation. Students will be required to set up a plan for instituting a learning resource center at a specified level. The course also provides information and guidelines regarding the cyber library and its services.

## 580312 Evaluation in Educational- Technology

This course explores current trends, issues and assessment/ evaluation methods in modern educational technology. Emphasis will be placed on applying the processes of student assessment and program evaluation to determine the outcomes of educational technology application. In addition the relevance of a broad selection of evaluation criteria are assessed, and the question of how evaluation might be applied to determine formative, summative and Criterion-Referenced Measurement (CRM) outcomes of student learning through technology use is addressed.

### 580 314 Selection and Evaluation of Computer-Based Instruction Software

This course will explore techniques for selecting and evaluating educational software products and Internet-based resources in terms of quality, effectiveness, educational benefits, instructional uses(s) and ease of implementation. In addition to conducting evaluations of educational software and Internet-based resources, students will evaluate hardware system requirements and install/download applications for use.

### 580 315 Web Page Design

In this course students will critically evaluate web sites, develop expertise in website design, and skills in website development using HTML and web authoring software. They will design, develop and publish a simple personal website in addition to a more complex informational or instructional one.

### 580 321 Instructional Design Project

During this course, students will complete the design of an instructional program for an existing instructional problem. Students will identify an instructional problem, conduct a needs analysis and design the instructional plan to include evaluation measures as a solution to the problem.

### 580 322 Learning Resource Administration

This course covers the following concepts: media quarters, facilities, collections, equipment and services. The course also discusses principles of organization and administration of learning resource centers and media centers and programs. Students are expected to familiarize themselves with learning and media centers in the field.

### (580325) Web-based Instruction:

This course is an introduction to the principles of Web-Based Instruction (WBI) and its role in creating learning environments that utilize the attributes and powerful resources of the Internet. Emphasis will be placed on pedagogical, technological, organizational, institutional, and ethical issues related to the design, development, and delivery of WBI. Online course will be constructed as a project in this course for the purpose of providing a developmentally appropriate academic experience integrated with current learning theories and better practices in education.

### (580412) Integration of Technology into Instruction and Training:

In this course students explore technology integration in instruction and training in a specific discipline, apply the NTEQ model for integrating technology in instruction, and evaluate the application of the model. They also develop expertise with tools and techniques for learner-centered and teacher-directed technology integration.

### (580421) Practicum:

On- site experience relates closely theory and practice, under supervision of qualified person (s). Students under the supervision of a practicum supervisor and a faculty coordinator are responsible for planning and carrying out a "Plan of Work". Students maintain and submit logs, journals, and other documentations of the experience.

### (580422) Graduation Project:

The course is intended as a vehicle by which the students can show the competencies of the ET major that has been mastered. This involves the completion of a significant project in which educational technology concepts and techniques are used. Students should try to clearly show

that they have used what was learned in their area of concentration.

## (580510) Instructional Graphic Design:

This course will focus on computer graphics production used in the development of instructional materials by examining of the principles of graphic design, typography, and production techniques as they apply to electronic delivery systems. Students will develop an awareness of the visual aspects of communicating information and exercise that awareness through practice using design tools, primarily Adobe Photoshop.

## (580511) Instructional Videography:

In this course students participate in the pre-production, production, and post-production phases of the digital video production process to develop technically and aesthetically sound video programs that meet instructional needs.

## (580512) Animation in Multimedia:

In this course students consider purposes for using animation in instructional multimedia, explore various ways of creating animation, and develop expertise with software packages for creating digital animation through a series of hands-on projects.

## (580520) Database Application for Educational Management:

In this course, students will explore the uses of databases for the management of educational information. They will gain skills in the development of computer-based databases and will design, develop, and plan for the implementation of an educational database.

## (580521) Simulations and Games:

In the course students will consider issues related to the design of simulations and games, evaluate commercially produced simulations and games, explore a variety of software for development of simulations and games, and develop expertise with specific software packages. They will design and develop technically simple, instructionally sound simulations and games.

## (580522) Computer-Based Training:

Students will design and develop computer-based training; following an instructional design process can be used for all media (computer-based training, Web-based training, Distance Education). Students will examine major types of media that are popular for delivery systems today, the benefits and drawbacks of each, and walk through the processes of needs assessment, instructional design, development and implementation, and evaluation.

## (580530) Instructional Web Authoring Systems:

This course will explore methodologies in comparing and selecting authoring systems for distance education. The course will focus on effective instructional strategies in distance education and both asynchronous and synchronous deliveries will be explored.

## (580531) Web Programming Languages:

In this course students will explore, compare, and contrast client-side and server-side Web programming languages. They will develop intermediate level skills with coding and troubleshooting a client-side scripting language. They will design and develop an instructional application that incorporates a client-side scripting language.

### (580532) Information Management and Distance Learning Technologies:

This course will explore the component processes and strategies that comprise distance education, to include teaching and learning, communication, management of information, course design, program planning and delivery. Students will explore administrative, instructional, and technical issues associated with integrated delivery systems

### (580540) Educational Technology and Human Resource Development:

This course will introduce organizational factors that affect training and development systems, ways to identify training needs in an organization, strategies for maximizing trainee's learning, methods of measuring training effectiveness, strategies for developing and training leaders, and management and executive development approaches.

### (580541) Design and Management of Training Projects:

Students will explore the unique responsibilities of project management for an instructional design project, which includes project planning, timeline and budget development, selecting team members, tracking project progress, managing simple and complex projects, and using a project management productivity tool.

### (580323) Computer-Based Collaborative Instruction:

In this course, students will develop an understanding of the concept of collaborative learning (collaborative instruction) and how collaborative learning activities are implemented. They will evaluate both asynchronous and synchronous communication tools for collaborative learning and plan, facilitate, and evaluate computer-based collaborative learning activities.

## Faculty Members

### Ajman Campus

| Name | Rank | Specialization | Degree | year | University |
|------|------|----------------|--------|------|------------|
| Dr. Samir Hadid,   Dean | Professor | Mathematics | PhD | 1979 | London Univ. |
| Dr. Cheikh Ould Hamoud,     The Head of Department of Math&Science. | Professor | Mathematics | PhD | 1998 | Univ. of Mohammaed V - Agdal / Morroco |
| Dr. Mazen Ahmed Jaradat, Head of Department of Arabic &Islamic studies | Associate Professor | Arabic Language | PhD | 1993 | Ain Shams Univ, Egypt |
| Dr. Basim Nashat Al-Samarrai, Head of Ed. Tech. Department | Associate Professor | Edu. Psychology | PhD | 1983 | Indiana Univ. / USA |
| Dr. Amin Abdullah  Al-Mekhlafi,  Head of  TEFL Department | Assistant Professor | TEFL | PhD | 1998 | Florida Univ. / USA |

| Name | Rank | Specialization | Degree | year | University |
|------|------|----------------|--------|------|------------|
| Dr. Ibrahim Rajab Gherfal | Professor | Education Technology | PhD | 1982 | Catholic Univ. of America |
| Dr. Kubais S. A.Fahady | Professor | Mathematics | PhD | 1972 | The Univ. of Hull / UK |
| Dr. Hashim S. M. Manna | Professor | Arabic Language | PhD | 1986 | Univ. of London |
| Dr. Muzahim Bani T. Al-ubaidi | Associate Professor | Mathematics | PhD | 1993 | The Hungarian Committee |
| Dr. Mohammed Djeddi | Associate Professor | Statistics | PhD | 1986 | University of Sheffield/ UK |
| Dr. Ababakr Ali El-Saddik | Associate Professor | Islamic Studies | PhD | 1990 | Al Azhar Univ. / Egypt |
| Dr. Mohamad Eqbal Farhat | Associate Professor | Islamic Studies | PhD | 1998 | Al Zaytona Univ. / Tunisia |
| Dr. Abdul Kareem A. Yaseen | Associate Professor | Mathematics | PhD | 1987 | Wales Univ. / UK |
| Dr. Atef Fayez Abd El Kader | Assistant Professor | Physics | PhD | 1998 | The Queens Univ / UK |
| Dr. Said Mohammady | Assistant Professor | Mathematics | PhD | 1988 | *Ain Shams Univ. *Buateh Univ./ France |
| Dr. Najah Shabib | Assistant Professor | Education | PhD | 2001 | Wales Univ. / UK |
| Dr.Waleed Says Zaher | Assistant Professor | Physics | PhD | 2004 | Sequer/ USA |
| Mr. Tareq Moh›d N. Abu Sa›a | Lecturer | Mathematics | Master - | 1982 | Middle East Technical Univ. Turkey |
| Mr. Salim Abdul M. Al-Ajeel | Lecturer | Physics | Master - | 1989 | Baghdad Univ. |
| Ms. Sumaya A. Hussain | Lecturer | Education (Math) | Master - | 1994 | Baghdad/Iraq |
| Mr. Mohammed A. I. Jadallah | Lecturer | Education (Arabic) | Master - | 2003 | Sudan Univ. |
| Mr. Mahmoud Ibrahim Y. khrais | Lecturer | Mathematics | Master - | 1982 | Sam Houston |
| Mr. Atheer Dawood Mahir | Lecturer | Physics | Master - | 1995 | Baghdad Univ. |
| Ms. Randa Abdou Suliman | Lecturer | English | Master - | 1999 | Alexandria Univ. / Egypt |

## Fujairah Campus

| Name | Rank | Specialization | Degree | year | University |
|---|---|---|---|---|---|
| Dr. Mustafa Salman | Professor | Mathematics | PhD | 1981 | Birmingham Univ. England |
| Dr. Hashim Al Samarei | Professor | Teaching Methods | PhD | 1994 | Baghsad Univ. |
| Dr. Ahmed Al Shafei | Associate Professor | Developing Psychology | PhD | 2003 | Ean Shams Uni. |
| Dr. Ali Al Surori | Associate Professor | Islamic Stu. | PhD | 1989 | Al AZher Uni. 1989 |
| Dr. Mohanned Kazer | Associate Professor | Methods of teach. Islamic | PhD | 2002 | Huddersfield Uni. |
| Dr. Mohamed R. Zanger | Associate Professor | Arabic Language | PhD | 1995 | Um alqura- Saudi Arabia 1995 |
| Dr. Osama Ajami | Assistant Professor | Mathematics | PhD | 2000 | East Anglia UK. |
| Dr. Abdulhamid Al Qubaissi | Assistant Professor | Arabic Grammar | PhD | 1989 | Al AZher Uni. |
| Dr. Mamdouh Hashim | Assistant Professor | Physics | PhD | 1995 | Leeds Univ. England |
| Dr. Sameh Kamis | Assistant Professor | Edu. Psychology | PhD | 1997 | Ean Shams Uni. |
| Dr. Mahdi Qayess | Assistant Professor | Islamic Stu. | PhD | 1999 | Baghdad uni. |
| Dr. Hatem al Qudah | Assistant Professor | Method of teach. Arabic | PhD | 2002 | Huddersfield Uni. |
| Dr. Abdulrahman. Qassem Al bari | Lecturer | Medical Physics | Master | 2005 | AL Nelaine Univ. |
| Mr. Qussie Shehada | Lecturer | Edu. Science | Master | 2005 | Yarmouk Univ. /Jordan |
| Mrs. Lubna Tarif | Lecturer | Mathematics | Master | 2000 | Jordan Univ. |