

Catalog



**American University of
Ras Al Khaimah
(AURAK)**

2013-2014



His Highness Sheikh Saud Bin Saqr Al Qassimi
Ruler of Ras Al Khaimah, and
Chancellor
American University of Ras Al Khaimah

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Message from the President

Dear All,

American University of Ras Al Khaimah (AURAK) is continuing to focus on the fulfillment of the vision of His Highness Sheikh Saud Bin Saqr Al Qasimi, the ruler of Ras Al Khaimah, who wished to establish an institution of higher education that followed the American model entwined with indigenous culture, and to expand local horizons to encompass western academic traditions. On August 1, 2009, AURAK received licensure from the Ministry of Higher Education and Scientific Research with four (4) accredited programs: BS in Biotechnology, BS in Business Administration, BS in Computing Engineering and BS in Electronics and Communication Engineering. AURAK now expand its offering to fourteen (14) new programs namely: Bachelor of Science in Accounting, Civil and Infrastructure Engineering, Mechanical Engineering, Industrial Engineering, Computer Science, Finance, Marketing, Human Resource Management, Bachelor of Arts in English Language, Mass Communication and Graduate programs in MBA, Executive MBA, Engineering Project Management and Education.

AURAK's destiny is to meet the growing needs of the Emirates by employing a cadre of diversified and experienced faculty and staff, introducing of new programs, rebuilding the infrastructure, modernizing the University with innovative technology, new laboratories, and enhancing the facilities. Relationships have been established with other academic institutions through the signing of Memoranda of Understanding (MOU) with American Universities namely George Mason University; California State University, San Bernardino; Hong Kong University of Science and Technology; and University at Albany, State University of New York. This paves the way for global exposure for faculty and staff, providing a closer bonding, academic exchange, resources sharing and expertise.

The growth of AURAK is historical for the Northern Emirates, as it celebrates diversity and multiculturalism in the ethnic variety of its staff and faculty, but remains located within the American academic system. AURAK is in every way evolving, progressing and advancing forward.

I am confident that our united efforts will lead the University to the forefront of the best academic institutions in the UAE. I wish you all many enjoyable and productive academic years at the American University of Ras Al Khaimah.

Prof. Hassan Hamdan Al Alkim

President, AURAK

Academic Calendar 2013 – 2014

FALL 2013

August	28	Placement Tests
August	28	New Faculty Orientation
August	29	Orientation and New Student Course Registration
September	1	First day of Class and Fee Payment
September	5	Last day to Add/Drop
October	3	Last date to withdraw a course without grade 'F'
October	15-16-17	Eid Al Adha Holiday
November	4	Islamic New Year
December	2	UAE National Day
December	15 - January 2	Fall Semester Break
January	5	Classes Resume
January	9	Last Day of Class
January	11 - 16	Examination Period
January	13	Prophet Mohammed's Birthday
January	21	Grades Available

SPRING 2014

January	22	Placement Tests
January	22	New Faculty Orientation
January	23	Orientation and New Student Course Registration
January	26	First day of Class and Fee Payment
January	30	Last day to Add/Drop
February	20	Last Date to withdraw a course without grade 'F'
March	30 – April 10	Spring Break
April	13	Classes Resume
May	22	Last Day of Class
May	25-29	Examination Period
June	2	Grades Available
June	5	Commencement

SUMMER 2014 – Session I

June	3	Classes Begin
July	10	Last day of Summer Session I
July	13	Grades Available

SUMMER 2014 – Session II

July	14	Classes Begin
August	17	Last day of Summer Session II
August	19	Grades Available

About AURAK

The University originated from the vision of His Highness Sheikh Saud Bin Saqr Al Qasimi, Ruler of Ras Al Khaimah, who wanted to found a university based on the American model that would serve the needs of community, the country, and the region. He wished to provide high quality educational opportunities to students that both emphasize a global outlook and are rooted in the region's context and culture. Consequently, the American University of Ras Al Khaimah was established as an independent institution by Royal Decree in April 2009, and was licensed by the Ministry of Higher Education and Scientific Research on August 1, 2009 with four accredited programs: BS in Biotechnology, BS in Business Administration, BS in Computing Engineering and BS in Electronics and Communication Engineering.

AURAK Vision, Mission and Values

Our Vision

To be a leading knowledge-based professional institution that adheres to the universality of knowledge- sharing.

Our Mission

The American University of Ras Al Khaimah (AURAK) is an independent coeducational institution of higher education. AURAK's mission is to provide high-quality undergraduate and graduate education based on the principles of objectivity and scientific merits that contributes to human development. It encourages life-long learning and professional education.

Our Values

People

To create a student learning environment that develops social and cultural understanding for personal and professional growth and concern for others, builds skills of independence, self – direction , critical and reflective thinking , innovation and entrepreneurship ; to recruit high quality faculty and staff members capitalizing on their uniqueness and recognizing their excellence in performance.

Quality

To offer high quality academic and professional programs that build mastery and commitment to life- long learning.

Scholarship and Research

To advance knowledge through discovery, dissemination, and application.

Cultural Authenticity

To serve as a center for cultural dialogue and understanding, promoting cultural heritage and as a community resource for language development.

Engagement

To engage faculty, students, and staff with the broader community; to maximize human resources and contribute to the solution of local, regional, and global problems by developing sustainable partnerships that enhance opportunities for students and the community, including partnerships with local schools, local and regional governments, business and industry, and other institutions of higher education.

Improvement and Productivity

To seek continuous improvement through reflection, assessment, and quality enhancement; setting and rewarding high standards and being proactive, efficient, and effective within the context of high quality.

Academic Freedom

To create an environment of open, critical thought, and enquiry and exchange of ideas; of tolerance for divergent views and beliefs.

Integrity

To maintain the highest standards of integrity and instill those standards as an important value for sustaining humankind.

Enterprising

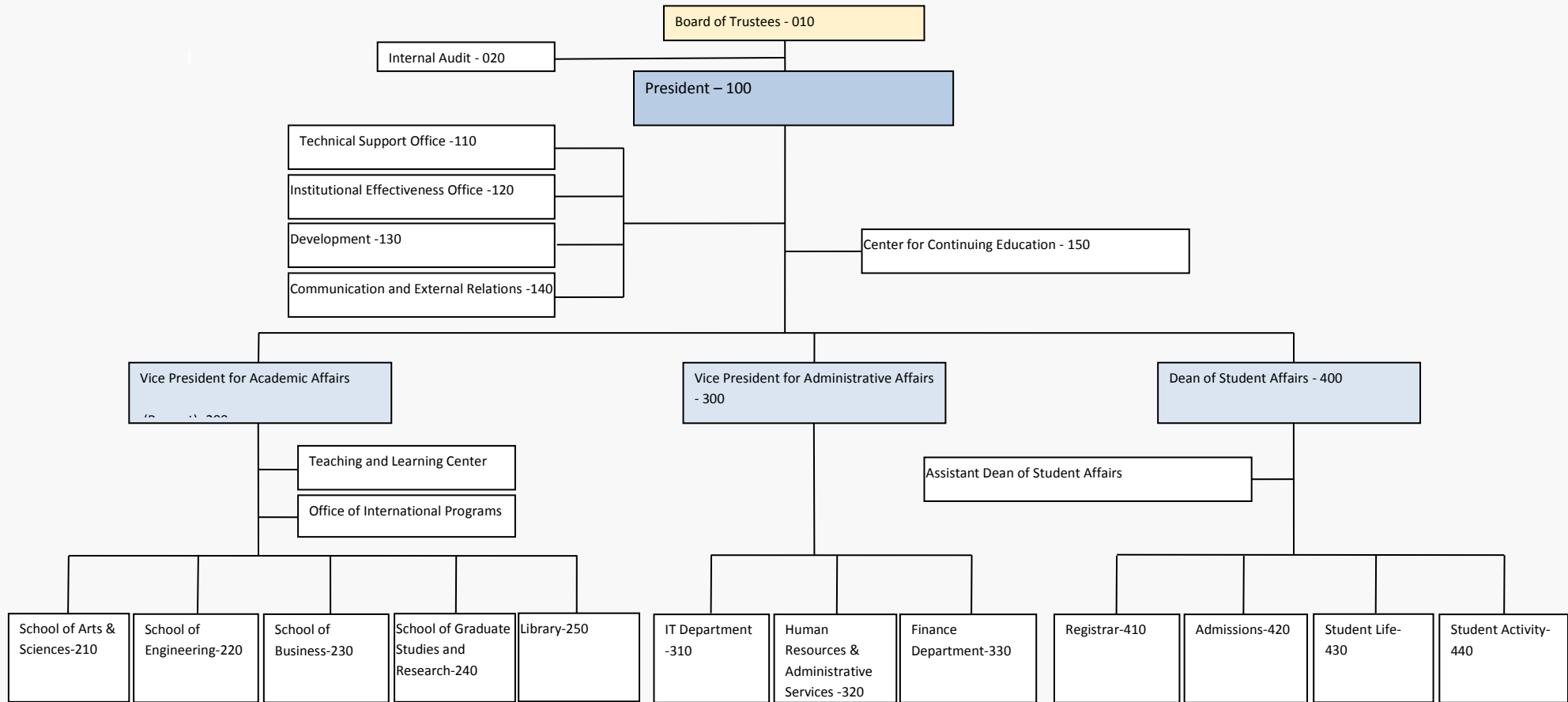
To value innovation and entrepreneurship in teaching, research, services, and other enterprises.

Global

To promote multi- cultural understanding, global knowledge, and world citizenship for enhancing world peace and prosperity and creating sustainable futures.

AURAK Organizational Chart

AURAK's Organizational Chart-Approved by the Board of Governors on July 8th, 2013



Faculty List

Abu-Jadayil, Wisam

Assistant Professor, PhD Mechanical and Industrial Engineering, Iowa State University, USA

Ahmed, Irshad

Assistant Professor, PhD Chemistry, Bhavnagar University, INDIA

Akash, Bilal

Professor and Dean, PhD Mechanical Engineering, Southern Illinois University, USA

Al Alkim, Hassan

Professor and President, PhD Political Science, Exeter University, UK

Al-Ani, Nowar

Assistant Professor, PhD Islamic Studies, Beirut University, LEBANON

Al-Mawali, Hamzah

Assistant Professor, PhD Accounting, University of Sciences USM, MALAYSIA

Al-Shaboul, Yousef

Assistant Professor, PhD English Education, University of North Texas, USA

Amash, Rassem

Associate Professor, PhD Organizational Leadership, Nova Southeastern University, USA

Ammari, Madiha Zahera

Instructor, MS Structural Engineering, the University of Jordan, JORDAN

Arthur, Robert

Assistant Professor, PhD Geography, University of Calgary, CANADA

Assaad, Maher

Assistant Professor, PhD Electrical and Electronic Engineering, University of Glasgow, UK

Attia, Hussain

Instructor, MS Electrical Engineering, University of Technology, IRAQ

Awad, Mohammed

Assistant Professor, PhD Computer Science, University of Houston, USA

Ayoola, Anthony

Associate Professor, PhD Management, King's College London, UK

Badarneh, Muhammed
Associate Professor, PhD Linguistics, Arizona State University, USA

Bdira, Elyes
Assistant Professor, PhD Electrical and Communication Engineering, Concordia University, CANADA

Bouzahir, Hassane (on leave)
Professor, PhD Mathematics, Cadi Ayyad University, MOROCCO

Brevett, Renford
Assistant Professor, PhD Industrial Education and Technology, Iowa State University, USA

Chan, Soon
Professor, PhD Finance and Accounting, Wollongong University, AUSTRALIA

D'Souza, Brendan
Assistant Professor, PhD Biotechnology, Dublin City University, IRELAND

Dodd, Cambria
Assistant Professor, PhD Comparative and International Education, Columbia University, USA

Dorstewitz, Philipp
Assistant Professor, PhD Philosophy and Planning Theory, London School of Economics, UK

ElBialy, Mohamed
Professor, PhD Mathematics, University of Minnesota, USA

Griffin, Larry
Professor, PhD English, University of Oklahoma, USA

Hadid, Maha
Instructor, MS information Science and Systems, University of Marseille, FRANCE

Hamad, Nasser
Associate Professor, PhD Electronics Engineering, University of Electro-Communications (UEC), JAPAN

Hampton, Varduhi
Instructor, MA English and German Language, Yerevan State University, ARMENIA

Idris, Rami
Instructor, MS Computer Science, University of Detroit Mercy, USA.

Jallad, Abdul-Halim
Assistant Professor, PhD Computer Engineering, University of Surrey, UK

Katkhuda, Hasan

Associate Professor, PhD Civil Engineering, University of Arizona, USA

Khan, Farooq

Professor, PhD Management, Aligarh Muslim University (AMU), INDIA

Khodr, Majed

Associate Professor, PhD Electrical and Computer Engineering, University of Oklahoma, USA

Kim, Bong Sik

Assistant Professor, PhD Mathematics, Arizona State University, USA

Lal, David S.

Professor, PhD Business, University of Strathclyde, UK

Lam, Tri

Associate Professor, PhD Economics, Victoria University, AUSTRALIA

Mahmoud, Fathi

Instructor, MS Nuclear and Elementary Physics, London University, UK

Marton, John

Instructor, M.Sc Biochemistry, Bharathidasan University, INDIA

Matar, Rachel

Assistant Professor, PhD Structural and Functional Biochemistry, University Claude Bernard, FRANCE

Merabet, Mustapha

Associate Professor, PhD Energy Sciences, University of Quebec, CANADA

Merheb, Maxim

Assistant Professor, PhD Forensic Biology and Biophysics, Ecole Normale Supérieure, FRANCE

Mohsen, Mousa

Professor and Dean, PhD Mechanical Engineering, Wayne State University, USA

Negash, Beza

Assistant Professor, PhD Electrical and Communication Engineering, Aalborg University, DENMARK

Patterson, Anthony

Assistant Professor, PhD English Studies, Durham University, UK

Pettaway, Lincoln
Assistant Professor, PhD Human Resource Development, Barry University, USA

Puthiyaveetil, Abdul Gafoor
Assistant Professor, PhD Biology, Virginia University of Technology, USA

Ravindran, Aisha
Associate Professor, PhD English, Mahatma Gandhi University, INDIA

Rousseau, Richard
Associate Professor, PhD Political Sociology, University of Quebec in Montreal, CANADA.

Ryder, John
Professor and Provost, PhD Philosophy, Stony Brook University, USA

Shafiq, Nausheen
Instructor, MA English Literature, University of Nottingham, UK

Sharpe, Peggy
Professor and Dean, PhD Romance Languages, University of New Mexico, USA

Shehadeh, Omar
Associate Professor, PhD Arabic Language and Literature, Yarmouk University, JORDAN.

Takruri, Maen
Assistant Professor, PhD Electrical Engineering, University of Technology, AUSTRALIA

Taylor, John
Assistant Professor, PhD Mathematics, University of North Texas, USA

Verma, Priti
Assistant Professor, PhD Child Development, Chaudhary Charan Singh Haryana Agricultural University, INDIA

Yaseen, Zahi
Assistant Professor, PhD Educational Leadership, Central Michigan University, USA

Campus Map



Partner Organizations and Institutions

1. MOU between AURAK and California State University, San Bernardino USA
2. MOU between AURAK and George Mason University
3. MOU between AURAK and University at Albany, State University of New York
4. MOU between AURAK and Sheikh Saqr Program for Government Excellence
5. MOU between AURAK and Gulf Pharmaceutical Industries-JULPHAR
6. MOU between AURAK and Telecommunications Regulatory Authority
7. MOU between AURAK and Ras Al Khaimah White Cement
8. MOU between AURAK and the UAE Ministry of Foreign Trade
9. MOU between AURAK and Al Rahma Charity Foundation
10. MOU between AURAK and Ras Al Khaimah Charity Foundation

Campus Resources & Facilities

Bookstore

The campus bookstore is located within the university campus. In addition to textbooks, the bookstore carries general reading materials, stationery supplies, and other related goods and products. Operating hours are posted on the bookstore door.

Career Development Office

Career services at AURAK are designed to support the University mission by promoting students' successful academic progress and adjustment and by providing degree-seeking students with individual career guidance and assistance in job placement. It provides students with individual or group guidance and preparation to enter the professional job market. The center works in close collaboration with academic advisors and faculty to assess students' progress and to suggest suitable job placement opportunities. Career Center staff also monitors national and international employment trends and conditions and distribute the findings to the university community.

The Career Center works as the liaison between business and industry and the university. The Student Intern program is administered through the Career Center.

Services offered:

- Career resource Library
- Online and paper based tools for self-assessment
- Learning and study skills workshops
- Information on career options and employment trends
- Awareness of required skills and competencies
- General job skills advice and training
- Resume and cover letter writing
- Interview preparation through mock interviews
- Work-place etiquette and techniques
- Links with potential employers
- Advice on employment opportunities
- Organization of career fairs on campus
- Internships, job experience, training opportunities

AURAK students are allowed to work at the university as the part-time staff in these positions: Library Assistant, Laboratory Assistant, Admission Assistant, Marketing Assistant and IT assistant according to the AURAK policy for Career Development and Student Empowerment. The aim of this policy is to support students to gain experience while they are getting their education.

Students are strongly encouraged to visit the Career Development Office during their first year at AURAK and continue working closely with this office to develop their career plan. Junior and Senior students are encouraged to visit this office at least twice every semester.

Computer Facilities and Resources

AURAK is a high-technology, fully Wi-Fi covered campus and students, faculty and staff have ample access to computers and IT services. The Information Technology (IT) Department serves students, faculty and staff's computer related needs by providing administrative, technical and instructional computer support services such as My AURAK, e-mail accounts, local area networks and wireless. All classrooms have overhead projectors and are connected to the internet to enhance student learning. There are four computer laboratories for students' use including a database browsing lab.

Computer Labs are located at the following places: Building B, Ground Floor:

Operating hours: Sunday-Thursday 8:30 AM to 5:00 PM Building B, Ground floor, B 111

Operating hours: Sunday-Thursday 8:30 AM to 5:00 PM Building B, Ground floor, B 114

IT Help Desk

The IT Help Desk is dedicated to assist administrators, students, and faculty with their IT related needs. Location: Building A, Operating Hours: Sunday-Thursday 8:30 AM to 5:00 PM

Food Services

The food court is located on the ground floor of the new Student Center. This privately operated enterprise provides a wide selection of self-service meals, snacks, and drinks. Self-service vending machines are also located throughout the campus.

Laboratories

Engineering Laboratories

AURAK has well equipped labs, in line with international standards, for all their programs.

The electronic labs focus on electronics, communications, signal processing, digital systems, microprocessor and microcontrollers. The laboratories are fully equipped with standard and specialized instrumentation including:

Dual Trace Digital Storage Oscilloscopes, Dual Trace Cathode Ray Oscilloscope, Frequency Analyzers, Digital Sweep Function Generators, General Function Generators, Digital Multi meters, DC Power Supplies, Electrical & Electronic Circuits Trainer, Digital Circuits Trainers, Communication Circuits Trainers, Different Types Breadboard Modules, Temperature Controlled Soldering Stations.

The laboratories are supported with different types of components which include: Resistors, Capacitors, Inductors, Diodes, Zener Diodes, Transistors, Photo Transistors, Digital Chips, Memory Chips, Analog Chips, Op-Amps Chips.

The laboratories are equipped with computers that have network software for labs requiring simulations: VHDL Software for Digital System Design Lab, MATLAB for Digital Signal Processing and PSpice Software for Analog and Digital Circuits Simulations.

Science Laboratories

To support the laboratory-based modules of the Biotechnology Program, there are dedicated Biotechnology, Chemistry and Physics Laboratories to facilitate student learning through practical exercises. A newer Biotechnology laboratory, the Julphar Biotechnology Laboratory, that houses cell culture and molecular biology facilities has been functional since September 2012. The Biotechnology and Chemistry Laboratories are fully equipped with standard and specialized instrumentation including digital balances, centrifuges, pH-meters, spectrophotometers, spectrofluorometer, upright and inverted microscopes, laminar flow cell culture cabinets, an ultralow freezer, PCR thermocycler, Gas Chromatography and Infrared spectroscopy equipment, rota evaporator, incubators, shaking platforms, UV transilluminator, nucleic acid and protein electrophoresis equipment, protein blotting apparatus etc.

The Physics Laboratory is equipped with Force table and pulleys, free-fall apparatus, voltmeters, multimeters, oscilloscope, capacitors, Projectile launcher with Photogates and PASCO computer Interface, force sensor, motion sensor, Dual Trace Cathode Ray Oscilloscope, Michelson Interferometer, Polarization Analyzer etc.

Laboratory instrumentation and reagents are constantly being updated to ensure maximum efficacy of teaching of laboratory-based modules. In addition to dedicated computer laboratories, computer workstations equipped with data logger software are available in some laboratories for conducting laboratory exercises.

LIBRARY

I. OVERVIEW

AURAK's Saqr library plays a significant role in upgrading information resources and services that could best support the instructional and research activity of the university. The library collection consists of many different types of library materials and information sources either in print or electronic formats. Located at the ground floor of Academic Building A, the Saqr library is a place most suitable for learning and information activities.

II. LIBRARY MISSION AND VISION

MISSION

The mission of the Saqr library is to develop a large collection of knowledge resources and organize it to provide the best services in support of the university's teaching, research and community service programs.

VISION

The library supports AURAK's overall vision which is to promote strong partnership with the university's teaching and research endeavors, and to make direct and meaningful contributions to the civic, business, and social life of Ras Al Khaimah in particular, and the region in general.

III. LIBRARY SERVICE HOURS

Sunday – Thursday: 8:00am - 9:00pm

Friday: Closed

Saturday: 12:00pm - 6:00pm

Declared Holidays: Closed

Changes in the above schedule will be posted or announced.

IV. LIBRARY COLLECTIONS

Other than books the Saqr Library houses a wide range of relevant materials including reference sources, periodicals, multimedia presentations, and electronic databases. Electronic Database subscriptions include: EBSCOhost, Springerlink, ProQuest ABI/ Telecommunications, Euromonitor, JSTOR, ERIC and Directory of Open Access databases covering the content of full-text journals.

V. LIBRARY SERVICES

CIRCULATION SERVICE

Borrowing

Borrowing privileges are provided to all registered students, and currently employed faculty and staff. A University ID card is required to check-out circulating items. Students, faculty, and staff have the privilege of borrowing books based on the following policies:

Loan Period

Students – 10 items for 3 weeks
Faculty – 20 items for one semester
Staff – 3 items for 3 weeks

Renewals

Circulating items may be renewed online or at the library Circulation Desk. The borrowers may renew items twice in succession unless the item has been requested by another user.

Fines

All borrowers pay overdue fines for late return of the borrowed items. Days on which the Library is closed are not counted. Current overdue fine is:

AED 5.00 per day per item (circulating and reserve materials)

Lost and/or Damaged Items

Replacement fines for lost or damaged library materials are the actual price of the material.

REFERENCE SERVICES

The library provides reference help to all students, faculty, staff and library visitors. Patrons are encouraged to contact the librarian on duty for help in using reference services and sources, particularly the online resources and access to reference materials such as dictionaries, encyclopedias, yearbooks, etc.

INTERNET SERVICE

Workstations within the library have internet access, as well as access to common productivity software applications. The library is serviced by wireless internet to facilitate the use of laptops. The wireless network will allow users to access both the library catalog as well as the electronic databases.

Online Public Access Catalog (OPAC)

Contains all library holdings and serves as a search guide for easy retrieval of library materials. It allows users to browse all existing library resources of the university online.

PRINTING SERVICES

Students can use the networked printer located in the Library Browsing Center with their account. The library also provides a coin-operated self-service photocopier which can be used for photocopying reference materials.

VI. LIBRARY GENERAL RULES AND REGULATIONS

1. Silence should be maintained in the library.
2. An ID card must be presented for borrowing of library materials.
3. Eating, drinking, and other activities that distract other readers are strictly prohibited.
4. Online chatting and playing games are not allowed in the Library Browsing Center.
5. Use of mobile phones inside the library is strictly prohibited.
6. Do not leave your valuables in the library; Library staffs are not responsible for the loss of personal valuables.
7. Do not reshelved used library materials.
8. Handle all library materials with care.
9. Keep things in order. Arrange tables and chairs upon leaving the library.
10. Keep the library clean.

VII. LIBRARY OF CONGRESS CLASSIFICATION SCHEME

The library collections are arranged and classified according to the Library of Congress Classification System. The Library of Congress Classification System main subjects are:

- A - GENERAL WORKS
- B - PHILOSOPHY, PSYCHOLOGY, RELIGION
- C - AUXILIARY SCIENCES OF HISTORY
- D - WORLD HISTORY AND HISTORY OF EUROPE, ASIA, AFRICA, AUSTRALIA, NEW ZEALAND, ETC.
- E&F- HISTORY OF THE AMERICAS
- G - GEOGRAPHY, ANTHROPOLOGY, RECREATION
- H - SOCIAL SCIENCES
- J - POLITICAL SCIENCE
- K - LAW
- L - EDUCATION
- M - MUSIC AND BOOKS ON MUSIC
- N - FINE ARTS
- P - LANGUAGE AND LITERATURE
- Q – SCIENCE
- R - MEDICINE
- S - AGRICULTURE
- T - TECHNOLOGY
- U - MILITARY SCIENCE
- V - NAVAL SCIENCE
- Z - BIBLIOGRAPHY, LIBRARY SCIENCE. INFORMATION RESOURCES (GENERAL)

Mosque (Masjid)

The mosque, located on campus between Building A and Building B, is open for prayers at all times. There is a separate female prayer room within the mosque.

Parking

The university has ample parking facilities and provides free parking spaces for faculty, staff, students and visitors.

Photocopy Facilities

A coin-operated photocopier is available in the library. When using a photocopier, students are reminded that AURAK campus adheres to UAE copyright laws.

Security

The university provides 24 hours security services. Security guards monitor the entire campus premises including the student residence halls and all university buildings to ensure the safety and security of the campus community. CCTV cameras are installed in all campus buildings.

Student Center

A Student Center at the EDRAK Building which also includes a food court is available to students for conducting various activities. The second Student Center, located in Bldg B is the heart of the student community. It is a place to meet fellow students, socialize, hangout watch TV and check email. Students can play table tennis, pool and other indoor games. The Student Centers are the venues for many student activities and events. The second Student Center also houses the offices of the Student Government Association (SGA). A separate facility for female students in the form of a ladies' lounge has also been planned.

Undergraduate Studies

Admissions

AURAK seeks to admit qualified students who wish to become part of an innovative global academic institution based on the American model. It is the goal of AURAK to admit those students most likely to benefit from its academic programs and diverse student body. Applications are welcome from all students without regard to race, color, religion, national origin, disability, sex, or age. To be considered for admission, each applicant must present sufficient evidence of appropriate qualifications in line with the requirements of the UAE Ministry of Higher Education and Scientific Research. Factors considered include, but are not limited to, scores on school leaving certificates and on other standardized exams, English proficiency, and level of difficulty and appropriateness of coursework, essays, and recommendations. An offer of admission is valid only for the semester for which the student applies.

When reviewing applications, the Admissions Office considers the academic rigor of the stream or track that an applicant has completed in high school.

Undergraduate Programs:

- **Freshman Admission Requirements**

High School Graduate Certification

To qualify for admission, a student must hold a UAE General Secondary Education Certificate (GSEC), or its equivalent as approved by the Ministry of Higher Education and Scientific Research, with a minimum average score of 60% for admission to the all-academic programs except a minimum average of 70% for admission to the Engineering programs.

For non-UAE high school graduates, the certification required is that which qualifies the holder for admission to a public university in the country in which the certificate was issued provided that the certificate was obtained after a minimum of 11 years of school attendance. If a country has two levels of secondary school certificates, the applicant must earn the higher level. The certificate must include at least six subjects from the following four areas of study:

- 1) Mathematics
- 2) Sciences
- 3) Languages
- 4) Social sciences, Humanities and Arts.

British Curriculum Certificate (IGCSE/GCSE, GCE):

(a) A minimum of seven (7) IGCSE/GCSE (O-level) subjects with a minimum grade of “C”,

OR

(b) A combination of five (5) IGCSE/GCSE (O-level) subjects with a minimum grade of “C” and two (2) GCE (AS-level) subjects with minimum “D” grade or one GCE (A-level) subject with a minimum “E” grade.

Subjects must be from the following areas: Mathematics, Languages, Sciences, Social studies, Humanities, and Arts

(c) Applications for Engineering and Science degrees require Physics and Mathematics at the AS and/or A-level.

(d) An original School Leaving Certificate showing at least 11 years of schooling.

French Baccalaureate:

A minimum score of 10 (for Engineering applicants, minimum required score for Math and Physics is 12 out of 20).

Indian Board Certificate:

A Senior Secondary School Certificate (12th Standard) with minimum average of 60%.

International Baccalaureate (IB):

A minimum score of 4 in at least six subjects, with three subjects at the Higher Level.

Iranian Certificate:

A pre-university certificate is required with a minimum average score of 14 or more out of 20, or 16 or more in the last two years of secondary education.

Lebanese Baccalaureate:

Successful completion of Part II (any strand).

Pakistani Board Certificate (HSC):

A Higher Secondary School Certificate (Part II) with a minimum average of 60%.

Other Certificates:

The University recognizes other certificates provided that they meet requirements equivalent to the certificates listed above in college preparatory subjects.

Advanced Standing

Currently AURAK does not award credit by advanced standing.

English Language Proficiency

The medium of instruction at AURAK is English. Therefore, prospective students must demonstrate a reasonable level of proficiency when admitted to a degree program. Prospective students must have a minimum TOEFL score of 500 (61 iBT) or a minimum (Academic) IELTS score of 5.0 for full admission (a General IELTS score will not be accepted). Students whose scores are between 400 and 499 on the TOEFL or 4 on the Academic IELTS may enroll in the English Language Program for up to one year to aid

in meeting this requirement. Students below the 400 TOEFL level or its equivalent may enroll in other

AURAK Intensive English Programs.

Applicants may take the institutional TOEFL on the AURAK campus or the international TOEFL at any licensed ETS testing center. Institutional TOEFL scores from other institutions are not valid. International TOEFL scores should be sent directly to the AURAK Admissions Office or ordered online through the official ETS website at www.ets.org. AURAK's TOEFL school code is 4574. Exams scores are valid for two calendar years from date of examination.

English Language Programs

Students who have earned at least a 450 on the TOEFL test or the equivalent but are below 500 may be admitted to the AURAK English Language Program (ELP) as preparation to enter their academic program of choice. Students will be offered full admission into their academic program of choice once they have earned the required TOEFL minimum score or equivalent after a period of study in the English Language Program. To maintain their admitted status, students must be making progress in gaining fluency in English by earning a "satisfactory" grade.

Achieving the minimum TOEFL score or equivalent and passing the ELP course are both required for full admission to the academic programs. English Language Program students, if qualified, may enroll either in

an Information Technology course or a Mathematics course during their first semester. Depending on their progress, ELP students may enroll in additional courses if they continue in ELP for a second semester.

- **Transfer Student Admission Requirements**

Prospective students who have attended other accredited colleges and universities may apply to AURAK as transfer students. Transfer applicants must be in good standing, having a cumulative grade point average of 2.0 or more at their previous institutions, and submit official transcripts from each institution attended. Transfer applicants with a cumulative GPA of less than 2.0 but not lower than 1.8 may be considered for admission at AURAK if they are applying to a program in a field different from the previous one. Currently, AURAK does not award credit for recognition of prior learning.

Transfer applicants with fewer than 30 transferrable credits must also submit a copy of their secondary school record. Transfer applicants must meet the same language proficiency as mentioned above for freshman admission. Applicants that have been placed on probation or suspended for disciplinary reasons at their previous institution are not eligible for admission to AURAK.

Other Transfer Requirements:

- 1) Students who have completed courses at other accredited /recognized institutions of higher education and are seeking admission to AURAK may be awarded credits for those courses, provided that they submit authenticated transcripts, catalog descriptions and course syllabi to prove validity of such credits.
- 2) The Registrar's Office, in consultation with the respective Program Chairs, determines whether a course completed at another institution is equivalent to a course offered in the particular program for which the student is seeking credit transfer.
- 3) The total number of credits that can be transferred into an AURAK program shall not exceed 50% of the total number of credits required for completion of the degree for that program.
- 4) The transferred course must offer the same number of credits as the AURAK course to be considered for equivalency and be offered at the same level (upper or lower).
- 5) Transferred credits and grades will not be used in calculating the cumulative grade point average (CGPA).
- 6) Only courses graded as "C "or above are considered for transfer credit.

Application Procedures (For Both Freshman and Transfer Applicants)

Prospective students can apply online or in person. Application forms are available in the Admissions Office or online on the AURAK website (<http://www.aurak.ae>). Forms should be completed by the applicant and sent by fax, email, or post to AURAK along with the following documents:

- A non-refundable application fee of AED 250
- Attested official high school certificate or attested copy, if applying as a freshman or with fewer than 30 transferrable credits
- TOEFL / IELTS scores
- Photocopy of Passport
- Four (4) passport-size photographs
- Official university transcript(s), if applying as a transfer student

Attestation of Documents

All students are required to submit officially attested high school certificates to the university before the end of the first semester or their registration will be canceled. High School Certificates issued in the UAE must be certified by the UAE Ministry of Education. High School Certificates issued abroad must be certified by the Ministry of Education or Board of Secondary Education in the country where the certificate was

issued, or the Ministry of Foreign Affairs of the country where the certificate was issued or the UAE Embassy in that country; or the UAE Ministry of Education

In cases where none of the above modes of attestation are available, the certificate may be verified and attested by the Embassy of the concerned country in the UAE and the UAE Ministry of Foreign Affairs. University degrees and transcripts issued outside the UAE must be attested by the UAE Ministry of Higher Education and Scientific Research. 18

Admission Interview

The Admissions Office reserves the right to require an applicant to attend an admissions interview as part of the application process when there is a need for additional information. Interviews may take place on campus, in person or by phone / Skype, when necessary.

Admission Categories

Early Admission

Students in their final year of secondary school are encouraged to apply for early admission by submitting official grade reports from at least the last two years previous to the final year of secondary school, the transcript of the first term of the final year, and TOEFL or equivalent test scores.

Applicants with higher grades and who have the higher required TOEFL score or equivalent will be given priority in admission consideration.

Early admission is only offered to highly qualified applicants and is not final until students submit a recognized and officially certified secondary school certificate or equivalent showing successful completion of secondary education and any other items as requested in the letter of admission.

Full Admission

Students who fulfill high school and English Language proficiency requirements enter directly into the academic program of their choice.

Conditional Admission

In some situations, applicants may be admitted based on he or she meeting certain conditions in the application process. For example, students who attended high school outside the UAE may be conditionally admitted if official attestation of certificates is not available. Students must submit officially attested documents before the end of the first semester; if they fail to do so their admission will be withdrawn.

Provisional Admission

Applicants who are holders of foreign secondary school certificates and whose high school score is slightly below the minimum requirement and who have a TOEFL score of at least 500 or equivalent may be provisionally admitted based on the recommendation of the Program Chair following an assessment and an interview. Students admitted under these conditions must earn a minimum of 2.0 (C) GPA average with a minimum of 12 credits of course work in their first semester to remove their “provisional” status and continue enrollment at AURAK. Students who do not meet this provision at the end of their first semester are withdrawn from their respective AURAK degree program and can only reapply to the program the following academic year.

Application Delaines

The application deadline for fall admission is notified through newspapers or through university notice boards for freshmen and transfer applicants. Admission decisions for first year students are usually made after receipt of the first-semester grades of the senior year of secondary school and all appropriate test results. Admission is contingent upon satisfactory completion of in-progress course work and graduation from secondary school. Transfer decisions are made as files become complete.

Acceptance of Admission Offer

Students confirm their acceptance of an admission offer by completing the enrollment confirmation and Permission to Release Academic Information forms in the admission packet and submitting it with the enrollment deposit, Visa Fee (if applicable), and Residence Hall fee (if applicable).

Application for a Second Bachelor's Degree

Students who have received a baccalaureate degree from any accredited institution may apply to pursue a second degree through the Admissions Office. If admitted, the Vice President, Academic Affairs, will assist the student to develop an approved course of study (a contract) of at least thirty Education requirements do not need to be met for a second degree.

New Student Placement Exams

An English language placement exam is administered to entering students as a benchmark assessment of their English language skills and for placement in the appropriate level in the English language program or in the first academic English language course. AURAK uses a Math Placement Exam to determine which mathematics course new students may take. Students who were awarded transfer credit for a Math course taken at another institution are not required to take the Math Placement Exam.

Student Residence Visa

The Office of Administration arranges student visas under the sponsorship of AURAK. Visas must be renewed every year. Students on an AURAK visa who discontinue their studies or transfer to another university must submit their passport for visa cancellation prior to their departure.

The visa process takes approximately two weeks during which students cannot leave the country as they must hand over their passports temporarily. The visa application requires:

A scanned color photograph

A scanned passport copy, and

A scanned copy of the secondary school certificate

All student applicants for a residence visa must undergo medical tests conducted by the preventive health department of the RAK government, and fingerprinting by the police department. The medical tests include a blood test and an X-ray. Failure to pass either one of the medical tests leads to 20 deportation to country of region.

Right to Withdraw Offer

AURAK reserves the right to withdraw an offer of admission if an applicant fails to satisfy all the requirements, or if it is determined that admission was obtained through the use of falsified, altered, or embellished information. In the case of withdrawal of admission from a matriculated student, credit earned may be withheld.

Readmission

Students in good academic standing who have missed two or more consecutive semesters of enrollment (excluding summer term) may be readmitted by completing a Re-enrollment Form available from the Registrar's Office.

Tuition, Fees and Housing

American University of Ras Al Khaimah		
TUITION & FEES FOR Fall 2013 - Spring 2014		
Undergraduate Program	Amount (AED)	Due by:
Application	250	Application submission, non-refundable
Admission	500	Issuance of Admission Letter; and Non-refundable
Tuition	1,200	Per credit hour, payable by first day of class or make arrangement with Finance department
Graduate Program		
Application	500	Application submission, non-refundable
Admission	2,000	Issuance of Admission Letter; and Non-refundable
Tuition - MBA	2,400	Per credit, payable by first day of class
Tuition - EMBA	3,000	Per credit, payable by first day of class
Tuition - MED & DED	1,750	Per credit, payable by first day of class
English Language Program		
ELP Application	250	Application submission, non-refundable
ELP 1 (Intermediate)	10,000	Per semester, payable by first day of class
ELP 2 (Transition)	12,000	Per semester, payable by first day of class plus 6 credits (Bonus)
Foundation Program	10,000	Per semester, payable by first day of class
Intensive English	10,000	Per semester, payable by first day of class
Others		

Technology / Activity Services	500	Per semester, non-refundable
Lab	500	Per semester, per lab & non-refundable
Security deposit	1,000	One time, refundable if no s/damage charges due
Graduation	500	One time, non-refundable
Visa	1,200	100% due at time of admission payment, non-refundable
Visa change of status	700	100% due at time of admission payment, or when applicable, non refundable
Late Payment	100	Per week after due date
Check Returned	200	Penalty for every check returned
Transcript - Official	50	Per Transcript
Transcript - True	20	Per Transcript
TOELF Testing	500	Per Test
Transportation	2,500	Per Semester for Ras Al Khaimah
Transportation	4,000	Per Semester for Dubai, Sharjah, Ajman, Um Al Quwain
Transportation	6,000	Per Semester for Abu Dhabi (only on weekend or Per two-way trip AED 300)
ID Card	50	For Replacement
Official Letter	20	Per Letter
Gymnasium	300	Per month, for Non-AURAK students
Library Books overdue fines	5	Per day per item for Circulating & Reserve materials
Library Books Lost / Damaged	Actual Cost	Circulating books, Audio-Visual items, Reference Material
Health Insurance	1,600	Optional

Payment Policies and Procedures

Tuition and all other fees must be paid by the first day of classes. Fees can be paid by cash, check, and wire transfer or credit card. Credit cards payments require a surcharge of 3% of the total fee.

Students who do not pay their fees by the specified deadline will be put on financial hold. Students on financial hold are not allowed to register for classes or take final exams and will not be issued official transcripts until all fees are paid.

Students are responsible for full tuition payment for all courses in which they are registered unless their registration is canceled for nonpayment, canceled administratively due to academic suspension, dismissal or termination, or the course is dropped before the tuition liability begins

Refund Policies

Tuition fees are refundable subject to the following rate:

Withdraw By	% of Refund
The end of the 1st week of the semester	100%
The end of the 2nd week of the semester	75%
The end of the 3rd week of the semester	50%
The end of the 4th week of the semester	25%
Beyond the end of the 4th semester week	No Refund

The following fees are non-refundable

- Application fee
- Admission fee
- Visa fee
- Technology fee
- Lab fee
- Activity fee

Financial Responsibilities

Students are responsible for maintaining current addresses with AURAK and for activating and checking their personal AURAK e-mail accounts.

The registration process shall not be considered complete unless all outstanding balances from the prior term are paid in full.

By registering for classes, students accept responsibility for charges for the entire semester. Failure to receive a reminder bill confirming charges does not waive the requirement for payment when due.

Students are responsible for dropping unwanted courses by the drop dates and using the drop and withdrawal procedures published in each term's Schedule of Classes. Full or partial tuition liability may apply.

Non-returning students are responsible for submitting a written withdrawal to the Registrar's Office.
Penalties may apply.

Financial Aid and Scholarships

AURAK offers freshmen students a 15% reduction in their first semester fees if they hold a 90% or above in their high school scores. Additionally, applicants may apply for multiple scholarships available to prospective students at the beginning of their academic program. Please contact the Admissions Office for more information on current scholarship programs.

On-campus Housing

Student accommodation is available on the AURAK campus for students who do not live in Ras Al Khaimah. There are two apartment complexes situated on either side of the Student Center. Each apartment complex (separately designated for women and men) has five floors. Each air conditioned studio is designed to the highest standard with new, elegant furnishings carefully adapted to suit studio- sized accommodation.

While each studio apartment is designed to accommodate two (2) students (double-occupancy), single- occupancy can be requested at an additional cost. Students can select their roommate or have the Resident Administrator suggest a companion who shares common interests. For added comfort and security, the Resident Administrator resides on the premises and will help students with their needs. CCTV cameras are located throughout the Student Residences including the underground parking area. To learn more, please visit www.edrak-amd.ae.

Student Affairs

The Office of Student Affairs (OSA) provides the services and facilities necessary to promote the academic, professional, and social well-being of AURAK students and encourages students to become actively involved in campus life. Out-of-classroom learning experiences play a significant role in students' professional and personal development by enhancing their social, leadership and organizational skills. The OSA offers comprehensive programs, orientation, activities, workshops, counseling, and initiatives that revolve around student needs, requests, and suggestions.

The Office of Student Affairs also serves as an important information resource for students. It provides students with an introduction, clarification, and guidance to the university environment, its policies and procedures, as well as overall campus practices. As a student-centered unit, the Office of Student Affairs strongly encourages students to address their concerns, needs, and suggestions to the Student Affairs staff.

The Office of Student Affairs in cooperation with the Student Government Association (SGA) organizes a wide range of activities for students throughout the year. These activities are carefully planned with the purpose of exposing students to a diverse variety of cultural, social, and educational experiences. In addition to their entertainment value, these activities enhance students' creativity, collegiate, humanitarian, and social skills.

There are numbers of traditional activities that the Student Affairs conducts on an annual or semester basis. These include the UAE National Day celebrations, IFTAR Dinner, start and end of semester celebrations, and Achievement Awards ceremony. These activities are supplemented by cultural events — museum and theatre trips; art exhibitions — as well as hiking trips, dhow cruises, movie nights, and beach barbecues. AURAK's very active sports program completes the comprehensive repertoire of student activities. Tournaments and leagues are organized in most sports for both men and women.

Athletics

AURAK has an active and lively sports program. The Sports Coordinator organizes several leagues and tournaments on-campus, locally, and nationally. There are a number of university teams to join with try-outs conducted at the start of each semester or on-going. These teams include football, cricket and basketball. There are also pool tournaments for men and women. With the addition of the professionally surfaced six-lane running track, AURAK will host track and field events. The terraced bleachers surrounding the grassed football field offer seating for lively audience interaction.

Individual or group weight-training sessions are also offered with expert guidance available on the proper use of the equipment. The indoor sports area is available for organized or informal basketball, football, or badminton games. Aerobics, yoga, and martial arts courses are offered on a regular basis. The refurbished locker, shower, and bathrooms offer a clean and refreshing supplement to AURAK's sports

activities. While the gymnasium and weight-room can be used by men and women, there are also women-only timings available. Sports information is regularly posted on the bulletin boards throughout the campus.

Student Clubs

The Office of Student Affairs encourages student growth through a variety of clubs and activities. It supports extra-curricular and co-curricular activities to supplement the academic programs. The Office of Student Affairs facilitates the institution of professional, academic, and social clubs. It will also mentor and train the student officers and club members.

Membership in clubs not only helps students to make new friends, meet people who share the same interests, but also helps students to acquire important skills such as leadership and organizational skills, team work, and event planning. AURAK encourages all students to establish or join clubs to pursue various activities, explore or further their interests, or make new friends.

Student Government Association (SGA)

The SGA represents the student body, provides student leadership and serves as a liaison between the students and the campus administration. It also plays an important role in planning and sponsoring student activities and events and has a voice in the governance of the university.

The SGA Constitution defines the SGA's goals and objectives and establishes the roles and responsibilities of each SGA member. The constitution defines the policies and procedures to follow for planning and organizing campus event.

Health Insurance

Health insurance coverage is optional for all AURAK students. Students are charged a health insurance fee of AED 1600 per year. UAE based students who are covered by their parents' health insurance policy or are covered by other health insurance schemes are required to provide proof of valid insurance cover to the Finance Department when paying their tuition fees to be exempted from the university insurance. UAE nationals who are covered by the Government Health Policy are also exempted from the university insurance.

Students' Rights and Responsibilities

AURAK adheres to the following values that underlie the philosophy and goals of the university:

- The importance of personal integrity.
- The right of every individual to be treated with respect and dignity.
- The freedom of intellectual inquiry in the pursuit of truth.
- The freedom of speech and the open exchange of ideas.
- The acceptance and appreciation of diversity with regards to race, gender, religion, age, disability, and ethnicity.
- The recognition that community service is an important component of the intellectual development of students.

Students' Rights

AURAK students have the right to pursue their education in a free and fair manner so long as they maintain their eligibility to remain as a member of the student community by meeting its academic standards. It is the responsibility of students to observe the regulations imposed by the campus for the governance of the academic community.

- Students have a right to expect AURAK to maintain a climate conducive to thinking and learning. University teaching should reflect consideration for the dignity of students and their rights as persons. Students have a right to be treated with courtesy and respect.
- Students have a right to reasonable notice of the general content of the course, what will be required of them, and the criteria upon which their performance will be evaluated. Students have a right to have their performance evaluated promptly, conscientiously, without prejudice or favoritism, and consistently, with the criteria stated at the beginning of the course.
- Students have a right to perform student evaluations considered in the retention and promotion reviews of faculty members.
- Students have a right to be free from discrimination and sexual harassment which is illegal. Campus policy prohibits discrimination, harassment of a student because of his/her race, color, religion, national origin, sex, age, or status as an individual with a disability.
- Students have a right to privacy and confidentiality subject to reasonable campus rules and regulations, right to protection against unauthorized disclosures of confidential information contained in their educational records and to examine the information contained in their educational records.

Grievance Policy

All students have the right to express their dissatisfaction. If they wish to file a formal grievance, these steps apply:

- The grievant must file a formal written complaint with the Dean of Student Affairs.
- The Dean of Student Affairs, will ascertain if the complaint falls within the scope of an action appropriate for a grievance and will attempt to resolve the complaint informally before instituting the official grievance process.
- If such action is found valid, the Dean will convene a committee of a minimum of three people including faculty, administration, and student representative(s) within three working days.
- The committee will review the complaint, interview the complainant and any witnesses cited in the complaint.
- The committee will recommend a cause of action to the Dean of Student Affairs within seven working days.
- The Dean will forward to the student the recommendation of the committee or a modification of its recommendation deemed appropriate after consultation with the committee within three working days.
- If the student does not agree with the decision, the student has the right to file an appeal with the Provost. The Provost will review the decision and render a final decision in the matter within three working days. The President is the final authority to whom appeal may be made.

Apart from formal reporting of grievances, there are two Complaint/Suggestion Boxes installed at the University. If the student does not wish to directly contact the Faculty, Advisor or any other Staff, they are advised to write their grievance and drop it in these boxes. Any complaint/suggestion dropped in this box comes directly to the Office of the President, and confidentiality is ensured. But we do expect that the student will mention his/her ID No.

Students are encouraged to meet the faculty member during their assigned office hours. Due to any reason if they are not able to meet the faculty during office hours, they may request an appointment either through phone or email. Their contact numbers and email addresses are displayed on their office doors. Alternately, an appointment may be fixed through the Faculty Administrative Assistant.

If the grievance is regarding a Chairperson, and it has not been resolved after meeting with him/her, then the student may approach the Dean of the School. If the grievance is with the

Dean, then the student may see the Provost and if the grievance is with the Provost, then the student may see the President. Please request for an appointment.

Students' Responsibilities

AURAK Communication Policy

AURAK students are required to maintain current contact information with the University, including permanent and local addresses, telephone numbers, student ID number, and legal name (as written in their passport). Each student must also maintain the university e-mail account assigned at the time of admission. Students are responsible for official communications directed to AURAK e-mail accounts.

Student Publication Policy

Currently, there are no student-run media. In future, any student publication coming up at AURAK will be required to conform to the norms of responsible journalism and avoid libelous, indecent, or harassing material. The same publication policies will apply when deciding what material can be included on the web site, or any other social media, developed and managed by the students. All the publications should particularly keep in mind the cultural norms of Ras al Khaimah and the UAE.

Students should get all the articles, stories or any other related materials reviewed by the Editor to ensure the correctness of the English language. Students should take prior approval from the Dean of Student Affairs before distributing, posting or publishing any printed/online material in the name of AURAK.

Guidelines for Using AURAK Name, Logo, and Mark

Students may use the AURAK name in association with their University- sanctioned activities. Recognized student groups producing merchandise for sale that incorporates AURAK's name, marks or logos must comply and get permission from the Dean of Student Affairs. Students may use the name of a school, department or other AURAK programs outside the University (other than on a resume) only with approval of the appropriate authorized person.

Financial Responsibilities

- Registration shall not be considered complete unless all outstanding balances from the prior term are paid in full.
- By registering for classes, students accept responsibility for charges for the entire semester.
- Failure to receive a reminder bill confirming charges does not waive the requirement for payment when due.

- Students are responsible for dropping unwanted courses by the drop dates and using the drop and withdrawal procedures published in each term's Schedule of Classes. Full or partial tuition liability may apply.
- Non-returning students are responsible for submitting a written withdrawal to the Dean, Student Affairs. Penalties may apply.

Student Conduct

As members of the University community, students are to conduct themselves appropriately at all times.

Students are expected to:

- Demonstrate sensitivity to the cultural and religious norms and customs of the UAE and ensure that their conduct is in line with those cultural expectations.
- Show proper respect to fellow students as well as to AURAK employees and representatives. This includes security personnel in addition to faculty and staff.
- Display principles of integrity at all times.
- Treat others as they would themselves wish to be treated.
- Have knowledge of and observe the regulations of AURAK.
- Use University property/facilities responsibly.
- Refrain from disruptive behavior, such as talking during speeches or classes; arriving late for classes or leaving early; receiving or initiating telephone calls on mobile phones during classes; sending text messages during class; and making negative or rude comments during class about other students, faculty members, or the opinions of other students.
- Provide security guards with personal identification, such as their AURAK ID card, or other appropriate documentation upon request.
- Seek permission for using someone else's property.
- Refrain from organizing any event, co-curricular or extra-curricular activity inside AURAK without prior permission from the Student Affairs Office or the University.
- Refrain from distributing leaflets or journals, posting notices, or collecting signatures on the premises of AURAK without prior permission from the Dean of Student Affairs.
- Refrain from using another person's name and/or ID number for any reason.
- Use the internet responsibly. Do not access inappropriate material, use inappropriate chat lines or rooms, or misuse e-mail.
- Refrain from exchanging any gifts of significant monetary value with members of the faculty, staff, or administration.
- Attend classes regularly and punctually and complete assignments on time.

- Be actively involved in class discussions and other course-related classroom activities.
- Have knowledge of, and meet, the requirements for course and program completion.
- Abide by high standards of academic integrity, ethics, and honesty.
- Refrain from cheating on homework or examinations, plagiarizing other people's work by submitting it as their own, and/or any other forms of academic dishonesty.
- Adhere to the published test or examination rules and regulations.

Behavioral Misconduct

The University reserves the right to discipline students for any acts of behavioral misconduct. All cases of non-academic misconduct are reported to the Dean of Student Affairs (DSA). The following behavior is classified as misconduct according to AURAK rules and is subject to disciplinary action.

- Physical contact between males and females is strictly prohibited in keeping with the cultural norms of Ras Al Khaimah and the UAE.
- Inappropriate dress for both men and women is prohibited. This relates to tight, revealing and provocative clothing.
- Possessing, consuming or selling drugs, controlled substances and/or alcoholic beverages on campus or in the residence halls or at university-sponsored activities/events is strictly prohibited and will result in dismissal from the university.
- Sexual abuse; attempting or making sexual contact, including, but not limited to inappropriate touching, against a person's will.
- Behavior/conduct which threatens or endangers the health or safety of any person on university premises or at university sponsored activities/events.
- Willful or reckless damage to university property.
- Dishonesty or knowingly spreading false information.
- Intentionally disrupting or obstructing classroom activities or any other university activities.
- Altering or tempering with university records, documents or ID's.
- Distributing or posting printed material in the name AURAK without prior approval of the Student Affairs Office.
- Gambling or other illegal gaming activities on university or residence hall premises.
- Unauthorized use of the university's corporate name and/or logo.
- Harassment, which includes physical, verbal, graphic, written or electronic. Any form of intimidation that appears threatening to an individual or limits the ability of a student to work, study or live in peace.

- Abuse of computer equipment (stalking, harassment, stealing, deleting information, internet theft or knowingly introducing a computer virus). Tampering with university computer equipment, network systems or computer files.
- Failure to follow the direction of university officials acting in accordance with their duties.
- Any violation of traffic laws on campus, including reckless driving and parking in unauthorized spaces.
- Deliberately failing to comply with the directions of the university security guards acting in accordance with their duties.

Reporting Behavioral Misconduct

All cases of behavior misconduct should be reported to the Dean of Student Affairs who will follow the procedures described below. The result may be:

- Verbal or written warning
- University or community service
- Suspension from University activities

Dismissal

In the event of a suspected incident of behavior misconduct, the person raising the issue must submit a formal written report to the Dean of Student Affairs requesting action. The Dean of Student Affairs will review the written request and determine if there are sufficient grounds to pursue the case further. If so, he/she will forward the case to AURAK's Disciplinary committee. The student under investigation will be formally notified of the date and venue. The Dean of Student Affairs will make the student under investigation, as well as all committee members, fully aware of the charges. Final decision will be taken by the Disciplinary committee.

During the hearing, both the student and the person bringing the charges will be allowed to state their case before the three-member committee. If requested, the parties involved will be allowed an advisor during the proceedings from inside the university community or from the student's immediate family. Once the committee has heard the evidence, it will come to a judgment and determine sanctions, if warranted, within two working days of the hearing. The judgment will be formally submitted in writing to the Dean of Student Affairs who will then inform the student immediately and administer the sanctions.

The student is allowed to lodge a formal, written appeal with the Dean of Student Affairs within seven working days after the committee's findings. Appeals can be granted only on the basis of new evidence, or procedural irregularity, or other grounds of a serious nature. The Dean of Student Affairs shall review the case and determine its final disposition on the case.

Academic Integrity

AURAK Honor Code..

“To promote a stronger sense of mutual responsibility, respect, trust and fairness among all members of the AURAK community and with the desire for greater academic and personal achievement, we, the student members of the university community, have set forth this honor code:

Student members of the American University of Ras Al Khaimah community pledge not to cheat, plagiarize, steal, or lie in matters related to academic work”.

Students are responsible for understanding the above honor code’s provisions. Cheating and attempted cheating, plagiarism, lying, and stealing of academic work and related materials constitute Honor Code violations.

In the spirit of the code, a student’s word is a declaration of good faith acceptable as truth in all academic matters until proven otherwise. To maintain an academic community according to these standards, students and faculty must report all alleged violations to the Office of Student Affairs.

At the beginning of each semester faculty members have the responsibility to explain to their students the policy regarding the Honor Code and what is considered an integrity violation in their courses, with special attention to plagiarism. They must explain the extent to which aid, if any, is permitted on academic work. It is the sole responsibility of the students to request an explanation of any aspect of an instructor’s policies regarding the Honor Code that they do not fully understand. They have an obligation not only to follow the code themselves, but to encourage respect among their fellow students for the provisions of the code. This includes an obligation to report violations by other students to the Office of Student Affairs. Any student, who has knowledge of a violation but does not report it, may be penalized for violating the Honor Code.

Faculty members are also responsible for maintaining the integrity of the learning and testing process. Faculty members may actively proctor exams, prohibit the use of mobile phones in class, or take any other actions they believe are warranted.

For all academic assignments, project work, and presentations, students need to ensure that due acknowledgement is given to the source of any information which they incorporate into their work. Students must ask their professors if they are unsure whether or not something constitutes academic misconduct in any form. The following are some examples of academic misconduct:

- Cheating or using unfair means in examinations as determined by the professor.

- Significant paraphrasing in written academic work.
- Unacknowledged use of information or ideas unless such ideas are commonplace.
- Citing sources which the student has not read or referred to.
- Breaching the word limit of assignments and/or intentionally mentioning the wrong word count.

Cheating may take many forms, for example:

- Copying from another student's paper during an exam, or allowing or encouraging another student to copy from your paper during an exam.
- Having someone else take your exam in your place, or taking an exam for someone else.
- Obtaining unauthorized access to exams and accepting exams obtained by unauthorized access.

Violations of Academic Integrity: Plagiarism

This is a serious academic offense which constitutes the use of someone else's ideas, words, projects, artwork, phrasing, sentence structure or other work without properly acknowledging its source. Plagiarism is dishonest because it misrepresents the work of someone else as one's own. It is intellectual theft as it robs others of credit for their work. For a student found plagiarizing, the punishment can range from receiving a failing grade on that particular assignment without the right to redo the assignment all the way up to a student receiving a failing grade for the entire course.

Plagiarism takes many forms and includes:

- Using someone else's words without putting those words in quotation marks.
- Handing in as 'original' work prepared by someone else or preparing/completing someone else's work.
- Using unique, original ideas, phrases, sentences, paragraphs, etc. from a single source or a variety of sources such as a text, journal, web page, electronic source, design, artwork, etc. in one's work without citing all sources.
- Using the same work to satisfy the requirements of two or more courses (during the same or different terms).
- Having someone else rewrite a rough draft or rewriting a rough draft that is not your own work.

Instances of plagiarism are subject to evaluation according to the criterion of "reasonable doubt". Any violation of the University's academic rules, regulations or directives must be reported as soon as possible and may result in one or all of the following disciplinary measures:

- Verbal or written warning
- Repeating the course
- Repeating the term
- Dismissal from the university

Reporting Violations of Academic Integrity/Misconduct

All incidents of plagiarism will be reported by the faculty to their respective Chairpersons who in turn will report the case to the Dean of the School. Finally, the Dean will report the incident to the Disciplinary

Committee at AURAK that is responsible for handling such issues, to examine the case on the basis of the University's plagiarism policy. If a case of plagiarism is identified, the student's faculty advisor will be notified, a copy of the decision will be inserted into the student's records, and the Registrar's Office will also maintain a copy of the report in the student's file. Once adopted, this process will ensure that plagiarism is tracked at two levels.

The Disciplinary Process

The Dean of Student Affairs will make the student under investigation, as well as all committee members, fully aware of the charges. During the hearing, both the student and the faculty member bringing the charges will be allowed to state their case before the three-member committee. If requested, the parties involved will be allowed an advisor during the proceedings from inside the university community or from the student's immediate family.

Once the committee has heard the evidence, it will reach a judgment and determine sanctions, if warranted, within two working days of the hearing. The judgment and sanctions will be formally submitted in writing to the Dean of Student Affairs who will then inform the student immediately and administer the sanctions.

The student is allowed to lodge a formal, written appeal with the Dean of Student Affairs within seven working days after the committee's findings. Appeals can be granted only on the basis of new evidence, procedural irregularity, or other grounds of a serious nature. The Dean of Student Affairs shall review the case and determine the final disposition of the case.

Academic Policies

Each student is responsible for knowing AURAK's rules, regulations, requirements, and academic policies. The Student Handbook, the University Catalog, and the institutional website are repositories of policy statements. Corrections, changes, or interpretations may be communicated by other means, including electronically. Any student in doubt about an academic matter should consult the Registrar's Office or their assigned faculty advisor. Students are subject to the university's stated policies regarding patents and copyrights.

Academic Advising

AURAK is committed to helping students achieve success in their course of study. Ensuring that students receive appropriate academic advising is part of that commitment.

New students are first advised during a required Orientation Program in which they learn about university policies and procedures and receive a current University Catalog and a Student Handbook. At the initial meeting with their faculty advisor during orientation, each student is informed of program procedures, course of studies, and the importance of understanding the information in the University Catalog. Advisors also answer specific questions concerning the academic program.

Faculty advisors are required to post office hours for advising that coincide with students' availability. The faculty advisor is to maintain advising files for all advisees that contain a log of meetings with a brief description of major issues discussed or advice given. Any information contained in these files shall remain confidential.

Students on probation are required to meet with their Advisor on a regular basis to assess their progress and to report their use of AURAK's various resources for academic support. Students violating AURAK's attendance policy or doing poorly at mid-term are also required to meet with their Advisors.

If students have concerns, comments, or recommendations about their educational experiences at AURAK, they should contact the Dean of the School in which their degree program is located.

Attendance Policies

Attendance is a core aspect of student retention, progression and academic achievement. It is the University's view that students who actively participate in their learning by attending classes regularly, are more likely to achieve better results and successfully complete their course.

The University expects students to attend all learning and teaching sessions associated with their program, as set out in course schedules and syllabi. Such learning and teaching sessions include, but are not limited to, lectures, seminars, tutorials, workshops, laboratory and practical sessions, professional placements, field trips, industrial visits, and in the case of directed or independent study students, scheduled meetings with supervisors.

Students are required to arrive on time for classes and remain for the duration of the teaching session. Late arrival at, and early departure from, teaching sessions is deemed disruptive, discourteous, unprofessional and unfair to other class members and tutors.

Students will be expected to:

- Attend all learning and teaching sessions associated with their program of study
- Notify their course instructors in advance (in person, by phone or e-mail) that they will be absent from time-tabled class sessions
- Obtain prior permission from their instructor or course manager, for planned absences of two or more consecutive class sessions during the semester
- Provide a medical certificate or other corroborating evidence to explain their absence, if required by the University.

Unsatisfactory student attendance includes failure regularly to attend learning and teaching sessions without providing a satisfactory reason to instructors for absence and/or persistent late arrival at, or early departure from, learning and teaching sessions.

Where a student fails to attend classes for **two weeks cumulatively** without the University's permission, the student will receive a "**non-attendance warning (NAW)**", and will be required to provide satisfactory explanation for the non-attendance. With each subsequent NAW issued, a formal report on the student's non-attendance is made to his or her sponsor.

Where a student fails to attend classes for **four or more weeks cumulatively**, or where a recurring pattern of non-attendance (that is more than **two NAWs**) is observed, over the course of the semester, the student may be deemed to have failed the course, in which case he or she will receive an "F (Fail)" or "U (Unsatisfactory)" grade, as appropriate.

Course Instructors are responsible for reminding students of the importance of regular attendance at learning or teaching sessions, and for accurately recording student attendance. Instructors and Course Managers (Department Chairs or Program Coordinators) will be required to consult with the relevant School Deans, to ensure timely issuance of NAWs, non-attendance reports to sponsors (subject to data confidentiality stipulations) and to provide relevant academic counseling where necessary.

It is the policy of AURAK to make every reasonable effort to allow members of the University community to observe their religious holidays without academic penalty. Absence from class or examinations for religious reasons does not, however, relieve students from responsibility for any part of the course work required during the period of absence.

Courses and Course Schedules

Each course offered by the university has a designated course prefix (or code) and number. The course prefix represents the discipline or field of study, the number indicates the level of the course content. MATH 105 thus indicates that the course is Mathematics and is appropriate for students in their first year; ECEN 492 indicates that the course is in Electronics and Communication Engineering and is intended for fourth year students.

Courses are offered at the discretion of the Vice President for Academic Affairs and the respective Deans and Department Chairs. Not every course is offered every semester. Courses are offered at a frequency that enables students to make satisfactory progress toward their degrees.

Course Credit

Each course has a credit value. A credit represents the in-class instruction and out-of-class study per week during the sixteen week semester. Normally one credit represents 50 minutes of class instruction per week per semester, 120 minutes of laboratory experience per week per semester, or one or two 50-minute recitation sessions per week per semester.

Class Periods

Classes normally meet three times a week in 50-minute periods or two times a week in 75-minute periods. In some cases, usually advanced courses, class may meet once per week for 150 minutes. The university holds classes five days a week from Sunday through Thursday. If necessary, make up classes may be held on Saturdays. University administrative offices are closed on Friday and Saturday.

All classes are expected to meet on the days and times published in the course schedule. Changes may only be made with the approval of the appropriate School Dean.

Independent study or research, internships and other programs for experimental learning, and other study opportunities may follow a different, approved time frame and schedule.

Course Pre-requisites and Co-requisites

Course pre-requisites or co-requisites state requirements for student entry into courses, and reflect necessary preparation for enrolling in a course. It is the student's responsibility to be aware

of these requirements as stated in the University Catalog, and to have taken pre-requisites recently enough to be of value. The instructor of the course may drop students who have enrolled in a course for which they have not met the pre-requisites.

Course Selection and Registration

Typically, by mid-semester, the Schedule of Classes for the following semester is available through the Registrar's Office and on the website. Students may select courses in consultation with their faculty/academic advisor and they can then register online or submit a completed "Course Request Form" to the Registrar's Office by the published deadlines.

Registration Criteria

- A student with a cumulative GPA of 3.0 or above is entitled to register for 18 credit hours the following semester.
- A student with a cumulative GPA of 2.5 or above is entitled to register for 15 credit hours the following semester.
- A student with a cumulative GPA of less than 2.5 is entitled to register for 12 credit hours the following semester.
- A student with a (D), (D+) or (C-) in a pre-requisite course must have a cumulative GPA of (2.0) or above in order to register for the following sequence course.

Concurrent Enrollment at Other Institutions

Students who apply for admission to AURAK usually do not seek simultaneous enrollment at another institution. Should students seek concurrent enrollment, they must obtain written approval in advance from the Vice President for Academic Affairs. Such approval enables a student to enroll elsewhere in a course unavailable at AURAK.

Catalog numbers and descriptions of courses to be taken elsewhere must be submitted with the request for approval. As for any transferred course, students must submit an official transcript to the Registrar's Office to earn credit, and grades are not included in the GPA. Students who enroll elsewhere without advance written permission while enrolled at AURAK may not receive transfer credit for the course work taken.

Summer Term

During a summer term, students may register for one or two courses. All attendance, grading, and other academic policies apply to the summer term as well as to the two academic semesters.

Examination Policy

AURAK faculty shall ensure that the academic assessment of undergraduate students is fair, accurate, aligned with learning outcomes and program goals and is undertaken at an appropriate level as follows:

Students shall undergo a minimum of 3 assessments distributed evenly throughout the semester.

Assessment tools may be in the form of

- Exam
- Project
- Paper
- Presentation
- Homework assignment
- In class quiz
- Case Study/Analysis

In addition to the above mentioned assessment tools, “in class participation” may be used as an assessment tool.

AURAK faculty shall ensure that appropriate assessment tools are employed for the specific learning outcomes.

Weighting of assessment:

- No single assessment tool can count for more than 40% of the total grade
- “In class participation” may be used in calculating final grade provided it does not exceed 10% of the total grade.
- Attendance has no weight in the final grade as it is dealt with under “attendance policy”.

Midterm Exams

If an instructor chooses to give a mid-term exam, it is typically scheduled by the instructor during the eighth week of the semester, and concerns the content covered during the previous weeks. The date of the midterm exam must be included in the course syllabus. If the instructor teaches multiple sections of the same course, the date for a common midterm exam must be scheduled, and the students informed of the date at the beginning of the semester. Students may be excused from the midterm exam and given a makeup exam on another date only if there is documented evidence of illness, or due to extenuating circumstances. A makeup exam must be approved by the Chair of the department.

Final Exams

Final exams are usually given at the end of all undergraduate courses. Except for laboratory courses, exams may not be given during the last week of classes. Exams may not exceed the scheduled length of three (3) hours. The final exam schedule is posted on campus. Each instructor must note in the course syllabus when the final exam will be given.

An instructor who is assigning a take-home exam or significant end-of-semester paper or project should so inform the students on the syllabus at the beginning of the semester. Take home exams should be distributed by the beginning of the last week of classes so that students can coordinate them with preparation for other exams. Students must not be required to submit exams before the date of the regularly scheduled exam for a course. Accommodation will be made for students with more than one final exam scheduled in the same time period. Re-taking (or re-sitting) a final exam is not permitted. Students are not expected to take more than two final exams in one day.

Absence from Final Exams

Absences from final exams are not to be excused except for sickness on the day of the exam or for other cause approved by the Dean of the respective School. The effect of an unexcused absence from an undergraduate final exam shall be determined by the weighted value of the exam as stated in the course syllabus provided by the instructor. If absence from a final exam is unexcused, the grade for the course is entered as F.

Final Semester Grades

Final grades are available through the website and/or collected from the Registrar's Office. Official transcripts and official semester grade reports for tuition reimbursement are obtained through the Registrar's Office.

Students may access and print an unofficial record of their semester grades and other academic information from the website by logging onto their SIS (Student Information System) account. Official transcripts are available, on request.

Change of Grade

Once a final grade has been recorded, it can be changed only in cases of computational or recording error, or pursuant to a successful appeal of grade. Additional work of any type submitted to improve a grade after the final grade has been assigned is never accepted. All changes of final grades must be initiated, approved, and recorded by the second week of classes of the next regular semester (spring for fall grades and fall for spring grades).

Appeal of a Grade

Although faculty members are generally the best judge of student performance, sometimes a student believes a grade is unfair. If the student is not satisfied with a grade in a course, an appeal may be made to the Instructor. If the instructor is no longer associated with the University, the Vice President of Academic Affairs/Provost will appoint a faculty surrogate, who will assume the authority of the instructor. If a satisfactory resolution of the situation is not reached, the student may appeal to the Department Chair, then to the Dean of the School. If the student is still not satisfied, an appeal may be made to the Vice President of Academic Affairs/Provost who has the final authority to decide the merit of the appeal. If the instructor is no longer associated with the University, the decision of the Vice President of Academic Affairs/Provost is not subject to further appeal.

In the case a graduate student, If the student believes that the grade appeal review by the school was affected by procedural errors or the lack of consideration of factors relevant to the case, then an appeal may be submitted to the Dean of Graduate Studies and Research. The student must clearly state the reasons for the appeal and submit all relevant materials to the Dean of Graduate Studies and Research.

Pending Grade Appeal

A student may request the Vice President for Academic Affairs to delay imposing an academic suspension because of a pending grade appeal that could change the student's status. An approved delay allows the student to register. If the grade appeal is successful, the official transcript is corrected and the student continues in classes as a student in good academic standing. If the grade appeal is not successful, the student is required to stop attending all classes and settle the case with Vice President for Academic Affairs appropriately.

Grading System

University course work is measured in terms of quantity and quality. A credit normally represents one hour per week of lecture or recitation or not fewer than two hours per week of independent or laboratory work throughout a semester. The number of credits is a measure of quantity. The grade is a measure of quality. The university system for undergraduate grading is as follows:

Grade	GPA	Percentage Scores
A	4.0	90-100
B+	3.5	85-89

B	3.0	80-84
C+	2.5	75-79
C	2.0	70-74
D+	1.5	65-69
D	1.0	60-64
F	0.0	0-59

No credit toward graduation accrues from a failing grade or from a grade that is replaced by a repeated course.

Grade Point Average (GPA)

Grade or quality point values are assigned to letter grades as indicated in the grading system table. A quality or grade point score is computed by multiplying the value of a letter grade by the number of credits for the course. For example, a student receiving an A in a 3-credit course earns 12 quality points. The GPA is computed by dividing the quality points earned by the number of credits graded A through F (GPA hours).

For undergraduates, the GPA computed for the current semester gives the current GPA, which is the measure of academic performance in one semester and affects eligibility for the Honor's List. The GPA computed for all institutional credit gives the cumulative GPA, which is the basis for the university's retention policies, including good standing, warning, probation, suspension, and dismissal. The cumulative GPA also determines students' eligibility to graduate and to have university honors posted to their record at graduation.

Additional Grade Notations

Satisfactory/Unsatisfactory (S/U):

An S grade reflects passing work in a course; a U grade reflects a failure. S and U have no effect on grade point average.

Incomplete (I):

This grade is given to students who are passing a course but are unable to complete all the course work or the final exam for a verified reason beyond their control. The student must then complete all the requirements by the end of the next semester, not including any summer term, and the

instructor must turn in the final grade by the end of the that semester's grading deadline. Unless an explicit written extension is filed, the grade of I is changed to an F if the course requirements have not been fulfilled. Students who have filed their intention to graduate have only six weeks from the date of degree conferral to resolve any incomplete grades. An "I" is not calculated in a student's grade point average.

In Progress (IP):

The grade of IP indicates that the student is making progress in a course, writing a thesis or dissertation, or participating in an internship that extends beyond one semester or summer term. The grade of IP has no effect on the student's grade point average.

Withdrawal (W):

The grade of W on a course indicates that the student has dropped the course. While it has no effect on the GPA, dropped courses are part of attempted course credits that serve as the basis for the student's credit level. A W for all courses in a given semester and the transcript notation "withdrawn" indicates that the student withdrew from AURAK.

Repeating a Course

Undergraduate degree students may repeat courses for which they seek a higher grade. A grade received in a repeated course replaces the previous grade in the same course in the calculation of the GPA, even if the more recent grade is lower. Every registration for a course and its grade remains as part of a student's transcript. Duplicate credit is not given. No adjustment to the cumulative GPA will be made if the grade in the repeated course is a W. No more than three courses can be repeated at AURAK over the course of a given degree program.

A grade in an AURAK course will not be excluded from the CGPA based on the subsequent taking of an equivalent course at a transfer institution. Note that individual programs may disallow students from retaking certain high-demand courses simply for the purpose of improving their grade.

Academic Progress / GPA Retention Levels

Academic Excellence

To honor academic excellence, an AURAK Honor's List is published comprising all students who have a GPA equal to or greater than 3.5 after completing at least 6 credits, subject to the following conditions:

- The student has completed all work assigned and does not have a grade of I in any of these courses.
- The student has no grade below a B.
- The student has not repeated a course to improve the grade in any of the courses.

Satisfactory Progress

To make satisfactory progress toward degree completion, students must attain a cumulative GPA of 2.0 (“C”) or better.

Academic Warning, Probation, Suspension

At the end of each semester, the Registrar’s Office will identify cases of non-compliance with the academic standards. Students who have received a semester GPA that has fallen below 2.0 are given an academic warning. Students who receive two warnings during any four consecutive periods of enrollment are on probation during the academic period of enrollment following the second warning, unless suspension criteria apply.

Students whose cumulative GPA (CGPA) has fallen below 2.0, will be placed on academic probation. To remain in the program, students on academic probation must revert to good academic standing (2.0 CGPA and above) within one semester from the date they are placed on probation. Students on academic probation are limited to registering for a maximum of 12 credit hours in any fall or spring semester. The Registrar’s Office will inform each student placed on probation, in writing, of the specific outcomes required for reversion to good academic standing.

Students on academic probation are not eligible to hold or run for office in any organization or activity associated with the university; travel to or compete in any event; or serve as a working member of any student organization.

Students on probation for two semesters who fail to improve their CGPA accordingly are subject to suspension. Students on suspension may not enroll for at least one full academic semester. They must officially request readmission and write a letter to the Dean of Student Affairs stating 1) what they have been doing during their period of suspension and 2) what they plan to do differently upon return if readmitted to AURAK.

Following a first suspension, students cannot take courses for two academic periods unless suspended at the end of a summer term in which case the student will be unable to enroll for the fall semester, but may return for the spring semester. Students receiving a second suspension may not take courses for one full academic year. A third suspension results in dismissal from the university.

Students who have been suspended and are readmitted may be subject to dismissal if they do not earn a minimum of a 2.0 (“C”) average during their first semester after readmission. Readmission is rarely approved for a student who has been dismissed.

Intellectual Property (Student Work)

Intellectual property (IP) is property (an idea, invention, or process) that derives from the work of the mind or intellect. IP is also an application, right or registration of an idea, invention or prose. Copyrightable works, including publications and patentable works developed in connection with course work by students who are not AURAK employees, are deemed to be intellectual property that belongs to the student. However, AURAK may claim copyright ownership of a work or ownership of a patentable invention when extraordinary use of university facilities, personnel, or resources is made in the development of the materials or invention, especially when unrelated to course work. Students are subject to the university's stated policies regarding patents and copyrights.

University Withdrawal

Official withdrawal removes students from any academic program and cancels student status at AURAK. In order to return to the university, students need to apply for readmission through the Admission Office. Students who wish to withdraw have to complete a 'withdrawal form' available at the Registrar's Office and get clearance from all university departments. If the withdrawal process is completed satisfactorily and all financial obligations to the university are cleared, the effective date of withdrawal is noted on the student's permanent academic record. The effective date is the date used for calculating billing or refunds. No grades other than a W for the current semester are recorded.

Leave of Absence

Occasionally, students are forced to leave the university for a semester or two because of circumstances beyond their control. Others find they simply need a break from studying. In such circumstances, taking a leave of absence might be wise. Students who have an approved leave of absence for a semester or a year may register for the semester in which they plan to return without applying for readmission. Unless there are extenuating circumstances such as illness, a leave of absence is not normally given to a student who leaves the university during a term.

Non-academic Regulations

Drug and Alcohol Policy

The AURAK Campus adheres to the laws of the UAE concerning alcohol and drug use. Any student found using drugs will face automatic dismissal. Any student found drinking alcohol or having it in their possession on campus will be automatically dismissed.

Individuals with Disabilities Policy

The Campus is committed to providing equal access to employment and educational opportunities for people with disabilities. AURAK recognizes that individuals with disabilities may need reasonable accommodations to have equally effective opportunities to participate in or benefit from Campus educational programs, services, and activities, and to have equal employment opportunities. The Campus will adhere to all applicable UAE federal and state laws, regulations, and guidelines with respect to providing reasonable accommodations as necessary to afford equal employment opportunity and equal access to programs for qualified people with disabilities. Students requesting reasonable accommodations for a disability should contact the Dean of Student Affairs.

Non-discrimination Policy

AURAK's non-discrimination policy prohibits discrimination based on race, color, religion, national origin, disability, sexual orientation, gender, or age. AURAK is committed to providing faculty, staff, and students with an environment in which they may pursue their careers or studies free from discrimination.

The cornerstone of this policy is the University's Non-discrimination Policy Statement found in the University's Policies and Procedures Manual:

"The American University of Ras Al Khaimah is an equal opportunity institution committed to the principle that access to study or employment opportunities afforded by the university, including all benefits and privileges, be accorded to each person – student, faculty, or staff member, or applicant for employment or admission – on the basis of individual merit and without regard to race, color, religion (employees), national origin, disability, gender, or age (except where gender or age is a bona fide occupational qualification)."

Pets Policy

No pets, except those assisting people with disabilities, are permitted in Campus buildings at any time. Pets on campus grounds must be on a leash and under supervision at all times.

Sexual Assault Policy

The following policy applies equally to all members of the AURAK community: students, faculty, administrators, staff, contract employees, and visitors.

AURAK and the AURAK Campus is committed to providing an institutional environment where all people may pursue their studies, careers, duties, and activities in an atmosphere free of threat of unwelcome and unwanted sexual actions. It strongly condemns sexual offenses, will not tolerate sexual offenders, and supports those who have been victimized.

The Campus will respond promptly, fairly, and decisively to all reports of sexual assault. Members of the Campus community accused of sexual assault will be subject to Campus disciplinary procedures when the alleged incident has occurred on campus, or when the incident has occurred off-campus and materially affects the learning environment or operations of the campus. For those seeking assistance, please contact the Office of Student Affairs.

Sexual Harassment Policy and Grievance Procedures

The University is committed to providing an institutional environment in which all persons may pursue their studies, careers, duties, and activities in an atmosphere free of threat of unwelcome and unwanted sexual advances. The University strongly condemns sexual offenses, will not tolerate offenders, and supports those who have been harassed. Students who believe they have been the victim of sexual harassment should report the incident to the Office of Student Affairs. This policy applies equally to all members of University community: students, faculty, administrators, staff, contract employees, and visitors.

Unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature constitute harassment when

- (1) Submission to or rejection of such conduct is made either explicitly or implicitly a term or condition of an individual's academic performance or employment;
- (2) Submission to or rejection of such conduct by an individual is used as the basis for decisions about academic evaluation, employment, promotion, transfer, selection for training, performance evaluation, or selection for academic awards or benefits;
- (3) Such conduct has the purpose or effect of creating an intimidating, hostile, or offensive educational or work environment or substantially interferes with a student's academic or an employee's work performance.

Students who believe they have been the victim of sexual harassment should report the incident to the Office of Student Affairs.

Smoke-free Environment Policy

Smoking is not permitted in any building on the AURAK Campus including the Student Residences.

Stalking Policy

Stalking is prohibited and will not be tolerated. Stalking is defined as behaviors or activities which, when taken as a whole, give the victim reason to believe that his or her safety is at risk, or that materially affects the learning experience or participation at AURAK. This policy applies to students, faculty, staff, contractors, and visitors, as well as to the behaviors and activities that occur both on and off campus. Victims of stalking are encouraged to report incidents to the Office of Student Affairs.

Academic Programs

A degree program—the major or field—is a program of study that normally requires at least 30 credits of coursework in a specific field. The degree and major or field appear on the diploma. The Bachelor of Science degree programs at AURAK are professionally-oriented, and all require the completion of a minimum of 120 credits, approximately 40 courses, including general education courses. Some programs require additional coursework and all require an internship.

Degrees normally take four years to complete with a minimum of three years, assuming summer enrollment. If a degree is not completed within six years, all coursework in the major is re-evaluated for its current relevance.

A concentration is a second-order component of a degree program. A concentration consists of at least twelve credit hours that are not applied to any other concentration. AURAK currently offers the following four undergraduate majors and concentrations in the Bachelor of Science degree:

- BS in Biotechnology
- BA in Mass Communication
- BA in English Language
- BS in Business Administration
- BS in Accounting
- BS in Finance
- BS in Human Resource Management
- BS in Marketing
- BS in Computer Engineering
- BS in Computer Science
- BS in Electronics and Communications Engineering
- BS in Civil and Infrastructure Engineering
- BS in Industrial Engineering
- BS in Mechanical Engineering

Degree Completion Requirements:

- Successful completion of all credit hours as specified by the program curriculum with a minimum cumulative GPA of 2.0.
- Completion of the minimum enrollment period and not exceeding the maximum enrollment period.
- Transfer or concurrently enrolled students are required to complete a minimum of 50% of the required credit hours at AURAK including the majority of the final 30 credit hours (please refer to this Catalog for additional information on transfer credit policies).

Enrollment Periods:

- The standard enrollment period for a Bachelor of Science degree is eight (8) academic semesters or four (4) academic years. An academic year consists of two (2) academic semesters in addition to an optional summer session or term.
- The minimum enrollment period for a Bachelor of Science degree is three (3) academic
- years. The maximum enrollment period for a Bachelor of Science degree is six (6)
- academic years. Summer session or term is not considered an academic semester for the purposes of calculating enrollment periods.

General Education Program

The mission of the General Education program at the American University of Ras Al Khaimah is intrinsically connected with the vision and mission of the University. Graduates of AURAK will possess the essential skills, conceptual knowledge, sensitivity to diversity, ethical and civic responsiveness, and the spirit of entrepreneurship that will enable them to negotiate with and adapt to a challenging and dynamic environment. The goals of a liberal arts education require that students take a set of courses that are outside their major to acquire a holistic awareness of a broad range of knowledge areas. The aims of the General Education program at AURAK addresses these needs in a diverse, connected, globalized environment through courses that are both broad and deep in content, and use vibrant integrated pedagogical methods to achieve the development of an empowered twenty-first global citizen through a liberal arts education.

The diverse range of topics, the interdisciplinary and globalized focus to the content, the pedagogical shift to experiential and activity-based learning, the generation of research, innovation and enhanced aesthetic sensitivity, will combine in the development of self-responsible, self-directed individuals who will engage in life-long learning.

Students in all academic programs at AURAK must complete the general education program, which complements and contributes to the fulfillment of the mission of the university. Students are required to take a set of courses outside their major to develop their understanding of broad disciplinary areas and the connections between and among them. Courses approved for general education stress experiential and activity-based learning and the application of knowledge to concrete situations.

Program Objectives

The General Education Program aims to develop self-directed individuals who:

1. Are engaged, committed citizens, and aware of the global effect of social, political, and economic change.
2. Understand the nature of tradition and world cultures, understand the impact of the past on the present, and respond sensitively in culturally diverse environments.
3. Are aware of ethical issues and think critically to make informed and responsible decisions.
4. Use empirical and logical reasoning to assess evidence, evaluate data, make decisions, and solve problems.
5. Understand scientific principles and contemporary developments in science and technology and their impact on human life and the environment.
6. Communicate clearly and effectively in writing and speech and understand the rhetorical and stylistic strategies that impact diverse audiences for various purposes.
7. Can locate, access, critically evaluate, and use information ethically and efficiently for a variety of purposes, and engage in independent investigations and research.

8. Can interpret the meaning of different forms of artistic expression within historical and theoretical contexts and respond to works of art.

Program Learning Outcomes

Upon graduation the students are able to:

1. Demonstrate effective written and oral communication skills and use current technology to create a final written or oral product.
2. Recognize, analyze, and evaluate ethical issues and defend their positions through reasoned argument.
3. Use logical and mathematical reasoning to analyze quantitative data and solve problems for personal and professional purposes.
4. Use appropriate tools to access information, evaluate sources, and conduct independent research.
5. Respect the contributions of multicultural contexts that enhance human experience, and to appreciate the interdependence of the global community to facilitate coexistence in multicultural environments.
6. Understand the historical contexts and variety of artistic forms, the nature and norms of creative processes that shape creative works, and the ability to engage in creative production of original artifacts.
7. Employ the basic concepts of ethics or one of the social sciences to analyze a contemporary issue.
8. Recognize, analyze and resolve scientific problems through the application of scientific methods.
9. Use computers for academic purposes, to incorporate technology into academic content, and to access information efficiently.

Degree Requirements

To achieve these outcomes, the General Education Program requires students to take 31-35 credits in the following skills development and knowledge areas:

Core Competencies:

1. Communication skills
2. Quantitative literacy
3. Information technology
4. Critical thinking
5. Information literacy
6. University life

Knowledge Areas:

1. Effective communication
2. Creative and aesthetic understanding
3. Cross-cultural and ethical understanding
4. Social and global perspectives
5. Science of the natural and physical worlds

6. Empirical and mathematical reasoning

Core Courses (22-24 Credits)

A minimum of seven courses is required in this area. Students who successfully test out of ITEC 103 may take any other 3 or 4 credit course approved for general education. **UNIV 100**, University Freshman Transition is mandatory for freshmen.

- a. ENGL 100/101, Composition (3)
- b. POLI 100, Contemporary Global Issues (3)
- c. COMM 100, Public Speaking (3) or
COMM 101, Interpersonal Communication (3)
- d. PHIL 100, Critical Thinking and Reasoning (3)
- e. One of the following MATH courses
MATH 101, Numbers and Data Interpretation (3)
STAT 100, Statistics (3)
MATH 108, Business Calculus (3)
MATH 111, Calculus for Life Sciences (4)
MATH 113, Calculus I (4)
- f. ITEC 103, Introduction to Computing (3) (students have the opportunity to test out of this course and substitute the more advanced course CSCI 104 (called also Introduction to Computing) with Computer Science students) or
CSCI 112, 113, Introduction to Computer Programming (4)
- g. MEST 100, Introduction to Islam in World Culture (3)
- h. UNIV 100, University Freshman Transition (1)

Knowledge Domains

Students must complete a minimum of **9-11** credits from the following three categories: **Students in Engineering and the Sciences** programs must take 6 credit hours from Arts and Humanities and Social and Behavioral Sciences, and 3-4 from the Natural Sciences. **Students in the Business, English, and Mass Communication** programs must take 3 credit hours from the Arts and Humanities and Social and Behavioral Sciences and 6-8 from the Natural Sciences to fulfill the general education requirement.

Arts and Humanities

1. Creative and Aesthetic Understanding
 - a. ARTT 100, Introduction to Visual Arts
 - b. ARAB 110 Introduction to Arabic Literature
 - c. COMM 102, Reading Image and Film
 - d. COMM 104, Photography and Communication
2. Cross-cultural and Ethical Understanding
 - a. HIST 100, Contemporary Middle Eastern History
 - b. HIST 101, Ancient History of the Arabian Peninsula
 - c. PHIL 101, Ethics in Today's World
 - d. PHIL 102, World Philosophies

Social and Behavioral Sciences

3. Social and Global Perspectives

- a. PSYC 100, Introduction to Psychology
- b. SOCI 101, Contemporary Social Issues
- c. ECON 103, Principles of Microeconomics
- d. POLI 101, Politics of Scarcity
- e. POLI 102, State and Society in the UAE
- f. GEOG 200, World Regional Geography

The Natural Sciences

4. Science of the Natural and Physical Worlds

- a. BIOL 100, Humankind in a Biological World
- b. CHEM 100, 101, Chemistry in Everyday Life (4)
- c. ENVS 100, 101, Energy and Environmental Science (4)
- d. ENVS 102, Sustainability and Human-Environment Relations
- e. CHEM 211, General Chemistry

Total No. of Credits: 31-35 (including UNIV 100 and MEST100)

BIOTECHNOLOGY

BACHELOR OF SCIENCE IN BIOTECHNOLOGY

Biotechnology is the modern face of the biological sciences. It embodies the application of scientific and technological advances, particularly those involving the science of Molecular Genetics, Recombinant DNA and diagnostics to solve biological problems through the production of materials, processes, and services that are beneficial to man and his environment.

In medicine, biotechnology aids in the manufacture of therapeutics, enzymes, antibiotics, vitamins, and vaccines. In agriculture, biotechnology helps improve food quality, quantity, and processing. Additionally, biotechnology has applications in green manufacturing technologies and in environmental protection by finding new ways to minimize contamination and pollution and finding alternative energy sources. In the past decade, industry has increasingly turned to biotechnology to improve product quality and make the production process easier, cleaner, and more cost-effective.

Biotechnology graduates work in fields such as molecular biology, genetics, forensics, plant and animal sciences, food production, therapeutics, agriculture, and environmental sciences.

Program Mission

The Bachelor of Science in Biotechnology Program with concentration in Cell and Molecular Biotechnology or Medical Biotechnology aims to produce skilled and knowledgeable Biotechnologists capable of applying their acquired knowledge to scientific research and development in medicine, science, agriculture and the environment for the benefit of society and the country, whilst maintaining the highest standards of professional ethics in the practice of their careers.

Program Objectives

The objectives of the Biotechnology Program are to:

- Supply society with biologically literate citizens who are capable of advising and responsible decision making.
- Produce ambitious, creative graduates who are interested in continuing their education in the biosciences.
- Practice scientific inquiry and appreciate its role in the development of research, science, technology and society.
- Produce responsible biotechnology professionals to fulfill the employment and research needs in the biotechnology industry in the UAE and the region.

- Contribute to advancement of agriculture, medicine, and environmental sciences through the application of biotechnology theory and recombinant DNA technology.
- Enhance the students' ability to integrate their acquired math, computer, and biosciences' knowledge and skills to investigate and solve biological problems.

Program Learning Outcomes

AURAK Biotechnology graduates should demonstrate:

- An understanding of the factual and theoretical basis of biotechnology on the molecular, cellular, and organism levels.
- Comprehension of and appreciation for the role of biotechnology in explaining the unity, similarity and diversity of life components with demonstrable understanding of the life hierarchical organizations and their characteristics.
- Knowledge of the basic laboratory tools and biotechnology-related techniques to be able to function successfully within the biotechnology employment sector in areas such as hospital, environmental and forensics laboratories and the pharmaceutical industry.
- Basic experience with computers and electronic communications in order to utilize the new computer-assisted technologies for learning and applying biotechnology knowledge.
- The ability to share biotechnology knowledge effectively by using a variety of skills and resources. e.g., to use library and electronic resources to access, evaluate, organize and communicate applied biological information clearly in written and oral form.
- An understanding of the scientific method; an ability to cite scientific problems and approach them analytically through the application of appropriate experimental design, technology, and statistical methods.
- The ability to interact with the larger community in discussions of the socioeconomic implications of biotechnology industry and to promote responsible public decisions.
- The ability to pursue further education as an independent life-long learner; the ability to prepare for a variety of satisfying career options such as Biotechnologist, laboratory technician, research assistant, scientific researcher and for entrance into graduate programs and professional schools.
- An understanding and appreciation of the significance and societal implications of biotechnology applied to medicine, agriculture and the environment.
- The ability to use some of the current computer tools, such as programs, software, and databases for researching, analyzing and resolving biological problems mainly in genomics and proteomics.

Degree requirements

The BS in Biotechnology degree is a four-year degree program with concentration in either Cell and Molecular Biotechnology or Medical Biotechnology. For the first three years of the BS in Biotechnology program, students follow a common sequence of courses, with courses specific to the respective concentration taken in the fourth year of the program. To earn a Bachelor's degree,

students must satisfactorily complete at least 128 approved credits, fulfill all the requirements for the BS in Biotechnology degree, and achieve a GPA of 2.00 or higher. Students must apply for at least 45 credits of upper-level courses (designated 300-level or higher) toward graduation requirements. Thirty-four credit hours from approved courses are required to fulfill the general education requirements.

The degree is designed to be completed in four years, assuming students do not interrupt their study. Students who withdraw or take a leave of absence from the program must meet requirements for returning that are outlined in this *Catalog*. Students are required to meet specific standards to progress, as well as the maximum time allowed to complete the program, which are also detailed in the *Catalog*. If a degree is not completed within a period of six years, all coursework in the major will be re-evaluated for its current relevance.

BS in Biotechnology Degree Requirements

The BS in Biotechnology degree requires the completion of 128 credits in the following areas of study:

Requirements	No. of Credits
I. University General Education Requirements	34
II. Biotechnology Program Core Courses	62
III. Biotechnology Program Elective courses	6
IV. Concentration (Cell and Molecular Biotechnology or Medical Biotechnology) Course Requirements	17
V. Free Electives	9
TOTAL	128

I. University General Education Requirements**34 Credits****Compulsory:****Core Courses****24 Credits**

Course No.	Title	No. of Credits
ENGL 100/101	Composition	3
COMM 100 or COMM 101	Public Speaking or Interpersonal Communication and Group Interaction	3
CSCI 112	Introduction to Computer Programming	3
CSCI 113	Introduction to Computer Programming Lab	1
MEST 100	Introduction to Islam in World Culture	3
PHIL 100	Critical Thinking and Reasoning	3
POLI 100	Contemporary Global Issues	3
UNIV 100	University First Year Transition	1
MATH 111	Calculus for Life Sciences	4

Electives:**Arts and Humanities and Social and Behavioral Sciences Electives****6 Credits**

Course No.	Title	No. of Credits
ARTT 100	Introduction to Visual Arts	3
ARAB 110	Introduction to Arabic Literature	3
COMM 102	Reading Image and Film	3
COMM 104	Photography and Communication	3
HIST 100	Contemporary Middle Eastern History	3

HIST 101	Ancient History of the Arab Peninsula	3
PHIL 101	Ethics in Today's World	3
PHIL 102	World Philosophies	3
PSYC 100	Introduction to Psychology	3
SOCI 100	Contemporary Social Issues	3
ECON 103	Principles of Microeconomics	3
POLI 101	Politics of Scarcity	3
POLI 102	State and Society in the UAE	3

Natural Sciences Elective

4 Credits

Course No.	Title	No. of Credits
ENVS 100,101	Energy and Environmental Science	4

II. Biotechnology Program Core courses

62 Credits

Course No.	Title	No. of Credits
BIOL 112	University Biology I	3
BIOL 113	University Biology I Lab	1
CHEM 111	Principles of General Chemistry	3
CHEM 112	Principles of General Chemistry Lab	1
PHYS 110	University Physics I	3
PHYS 111	University Physics I Lab	1
STAT 110	Introductory Probability and Statistics	3
BIOL 114	University Biology II	3

BIOL 115	University Biology II Lab	1
CHEM 215	Organic Chemistry I	3
CHEM 216	General Organic Chemistry Lab I	1
CHEM 217	Organic Chemistry II	3
CHEM 218	General Organic Chemistry Lab II	1
BIOL 230	General Microbiology	3
BIOL 231	General Microbiology Lab	1
BIOL 270	General Genetics	3
BIOL 271	General Genetics Lab	1
STAT 210	Probability and Statistics for Life Sciences	3
BIOL 330	Applied and Industrial Microbiology	3
BIOL 331	Techniques in Applied and Industrial Microbiology	1
BIOL 352	General Biochemistry	3
BIOL 353	Biomolecules Analysis Lab	1
BIOL 370	Foundations in Mathematical Biology	3
BIOL 380	Biotechnology and Genetic Engineering	3
BIOL 381	Biotechnology Lab Methods and Techniques	1
UNIV 390	Internship	3
BIOL 493	Research Methodology in the Biological Sciences	2

BIOL 494	Senior Project	4
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III. Biotechnology Program Elective courses

6 Credits

Course No.	Title	No. of Credits
BIOL 240	Ecology	3
BIOL 322	Microbial Genetics	3
BIOL 354	Biophysics	3
BIOL 355	Biophysics Lab	1
BIOL 356	Virology	3
BIOL 360	Developmental Biology	3
BIOL 450	Bioethics	2
BIOL 480	Food Biotechnology	3
BIOL 481	Bioprocessing Technology in the Pharmaceutical Industry	3
BIOL 491	Senior Seminar	1
BIOL 492	Special Topics in Biotechnology	2
	Students may choose one course from the other concentration as an Elective course	3 - 4

IV. Concentration course requirements

A. Concentration in Cell and Molecular Biotechnology

17 Credits

Course No.	Title	No. of Credits
BIOL 420	Molecular Biology and Genetics	3

BIOL 421	Molecular Biology and Recombinant DNA Lab	1
BIOL 423	Advanced Molecular Biology and Forensic Sciences	3
BIOL 430	Cell Culture Theory and Technology	3
BIOL 431	Cell Culture Techniques Lab	1
BIOL 434	Cell Communication and Signal Transduction	3
BIOL 473	Bioinformatics and Computational Biology	3

B. Concentration in Medical Biotechnology

17 Credits

Course No.	Title	No. of Credits
BIOL 435	Stem Cell Biology and Regenerative Medicine	3
BIOL 436	Immunology	3
BIOL 440	Medical Microbiology	3
BIOL 441	Medical Microbiology Lab	1
BIOL 442	Molecular Diagnostics	3
BIOL 443	Molecular Diagnostics Lab	1
CHEM 411	Medicinal Chemistry	3

V. Free Electives

9 Credits

Minor in Biotechnology Requirements

24 Credits

Core Courses:

16 Credits

Course No.	Title	No. of Credits
BIOL 112	University Biology I	3
BIOL 113	University Biology I Lab	1
BIOL 114	University Biology II	3
BIOL 115	University Biology II Lab	1
BIOL 230	General Microbiology	3
BIOL 231	General Microbiology Lab	1
BIOL 270	General Genetics	3
BIOL 271	General Genetics Lab	1

Elective Courses:

8 Credits

Students can choose one 300 level course combination (A or B) and one 400 level course combination (C, D or E) from below:

Course Combination	Course No.	Title	No. of Credits
A	BIOL 330 &	Applied and Industrial Microbiology	3
	BIOL 331	Techniques in Applied and Industrial Microbiology Lab	1
B	BIOL 380 &	Biotechnology and Genetic Engineering	3
	BIOL 381	Biotechnology Lab Methods and Techniques	1
C	BIOL 420 &	Molecular Biology and Genetics	3

	BIOL 421	Molecular Biology and Recombinant DNA Lab	1
D	BIOL 430 &	Cell Culture Theory and Technology	3
	BIOL 431	Cell Culture Techniques Lab	1
E	BIOL 440 &	Medical Microbiology	3
	BIOL 441	Medical Microbiology Lab	1

Recommended Four-Year Schedule for BS in Biotechnology Program with concentration in Cell and Molecular Biotechnology or Medical Biotechnology (for entrants in Fall 2013 and after):

BS Degree in Biotechnology with Concentration in Cell and Molecular Biotechnology

First Year, Semester 1			First Year, Semester 2		
Course	Title	CR	Course	Title	CR
BIOL 112	University Biology I	3	BIOL 114	University Biology II	3
BIOL 113	University Biology I Lab	1	BIOL 115	University Biology II Lab	1
MATH 111	Calculus for Life Sciences	4	CHEM 111	Principles of General Chemistry	3
ENGL 100/101	Composition	3	CHEM 112	Principles of General Chemistry Lab	1
MEST 100	Introduction to Islam in World Culture	3	STAT 110	Introductory Probability and Statistics	3
UNIV 100	University First Year Transition	1	PHIL 100	Critical Thinking and Reasoning	3
			COMM 100 /COMM 101	Public Speaking/ Interpersonal Communication	3
TOTAL 15			TOTAL 17		
Second Year, Semester 1			Second Year, Semester 2		
Course	Title	CR	Course	Title	CR
BIOL 230	General Microbiology	3	BIOL 270	General Genetics	3
BIOL 231	General Microbiology Lab	1	BIOL 271	General Genetics Lab	1
CHEM 215	Organic Chemistry I	3	CHEM 217	Organic Chemistry II	3
CHEM 216	General Organic Chemistry Lab I	1	CHEM 218	General Organic Chemistry Lab II	1
STAT 210	Probability and Statistics for Life Sciences	3	PHYS 110	University Physics I	3
CSCI 112	Introduction to Computer Programming	3	PHYS 111	University Physics I Lab	1
CSCI 113	Introduction to Computer Programming Lab	1		Gen. Ed. Arts and Humanities and Social and Behavioral Sciences Elective	3

TOTAL			15			TOTAL			15		
Third Year, Semester 1						Third Year, Semester 2					
Course	Title	CR	Course	Title	CR	Course	Title	CR	Course	Title	CR
BIOL 352	General Biochemistry	3	BIOL 380	Biotechnology and Genetic Engineering	3						
BIOL 353	Biomolecules Analysis Lab	1	BIOL 381	Biotechnology Lab Methods and Techniques	1						
ENGL 302	Advanced Composition and Research Methodology	3	BIOL 370	Foundations in Mathematical Biology	3						
BIOL 330	Applied and Industrial Microbiology	3		Biotechnology Elective	3						
BIOL 331	Techniques in Applied and Industrial Microbiology	1		Gen. Ed. Natural Sciences Elective	4						
	Free Elective	3		Free Elective	3						
	Gen. Ed. Arts and Humanities and Social and Behavioral Sciences Elective	3									
TOTAL			17			TOTAL			17		
Junior Year, Summer Semester											
Course	Title	CR	Course	Title	CR	Course	Title	CR	Course	Title	CR
UNIV 390	Internship	3									
Fourth Year, Semester 1						Fourth Year, Semester 2					
Course	Title	CR	Course	Title	CR	Course	Title	CR	Course	Title	CR
BIOL 420	Molecular Biology and Genetics	3	BIOL 423	Advanced Molecular Biology and Forensic Sciences	3						
BIOL 421	Molecular Biology and Recombinant DNA Lab	1	BIOL 434	Cell communication and Signal Transduction	3						
BIOL 430	Cell culture theory and technology	3	BIOL 473	Bioinformatics and Computational Biology	3						
BIOL 431	Cell culture techniques Lab	1	BIOL 494	Senior Project	4						
BIOL 493	Research Methodology in the Biological Sciences	2									

	Biotechnology Elective	3			
	Free Elective	3			
TOTAL		16	TOTAL		13

BS Degree In Biotechnology With Concentration In Medical Biotechnology

First Year, Semester 1			First Year, Semester 2		
Course	Title	CR	Course	Title	CR
BIOL 112	University Biology I	3	BIOL 114	University Biology II	3
BIOL 113	University Biology I Lab	1	BIOL 115	University Biology II Lab	1
MATH 111	Calculus for Life Sciences	4	CHEM 111	Principles of General Chemistry	3
ENGL 100/101	Composition	3	CHEM 112	Principles of General Chemistry Lab	1
MEST 100	Introduction to Islam in World Culture	3	STAT 110	Introductory Probability and Statistics	3
UNIV 100	University First Year Transition	1	PHIL 100	Critical Thinking and Reasoning	3
			COMM 100 /COMM 101	Public Speaking/ Interpersonal Communication	3
TOTAL		15	TOTAL		17
Second Year, Semester 1			Second Year, Semester 2		
Course	Title	CR	Course	Title	CR
BIOL 230	General Microbiology	3	BIOL 270	General Genetics	3
BIOL 231	General Microbiology Lab	1	BIOL 271	General Genetics Lab	1
CHEM 215	Organic Chemistry I	3	CHEM 217	Organic Chemistry II	3
CHEM 216	General Organic Chemistry Lab I	1	CHEM 218	General Organic Chemistry Lab II	1
STAT 210	Probability and Statistics for Life Sciences	3	PHYS 110	University Physics I	3
CSCI 112	Introduction to Computer Programming	3	PHYS 111	University Physics I Lab	1

CSCI 113	Introduction to Computer Programming Lab	1		Gen. Ed. Arts and Humanities and Social and Behavioral Sciences Elective	3
TOTAL			15	TOTAL	
15			15		
Third Year, Semester 1			Third Year, Semester 2		
Course	Title	CR	Course	Title	CR
BIOL 352	General Biochemistry	3	BIOL 380	Biotechnology and Genetic Engineering	3
BIOL 353	Biomolecules Analysis Lab	1	BIOL 381	Biotechnology Lab Methods and Techniques	1
ENGL 302	Advanced Composition and Research Methodology	3	BIOL 370	Foundations in Mathematical Biology	3
BIOL 330	Applied and Industrial Microbiology	3		Biotechnology Elective	3
BIOL 331	Techniques in Applied and Industrial Microbiology	1		Gen. Ed. Natural Sciences Elective	4
	Free Elective	3		Free Elective	3
	Gen. Ed. Arts and Humanities and Social and Behavioral Sciences Elective	3			
TOTAL			17	TOTAL	
17			17		
Junior Year, Summer Semester					
Course	Title	CR	Course	Title	CR
UNIV 390	Internship	3			
Fourth Year, Semester 1			Fourth Year, Semester 2		
Course	Title	CR	Course	Title	CR
BIOL 440	Medical Microbiology	3	BIOL 435	Stem Cell Biology and Regenerative Medicine	3
BIOL 441	Medical Microbiology Lab	1	BIOL 436	Immunology	3
BIOL 442	Molecular Diagnostics	3	CHEM 411	Medicinal Chemistry	3
BIOL 443	Molecular Diagnostics Lab	1	BIOL 494	Senior Project	4
BIOL 493	Research Methodology in the Biological Sciences	2			

	Biotechnology Elective	3			
	Free Elective	3			
TOTAL		16	TOTAL		13

ENGLISH LANGUAGE

Bachelor of Arts in English Language

The B.A. in English Language fulfills the university requirement to offer a range of programs in its mission to provide a liberal arts education. In attempting to fulfill this mission as well as to satisfy the needs of the community as delineated in the needs assessment, options for higher education in an expanding list of programs is being offered that will allow a larger percentage of the population in the Emirate of Ras Al Khaimah as well as the neighboring Emirates to pursue higher education in their desired discipline.

Program Mission

The Bachelor of Arts in English Language, with concentrations in Translation, the Teaching of English, and Literature will produce competent graduates with the requisite skills in their area of concentration to enable the application of both knowledge and skills to engage in research to benefit the community and the nation, as well as to pursue excellence in their professional lives.

Program Goals

The goals and objectives of the Bachelor of Arts in English Language are symbiotically aligned with the mission statement of the University and seek to achieve the objectives embedded in the statement. The program goals are:

1. To provide the student with a broad and deep knowledge about the study of languages, the similarities and differences between languages, their structure, processes, meaning, social and professional uses.
2. To foster an understanding of the interdisciplinary nature, and the historical and cultural contexts of human communication.
3. To enhance the student's proficiency in research skills, use of technology and the media, critical, creative and analytical abilities to pursue knowledge independently, and engage in the pursuit of advanced higher education.
4. To produce graduates who possess practical and interpersonal skills, the ability to establish and evaluate peer relationships, and provide leadership to serve the needs of the community.
5. To produce responsible and competent professionals with practical skills, social commitment and ethical standards that satisfy the demands of employment in the UAE and the region.

Program Student Learning Outcomes

Upon completing the Bachelor of Arts in English Language at AURAK, students should be able to demonstrate the achievement of specific skills and competencies. Graduates are expected to be able to:

1. understand the phonological, morphemic and semantic structure of the English language
2. recognize and evaluate the relationship between language and culture and the development of English as a global language
3. engage in individual and institutional investigative field work in linguistics in diverse settings
4. employ effective tools in the interpretation of texts and use technology and media effectively
5. engage in critical thinking and analysis to distinguish and resolve linguistic issues
6. create an effective liaison between the immediate community and the larger global environment
7. understand the process of first and additional language acquisition, the concept of bilingualism, and the learning of languages
8. demonstrate an understanding of literary practices and the comparative analyses of literary texts
9. appraise the relationship between social, educational and cultural contexts in language learning
10. employ the strategies of effective oral and written communication to convey information, work effectively in teams, and defend one's position to a variety of audiences
11. use some of the current computer tools, such as programs, software, and databases for researching, analyzing, resolving issues related to language study
12. design and develop appropriate strategies and tools to enhance linguistic and pedagogical research
13. pursue further education as an independent lifelong learner for entrance into graduate programs and professional schools
14. display their expertise as professional practitioners and thereby enhance their employability range and options in the areas of their specializations

Degree Requirements

To earn a BA degree in English Language, students must satisfactorily complete at least 120 approved credits, fulfill all the requirements for the BA in English Language degree, and achieve a GPA of 2.00 or higher. Students must apply for at least 45 credits of upper-level courses (designated 300-level or higher) toward graduation requirements. Thirty one credit hours from approved courses are required to fulfill the general education requirements. The BA in English Language offers concentrations in Translation, the Teaching of English and Literature. Students complete 21 credits in the concentration, and an additional 21 credits through free electives, or the completion of a minor.

Students also fulfill a modern language and culture competency requirement by completing 15 credit hours of study in a modern language, from beginner to intermediate level, with one course in culture and civilization. All students are given a placement test to determine their admission to beginner, intermediate, or advanced level modern language courses. Those who are placed at the intermediate level may take the advanced level courses to fulfill the 15 credit hour requirement, and those who display proficiency at the advanced level may take another foreign language with the requisite credit hours. All students are expected to study Arabic. Students who test out of Arabic are expected to meet the modern language requirement through study of another language. Students who choose the concentration in Translation are required to display proficiency in Arabic through the advanced level either through a proficiency exam or successful completion of ARAB 212.

The degree is designed to be completed in four years, assuming students do not interrupt their study. Students who withdraw or take a leave of absence from the program must meet requirements for returning that are outlined in the American University of Ras Al Khaimah *Catalog*. Students must meet specific standards to progress, as well as the maximum time allowed to complete the program, which are also detailed in the *Catalog*. If a degree is not completed within a period of six years all coursework in the major will be re-evaluated for its current relevance.

The BA in English Language degree requires the completion of 120 credits in the following areas of study:

Requirements	No. of Credits
I. University General Education Requirements	31
II. Department/Program Core Course Requirements	32
III. Concentration Course Requirements (Translation, Teaching of English or Literature) Compulsory Courses	18
1. Electives	3
IV. Modern Language and Culture Competency Requirement	15

V. Free Electives/Minor	21
TOTAL	120

I. University General Education Requirements 31 Credits

**Compulsory:
Core Courses**

22 Credits

Course No.	Title	Pre-requisites and Co-requisites	No. of Credits
ENGL 100/101	Composition	Placement Test	3
COMM 100 or COMM 101	Public Speaking or Interpersonal Communication and Group Interaction	ENGL 100/101	3
ITEC 103	Introduction to Computing		3
MATH 101	Numbers and Data Interpretation		3
MEST 100	Introduction to Islam in World Culture		3
PHIL 100	Critical Thinking and Reasoning		3
POLI 100	Contemporary Global Issues		3
UNIV 100	University First Year Transition		1

Electives:

Arts and Humanities and Social and Behavioral Sciences Elective

3 Credits

Course No.	Title	Pre-requisites and Co-requisites	No. of Credits
ARTT 100	Introduction to Visual Arts	ENGL 100/101	3
ARAB 110	Introduction to Arabic Literature	ENGL 100/101	3
COMM 102	Reading Image and Film		3
COMM 104	Photography and Communication		3
HIST 100	Contemporary Middle Eastern History		3
HIST 101	Ancient History of the Arab Peninsula		3
PHIL 101	Ethics in Today's World		3
PHIL 102	World Philosophies		3
PSYC 100	Introduction to Psychology		3
SOCI 100	Contemporary Social Issues		3
ECON 103	Principles of Microeconomics		3
POLI 101	Politics of Scarcity		3
POLI 102	State and Society in the UAE		3

Natural Sciences Elective

6-8 Credits

Course No.	Title	Pre-requisites and Co-requisites	No. of Credits
BIOL 100	Humankind in a Biological World		3
CHEM 100,101	Chemistry in Everyday Life		4
ENVS 100,101	Energy and Environmental Science		4
ENVS 102	Sustainability and Human-Environment Relations		3

II. Program Core Course Requirements

32 Credits

Course No.	Title	Pre-requisites and Co-requisites	No. of Credits
ENGL 111	Introduction to the Study of Language		3
ENGL 112	The Structure of English		3
ENGL 211	Phonetics and Phonology		3
ENGL 212	Language, Society and Communication		3
ENGL 214	Semantics and Pragmatics		3
ENGL 221	English as a Global Language		3
ENGL 222	Psycholinguistics		3
ENGL 223	Applied Linguistics		3
ENGL 311	Gender and Language	ENGL 212	3
ENGL 490	Research Methodology		2
ENGL 492	Senior Research Project		3

III. Concentrations (Translation, Teaching of English, Literature)

21 Credits

A. Concentration in Translation

21 Credits

Core Courses:

18 Credits

Course No.	Title	Pre-requisites and Co-requisites	No. of Credits
ENGL 320	Introduction to Translation Studies		3
ENGL 322	Practical Translation: English into Arabic	ENGL 323(Co-req.)	3
ENGL 323	Practical Translation: Arabic into English	ENGL 322 (Co-req.)	3
ENGL 420	Tools and Technology in Translation		3
ENGL 423	Media Translation		3
UNIV 390	Internship		3

Electives:

3 Credits

Course No.	Title	Pre-requisites and Co-requisites	No. of Credits
ENGL 421	Interpretation and the Community		3
ENGL 422	Technical Translation: Scientific and Legal Texts		3
	Free Elective		3

B. Concentration in the Teaching of English

21 Credits

Core Courses:

18 Credits

Course No.	Title	Pre-requisites and Co-requisites	No. of Credits
ENGL 331	Introduction to the Teaching of English		3
ENGL 332	Second Language Acquisition		3
ENGL 333	Theories and Methods of Teaching English	ENGL 331	3
ENGL 334	Curriculum Development, Planning and Assessment		3
ENGL 433	Classroom Management and Student Engagement		3
UNIV 390	Internship		3

Elective Courses:

3 Credits

Course No.	Title	Pre-requisites and Co-requisites	No. of Credits
ENGL 432	Teaching Literature		3
ENGL 434	Technology and Teaching of English	ITEC 103	3
	Free Elective		3

C. Concentration in Literature

21 Credits

Core Courses:

18 Credits

Course No.	Title	Pre-requisites and Co-requisites	No. of Credits
ENGL 341	Introduction to the Study of Literature		3
ENGL 342	World Literature - I	ENGL 341	3
ENGL 343	World Literature - II	ENGL 341	3

ENGL 344	American Literature - I	ENGL 341	3
ENGL 345	American Literature - II	ENGL 341	3
ENGL 441	Literary Perspectives	ENGL 341	

Elective Courses:

3 Credits

Course No.	Title	Pre-requisites and Co-requisites	No. of Credits
ENGL 442	British Literature - I	ENGL 341	3
ENGL 443	British Literature - II	ENGL 341	3
ENGL 444	Special Topics in Literature	ENGL 341	3

IV. Modern Language Competency Requirement

15 Credits

Course No.	Title	Pre-requisites and Co-requisites	No. of Credits
ARAB 111	Intermediate Arabic - I	ARAB 099 or Placement Test	3
ARAB 112	Intermediate Arabic - II	ARAB 111	3
ARAB 211	Advanced Arabic - I	ARAB 112	3
ARAB 212	Advanced Arabic - II	ARAB 211	3
ARAB 312	Topics in Arab Culture and Civilization		3

V. Free Electives/Minor (to be taken from other departments)

21 Credits

Minor in Practical Translation (to be offered to other departments)

18 credits

Core Courses:

15 Credits

Course No.	Title	Pre-requisites and Co-requisites	No. of Credits
ENGL 320	Introduction to Translation Studies		3
ENGL 322	Practical Translation: English into Arabic	ENGL 323(Co-req.)	3
ENGL 323	Practical Translation: Arabic into English	ENGL 322 (Co-req.)	3
ENGL 420	Tools and Technology in Translation		3
ENGL 423	Media Translation		3

Electives:

3 Credits

Course No.	Title	Pre-requisites and Co-requisites	No. of Credits
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ENGL 421	Interpretation and the Community		3
ENGL 422	Technical Translation: Scientific and Legal Texts		3

**B.A. Degree in English Language with Concentration in Translation
Proposed Four-Year Schedule**

First Year, Semester 1			First Year, Semester 2		
Course	Title	CR	Course	Title	CR
ENGL 100/101	Composition	3	COMM100	Public Speaking	3
MATH 101	Numbers and Data Interpretation	3	MEST 100	Islam in World Culture	3
ITEC 103	Introduction to Computing	3	PHIL 100	Critical Thinking and Reasoning	3
ENGL 111	Introduction to the Study of Language	3	ENGL 112	The Structure of English	3
UNIV 100	University First Year Transition	1		Gen. Ed. Science Elective	3
TOTAL 13			TOTAL 15		
Second Year, Semester 1			Second Year, Semester 2		
Course	Title	CR	Course	Title	CR
ENGL 211	Phonetics and Phonology	3	ENGL 221	English as a Global Language	3
ENGL 212	Language, Society and Communication	3	ENGL 222	Psycholinguistics	3
ENGL 214	Semantics and Pragmatics	3	ENGL 223	Applied Linguistics	3
	Gen. Ed. Science Elective	3		Gen. Ed. Arts& Hum/Soc. Sc. Elective	3
	Modern Language Requirement	3		Modern Language Requirement	3
TOTAL 15			TOTAL 15		
Third Year, Semester 1			Third Year, Semester 2		
Course	Title	CR	Course	Title	CR
POLI 100	Contemporary Global Issues	3	ENGL 322	Practical Translation: English into Arabic	3
ENGL 311	Gender and Language	3	ENGL 323	Practical Translation: Arabic into English	3
ENGL 320	Introduction to Translation Studies	3		Free Elective	3
	Free Elective	3		Free Elective	3

	Free Elective	3		Modern Language Requirement	3
	Modern Language Requirement	3			
TOTAL 18			TOTAL 15		
Junior Year, Summer Semester					
Course	Title	CR	Course	Title	CR
UNIV 390	Internship	3			
Fourth Year, Semester 1			Fourth Year, Semester 2		
Course	Title	CR	Course	Title	CR
ENGL 423	Media Translation	3	ENGL 492	Senior Research Project	3
ENGL 420	Tools and Technology in Translation	3		Free Elective	3
ENGL 490	Research Methodology	2		Free Elective	3
	Concentration Elective	3		Free Elective	3
	Modern Language Requirement	3			
	Free Elective	3			
TOTAL 17			TOTAL 12		

**B.A. Degree in English Language with Concentration in the Teaching of English
Proposed Four-Year Schedule**

First Year, Semester 1			First Year, Semester 2		
Course	Title	CR	Course	Title	CR
ENGL 100/101	Composition	3	COMM100	Public Speaking	3
MATH 101	Numbers and Data Interpretation	3	MEST 100	Islam in World Culture	3
ITEC 103	Introduction to Computing	3	PHIL 100	Critical Thinking and Reasoning	3
ENGL 111	Introduction to the Study of Language	3	ENGL 112	The Structure of English	3
UNIV 100	University First Year Transition	1		Gen. Ed. Science Elective	3
TOTAL 13			TOTAL 15		

Second Year, Semester 1			Second Year, Semester 2		
Course	Title	CR	Course	Title	CR
ENGL 211	Phonetics and Phonology	3	ENGL 221	English as a Global Language	3
ENGL 212	Language, Society and Communication	3	ENGL 222	Psycholinguistics	3
ENGL 214	Semantics and Pragmatics	3	ENGL 223	Applied Linguistics	3
	Gen. Ed. Science Elective	3		Gen. Ed. Arts& Hum/Soc. Sc. Elective	3
	Modern Language Requirement	3		Modern Language Requirement	3
TOTAL 15			TOTAL 15		
Third Year, Semester 1			Third Year, Semester 2		
Course	Title	CR	Course	Title	CR
POLI 100	Contemporary Global Issues	3	ENGL 332	Second Language Acquisition	3
ENGL 311	Gender and Language	3	ENGL 333	Theories and Methods of Teaching English	3
ENGL 331	Introduction to the Teaching of English	3	ENGL 334	Curriculum Development, Planning and Assessment	3
	Free Elective	3		Free Elective	3
	Free Elective	3		Modern Language Requirement	3
	Modern Language Requirement	3			
TOTAL 18			TOTAL 15		
Junior Year, Summer Semester					
Course	Title	CR	Course	Title	CR
UNIV 390	Internship	3			
Fourth Year, Semester 1			Fourth Year, Semester 2		
Course	Title	CR	Course	Title	CR
ENGL 433	Classroom Management and Student Engagement	3			
ENGL 490	Research Methodology	2	ENGL 492	Senior Research Project	3
	Concentration Elective	3		Free Elective	3
	Modern Language Requirement	3		Free Elective	3
	Free Elective	3		Free Elective	3

TOTAL 17			TOTAL 12		

B.A. Degree in English Language with Concentration in Literature
Proposed Four-Year Schedule

First Year, Semester 1			First Year, Semester 2		
Course	Title	CR	Course	Title	CR
ENGL 100/101	Composition	3	COMM100	Public Speaking	3
MATH 101	Numbers and Data Interpretation	3	MEST 100	Islam in World Culture	3
ITEC 103	Introduction to Computing	3	PHIL 100	Critical Thinking and Reasoning	3
ENGL 111	Introduction to the Study of Language	3	ENGL 112	The Structure of English	3
UNIV 100	University First Year Transition	1		Gen. Ed. Science Elective	3
TOTAL 13			TOTAL 15		
Second Year, Semester 1			Second Year, Semester 2		
Course	Title	CR	Course	Title	CR
ENGL 211	Phonetics and Phonology	3	ENGL 221	English as a Global Language	3
ENGL 212	Language, Society and Communication	3	ENGL 222	Psycholinguistics	3
ENGL 214	Semantics and Pragmatics	3	ENGL 223	Applied Linguistics	3
	Gen. Ed. Science Elective	3		Gen. Ed.Arts& Hum/Soc. Sc. Elective	3
	Modern Language Requirement	3		Modern Language Requirement	3
TOTAL 15			TOTAL 15		
Third Year, Semester 1			Third Year, Semester 2		
Course	Title	CR	Course	Title	CR
POLI 100	Contemporary Global Issues	3	ENGL 342	World Literature - I	3
ENGL 311	Gender and Language	3	ENGL 343	World Literature - II	3
ENGL 341	Introduction to the Study of Literature	3	ENGL 344	American Literature - I	3

	Free Elective	3		Free Elective	3
	Free Elective	3		Modern Language Requirement	3
	Modern Language Requirement	3			
TOTAL 18			TOTAL 15		
Fourth Year, Semester 1			Fourth Year, Semester 2		
Course	Title	CR	Course	Title	CR
ENGL 440	American Literature- II	3	ENGL 441	Literary Perspectives	3
ENGL 490	Research Methodology	2	ENGL 492	Senior Research Project	3
	Concentration Elective	3		Free Elective	3
	Modern Language Requirement	3		Free Elective	3
	Free Elective	3		Free Elective	3
TOTAL 14			TOTAL 15		

BA in Mass Communication Program

The BA in Mass Communication Program (BAMCP) fulfills the university requirement to offer a range of programs in its mission to provide a liberal arts education. In attempting to fulfill this mission and to satisfy the needs of the community as delineated in the needs assessment, options for higher education in an expanding list of programs is offered that will allow a larger percentage of the population in the Emirate of Ras Al Khaimah and the neighboring Emirates to pursue higher education in their desired discipline.

Vision and Mission

Vision

The Bachelor of Arts in Mass Communication with concentrations in Digital Media or Public Relations at the American University of Ras Al Khaimah will be a premier undergraduate degree program that will meet the needs of the community, the nation, and the larger region.

Mission

The Bachelor of Arts in Mass Communication with concentrations in Digital Media or Public Relations will produce competent graduates with the requisite skills in their area of concentration to enable the application of both knowledge and skills in the engagement in research of benefit to the community, the nation, and the world to ensure quality in learners' professional lives.

Goals and Learning Outcomes of the Program in Mass Communication

Program Goals

The goals and objectives of the Bachelor of Arts in Mass Communication are symbiotically aligned with the mission statement of the university and seek to achieve the objectives embedded in the statement. The program goals include:

1. To provide the student with a broad and deep knowledge about the study of communication, the similarities and differences between communication delivery modes, including their structure, processes, an ethical practice thereof, and significance in social and professional uses.
2. To foster an understanding of the interdisciplinary nature, and the cultural, ethical and historical contexts of human communication.
3. To enhance the student's proficiency in research skills, use of technology and the media,

critical, creative and analytical abilities to pursue knowledge independently and/or to engage in the pursuit of advanced higher education.

4. To produce graduates who possess advanced practical and interpersonal skills that are grounded in the truth and ethically practiced and to have graduates who demonstrate the capacity to establish and evaluate communication relationships in order to lead and serve the community.
5. To produce responsible and competent professionals with practical skills, social commitment and ethical standards that satisfy the demands of employment in the UAE, the region, and the world.

Program Student Learning Outcomes

Upon completing the Bachelor of Arts in Mass Communication at AURAK, learners demonstrate the achievement of specific skills and competencies. Graduates are expected to

1. Understand communication theory and to apply it practically for effective communication of truth.
2. Recognize and evaluate the relationship between communication and culture in English, the global language for communication.
3. Engage in individual and institutional investigative field work in communication in diverse settings.
4. Employ effective tools for the exchange of information through the appropriate use technology and media.
5. Engage in critical thinking and analysis to distinguish and resolve communication issues.
6. Create an effective liaison between the immediate community and the larger global environment.
7. Understand the processes of communication delivery modes.
8. Demonstrate an understanding of communication practices and the comparative analyses of communication delivery modes.
9. Appraise the relationship between social, educational, and cultural contexts in communication.
10. Employ the strategies of effective oral and written communication in various delivery media to convey information, to work effectively in teams, and to defend one's position to a variety of audiences through a variety of communication delivery modes.
11. Use current computer tools, such as programs, software, and databases for researching, analyzing, and resolving issues related to communication.
12. Design and develop appropriate strategies and tools to enhance communication research

13. Pursue further education as an independent lifelong learner and/or for entrance into graduate programs and professional schools.
14. Display expertise as professional practitioners and thereby enhance their employability range and options in the areas of their specializations.
15. Recognize, analyze and deploy rhetorical strategies in diverse communication fields.

Goals and Learning Outcomes of the Concentrations

Students enrolled in the program for B.A. in Mass Communication have the option of selecting one from two concentrations:

- Concentration in Digital Media
- Concentration in Public Relations

Each concentration requires the completion of twenty-one credit hours, during the third and fourth years.

Concentration in Digital Media

Concentration in Digital Media Goals

The B.A. in Mass Communication with the concentration in Digital Media achieves the following goals:

1. To provide a strong foundation in the theoretical principles, approaches, techniques and practice of communication through digital media.
2. To produce graduates that have proficiency in communication and communication delivery mode skills that is applicable in diverse contexts.
3. To enhance the student's proficiency in research skills by developing their critical, creative and analytical abilities, and the ability to work with communication technology and communication media.
4. To produce responsible professionals competent in communication in digital media and who satisfy the demands of employment and the needs of the community in the UAE and the wider region.

Concentration in Digital Media Student Learning Outcomes

Upon completing the program in Mass Communication with a concentration in Digital Media, graduates will

1. Possess a sound knowledge of the approaches, techniques, principles, and practice of journalism in both print and media, with application in specialized fields and in professional contexts.
2. Communicate news information effectively in both print and digital media formats in a range of communicative situations with a high level of competence.
3. Display appropriate oral, aural and written skills to communicate effectively in target and source languages.
4. Evaluate and present critical analyses of communication challenges in both local and global contexts.
5. Identify discourse features related to specific registers and texts in specialized contexts.
6. Use machine-assisted technology and tools with competence in news and documentary information delivery and exchange.
7. Engage in creative and original research related to journalism, qualify to work in the field, and/or pursue higher education further into graduate work.

Concentration in Public Relations

Concentration in Public Relations Goals

The B.A. in Mass Communication with a concentration in Public Relations achieves the following goals:

1. To foster an understanding of the interdisciplinary nature, and the historical and cultural contexts of human communication in English and in another modern language in all public relations roles.
2. To enhance the learner's proficiency in research skills, use of technology and the media, acquire critical, creative and analytical abilities to pursue public relations communication knowledge independently and to become lifelong learners and/or pursue advanced higher education.
3. To demonstrate how contemporary public relation approaches and strategies may be used to improve communication with the audience in both public and private spheres.
4. To listen to and to speak, and to read and write public relations texts thoughtfully and to demonstrate an ability to support any communication with truthful and honest responses that increase the trust of the audience.
5. To write effective public relations texts and to create public relations in media.

Concentration in Public Relations Student Learning Outcomes

Upon completing the program in Mass Communication with a concentration in the Public Relations, graduates will:

1. Demonstrate an understanding of public relations communication practices and of the comparative analyses of various forms and methods of communication.
2. Adapt communication methods and strategies to accommodate the relationships between social, educational and cultural contexts in public relations communication.
3. Employ the strategies of effective oral and written communication in print and in digital media.
4. Convey information to one's audience so as to enhance an increased understanding between the public and the business or institution that the learner represents.
5. Pursue further education in public relations as a lifelong learner and/or for entrance into graduate programs and professional schools.
6. Understand and use a range of rhetorical terms and communication strategies to provide their audience with the most effective transmission of the truth of the given message.
7. Develop an effective aesthetic that supports the best communication of a message to a given audience.

BA MASS COMMUNICATION COURSE REQUIREMENTS

Here follow the curriculum grids, the core course requirements, the core course concentration courses and electives first for digital media and then for public relations:

II . Communication Program Core Course Requirements 32 credits

Course No.	Title	No. of Credits
COMM 110	Introduction to Communication	3
COMM 111	Introduction to Mass Communication	3
COMM 112	Introduction to Public Relations	3
COMM 212	Media Writing	3
COMM 213	Public Relations Writing	3
COMM 222	Intercultural Mass Communication	3
COMM 223	Globalization and Media Cultures	3
COMM 311	Ethics of Communication	3
COMM 321	Theories of Media Communication	3
COMM 491	Communication Research Methodology	2
COMM 492	Public Relations Campaigns	3

III. Concentrations (Digital Media or Public Relations)

21 Credits

A. Concentration in Digital Media

21 Credits

Core Courses:

18 Credits

Course No.	Title	No. of Credits
COMM 322	Digital Resources and Content	3

COMM 323	Advanced Journalism	3
COMM 329	Survey of Tools and Technology in Communication	3
COMM 334	Communication Transformation	3
COMM 424	Capstone: Multimedia Storytelling	3
UNIV 390	Internship	3

Electives:

3 Credits

Course No.	Title	No. of Credits
COMM 322	Digital Resources and Content	3
COMM 421	Social Media: Audiences and Messages	3
COMM 422	Streaming	3
COMM 423	Digital Practicum	3
COMM 426	Advanced Interpersonal Communication	3
COMM 448	Technological Perspectives in Communication	3

Concentration in Public Relations

21 Credits

Core Courses:

18 Credits

Course No.	Title	No. of Credits
COMM 323	Advanced Journalism	3
COMM 337	Public Relations Cases	3
COMM 343	Public Relations Research Methods	3

COMM 426	Advanced Interpersonal Communication	3
COMM 427	Capstone: Media Production in Public Relations	3
UNIV 390	Internship	3

Electives

3 Credits

Course No.	Title	No. of Credits
COMM 321	Theories of Media Communication	3
COMM 322	Digital Resources and Content	3
COMM 329	Survey of Tools and Technology in Communication	3
COMM 334	Communication Transformation	3
COMM 421	Social Media: Audiences and Messages	3
COMM 422	Streaming	3
COMM 423	Digital Practicum	3
COMM 448	Technological Perspectives in Communication	3

School of Business

Bachelor of Science in Business Administration

Concentrations in Finance, International Business, and Marketing

The degree in Business Administration is intended to provide a broad background of study for students who wish to pursue a career in one of the many business sectors—retail, hospitality, information technology, manufacturing, or non-profit organizations. The Business Administration program provides students with tools and knowledge valuable to any business and with practice in developing skills such as teamwork, analysis of numerical data, and communicating in writing and orally. Business Administration majors may choose to specialize in finance, international business, or marketing by taking four or more courses in one of those areas.

Program Mission

In line with the mission of the university, the mission of the Business Administration program is to prepare knowledgeable, skilled, globally-oriented, and ethical graduates prepared for entrance into business, government, and the professions or for graduate work.

Program Objectives

The objectives of the Business Administration Program are to ensure that graduates have:

- Sufficient breadth of understanding of all basic business functions for successful practice regionally and internationally.
- Proficiency in their area of specialization.
- Practical and interpersonal skills, teamwork, the ability to communicate orally and in writing, and to learn independently.
- An understanding of their ethical and social responsibilities in the conduct of business. The ability to think critically and creatively to analyze and solve problems.

Program Learning Outcomes

AURAK Business Administration graduates should be able to:

- Apply basic theories and principles of accounting, economics, finance, marketing, decision science and management information systems with acceptable understanding of global business environment.

- Use their knowledge of specific business discipline and apply principles and theories to model, analyze and solve business problems in their field.
- Meet the entrance requirements for graduate or professional schools in business and related fields.
- Work effectively as teams on projects, presenting case analyses and their solutions to panels of professionals orally and in writing.
- Effectively use information technology resources and software, including spreadsheets and databases for various business applications.
- Understand how ethical, social, legal, regulatory, environmental and technological elements of the global business environment impact business decision making.
- Evaluate business conditions and reach decisions, using statistical models, financial statements, and global market views.

Degree Requirements

The Bachelor of Science in Business Administration (BSBA) program includes sixty-two credits of core courses in business administration covering a broad knowledge of business areas and functions emphasizing global business environment and practices. By completing the major business courses, students will also gain essential knowledge in accounting, management, investment, finance and marketing. Each student may choose twelve credits to further concentrate and gain depth in the area of finance, marketing, or international business or they may also pursue a general Business Administration major by completing 12 credits of business electives. Additionally, students must fulfill the general education requirements with 37 credits and several specified business courses, and complete a three credit internship. General electives complete the 120-credit program.

<i>Areas</i>	<i>Credits</i>
University General Education Requirement	37
Business Core Courses	62
Concentration courses or Business Electives	12
General Electives	9

<i>General Education Courses</i>	<i>37 credits</i>
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Course Code	Course	Credits
ARTT 100	Introduction to the Visual Arts	3
BIOL 100	Humankind in a Biological World	3
COMM 100	Public Speaking	3
ENGL 100/101	Composition	3
ENGL 201	Literature across Cultures	3
ENGL 302	Advanced Composition	3
GENED	General Education Elective	3
ITEC 103*	Introduction to Computing	3
MATH 108	Introductory Calculus with Business	3

MEST 100	Introduction to Islam in World Culture	3
PSYC 100	Introduction to Psychology	3

*Students can test out of this course (see General Education Requirements section)

Business Administration Core Courses** 62 credits

Course Code	Course	Credits
ACCT 203	Survey of Accounting	3
ACCT 301	Financial Accounting and Managerial Decision	3
ACCT 311	Managerial and Cost Accounting	3
BUSN 301	Business Communication	3
BUSN 302	Legal Environment of Business	3
BUSN 498	(Capstone course) Advanced Business Models	3
ECON103	Principles of Microeconomics	3
ECON104	Principles of Macroeconomics	3
ECON 310	Money and Banking	3
FNAN 301	Financial Management	3
FNAN 311	Principles of Investments	3
MGMT 301	Managing People and Organizations	3
MGMT 311	Principles and Practices of Management	3
MIST 102	Spreadsheet Applications for Business	1
MIST 301	Introduction to Business Information Systems	3
MKTG 301	Financial Management	3
MKTG 312	Consumer Behavior	3
OPMT 210	Statistical Analysis for Management	4
OPMT 301	Operations Management	3
OPMT 311	Methods and Models of Management Science	3
UNIV 390	Internship	3

**Require a grade of C or better as "Graduation Requirements"

<i>Concentration courses or Business electives</i>	<i>12 credits</i>
General Electives	9 credits
Total	120 credits

General electives are needed to complete the 120 credits for a BSBA degree. Students should be aware of the required pre-requisites for business courses; students will be removed from courses if they register without having fulfilled the prerequisites. Business and general electives are selected with the assistance of the academic advisor.

Finance Concentration

Coursework in the finance concentration covers topics such as planning, raising funds, making wise investments and controlling costs. Using the context of the international economy, students study the flow of money and credit among financial institutions and between borders, investment and portfolio management, foreign currency, international banking, and the use of various financial instruments.

<i>Finance Concentration courses</i>	<i>12 Credits</i>
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Course Code	Course	Credits
FNAN 321	Financial Institutions	3
FNAN 401	Advanced Financial Management	3
FNAN 411	Investment Analysis and Portfolio Management	3
FNAN 431	International Financial Management	3

International Business Concentration

Business, government, and non-profit enterprises often operate globally. Knowledge of events and cultures outside of one's own is essential for success in this environment. To understand international business, globalization, and how trade works in highly complex business transactions, this concentration draws upon the traditional business disciplines and also upon psychology, sociology, economics, geography, history, languages, and law.

<i>International Business Concentration courses</i>	<i>12 Credits</i>
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Course Code	Course	Credits
BUSN 305	International Business	3
MGMT 403	Cross Cultural & Global Management	3
MKTG 407	International Marketing	3
OPMT 405	Supply Chain Management	3

Marketing Concentration

The marketing concentration provides students with a solid background in marketing concepts and practices, with an emphasis on market analysis and planning, research, and consumer behavior. The marketing specialization prepares students for a broad range of global and domestic career options in market and consumer research, brand management, advertising, customer relationship management, new market and business development, and marketing strategy. Opportunities in marketing have increased as firms, government agencies, and nonprofit organizations have adopted a more market orientation position.

<i>Marketing Concentration Courses</i>	<i>12 Credits</i>	
Course Code	Course	Credits

MKTG 333	Marketing Research Techniques & Applications	3
MKTG 313	Integrated Marketing Communications	3
MKTG 407	International Marketing	3
MKTG 471	Marketing Management	3

Business Administration Four-Year Sample Schedule

Freshman Year, First Semester						Freshman Year, Second Semester					
Course Code	Course Title	Credits	Course Code	Course Title	Credits						
GEN ED	General Education Elective	3	ECON 104	Principles of Macroeconomics	3						
ECON 103	Principles of Microeconomics	3	COMM 100	Public Speaking	3						
ENGL 101	Composition	3	GEN ED	General Education Elective	3						
ITEC 103	Introduction to Computing	3	GEN ED	General Education Elective	1						
MATH 108	Introductory Calculus with Business Applications	3	MEST 100	Introduction to Islam in World Culture	3						
Total		15	GEN ED	General Education Elective	3						
Total Sophomore Year, First Semester			Total Sophomore Year, Second Semester								
15			16								
Course Code	Course Title	Credits	Course Code	Course Title	Credits						
General Education Elective		3	General Education Elective		3						
ACCT 203	Survey of Accounting	3	GEN ED	General Education Elective	3						
GEN ED	General Education Elective	3	ECON 310	Money & Banking	3						
MIST 102	Spreadsheet Applications for Business	1	ENGL 302	Advanced Composition	3						
OPMT 210	Statistical Analysis for Management	4	MGMT 301	Managing People and Organizations	3						
Total		14	Total		15						
Total Junior Year, First Semester			Total Junior Year, Second Semester								
14			15								
Course Code	Course Title	Credits	Course Code	Course Title	Credits						
ACCT 301	Financial Accounting & Managerial Decision Making	3	BUSN 301	Business Communication	3						
BUSN 302	Legal Environment of Business	3	FNAN 301	Financial Management	3						
MIST 301	Systems Analysis & Design	3	MGMT 311	Principles & Practices of Management	3						
OPMT 301	Operations Management	3	MKTG 301	Principles of Marketing	3						
General Elective		3	Concentration Course or Business Elective		3						
Total		15	Total		15						
Junior Year, Summer											
Course Code	Course Title	Credits	Course Code	Course Title	Credits						
UNIV 390	Internship	3									
Senior Year, First Semester			Senior Year, Second Semester								
Course Code	Course Title	Credits	Course Code	Course Title	Credits						
ACCT 311	Managerial & Cost Accounting	3	BUSN 498	Advanced Business Models	3						
FNAN 311	Principles of Investments	3	OPMT 311	Methods & Models of Management Science	3						
MKTG 312	Consumer Behavior	3	Concentration Course or Business Elective		3						
Concentration Course or Business Elective		3	Concentration Course or Business Elective		3						
General Elective		3									
Total		15	Total		12						
TOTAL CREDITS											
120											

BS PROGRAMS COURSE STRUCTURES & COMPLETION REQUIREMENTS

School of Business

BS Finance Major

All Finance Major students must complete the following degree requirements:

Area	Credits
University General Education Requirement	36
Faculty Requirements	45
Department Compulsory Requirements	24
Department Elective Requirements	9
Free Electives	6
Total	120 Credits

AREA	Make-up of Credits	Credits	Cumulative Credits
GENERAL EDUCATION	Specified Courses from General Education List	36	36
FACULTY COURSES:	15x 3	45	81
Business Core Courses (BCC)			
DEPARTMENT COURSES:	8 x 3	24	105
Department Core Courses (DCC) Including Internship			
Elective Courses - take any 3 from available Business courses	3 x 3	9	114

Free Electives	2 x 3	6	120
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Relevant course details are given below:

FACULTY COURSE				
S. No.	Code	BUSINESS CORE COURSES	Prerequisites	Credits
1.	BACC204	Principles of Financial Accounting	ECON 103.	3
2.	BACC205	Principles of Managerial Accounting	ECON 103.	3
3.	BBSN 301	Business Communication	COMM100 & ENGL 101	3
4.	BBSN 302	Commercial Law	Junior standing	3
5.	BBSN 305	Research Methodology	BOPM 210, sophomore standing	3
6.	BBSN 306	International Business	ECON 104	3
7.	BBSN 498	Strategic Management	Senior standing	3
8.	BBSN 311	Business Environment in the UAE	ECON 103	3
9.	ECON 104	Principles of Macroeconomics	ECON 103	3
10.	BFIN 300	Principles of Finance	ECON 103	3
11.	BMGM 301	Principles of Management & Organizational Behavior	Sophomore standing	3
12.	BMIS 301	Introduction to Business Information Systems	Sophomore standing	3
13.	BMKT 301	Principles of Marketing	ECON 103.	3
14.	BOPM 210	Statistical Analysis for Management	MATH 108 or MATH 113	3
15.	BOPM 301	Operations Management	BOPM 210	3
				45

DEPARTMENT / FINANCE				
S. No.	Code	Finance Core Courses	Prerequisites	Credits
1.	BFIN 301	Financial Analysis, Forecasting, and Valuation	BFIN 300	3
2.	BFIN 302	Principles of Risk Management and Insurance	BFIN 301	3
3.	BFIN 321	Financial Institutions	BFIN 300	3
4.	BFIN 401	Advanced Financial Management	BFIN 301	3
5.	BFIN 411	Investment Analysis and Portfolio Management	BFIN 301	3
6.	BFIN 412	Futures and Options Markets	BFIN 301	3
7.	BFIN 421	Money and Capital Markets	BFIN 301	3
8.	BBSN 492	Internship	90 Credits & Above	3
				24

ELECTIVE COURSES (Three)			
1.	Any Business Course not on the department core list and not already taken		3
2.	Any Business Course not on the department core list and not already taken		3
3.	Any Business Course not on the department core list and not already taken		3
			9

FREE ELECTIVES (Any Two)*	2 X 3	6	6
TOTAL			120

*Students can choose any two courses from other programs running at AURAK

BS Finance Major – Sample Four Year Study Plan

Freshman Year, First Semester			Freshman Year, Second Semester		
Course Code	Course Title	Credits	Course Code	Course Title	Credits
GEN ED	General Education Elective	3	ECON 104	Principles of Macroeconomics	3
ECON 103	Principles of Microeconomics	3	COMM 100	Public Speaking	3
ENGL 101	Composition	3	GEN ED	General Education Elective	3
ITEC 103	Introduction to Computing	3	GEN ED	General Education Elective	3
MATH 108	Introductory Calculus with Business Applications	3	MEST 100	Introduction to Islam in World Culture	3
Total		15	Total		15
Sophomore Year, First Semester			Sophomore Year, Second Semester		
Course Code	Course Title	Credits	Course Code	Course Title	Credits
GEN ED	General Education Elective	3	GEN ED	General Education Elective	3
BACC 204	Principles of Financial Accounting	3	GEN ED	General Education Elective	3
GEN ED	General Education Elective	3	BBSN 305	Research Methodology	3
BMIS 301	Introduction to Business Information Systems	3	BBSN 301	Business Communication	3
BOPM 210	Statistical Analysis for Management	3	BMGM 301	Principles of Management & Organizational Behavior	3
Total		15	Total		15
Junior Year, First Semester			Junior Year, Second Semester		
Course Code	Course Title	Credits	Course Code	Course Title	Credits
BFIN 300	Principles of Finance	3	BACC205	Principles of Managerial Accounting	3
BBSN 302	Commercial Law	3	BBSN 306	International Business	3
BBSN 311	Business Environment in the UAE	3	BFIN 301	Financial Analysis, Forecasting, and Valuation	3
BOPM 301	Operations Management	3	BMKT 301	Principles of Marketing	3
General Elective		3	Business Elective		3
Total		15	Total		15
Junior Year, Summer Semester					
Course Code	Course Title	Credits	Course Code	Course Title	Credits
BBSN 492	Internship	3			
Senior Year, First Semester			Senior Year, Second Semester		
Course Code	Course Title	Credits	Course Code	Course Title	Credits
BFIN 302	Principles of Risk Management and Insurance	3	BFIN 411	Investment Analysis and Portfolio Management	3
BFIN 321	Financial Institutions	3	BFIN 412	Futures and Options Markets	3
BBSN 498	Strategic Management	3	BFIN 421	Money and Capital Markets	3
BFIN 401	Advanced Financial Management	3	Business Elective		3
General Elective		3	Business Elective		3
Total		15	Total		15
TOTAL CREDITS = 120					

School of Business
BS Human Resource Management (HRM) Major

All HRM Major students must complete the following degree requirements:

Area	Credits
University General Education Requirement	36
Faculty Requirements	45
Department Compulsory Requirements	24
Department Elective Requirements	9
Free Electives	6
Total	120 Credits

AREA	Make-up of Credits	Credits	Cumulative Credits
GENERAL EDUCATION	Specified Courses from General Education List	36	36
FACULTY COURSES:	15x 3	45	81
Business Core Courses (BCC)			
DEPARTMENT COURSES:	8 x 3	24	105
Department Core Courses (DCC) Including Internship			
Elective Courses - take any 3 from available Business courses	3 x 3	9	114

Free Electives	2 x 3	6	120
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Relevant course details are given below:

FACULTY COURSE					
S. No.	Code	BUSINESS CORE COURSES	Prerequisites	Credits	
1.	BACC204	Principles of Financial Accounting	ECON 103.	3	45
2.	BACC205	Principles of Managerial Accounting	ECON 103.	3	
3.	BBSN 301	Business Communication	COMM100 & ENGL 101	3	
4.	BBSN 302	Commercial Law	Junior standing	3	
5.	BBSN 305	Research Methodology	BOPM 210, sophomore standing	3	
6.	BBSN 306	International Business	ECON 104	3	
7.	BBSN 498	Strategic Management	Senior standing	3	
8.	BBSN 311	Business Environment in the UAE	ECON 103	3	
9.	ECON 104	Principles of Macroeconomics	ECON 103	3	
10.	BFIN 300	Principles of Finance	ECON 103	3	
11.	BMGM 301	Principles of Management & Organizational Behavior	Sophomore standing	3	
12.	BMIS 301	Introduction to Business Information Systems	Sophomore standing	3	
13.	BMKT 301	Principles of Marketing	ECON 103.	3	
14.	BOPM 210	Statistical Analysis for Management	MATH 108 or MATH 113	3	
15.	BOPM 301	Operations Management	BOPM 210	3	

DEPARTMENT / HUMAN RESOURCE MANAGEMENT				
S. No.	Code	HRM Core Courses	Prerequisites	Credits
1.	BHRM 301	Human Resource Management	BMGM 301	3
2.	BHRM 302	Compensation Management	BHRM 301. BOPM201	3
3.	BHRM 303	Human Resource Recruitment, Training and Development	BHRM 301	3
4.	BHRM 403	Cross Cultural and International Human Resource Management	BMGM 301	3
5.	BHRM 431	Employee Relations	BMGM 301 & BBSN 302	3
6.	BHRM 461	Diversity, Teamwork & Interpersonal Skills	Senior Standing	3
7.	BHRM 463	Negotiations in Organizations	Senior Standing	3
8.	BBSN 492	Internship	90 Credits & Above	3
				24

ELECTIVE COURSES (Three)			
1.	Any Business Course not on the department core list and not already taken		3
2.	Any Business Course not on the department core list and not already taken		3
3.	Any Business Course not on the department core list and not already taken		3
			9

FREE ELECTIVES (Any Two)*		2 X 3	6	6
TOTAL			120	

*Students can choose any two courses from other programs running at AURAK

BS HRM Major – Sample Four Year Study Plan

Freshman Year, First Semester			Freshman Year, Second Semester		
Course Code	Course Title	Credits	Course Code	Course Title	Credits
GEN ED	General Education Elective	3	ECON 104	Principles of Macroeconomics	3
ECON 103	Principles of Microeconomics	3	COMM 100	Public Speaking	3
ENGL 101	Composition	3	GEN ED	General Education Elective	3
ITEC 103	Introduction to Computing	3	GEN ED	General Education Elective	3
MATH 108	Introductory Calculus with Business Applications	3	MEST 100	Introduction to Islam in World Culture	3
Total		15	Total		15
Sophomore Year, First Semester			Sophomore Year, Second Semester		
Course Code	Course Title	Credits	Course Code	Course Title	Credits
GEN ED	General Education Elective	3	GEN ED	General Education Elective	3
BACC 204	Principles of Financial Accounting	3	GEN ED	General Education Elective	3
GEN ED	General Education Elective	3	BBSN 305	Research Methodology	3
BMIS 301	Introduction to Business Information Systems	3	BBSN 301	Business Communication	3
BOPM 210	Statistical Analysis for Management	3	BMGM 301	Principles of Management & Organizational Behavior	3
Total		15	Total		15
Junior Year, First Semester			Junior Year, Second Semester		
Course Code	Course Title	Credits	Course Code	Course Title	Credits
BFIN 300	Principles of Finance	3	BACC205	Principles of Managerial Accounting	3
BBSN 302	Commercial Law	3	BBSN 306	International Business	3
BBSN 311	Business Environment in the UAE	3	BHRM 301	Human Resource Management	3
BOPM 301	Operations Management	3	BMKT 301	Principles of Marketing	3
General Elective		3	Business Elective		3
Total		15	Total		15
Junior Year, Summer Semester					
Course Code	Course Title	Credits	Course Code	Course Title	Credits
BBSN 492	Internship	3			
Senior Year, First Semester			Senior Year, Second Semester		
Course Code	Course Title	Credits	Course Code	Course Title	Credits
BHRM 302	Compensation Management	3	BHRM 431	Employee Relations	3
BHRM 303	Human Resource Recruitment, Training and Development	3	BHRM 461	Diversity, Teamwork & Interpersonal Skills	3
BBSN 498	Strategic Management	3	BHRM 463	Negotiations in Organizations	3
BHRM 403	Cross Cultural and International Human Resource Management	3	Business Elective		3
General Elective		3	Business Elective		3
Total		15	Total		15
TOTAL CREDITS = 120					

School of Business
BS Marketing Major

All Marketing Major students must complete the following degree requirements:

Area	Credits
University General Education Requirement	36
Faculty Requirements	45
Department Compulsory Requirements	24
Department Elective Requirements	9
Free Electives	6
Total	120 Credits

AREA	Make-up of Credits	Credits	Cumulative Credits
GENERAL EDUCATION	Specified Courses from General Education List	36	36
FACULTY COURSES:	15x 3	45	81
Business Core Courses (BCC)			
DEPARTMENT COURSES:	8 x 3	24	105
Department Core Courses (DCC)			
Including Internship			
Elective Courses - take any 3 from available Business courses	3 x 3	9	114
Free Electives	2 x 3	6	120

Relevant course details are given below:

FACULTY COURSE					
S. No.	Code	BUSINESS CORE COURSES	Prerequisites	Credits	
1.	BACC204	Principles of Financial Accounting	ECON 103.	3	45
2.	BACC205	Principles of Managerial Accounting	ECON 103.	3	
3.	BBSN 301	Business Communication	COMM100 & ENGL 101	3	
4.	BBSN 302	Commercial Law	Junior standing	3	
5.	BBSN 305	Research Methodology	BOPM 210, sophomore standing	3	
6.	BBSN 306	International Business	ECON 104	3	
7.	BBSN 498	Strategic Management	Senior standing	3	
8.	BBSN 311	Business Environment in the UAE	ECON 103	3	
9.	ECON 104	Principles of Macroeconomics	ECON 103	3	
10.	BFIN 300	Principles of Finance	ECON 103	3	
11.	BMGM 301	Principles of Management & Organizational Behavior	Sophomore standing	3	
12.	BMIS 301	Introduction to Business Information Systems	Sophomore standing	3	
13.	BMKT 301	Principles of Marketing	ECON 103.	3	
14.	BOPM 210	Statistical Analysis for Management	MATH 108 or MATH 113	3	
15.	BOPM 301	Operations Management	BOPM 210	3	

DEPARTMENT / MARKETING				
S. No.	Code	Marketing Core Courses	Prerequisites	Credits
1.	BMKT 311	Sales Management	BMKT 301	3
2.	BMKT 312	Consumer Behavior	BMKT 301	3
3.	BMKT 313	Integrated Marketing Communications	BMKT 301 & BMKT 312	3
4.	BMKT 332	Retailing and E-Commerce Management	BMKT 301	3
5.	BMKT 351	Marketing Research Techniques & Applications	BMKT 301, BOPM 210	3
6.	BMKT 412	Marketing of Services	BMKT 301	3
7.	BMKT 471	Marketing Management (Capstone Course)	BMKT 313, BMKT 332 & BMKT 351	3
8.	BBSN 492	Internship	90 Credits & Above	3
				24

ELECTIVE COURSES (Three)					
1.	Any Business Course not on the department core list and not already taken			3	9
2.	Any Business Course not on the department core list and not already taken			3	
3.	Any Business Course not on the department core list and not already taken			3	

FREE ELECTIVES (Any Two)*			2 X 3	6	6
TOTAL					120

*Students can choose any two courses from other programs running at AURAK

BS Marketing Major – Sample Four Year Study Plan

Freshman Year, First Semester			Freshman Year, Second Semester		
Course Code	Course Title	Credits	Course Code	Course Title	Credits
GEN ED	General Education Elective	3	ECON 104	Principles of Macroeconomics	3
ECON 103	Principles of Microeconomics	3	COMM 100	Public Speaking	3
ENGL 101	Composition	3	GEN ED	General Education Elective	3
ITEC 103	Introduction to Computing	3	GEN ED	General Education Elective	3
MATH 108	Introductory Calculus with Business Applications	3	MEST 100	Introduction to Islam in World Culture	3
Total		15	Total		15
Sophomore Year, First Semester			Sophomore Year, Second Semester		
Course Code	Course Title	Credits	Course Code	Course Title	Credits
GEN ED	General Education Elective	3	GEN ED	General Education Elective	3
BACC 204	Principles of Financial Accounting	3	GEN ED	General Education Elective	3
GEN ED	General Education Elective	3	BBSN 305	Research Methodology	3
BMIS 301	Introduction to Business Information Systems	3	BBSN 301	Business Communication	3
BOPM 210	Statistical Analysis for Management	3	BMGM 301	Principles of Management & Organizational Behavior	3
Total		15	Total		15
Junior Year, First Semester			Junior Year, Second Semester		
Course Code	Course Title	Credits	Course Code	Course Title	Credits
BFIN 300	Principles of Finance	3	BACC205	Principles of Managerial Accounting	3
BBSN 302	Commercial Law	3	BBSN 306	International Business	3
BBSN 311	Business Environment in the UAE	3	BMKT 311	Sales Management	3
BOPM 301	Operations Management	3	BMKT 301	Principles of Marketing	3
General Elective		3	Business Elective		3
Total		15	Total		15
Junior Year, Summer Semester					
Course Code	Course Title	Credits	Course Code	Course Title	Credits
BBSN 492	Internship	3			
Senior Year, First Semester			Senior Year, Second Semester		
Course Code	Course Title	Credits	Course Code	Course Title	Credits
BMKT 312	Consumer Behavior	3	BMKT 351	Marketing Research Techniques & Applications	3
BMKT 313	Integrated Marketing Communications	3	BMKT 412	Marketing of Services	3
BBSN 498	Strategic Management	3	BMKT 471	Marketing Management (Capstone Course)	3

BMKT 332	Retailing and E-Commerce Management	3	Business Elective	3
General Elective		3	Business Elective	3
Total		15	Total	15
TOTAL CREDITS = 120				

School of Business
BS Accounting Major

All Accounting Major students must complete the following degree requirements:

Area	Credits
University General Education Requirement	36
Faculty Requirements	45
Department Compulsory Requirements	24
Department Elective Requirements	9
Free Electives	6
Total	120
	Credits

AREA	Make-up of Credits	Credits	Cumulative Credits
GENERAL EDUCATION	Specified Courses from General Education List	36	36
FACULTY COURSES:	15x 3	45	81
Business Core Courses (BCC)			
DEPARTMENT COURSES:	8 x 3	24	105
Department Core Courses (DCC) Including Internship			

Elective Courses - take any 3 from available Business courses	3 x 3	9	114
Free Electives	2 x 3	6	120

Relevant course details are given below:

FACULTY COURSE				
S. No.	Code	BUSINESS CORE COURSES	Prerequisites	Credits
1.	BACC204	Principles of Financial Accounting	ECON 103.	3
2.	BACC205	Principles of Managerial Accounting	ECON 103.	3
3.	BBSN 301	Business Communication	COMM100 & ENGL 101	3
4.	BBSN 302	Commercial Law	Junior standing	3
5.	BBSN 305	Research Methodology	BOPM 210, sophomore standing	3
6.	BBSN 306	International Business	ECON 104	3
7.	BBSN 498	Strategic Management	Senior standing	3
8.	BBSN 311	Business Environment in the UAE	ECON 103	3
9.	ECON 104	Principles of Macroeconomics	ECON 103	3
10.	BFIN 300	Principles of Finance	ECON 103	3
11.	BMGM 301	Principles of Management & Organizational Behavior	Sophomore standing	3
12.	BMIS 301	Introduction to Business Information Systems	Sophomore standing	3
13.	BMKT 301	Principles of Marketing	ECON 103.	3

45

14.	BOPM 210	Statistical Analysis for Management	MATH 108 or MATH 113	3	
15.	BOPM 301	Operations Management	BOPM 210	3	

DEPARTMENT / ACCOUNTING COURSE					
S. No.	Code	Accounting Core Courses	Prerequisites	Credits	
1.	BACC 311	Managerial and Cost Accounting	BACC 205 & Sophomore Status	3	24
2.	BACC 331	Intermediate Accounting I	BACC 204 & Sophomore Status	3	
3.	BACC 332	Intermediate Accounting II	BACC 331.	3	
4.	BACC 352	Taxation and Managerial Decisions	BACC 331 (Co-requisite)	3	
5.	BACC 361	Accounting Information Systems	BACC 331. (Co-requisite)	3	
6.	BACC 411	Internal (Operational) Auditing	BACC 332. (Co-requisite)	3	
7.	BACC 472	International Accounting	BACC 332 (Co-requisite)	3	
8.	BBSN 492	Internship	90 Credits & Above	3	

ELECTIVE COURSES (Three)					
1.	BACC 491	Special Topics in Accounting	BACC 332 and at least 90 Credits accumulated	3	9
2.	Any Business Course not on the department core list and not already taken			3	
3.	Any Business Course not on the department core list and not already taken			3	

4.	Any Business Course not on the department core list and not already taken	3	
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FREE ELECTIVES (Any Two)*	2 X 3	6	6
TOTAL			120

*Students can choose any two courses from other programs running at AURAK

BS Accounting Major – Sample Four Year Study Plan

Freshman Year, First Semester			Freshman Year, Second Semester		
Course Code	Course Title	Credits	Course Code	Course Title	Credits
GEN ED	General Education Elective	3	ECON 104	Principles of Macroeconomics	3
ECON 103	Principles of Microeconomics	3	COMM 100	Public Speaking	3
ENGL 101	Composition	3	GEN ED	General Education Elective	3
ITEC 103	Introduction to Computing	3	GEN ED	General Education Elective	3
MATH 108	Introductory Calculus with Business Applications	3	MEST 100	Introduction to Islam in World Culture	3
Total		15	Total		15
Sophomore Year, First Semester			Sophomore Year, Second Semester		
Course Code	Course Title	Credits	Course Code	Course Title	Credits
GEN ED	General Education Elective	3	GEN ED	General Education Elective	3
BACC 204	Principles of Financial Accounting	3	GEN ED	General Education Elective	3
GEN ED	General Education Elective	3	BACC205	Principles of Managerial Accounting	3
BMIS 301	Introduction to Business Information Systems	3	BBSN 301	Business Communication	3
BOPM 210	Statistical Analysis for Management	3	BMGM 301	Principles of Management & Organizational Behavior	3
Total		15	Total		15
Junior Year, First Semester			Junior Year, Second Semester		
Course Code	Course Title	Credits	Course Code	Course Title	Credits
BFIN 300	Principles of Finance	3	BACC 311	Managerial and Cost Accounting	3
BBSN 302	Commercial Law	3	BBSN 306	International Business	3
BBSN 311	Business Environment in the UAE	3	BBSN 305	Research Methodology	3
BOPM 301	Operations Management	3	BMKT 301	Principles of Marketing	3
General Elective		3	Business Elective		3
Total		15	Total		15
Junior Year, Summer Semester					
Course Code	Course Title	Credits	Course Code	Course Title	Credits
BBSN 492	Internship	3			
Senior Year, First Semester			Senior Year, Second Semester		
Course Code	Course Title	Credits	Course Code	Course Title	Credits
BACC 331	Intermediate Accounting I	3	BACC 332	Intermediate Accounting II	3
BACC 361	Accounting Information Systems	3	BACC 411	Internal (Operational) Auditing	3
BBSN 498	Strategic Management	3	BACC 472	International Accounting	3
BACC 352	Taxation and Managerial Decisions	3	BACC 491	Special Topics in Accounting	3
General Elective		3	Business Elective		3
Total		15	Total		15
TOTAL CREDITS = 120					

School of Business
Minor in Islamic Banking & Finance
Requirements for Minor in Islamic Banking & Finance

Minor in Islamic Banking & Finance					
S. No.	Code	DEPARTMENT CORE COURSES	Prerequisites	Credits	
1.	BIBF 301	Islamic Economical & Financial Systems	BFIN 300	3	12
2.	BIBF 302	Islamic Commercial Law & Contract	BFIN 300 & BBSN-302	3	
3.	BIBF 303	Islamic Commercial & Investment Banking	BFIN 301	3	
4.	BIBF 304	Corporate Governance, Risk Management & Regulation in Islamic Banking	BFIN 300	3	

ELECTIVE COURSES (Any ONE)					
1.	BIBF 305	Principles of Islamic Capital Market and Insurance	BIBF 301	3	3
2.	BIBF 306	Macro Economical System of Islam	BIBF 301	3	
3.	BIBF 307	Advanced Islamic Financial Services & its Marketing	BIBF 301	3	

Total				15 Credits	
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School of Business
Minor in International Business
Requirements for Minor in International Business

Minor in International Business				
S. No.	Code	DEPARTMENT CORE COURSES	Prerequisites	Credits
1.	BINB 302	International Business Law	BBSN 302	3
2.	BINB 303	Cross-Cultural & Global Management	BBSN 305 & BMGM 301	3
3.	BINB 304	International Financial Management	BFIN 300	3
4.	BINB 305	WTO & Corporate Strategies	BMGM 301	3
5.	BINB 306	International Accounting & Taxation	BACC 204 & BBSN 306	3

15

Total	15 Credits
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School of Engineering

Bachelor of Science in Computer Engineering

The Computer Engineering program integrates both electrical engineering and computer science in the development of computer systems. These engineers are involved in many hardware and software aspects of computing including design of microcontrollers, computers and circuit design. Computer Engineers focus not just on how computers work but how to integrate them into larger systems.

Students learn the fundamentals of circuits, systems, and software associated with the design of programmable systems as used for general purpose computing, communications, control, or signal processing. Because of their broad skills in both hardware and software, students in computer engineering are in high demand for employment after graduation. Computer engineering students are also positioned to pursue graduate programs in either computer science or electrical engineering.

Program Mission

The mission of the Computer Engineering program is to produce graduates who have the necessary theoretical background and the technical know-how and skills to create successful innovations and to solve problems in the field and to understand the social and environmental issues that may be involved. Graduates will have a thorough foundation in the basic principles of electrical engineering and information technology and a broad introduction to electronics, the design of digital computer systems, software development, data communications, and networking. Students will be prepared for employment in diverse areas of computer engineering or for further study in a graduate program.

Program Objectives

Upon graduation students will:

- Be technically competent and prepared well for careers in the field
- Be prepared to practice their profession ethically and to continue to learn
- Communicate effectively and be effective members or leaders of technical teams
- Understand the global nature and effects of information technology and engineering

Program Learning Outcomes

AURAK Computer Engineering graduates should be able to:

- Apply knowledge of mathematics, science, and engineering
- Design and conduct experiments, to analyze and interpret data
- Design a system, component, or process to meet desired needs
- Function effectively as multi-disciplinary team members
- Identify, formulate, and solve engineering problems
- Have an understanding of professional and ethical responsibility
- Communicate effectively
- Acquire the broad education necessary to understand the impact of engineering solutions in a global and societal context
 - Recognize the need for, and an to engage in life-long learning
 - Acquire knowledge of contemporary issues
 - Use the techniques, skills, and modern engineering tools necessary for engineering

Degree Requirements

The BS in Computer Engineering requires the completion of 132 credits in the following areas of study:

Area	Credits
University General Education Requirements	36
Mathematics and Science Courses	23
Engineering Core Courses	61
Technical Electives	9
Business Electives	3

General Education Courses (36 credits)		
Course Code	Course	Credits
ARTT 100	Introduction to the Visual Arts	3
COMM 100	Public Speaking	3
CSCI 112	Introduction to Computer Programming	3
CSCI 113	Introduction to Computer Programming Lab	1
ECON 103	Principles of Microeconomics	3
ENGL 100/101	Composition	3
ENGL 201	Literature across Cultures	3
ENGL 302	Advanced Composition	3
PSYC 100	Introduction to Psychology	3
ITEC 103*	Introduction to Computing	3
MEST 100	Introduction to Islam in World Culture	3
MATH 113	Analytic Geometry and Calculus I	4
PHYS 110	Physics I	3
PHYS 111	Physics I Lab	1

*Students can test out of this course (see General Education Requirements section)

Mathematics and Science Courses (23 credits)		
Course Code	Course	Credits
MATH 114	Analytic Geometry and Calculus II	4
MATH 203	Matrix Algebra	3
MATH 213	Analytic Geometry and Calculus III	3
MATH 214	Elementary Differential Equations	3
MATH 225	Discrete Mathematics	3
PHYS 220	Physics II	3
PHYS 221	Physics II Lab	1
STAT 346	Probability for Engineers	3

Computer Engineering Core Courses (61 credits)		
Course Code	Course Title	Credits
CSCI 211	Object Oriented Programming	3
CSCI 215	Data Structures and Algorithms Design	3
CSCI 312	Operating System Fundamentals	3
CENG 315	Microprocessors	3
CENG 316	Microprocessors Lab	1
CENG 335	Computer Architecture	3
CENG 336	Computer Systems Lab	1
CENG 401	Network Servers & Architecture	3
CSCI 411	Software Engineering	3
CENG 431	Embedded System Design	3
CENG 432	Embedded System Design Lab	0
ECEN 201	Introduction to Signal Analysis	3
ECEN 202	Introduction to Signal Analysis Lab	
ECEN 220	Signal & Systems I	3
ECEN 221	Signal & Systems I Lab	
ECEN 280	Electric Circuit Analysis	4
ECEN 281	Electric Circuit Analysis Lab	1
ECEN 331	Digital System Design	3
ECEN 332	Digital System Design Lab	1
ECEN 333	Linear Electronics I	3
ECEN 334	Linear Electronics Lab I	1
ECEN 462	Data and Computer Communication	3
ECEN 463	Data and Computer Communication Lab	1
ECEN 491	Engineering Seminar	1
ECEN 492	Senior Design Project I	2
ECEN 493	Senior Design Project II	4
ENGR 107	Introduction to Engineering	2
UNIV 390	Internship	3

Technical Electives (9)		
Course Code	Course Title	Credits
CSCI 415	Introduction to Parallel Programming	3
CENG 435	Advanced Computer Architecture	3
CENG 437	Introduction to Robotics	3
CENG 461	Network Security	3
CENG 466	Wireless Communications and Networking	3
CENG 499	Special Topics in Computer Engineering	3
ECEN 431	Digital Circuit Design	3
ECEN 465	Computer Networking Protocols	3
ECEN 481	Concepts of Multimedia Processing & Transmission	3

Business Electives (3)		
Course Code	Course	Credits
ACCT 203	Survey of Accounting	3
BUSN 302	Legal Environment of Business	3
BUSN 303	Introduction to Entrepreneurship	3
MGMT 301	Managing Behavior and Organizations	3
MKTG 301	Principles of Marketing	3

Computer Engineering Four-Year Sample Schedule

Freshman Year, First Semester			Freshman Year, Second Semester		
Course Code	Course Title	Credits	Course Code	Course Title	Credits
CSCI 112	Introduction to Computer Programming	3	COMM 100	Public Speaking	3
CSCI 113	Introduction to Computer Programming Lab	1	CSCI 211	Object Oriented Programming	3
ENGL 101	Composition	3	MATH 114	Analytic Geometry & Calculus II	4
ENGR 107	Introduction to Engineering	2	MATH 225	Discrete Mathematics	3
MATH 113	Analytic Geometry & Calculus I	4	PHYS 110	Physics I	3
MEST 100	Introduction to Islam in World Culture	3	PHYS 111	Physics I Lab	1
Total		16	Total		17
Sophomore Year, First Semester			Sophomore Year, Second Year		
Course Code	Course Title	Credits	Course Code	Course Title	Credits
CSCI 215	Data Structures & Algorithms Design	3	ECEN 280	Electric Circuit Analysis	4
GEN ED	General Education Elective	3	ECEN 281	Electric Circuit Analysis Lab	1
ECEN 201	Introduction to Signal Analysis	3	ECEN 331	Digital System Design	3
ECEN 202	Introduction to Signal Analysis Lab		ECEN 332	Digital System Design Lab	1
MATH 213	Analytic Geometry & Calculus III	3	MATH 203	Matrix Algebra	3
PHYS 220	Physics II	3	MATH 214	Elementary Differential Equations	3
PHYS 221	Physics II Lab	1	Total		15
Total		16	Total		15
Junior Year, First Semester			Junior Year, Second Semester		
Course Code	Course Title	Credits	Course Code	Course Title	Credits
CENG 315	Microprocessor	3	CENG 336	Computer Systems Lab	1
CENG 316	Microprocessor Lab	1	CSCI 312	Operating System Fundamentals	3
CENG 335	Computer Architecture	3	ECEN 333	Linear Electronics I	3
ECEN 220	Signal & Systems I	3	ECEN 334	Linear Electronics Lab I	1
ECEN 221	Signal & Systems I Lab		ECEN 462	Data & Computer Communication	3
ENGL 302	Advanced Composition	3	ECEN 463	Data & Computer Communication Lab	1
STAT 346	Probability for Engineers	3	ECON 103	Principles of Microeconomics	3
Total		16	Total		15

Junior Year, Summer Semester					
Course Code	Course Title	Credits	Course Code	Course Title	Credits
UNIV 390	Internship	3			
Senior Year, First Semester			Senior Year, Second Semester		
Course Code	Course Title	Credits	Course Code	Course Title	Credits
GEN ED	General Education Elective	3	ECEN 491	Senior Seminar	1
CENG 401	Network Servers & Architecture	3	ECEN 493	Senior Design Project II	4
CENG 431	Embedded System Design	3	GEN ED	General Education Elective	3
CENG 432	Embedded System Design Lab		Business Elective		3
CSCI 411	Software Engineering	3	Technical Elective 2		3
ECEN 492	Senior Seminar Project I	2	Technical Elective 3		3
Technical Elective		3	Total		
Total		17			
<i>TOTAL CREDITS 132</i>					

Electronics and Communications Engineering

Bachelor of Science in Electronics and Communications Engineering

Electronics and Communication Engineering is among the most challenging fields of study in electrical engineering. The areas of study in electronics and communication engineering are quite diverse. Electronics and communication engineering course give enormous job opportunities in electronics, communication and software companies. All electronic devices need a software interface to run and come with one or another device controlling programs architected and developed by electronics and communication engineering. It also gives great opportunities for research and development, as everyday consumers need new devices to support them in daily life.

Program Mission

The mission of the Electronics and Communications Engineering program is to provide graduates with a sound understanding of fundamental engineering principles and applications in the field. Graduates will have a comprehensive understanding of subjects like signals and systems, digital logic, circuits and electronics, and the theory and applications of digital communications, particularly networks and wireless communications. Graduates will be prepared for graduate study or employment. They will be able to demonstrate their ability to apply the knowledge and methodologies of electronics and communications engineering essential for a successful career.

Program Objectives

Upon graduation students will be:

- Successful practitioners in the region and worldwide
- Grounded in the fundamental concepts of electronics and communications engineering and able to continue their professional development throughout their careers
- Skilled in communicating clearly, working productively in teams, and capable of functioning responsibly in diverse cultural environments

Program Learning Outcomes

AURAK Electronics and Communications Engineering graduates should be able to:

- Apply knowledge of mathematics, science, and engineering
- Design and conduct experiments, to analyze and interpret data Design a system, component, or process to meet desired needs Function effectively as multi-disciplinary team members Identify, formulate, and solve engineering problems
- Have an understanding of professional and ethical responsibility

- Communicate effectively
- Acquire the broad education necessary to understand the impact of engineering solutions in a global and societal context
- Recognize the need for, and to engage in life-long learning
- Acquire knowledge of contemporary issues
- Use the techniques, skills, and modern engineering tools necessary for engineering

Degree Requirements

The BS in Electronics and Communications Engineering requires the completion of 132 credits in the following areas of study.

	Credit
University General Education Requirements	36
Mathematics, Science and IT Courses	24
Electronics and Communications Engineering Core Courses	60
Technical Electives	9
Business Electives	3

University General Education Requirements (36 Credits)		
Course Code	Course	Credits
ARTT 100	Introduction to the Visual Arts	3
COMM 100	Public Speaking	3
CSCI 112	Introduction to Computer Programming	3
CSCI 113	Introduction to Computer Programming Lab	1
ECON 103	Principles of Microeconomics	3
ENGL 100/101	Composition	3
ENGL 201	Literature across Cultures	3
ENGL 302	Advanced Composition	3
PSYC 100	Introduction to Psychology	3
ITEC 103*	Introduction to Computing	3
MEST 100	Introduction to Islam in World Culture	3
MATH 113	Analytic Geometry and Calculus I	4
PHYS 110	Physics I	3
PHYS 111	Physics I Lab	1

*Students can test out of this course (see General Education Requirements section)

Mathematics, Science and IT Courses (24 Credits)		
Course Code	Course Title	Credits
MATH 114	Analytic Geometry and Calculus II	4
MATH 203	Matrix Algebra	3
MATH 213	Analytic Geometry and Calculus III	3
MATH 214	Elementary Differential Equations	3
PHYS 220	Physics II	3
PHYS 221	Physics II Lab 1	1
PHYS 222	Physics III	3

PHYS 223	Physics III lab	1
STAT 346	Probability for Engineers	3

Electronics and Communications Engineering Core Courses (60 Credits)		
Course Code	Course	Credits
ECEN 101	Information Technology for Electrical Engineers	3
ECEN 102	Information Technology for Electrical Engineers Lab	0
ECEN 201	Introduction to Signal Analysis	3
ECEN 202	Introduction to Signal Analysis Lab	0
ECEN 220	Signal & Systems I	3
ECEN 221	Signal & Systems I Lab	0
ECEN 260	Modern Telecommunications	3
ECEN 280	Electric Circuit Analysis	4
ECEN 281	Electric Circuit Analysis Lab	1
ECEN 305	Electromagnetic Theory	3
ECEN 320	Signal and Systems II	3
ECEN 321	Signal and Systems II Lab	0
ECEN 331	Digital System Design	3
ECEN 332	Digital System Design Lab	1
ECEN 333	Linear Electronics I	3
ECEN 334	Linear Electronics I	1
ECEN 431	Digital Circuit Design	3
ECEN 433	Linear Electronics	3
ECEN 434	Linear Electronics Lab II	1
ECEN 460	Communication and Information Theory	3
ECEN 461	Communication Engineering Lab	1
ECEN 462	Data and Computer Communication	3
ECEN 464	Digital Communication Systems	3
ECEN 491	Engineering Seminar	1
ECEN 492	Senior Design Project I	2
ECEN 493	Senior Design Project II	4
ENGR 107	Introduction to Engineering	2
UNIV 390	Internship	3

Technical Electives (9		
Course Code	Course	Credits
ECEN 430	Principles of Semiconductor Devices	3
ECEN 435	Introduction to Optical Electronics	3
ECEN 437	Power Electronics	3
ECEN 465	Computer Networking Protocols	3
ECEN 466	Digital Signal Processing	3
ECEN 467	Mobile and Wireless Communications	3
ECEN 481	Concepts of Multimedia Processing & Transmission	3
ECEN 488	Fundamentals of Satellite Communication	3

ECEN 499	Special Topics in ECEN	3
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Business Electives (3		
Course Code	Course	Credits
ACCT 203	Survey of Accounting	3
BUSN 302	Legal Environment of Business	3
BUSN 303	Introduction to Entrepreneurship	3
MGMT 301	Managing Behavior and Organizations	3
MKTG 301	Principles of Marketing	3

Electronics & Communications Engineering Four-Year Sample Schedule

Freshman Year, First Semester						Freshman Year, Second Semester					
Course Code	Course Title	Credits		Course Code	Course Title	Credits		Course Code	Course Title	Credits	
ECEN 101	Information Technology for Electrical Engineers	3		COMM 100	Public Speaking	3					
ECEN 102	Information Technology for Electrical Engineers Lab			CSCI 112	Introduction to Computer Programming	3					
ENGL 101	Composition	3		CSCI 113	Introduction to Computer Programming Lab	1					
ENGR 107	Introduction to Engineering	2		ECEN 201	Introduction to Signal Analysis						
MATH 113	Analytic Geometry & Calculus I	4		ECEN 202	Introduction to Signal Analysis Lab	3					
MEST 100	Introduction to Islam in World Culture	3		MATH 114	Analytic Geometry & Calculus II	4					
Total		15		PHYS 110	Physics I	3					
Total		15		PHYS 111	Physics I Lab	1					
Total		15		Total		18					
Sophomore Year, First Semester						Sophomore Year, Second Semester					
Course Code	Course Title	Credits		Course Code	Course Title	Credits		Course Code	Course Title	Credits	
ECEN 260	Modern Telecommunications	3		ECEN 220	Signal & Systems I						
GEN ED	General Education Elective	3		ECEN 221	Signal & Systems I Lab	3					
MATH 203	Matrix Algebra	3		ECEN 280	Electric Circuit Analysis	4					
MATH 213	Analytic Geometry & Calculus III	3		ECEN 281	Electric Circuit Analysis Lab	1					
PHYS 220	Physics II	3		MATH 214	Elementary Differential Equations	3					
PHYS 221	Physics II Lab	1		PHYS 222	Physics III	3					
Total		16		PHYS 223	Physics III Lab	1					
Total		16		Total		15					
Junior Year, First Semester						Junior Year, Second Semester					
Course Code	Course Title	Credits		Course Code	Course Title	Credits		Course Code	Course Title	Credits	
ECEN 320	Signal & Systems II	3		ECEN 305	Electromagnetic Theory	3					
ECEN 321	Signal & Systems II Lab			ECEN 431	Digital Electronics	3					
ECEN 331	Digital System Design	3		ECEN 433	Linear Electronics II	3					
ECEN 332	Digital System Design Lab	1		ECEN 460	Communication & Information Theory	3					
ECEN 333	Linear Electronics I	3		ECON 103	Principles of Microeconomics	3					
ECEN 334	Linear Electronics Lab I	1		Total		15					
ENGL 302	Advanced Composition	3									
STAT 346	Probability for Engineers	3									
Total		17		Total		15					
Junior Year, Summer											
Course Code	Course Title	Credits		Course Code	Course Title	Credits					
UNIV 390	Internship	3									
Senior Year, First Semester						Senior Year, Second Semester					
Course Code	Course Title	Credits		Course Code	Course Title	Credits					

GEN ED	General Education Elective	3	ECEN 464	Digital Communication Systems	3
ECEN 434	Linear Electronics Lab II	1	ECEN 491	Senior Seminar	1
ECEN 461	Communication Engineering Lab	1	ECEN 493	Senior Design Project II	4
ECEN 462	Data & Computer Communication	3	GEN ED	General Education Elective	3
ECEN 492	Senior Design Project I	2	Technical Elective 2		3
Business Elective		3	Technical Elective 3		3
Technical Elective 1		3	Total		17
Total		16			

BS in Computer Science

Vision:

"The vision of the Bachelor of Science in Computer Science program at the American University of Ras Al Khaimah is to produce effective, well educated, and globally competitive Computer Science professionals for the region and the wider world. The program will strive to be one of the top sought programs in the GCC region through the excellence of its faculty, staff, graduates, and facilities."

Mission:

"The bachelor of Science in Computer Science aims to provide students with high-quality education covering a broad and well-integrated knowledge in the concepts and methodologies underlying the analysis, design, and utilization of computer software, algorithms and systems. The graduates of the program will be well versed in computer technology and its impact on the global society."

Goals:

The program's goals are to develop within each graduate strong professional and real-life skills and to initiate each in a career offering effective communication, lifelong learning, service to the community, and leadership within their local, regional and global communities. To achieve this goal statement, the educational program is organized into 4 major pillars, namely: (i) Strong curriculum with both breadth and depth; (ii) real life training and industrial experience; (iii) Solid theoretical foundation and engagement in life-long learning and (iv) Communication skills and social knowledge. Upon graduation, students will be:

1. Successful computer science practitioners in the region and worldwide.
2. Grounded in the fundamental and modern concepts of computer science and be able to articulate these concepts as computer science and engineering professionals.
3. Skilled with good analytic, design and implementation knowledge required to formulate and solve computer science and engineering problems.
4. Skilled in communicating clearly, working productively and effectively in teams, capable of functioning responsibly, aware of ethical issues and engaged in life-long learning.

The program level learning outcomes for the BCS program are:

Upon graduation, our students should be able to:

1. PLO1: Apply knowledge of mathematics, science, computing and engineering for real problems.
2. PLO2: Design and conduct experiments, as well as to collect, analyze, and interpret data.
3. PLO3: Design, implement, and evaluate a computer-based system, process, or program to meet desired needs, within realistic constraints.
4. PLO4: Function effectively as multi-disciplinary team members.
5. PLO5: Identify, formulate, analyze and solve computing problems.
6. PLO6: Understand professional and ethical responsibilities as well as legal, security and social issues.
7. PLO7: Communicate effectively.
8. PLO8: Understand the impact of computing solutions in a global and societal context.
9. PLO9: Engage in continuing professional development and life-long learning.
10. PLO10: Acquire knowledge of contemporary issues.
11. PLO11: Use techniques, tools and modern tools necessary for computer science, computing and engineering practice.
12. PLO12: Apply algorithmic principles, and computer science and engineering theory in the modeling, design and analysis of computer-based systems.

CS Program study plan:

BCS Sample Program Study Plan			
Freshman Year, First Semester	Cr	Freshman Year, Second Semester	Cr
CSCI 104 Introduction to Computing	3	COMM 100 Public Speaking	3
Econ 103 Economics	3	CSCI 112 Introduction to Computer Programming	3
ENGL 101 Composition	3	CSCI113 Introduction to Computer Prog Lab	1

MATH 113 Analytic Geometry and Calculus I	4	PHYS 110 University Physics I	3
MEST 100 Introduction to Islamic Culture	3	PHYS 111 University Physics I Lab	1
UNIV 100 University Freshman Transition	1	MATH 114 Analytic Geometry and Calculus II	4
Semester total credits	17	Semester total credits	15
Sophomore Year, First Semester		Sophomore Year, Second Semester	
CSCI 211 Object-oriented Programming	3	CSCI 215 Data Structure	3
MATH 213 Analytic Geom. & Calculus III	3	ECEN 331 Digital System Design	3
MATH 225 Discrete Math	3	ECEN 332 Digital System Lab	1
CSCI 232 Computer Organization	3	Math 203 Matrix Algebra	3
PHYS 220 University Physics II	3	Phil 101	3
		Stat 346 Prob.	3
Semester total credits	15	Semester total credits	16
Junior Year, First Semester		Junior Year, Second Semester	
CENG 335 Computer Architecture	3	Business Elective	3
CENG 336 Computer Sys Lab	1	CSCI 372 Compiler Design	3
ENGL 302 Advanced Composition	3	CSCI 462 Data Communications and Computer Networks	3
CSCI 326 Database Sys	3	CSCI 463 Data Comm and Computer Networks Lab	1
PSYC 100 Psychology	3	CSCI 388 Programming Languages	3
CSCI 312 Operating System	3	CSCI 315 Analysis of Algorithms	3
Semester total credits	16	Semester total credits	16
Junior Year, Summer Semester			
ENGR 390 Internship	3		
Senior Year, First Semester		Senior Year, Second Semester	
Free Elective 1	3	CSCI 493 Senior Design Project II	4
CSCI 440 Formals Methods	3	CENG 411 Software Engineering	3
CENG 461 Network Security	3	Technical Elective 2	3

CSCI 492 Senior Design Project I	2	Free Elective 2	3
Technical Elective 1	3		
Semester total credits	14	Semester total credits	13
		Program Total credits	125

CIVIL AND INFRASTRUCTURE ENGINEERING PROGRAM

Bachelor of Science in Civil and Infrastructure Engineering

The civil and infrastructure engineering program is a unique undergraduate program and can be considered as the first and only program in the United Arab of Emirates and the region that concentrates in infrastructure engineering in addition to civil engineering. This program contains inclusions of sustainable engineering, global issues, and multidisciplinary problem solving and system analysis components across its curriculum to solve society's most pressing problems and to improve the infrastructure services in the built environment. In addition the program closely matches local professional opportunities and the direction of professions in civil and infrastructural engineering in the 21st century.

Program Vision

With the commitment of the American University of Ras Al Khaimah to create a sustainable world and enhance the global quality of life, the program of Bachelor of Science in Civil and Infrastructure Engineering, civil and infrastructure engineering graduates will serve competently, collaboratively, and ethically as master builders, environmental stewards, innovators and integrators, managers of risk and uncertainty, and leaders in shaping public policy.

Program Mission

The Bachelor of Science in Civil Engineering and Infrastructure program at the American University of Ras Al Khaimah (AURAK) educates students to become qualified engineers who are capable of generating effective solutions by using engineering approaches in the field of Civil and Infrastructure Engineering. The graduates of the program will be well versed in technology and in social and environmental issues.

To fulfill this mission, the program provides the undergraduate student with a thorough foundation in the basic tenets of Civil and Infrastructure Engineering and technologies, and a broad introduction into structures, engineering materials, transport systems, soil engineering and environment protection. The program provides a strong background for graduate study in the diverse areas branching out of the Civil and Infrastructure Engineering field. The technical focus is complemented with topics in general education leading to a well-rounded member of the global society.

Program Goals

1. Provide graduates with the needed knowledge and skills to be professional leaders in Civil and Infrastructure Engineering to serve society as master planners, designers and constructors.
2. Provide students with the knowledge required to solve civil and infrastructure engineering problems and design civil and infrastructure engineering systems;
3. Educate students to utilize experimental tools and data analysis techniques for civil and infrastructure engineering applications;
4. Enhance the students' written and oral communication skills to present and deliver information effectively;
5. Strengthen the students' awareness to professional and ethical issues;
6. Train students to become innovators and integrators of ideas and technology across the public, private and academic sectors;
7. Provide students with the needed tools to be leaders in discussions and decisions shaping public environmental and infrastructure policy;
8. Prepare students for life-long learning and for successful carriers in the civil and infrastructure engineering profession.

Program Outcomes

AURAK has adopted ABET's a-I outcomes for Civil and Infrastructure Engineering Program. The outcomes for program are:

- a) An ability to apply knowledge of mathematics, science, and engineering in relation to Civil and infrastructure engineering;
- b) An ability to design and conduct experiments, to analyze and interpret data to solve Civil and Infrastructure engineering;
- c) An ability to design a system, component, or process to meet desired needs;
- d) An ability to function effectively as multi-disciplinary team members;
- e) An ability to identify, formulate, and solve engineering problems;
- f) An understanding of professional and ethical responsibility;
- g) An ability to communicate effectively;
- h) The broad education necessary to understand the impact of engineering solutions in a global and societal context;
- i) A recognition of the need for, and an to engage in life-long learning;
- j) A knowledge of contemporary issues;
- k) An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice;
- l) An understanding of civil engineering professional practice issues such as: procurement of work, bidding versus quality-based selection processes, addressing public safety concerns in project design, how design professionals interact with the construction profession to**

construct a project, the importance of professional licensing and continuing education, and/or other professional practice issues.

Degree Requirements

The BS in Civil and Infrastructure Engineering requires the completion of 132 credits in the following areas:

Area	Credit
University General Education Requirements	33
Mathematics, Science and IT Courses	27
Civil and Infrastructure Engineering Core Courses	66
Technical Electives	6

University General Education Requirements (33 Credits)		
Course Code	Course Title	Credits
ENGL 100/101	Composition	3
COMM 100	Public Speaking	3
PHIL 100	Critical Thinking and Reasoning	3
CSCI 112	Introduction to Computer Programming	3
CSCI 113	Introduction to Computer Programming Lab.	1
MATH 113	Calculus I	4
MEST 100	Introduction to Islam in World Culture	3
UNIV 100	University Freshman Transition	1
POLI 100	Contemporary Global Issues	3
ECON 103	Principles of Microeconomics	3
CHEM 211	General Chemistry	3

And the student shall choose one course (3 Credits) from the following:

Course Code	Course Title	Credits
ARTT 100	Introduction to Visual Arts	3
ARAB 110	Introduction to Arabic Literature	3
COMM 102	Reading Image and Film	3
COMM 104	Photography and Communication	3
HIST 100	Contemporary Middle Eastern History	3
HIST 101	Ancient History of the Arabian Peninsula	3
PHIL 101	Ethics in Today's World	3
PHIL 102	World Philosophies	3

Mathematics, Science and IT Courses (27 Credits)		
Course Code	Course Title	Credit Hours
ENGR 107	Introduction to Engineering	2
PHYS 110	University Physics I	3
PHYS 111	University Physics I Lab	1
MATH 114	Analytic Geometry and Calculus II	4
MATH 213	Calculus III	3
MATH 214	Elementary Differential Equations	3
PHYS 220	University Physics II	3
PHYS 221	University Physics II Lab	1
STAT 346	Probability for Engineers	3
ENGR 390	Internship	3
ECEN 491	Engineering Seminar	1

Civil and Infrastructure Engineering Core Courses (66 Credits)		
Course Code	Course Title	Credits
CIEN 201	Computer Aided Drawings	3
CIEN 211	Statics	3
CIEN 212	Mechanics of Materials	3
CIEN 241	Infrastructure Management	3
CIEN 250	Engineering in Global Environment	2
CIEN 251	Fluid Mechanics	3
CIEN 261	Surveying	1
CIEN 301	Numerical Analysis	3
CIEN 311	Structural Analysis	3
CIEN 321	Reinforced Concrete Design	3
CIEN 331	Construction Materials	3
CIEN 332	Construction Materials Lab.	1
CIEN 333	Geotechnical Engineering	3
CIEN 334	Civil Engineering Testing and Materials	1
CIEN 351	Environmental Engineering	2
CIEN 361	Highway Engineering and Design	3
CIEN 362	Transportation Engineering	3
CIEN 421	Structural Steel Design	3
CIEN 431	Foundation Engineering	3
CIEN 440	Infrastructure Financing	3
CIEN 441	Construction Management	3
CIEN 451	Infrastructure Systems	3
CIEN 465	Geographical Information System	2
CIEN 491	Senior Design Project (1)	2
CIEN 492	Senior Design Project (2)	4

Technical Electives (6 Credits)		
Course Code	Course Title	Credits
CIEN 411	Computer Applications in Structural Engineering	3
CIEN 422	Advanced Reinforced Concrete Design	3
CIEN 423	Fundamentals of Earthquake Engineering	3
CIEN 424	Bridge Design	3
CIEN 434	Advanced Concrete Technology	3
CIEN 442	Construction Planning & Scheduling	3
CIEN 443	Construction Methods and Equipment	3
CIEN 444	Construction Cost Analysis and Estimating	3
CIEN 452	Hydraulics	3
CIEN 453	Groundwater Hydrology	3
CIEN 454	Water and Wastewater Supply	3
CIEN 455	Solid Waste Management	3
CIEN 456	Sustainable Urban Building Sites	3
CIEN 462	Advanced Pavement Design	3
CIEN 463	Traffic Engineering	3
CIEN 464	Airport Planning and Design	3
CIEN 493	Special Topics in Civil Engineering	3
ENGR 399	Undergraduate Research Project	3

Civil and Infrastructure Engineering Four-Year Sample Schedule					
Freshman Year, First Semester			Freshman Year, Second Semester		
Course Code	Course Title	Credits	Course Code	Course Title	Credits
ENG 100/101	Composition	3	MATH 114	Analytic Geometry and Calculus II	4

ENGR 107	Introduction to Engineering	2	COMM 100	Public Speaking	3
MATH 113	Calculus I	4	CHEM 211	General Chemistry	3
UNIV 100	University Freshman Transition	1	PHYS 110	University Physics I	3
CSCI 112	Introduction to Computer Programming	3	PHYS 111	University Physics I Lab	1
CSCI 113	Introduction to Computer Programming	1	ECON 103	Principles of Microeconomics	3
MEST 100	Introduction to Islam in World Culture	3	Total		17
Total		17			
Sophomore Year, First Semester			Sophomore Year, Second Semester		
Course Code	Course Title	Credits	Course Code	Course Title	Credits
CIEN 201	Computer Aided Drawings	3	CIEN 212	Mechanics of Materials	3
CIEN 211	Statics	3	CIEN 251	Fluid Mechanics	3
CIEN 250	Engineering in Global Environment	2	CIEN 241	Infrastructure Management	3
MATH 213	Calculus III	3	MATH 214	Elementary Differential	3
PHYS 220	University Physics II	3	CIEN 261	Surveying	1
PHYS 221	University Physics II Lab	1	PHIL 100	Critical Thinking and Reasoning	3
Total		15	Total		
Junior Year, First Semester			Junior Year, Second Semester		
Course Code	Course Title	Credits	Course Code	Course Title	Credits
STAT 346	Probability for Engineers	3	POLI 100	Contemporary Global Issues	3
CIEN 301	Numerical Analysis	3	CIEN 351	Environmental Engineering	2

CIEN 311	Structural Analysis	3	CIEN 362	Transportation Engineering	3
CIEN 331	Construction Materials	3	CIEN 361	Highway Engineering and	3
CIEN 332	Construction Materials Lab.	1	CIEN 334	Civil Engineering Testing and	1
CIEN 333	Geotechnical Engineering	3	CIEN 321	Reinforced Concrete Design	3
Total		16	Total		
Junior Year, Summer Semester					
Course Code	Course Title	Credits	Course Code	Course Title	Credits
ENGR 390	Internship	3			
Senior Year, First Semester			Senior Year, Second Semester		
Course Code	Course Title	Credits	Course Code	Course Title	Credits
CIEN 441	Construction Management	3	CIEN 451	Infrastructure Systems	3
CIEN 421	Structural Steel Design	3	CIEN XXX	Technical Elective 1	3
CIEN 431	Foundation Engineering	3	CIEN XXX	Technical Elective 2	3
CIEN 440	Infrastructure Financing	3		General Education Elective from Arts	3
CIEN 465	Geographical Information System	2	CIEN 492	Senior Design Project (2)	4
CIEN 491	Senior Design Project (1)	2	Total		16
ECEN 491	Engineering Seminar	1			
Total		17			

BS in Mechanical Engineering

Overview

The mechanical engineering program is offered in the Mechanical and Industrial Engineering Department, the Bachelor of Science degree in mechanical engineering requires a minimum of 132 credit hours of course work. Mechanical engineering is one of the largest, broadest, and oldest engineering disciplines. Mechanical engineers use the principles of energy, materials, and mechanics to design and manufacture machines and devices of all types. They create the processes and systems that drive technology and industry.

The key characteristics of the profession are its breadth, flexibility, and individuality. The career paths of mechanical engineers are largely determined by individual choices, a decided advantage in a changing world.

Mechanics, energy and heat, mathematics, engineering sciences, design and manufacturing form the foundation of mechanical engineering. Mechanics includes fluids, ranging from still water to hypersonic gases flowing around a space vehicle; it involves the motion of anything from a particle to a machine or complex structure.

PROGRAM MISSION AND GOALS

Program Vision

With the commitment of the American University of Ras Al Khaimah to create a sustainable world and enhance the global quality of life, the vision of the program of Bachelor of Science in Mechanical Engineering is to achieve local, regional and international recognition for preparing high quality mechanical engineering graduates, conducting outstanding research and providing exceptional community service.

Program Mission

The Bachelor of Science in Mechanical Engineering program at the American University of Ras Al Khaimah (AURAK) educates students to become qualified engineers who are capable of generating effective solutions by using engineering approaches in the field of Mechanical Engineering. The graduates of the program will be well versed in technology and in social and environmental issues.

To fulfill this mission, the program provides the undergraduate student with a thorough foundation in the basic tenets of Mechanical Engineering and technologies, and a broad introduction into machine design, engineering materials, thermal sciences, energy and environment protection and mechanical systems. The program provides a strong background for graduate study in the diverse areas branching out of the Mechanical Engineering field. The technical focus is complemented with topics in general education leading to a well-rounded member of the global society.

Program Goals and Objectives

The Program Goals describe the expected accomplishments of graduates during their first few years after graduation. The program goals have been derived from and support the mission statement of the American University of Ras al Khaimah. The graduate of the Mechanical Engineering Program is expected to be able to:

1. Pursue a successful professional career in local and regional markets or higher studies in the field of mechanical engineering.
2. Conceive, design, model, analyze, test and implement mechanical systems and processes considering their environmental impact.
3. Professionally apply mathematical, computational and experimental techniques in solving practical problems.
4. Effectively communicate and function in various multidisciplinary environments and engage in lifelong learning and professional development.

5. Understand the ethical, cultural and environmental considerations of the engineering profession.

PROGRAM OUTCOMES

Program Outcomes

AURAK has adopted ABET's a-k outcomes for Mechanical Engineering Program. The outcomes for program are:

An ability to apply knowledge of mathematics, science, and engineering.

1. An ability to design and conduct experiments, as well as analyze and interpret data.
2. An ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability.
3. An ability to function effectively as multi-disciplinary teams.
4. An ability to identify, formulate, and solve engineering problems.
5. An understanding of professional and ethical responsibility.
6. An ability to communicate effectively;
7. The broad education necessary to understand the impact of engineering solutions in a global and societal context.
8. A recognition of the need for, and to engage in life-long learning.
9. A knowledge of contemporary issues
10. An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice;

PROGRAM FOUR YEAR SCHEDULE

Recommended Four-Year Schedule

BS Degree in Mechanical Engineering					
Four– Year Recommended Schedule					
Freshman Year, Semester 1 (Fall)			Freshman Year, Semester 2 (Spring)		
Course	Title	CR	Course	Title	CR
PHYS 110	University Physics I	3	MATH 114	Analytic Geometry and Calculus II	4
PHYS 111	University Physics I Lab	1	ENGL 101	Composition	3
ENGR 107	Introduction to Engineering	2	PHIL 100	Critical Thinking and Reasoning	3
MATH 113	Calculus I	4	PHYS 220	University Physics II	3
UNIV 100	University Freshman Transition	1	PHYS 111	University Physics II Lab	1
CSCI 112	Introduction to Computer Programming	3	CHEM 211	General Chemistry	3
CSCI 113	Introduction to Computer Programming Lab	1			
TOTAL		15	TOTAL		17
Sophomore Year, Semester 1 (Fall)			Sophomore Year, Semester 2 (Spring)		
Course	Title	CR	Course	Title	CR
CIEN 201	Computer Aided Drawings	3	CIEN 212	Mechanics of Materials	3
CIEN 211	Statics	3	MENG 221	Dynamics	3

MENG 211	Thermodynamics I	3	MATH 203	Matrix Algebra	3
MATH 213	Analytic Geometry and Calculus III	3	MATH 214	Elementary Differential Equations	3
COMM 100	Public Speaking	3	MENG 212	Thermodynamics II	3
			MEST 100	Introduction to Islam in World Culture	3

TOTAL		15	TOTAL		15
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Junior Year, Semester 1 (Fall)			Junior Year, Semester 2 (Spring)		
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Course	Title	CR	Course	Title	CR
STAT 346	Probability for Engineers	3	ENGL 302	Advanced Composition and Research Methodology	3
MENG 341	Fluid Mechanics	3	IENG 311	Manufacturing Processes I	3
IENG 231	Engineering Materials	3	MENG 321	Mechanical Vibration	3
IENG 232	Engineering Materials Lab.	1	MENG 361	Heat Transfer	3
ECON 103	Principles of Microeconomics	3	ECEN 281	Electrical Circuits Analysis Lab	1
MENG 342	Fluid Mechanics Lab	1	MENG 362	Thermal Sciences Lab	1
ECEN 280	Electrical Circuits Analysis	3	CIEN 301	Numerical Analysis	3

TOTAL		17	TOTAL		17
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Summer Semester					
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Course	Title	CR	Course	Title	CR
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ENGR 390	Internship	3			
Senior Year, Semester 1 (Fall)			Senior Year, Semester 2 (Spring)		
Course	Title	CR	Course	Title	CR
MENG 451	Machine Design I	3	MENG 452	Machine Design II	3
MENG 461	HVAC	3		ME Technical Elective 2	3
	ME Technical Elective I	3		ME Technical Elective 3	3
MENG 462	Design of Thermal System	2	MENG 492	Senior Design Project II	4
MENG 491	Senior Design Project I	2			
MENG 490	Engineering Seminar	1			
	General Education Elective	3			
TOTAL		17	TOTAL		13

PROGRAM REQUIREMENTS

The Bachelor of Science degree in Mechanical Engineering requires a minimum of (132) credit hours of course work.

- A detailed distribution of the minimum credit hours required is shown below:

Requirement Description	Credit Hours	
1. General Education	33	
▪ Core		24
▪ General Education Elective		9
2. Engineering Requirements	30	

▪ Compulsory		30
▪ Elective		--
3. Department Requirements		
	69	
▪ Compulsory		60
▪ Technical Elective		9

Total	132
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General Education Requirements

University General Education Requirements are (33) Credit Hours, as follows:

- a) *Core (24) Credit Hours, UNIV 100, University Freshman Transition* is mandatory for freshmen.

Course No.	Course Title	Detailed Distribution of Credit Hours		Credit Hours
		Lecture	Practical	
ENGL 101	Composition	3	-	3
COMM 100	Public Speaking	3	-	3
PHIL 100	Critical Thinking and Reasoning	3	-	3
CSCI 112	Introduction to Computer Programming	3	-	3
CSCI 113	Introduction to Computer Programming Lab.	-	3	1
MATH 113	Calculus I	4	-	4
MEST 100	Introduction to Islam in World Culture	3	-	3
UNIV 100	University Freshman Transition	1	-	1

Course No.	Course Title	Detailed Distribution of Credit Hours		Credit Hours
		Lecture	Practical	
ENGL 302	Advanced Composition and Research Methodology	3	-	3

b) *University General Education Elective (9) Credit Hours*, students must take 3 credit hours from Social and Behavioral Sciences, 3 from the Natural Sciences, and 3 from Arts and Humanities.

1. The Fields of Social and Behavioral Sciences (3 Credit Hours)

Course No.	Course Title	Detailed Distribution of Credit Hours		Credit Hours
		Lecture	Practical	
ECON 103	Principles of Microeconomics	3	-	3

2. The Field of Natural Sciences (3 Credit Hours)

Course No.	Course Title	Detailed Distribution of Credit Hours		Credit Hours
		Lecture	Practical	
CHEM 211	General Chemistry	3	-	3

3. The field of Arts and Humanities (3 Credit Hours)

i. Creative and Aesthetic Understanding

Course No.	Course Title	Detailed Distribution of Credit Hours		Credit Hours
		Lecture	Practical	
ARTT 100	Introduction to Visual Arts	3	-	3
ENGL 201	Literature across Cultures	3	-	3

Course No.	Course Title	Detailed Distribution of Credit Hours		Credit Hours
ARAB 110	Contemporary Arabic Literature	3	-	3
COMM 102	Reading Image and Film	3	-	3
COMM 104	Photography and Communication	3	-	3

ii. Cross-cultural and Ethical Understanding

Course No.	Course Title	Detailed Distribution of Credit Hours		Credit Hours
		Lecture	Practical	
HIST 281	Contemporary Middle Eastern History	3	-	3
HIST 282	Western Civilization	3	-	3
PHIL 101	Ethics in Today's World	3	-	3
PHIL 102	Philosophy of World	3	-	3

Engineering Requirements

Faculty Requirements are (30) Credit Hours include the following courses:

Course No.	Course Title	Detailed Distribution of Credit Hours		Credit Hours	Prerequisite
		Lecture	Practical		
ENGR 107	Introduction to Engineering	2	-	2	Co-req. MATH 113
PHYS 110	University Physics I	3	-	3	Co-req. MATH 114
PHYS 111	University Physics I Lab	-	3	1	Co-req.: MATH 114 & PHYS 110
MATH 114	Analytic Geometry and Calculus II	4	-	4	MATH 113

Course No.	Course Title	Detailed Distribution of Credit Hours		Credit Hours	Prerequisite
		Lecture	Practical		
MATH 203	Matrix Algebra	3	-	3	MATH 114
MATH 213	Calculus III	3	-	3	MATH 114
MATH 214	Elementary Differential Equations	3	-	3	MATH 213
PHYS 220	University Physics II	3	-	3	PHYS 110 & Co-req. : PHYS 221 + MATH 213
PHYS 221	University Physics II Lab	-	3	1	Co-req. : PHYS 220 + MATH 213
STAT 346	Probability for Engineers	3	-	3	MATH 114
ENGR 390	Internship	-	3	3	Completion of 90 credits and GPA of 2.0 and higher
ECEN 491	Engineering Seminar	-	1	1	Completion of 90 credits

Department Requirements

Department Requirements are (69) Credit Hours as follow:

a) Compulsory: (60) Credit Hours include the following courses:

Course No.	Course Title	Detailed Distribution of Credit Hours		Credit Hours	Prerequisite
		Lec tur	P r		
CIEN 201	Computer Aided Drawings	1	6	3	-

Course No.	Course Title	Detailed Distribution of Credit Hours		Credit Hours	Prerequisite
		Lec tur	P r		
CIEN 211	Statics	3	-	3	MATH 113 & PHYS 110
CIEN 212	Mechanics of Materials	3	-	3	CEIN 211
CIEN 301	Numerical Analysis	3	-	3	MATH 214 & CSCI 112
ECEN 280	Electric Circuits Analysis	3	-	3	PHYS 220
ECEN 281	Electric Circuits Analysis	-	3	1	Co-requisite ECEN 280
IENG 231	Engineering Materials	3	-	3	CHEM 211
IENG 232	Materials Lab	-	3	1	CIEN 212 & MENG 231 (co-req.)
IENG 311	Manufacturing Processes I	3	-	3	IENG 231
MENG 211	Thermodynamics I	3	-	3	CHEM 211
MENG 212	Thermodynamics II	3	-	3	MENG 211
MENG 221	Dynamics	3	3	3	CIEN 211
MENG 321	Mechanical Vibrations	3	-	3	MENG 221
MENG 341	Fluid Mechanics	3	-	3	MATH 213 & CIEN 211

Course No.	Course Title	Detailed Distribution of Credit Hours		Credit Hours	Prerequisite
		Lec tur	P r		
MENG 342	Fluid Mechanics Lab.	-	3	1	MENG 341
MENG 361	Heat Transfer	3	-	3	MENG 212 & MATH 214
MENG 362	Thermal Sciences Lab.	-	3	1	MENG 361 & MENG 212
MENG 451	Mechanical Design I	3	-	3	CIEN 212 & IENG 231
MENG 452	Mechanical Design II	3	-	3	MENG 451
MENG 461	HVAC	3	-	3	MENG 212
MENG 462	Design of Thermal System	2	-	2	MENG 361
MENG 491	Senior Design Project I	0	2	2	Senior Standing
MENG 492	Senior Design Project II	0	4	4	MENG 491

b) Technical Electives: (9) Credit Hours selected from the following list of courses:

COURSE NO.	COURSE TITLE	DETAILED DISTRIBUTION OF CREDIT HOURS		CREDIT HOURS	PREREQUISITE
		LECTURE	PRACTICAL		
IENG 451	Control Systems	3	-	3	MATH 214
IENG 412	Product Design	3		3	CIEN 212
MENG 311	Internal Combustion Engines	3	-	3	MENG 212
MENG 321	Theory of Machines	3	-	3	MENG 221
MENG 453	Computer Aided Design	3	-	3	MENG 452
MENG 455	Finite Elements in Machine Design	3	-	3	MENG 452
MENG 463	Energy Conversion and Management	3	-	3	MENG 361
MENG 464	Renewable Energy	3	-	3	MENG 361
MENG 465	Energy Conservation	3	-	3	MENG 361
MENG 466	Building Services	3	-	3	MENG 461
MENG 467	Refrigeration Systems	3	-	3	MENG 361
MENG 441	Turbo Machinery	3	-	3	MENG 341
MENG 493	Special Topics in Mechanical Engineering	3	-	3	Department Consent

BS in Industrial Engineering

OVERVIEW

The industrial engineering program is offered in the Mechanical and Industrial Engineering Department, the Bachelor of Science degree in industrial engineering requires a minimum of 132 credit hours of course work. As all engineering fields have to do with the design and implementation of technology, Industrial Engineering is concerned with the design, improvement, and installation of integrated systems of people, materials, equipment and energy. It is based on knowledge and skill in the mathematical, physical and the social science together with the principles and methods of engineering analysis and design to specify, predict, and evaluate the results to be obtained from such systems. Industrial engineering places equal weight on people, economics, and systems aspects of technology often neglected by other fields. In addition to the design of industrial engineering hardware and industrial environments, the industrial engineer is trained to design the administrative systems needed for the effective implementation of physical technology and to design the interface between the hardware and people.

PROGRAM MISSION AND GOALS

Program Vision

With the commitment of the American University of Ras Al Khaimah to create a sustainable world and enhance the global quality of life, the vision of the program of Bachelor of Science in Industrial Engineering is to be a first-ranked industrial engineering program nationally as well as regionally recognized for providing education, research, outreach, and engineering management consultancies.

Program Mission

The Bachelor of Science in Industrial Engineering program at the American University of Ras Al Khaimah (AURAK) mission is to create, acquire, assimilate, apply, and transfer knowledge for the design, analysis, improvement, and implementation of production systems that include

humans, materials, equipment, and other resources for manufacturing and services sectors, in addition to leading-edge research activities driven by the economic and technologic development needs for society. The Bachelor of Science in Industrial Engineering program at AURAK educates students to become qualified engineers who are capable of generating effective solutions by using engineering approaches in the field of Industrial Engineering. The graduates of the program will be well versed in technology and in social and economic issues.

Industrial Engineering program require students to apply principles of engineering, basic science, and mathematics; to model, analyze, design, and realize physical systems, components or processes; and prepare students to work professionally in both engineering management and manufacturing systems areas. The program provides students with an excellent foundation in the core technical competencies of the discipline: manufacturing technologies, engineering mechanics and materials, management sciences and human factors in production and workplace. In addition, an array of technical electives is offered to enable students to tailor their industrial engineering education to best suit their career goals. The technical focus is complemented with topics in general education leading to a well-rounded member of the global society.

Program Goals and Objectives

The Program Goals describe the expected accomplishments of graduates during their first few years after graduation. The program goals have been derived from and support the mission statement of the American University of Ras al Khaimah. The Graduate of the Industrial Engineering Program is expected to:

- Possess proficiency in science and management to adequately solve the problems encountered in the actual work field.
- Acquire appropriate engineering design, computer, and experimental skills.
- Possess good oral and written communication skills and professional responsibilities.
- Have the awareness to professional and ethical issues related to industrial engineering.

- Pursue a successful career in the industrial engineering profession and life-long learning.

PROGRAM OUTCOMES

AURAK has adopted ABET's a-k outcomes for Industrial Engineering Program. The outcomes for program are shown in the table below:

ABET Outcomes	IE Program Outcomes
a	An ability to apply knowledge of mathematics, science, engineering, and engineering management.
b	An ability to design and conduct experiments, as well as to analyze and interpret data
c	An ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, health and safety, and manufacturability.
d	An ability to function on multi-disciplinary teams
e	An ability to identify, formulate, and solve engineering problems
f	An understanding of professional and ethical responsibility
g	An ability to communicate effectively
h	The broad education necessary to understand the impact of engineering solutions in a global, economic, and societal context
i	A recognition of the need for, and an ability to engage in, further studies and life-long learning
j	A knowledge of contemporary issues
k	An ability to use the techniques, skills, and modern engineering tools necessary

for engineering practice

As with any program, the Industrial Engineering Program is essentially the sum of its constituent courses and in order to graduate, a student must complete all courses to an appropriate level. Each course in the curriculum has specified objectives which link directly to the Program Objectives. In addition, each course has specified outcomes related to the course objectives, which in turn link to Program Outcomes.

Program Outcomes are not of equal importance and consequently equal weighting cannot be given to all outcomes. Some outcomes link to large numbers of individual course outcomes, but some link to only a few. In a similar manner, attention to achieving some outcomes only occurs in a few courses. In practice the more technically related Program Outcomes have contributions from many courses.

Recommended Four-Year Schedule

BS Degree in Industrial Engineering					
Four– Year Recommended Schedule					
Freshman Year, Semester 1 (Fall)			Freshman Year, Semester 2 (Spring)		
Course	Title	CR	Course	Title	CR
PHYS 110	University Physics I	3	MATH 114	Analytic Geometry and Calculus II	4
ENGR 107	Introduction to Engineering	2	ENGL 101	Composition	3
MATH 113	Calculus I	4	PHIL 100	Critical Thinking and Reasoning	3
UNIV 100	University Freshman	1	PHYS	Univeristy Physics II	3

	Transition		220		
CSCI 112	Introduction to Computer Programming	3	PHYS 111	University Physics II Lab	1
CSCI 113	Introduction to Computer Programming Lab	1	CHEM 211	General Chemistry	3
PHYS111	University Physics I Lab	1			
TOTAL		15	TOTAL		17
Sophomore Year, Semester 1 (Fall)			Sophomore Year, Semester 2 (Spring)		
Course	Title	CR	Course	Title	CR
CIEN 201	Computer Aided Drawings	3	CIEN 212	Mechanics of Materials	3
CIEN 211	Statics	3	MENG 221	Dynamics	3
ECON 103	Principles of Microeconomics	3	MATH 203	Matrix Algebra	3
MATH 213	Analytic Geometry and Calculus III	3	MATH 214	Elementary Differential Equations	3
COMM 100	Public Speaking	3	IENG 241	Engineering Statistics	3
			MEST 100	Introduction to Islam in World Culture	3
TOTAL		15	TOTAL		15
Junior Year, Semester 1 (Fall)			Junior Year, Semester 2 (Spring)		

Course	Title	CR	Course	Title	CR
STAT 346	Probability for Engineers	3	ENGL 302	Advanced Composition and Research Methodology	3
MENG 343	Thermo Fluids	3	IENG 322	Quality Control	3
MENG 344	Thermo Fluids Lab	1	IENG 323	Human Factor	3
IENG 231	Engineering Materials	3	ECEN 280	Introduction to Electrical Circuits	3
IENG 232	Materials Lab	1	ECEN 281	Electrical Circuits Lab	1
IENG 321	Engineering Economy	3	IENG 311	Manufacturing Processes I	3
IENG 341	Operations Research I	3			
TOTAL		17	TOTAL		16
Summer Semester					
Course	Title	CR	Course	Title	CR
ENGR 390	Internship	3			
Senior Year, Semester 1 (Fall)			Senior Year, Semester 2 (Spring)		
Course	Title	CR	Course	Title	CR
IENG 312	Manufacturing Processes II	3	IENG 422	Facility Planning	3
IENG 421	Production Planning and Control	3		General Education Elective	3

CIEN 301	Numerical Analysis	3		IE Technical Elective II	3
	IE Technical Elective I	2		IE Technical Elective III	3
IENG 491	Senior Design Project I	2	MENG 492	Senior Design Project II	4
IENG 490	Engineering Seminar	1			
TOTAL		15	TOTAL		16

PROGRAM REQUIREMENTS

- The Bachelor of Science degree in Industrial Engineering requires a minimum of (132) credit hours of course work.
- A detailed distribution of the minimum credit hours required is shown below:

Requirement Description	Credit Hours	
4. General Education	33	
▪ Core		24
▪ General Education Elective		9
5. Engineering Requirements	30	
▪ Compulsory		30
▪ Elective		--
6. Department Requirements	69	
▪ Compulsory		60
▪ Technical Elective		9
Total	132	

General Education Requirements

University General Education Requirements are (33) Credit Hours, as follows:

- a) *Core (24) Credit Hours, UNIV 100*, University Freshman Transition is mandatory for freshmen.

Course No.	Course Title	Detailed Distribution of Credit Hours		Credit Hours
		Lecture	Practical	
ENGL 101	Composition	3	-	3
COMM 100	Public Speaking	3	-	3
PHIL 100	Critical Thinking and Reasoning	3	-	3
CSCI 112	Introduction to Computer Programming	3	-	3
CSCI 113	Introduction to Computer Programming Lab.	-	3	1
MATH 113	Calculus I	4	-	4
MEST 100	Introduction to Islam in World Culture	3	-	3
UNIV 100	University Freshman Transition	1	-	1
ENGL 302	Advanced Composition and Research Methodology	3	-	3

- b) *University General Education Elective (9) Credit Hours*, students must take 3 credit hours from Social and Behavioral Sciences, 3 from the Natural Sciences, and 3 from Arts and Humanities.

4. The Fields of Social and Behavioral Sciences (3 Credit Hours)

Course No.	Course Title	Detailed Distribution of Credit Hours		Credit Hours
		Lecture	Practical	
ECON 103	Principles of Microeconomics	3	-	3

5. The Field of Natural Sciences (3 Credit Hours)

Course No.	Course Title	Detailed Distribution of Credit Hours		Credit Hours
		Lecture	Practical	
CHEM 211	General Chemistry	3	-	3

6. The field of Arts and Humanities (3 Credit Hours)

iii. Creative and Aesthetic Understanding

Course No.	Course Title	Detailed Distribution of Credit Hours		Credit Hours
		Lecture	Practical	
ARTT 100	Introduction to Visual Arts	3	-	3
ENGL 201	Literature across Cultures	3	-	3
ARAB 110	Contemporary Arabic Literature	3	-	3
COMM 102	Reading Image and Film	3	-	3
COMM 104	Photography and Communication	3	-	3

iv. Cross-cultural and Ethical Understanding

Course No.	Course Title	Detailed Distribution of Credit Hours		Credit Hours
		Lecture	Practical	
HIST 281	Contemporary Middle Eastern History	3	-	3
HIST 282	Western Civilization	3	-	3
PHIL 101	Ethics in Today's World	3	-	3
PHIL 102	Philosophy of World	3	-	3

Engineering Requirements

School of Engineering Requirements is (30) Credit Hours include the following courses:

Course No.	Course Title	Detailed Distribution of Credit Hours		Credit Hours	Prerequisite
		Lecture	Practical		
ENGR 107	Introduction to Engineering	2	-	2	Co-req. MATH 113
PHYS 110	University Physics I	3	-	3	Co-req. MATH 114
PHYS 111	University Physics I Lab	-	3	1	Co-req.: MATH 114 & PHYS 110
MATH 114	Analytic Geometry and Calculus II	4	-	4	MATH 113
MATH 203	Matrix Algebra	3	-	3	MATH 114
MATH 213	Calculus III	3	-	3	MATH 114
MATH 214	Elementary Differential Equations	3	-	3	MATH 213

Course No.	Course Title	Detailed Distribution of Credit Hours		Credit Hours	Prerequisite
		Lecture	Practical		
PHYS 220	University Physics II	3	-	3	PHYS 110 & Co-req. : PHYS 221 +
PHYS 221	University Physics II Lab	-	3	1	Co-req. : PHYS 220 + MATH 213
STAT 346	Probability for Engineers	3	-	3	MATH 114
ENGR 390	Internship	-	3	3	Completion of 90 credits and GPA of 2.0 and higher
IENG 490	Engineering Seminar	-	1	1	Completion of 90 credits

Department Requirements

Department Requirements are (69) Credit Hours as follow:

c) **Compulsory: (60) Credit Hours include the following courses:**

Course No.	Course Title	Detailed Distribution of Credit Hours		Credit Hours	Prerequisite
		Lecture	Practical		
CIEN 201	Computer Aided Drawings	1	6	3	-
CIEN 211	Statics	3	-	3	MATH 113 & PHYS 110
CIEN 212	Mechanics of Materials	3	-	3	CIEN 211

Course No.	Course Title	Detailed Distribution of Credit Hours		Credit Hours	Prerequisite
		Lecture	Practical		
CIEN 301	Numerical Analysis	3	-	3	MATH 214 & CSCI 112
ECEN 280	Electric Circuits Analysis	3	-	3	PHYS 220
ECEN 281	Electric Circuits Analysis Lab	-	3	1	Co-requisite ECEN 280
MENG 343	Thermo-Fluids	3	-	3	MATH 213 & CIEN 211
MENG 344	Thermo-Fluids Lab.	-	3	1	MENG 343
MENG 221	Dynamics	2	3	3	CIEN 211
IENG 231	Engineering Materials	3	-	3	CHEM 211
IENG 232	Materials Lab	-	3	1	CIEN 212 IENG 231 (co-req.)
IENG 241	Engineering Statistics	3	-	2	MATH 114
IENG 311	Manufacturing Processes I	3	-	3	IENG 231
IENG 312	Manufacturing Processes II	2	3	3	IENG 311
IENG 321	Engineering Economy	3	-	3	MATH 113
IENG 322	Quality Control	3	-	3	IENG 241
IENG 323	Human Factors	3	-	3	IENG 241

Course No.	Course Title	Detailed Distribution of Credit Hours		Credit Hours	Prerequisite
		Lecture	Practical		
IENG 341	Operation Research I	3	-	3	MATH 114
IENG 421	Production Planning and Control	3	-	3	IENG 241
IENG 422	Facility Planning	3	-	3	IENG 421
IENG 491	Senior Design Project I	0	2	2	Senior Standing
IENG 492	Senior Design Project II	0	4	4	IENG 491

d) Technical Electives: (9) Credit Hours selected from the following list of courses:

Course No.	Course Title	Detailed Distribution of Credit Hours		Credit Hours	Prerequisite
		Lecture	Practical		
IENG 411	CAD/ CAM	3	-	3	CIEN 212
IENG 412	Product Design	3		3	CIEN 212
IENG 413	Metrology	3	-	3	IENG 311
IENG 423	Total Quality Management	3	-	3	IENG 322
IENG 424	Time and Motion Study	3	-	3	IENG 323
IENG 425	Project Management	3	-	3	IENG 341
IENG 426	Safety Engineering	3	-	3	-
IENG 427	Simulation				IENG 341
IENG 428	Operations Research II	3	-	3	IENG 341

Course No.	Course Title	Detailed Distribution of Credit Hours		Credit Hours	Prerequisite
		Lecture	Practical		
IENG 441	Statistical Analysis	3	-	3	IENG 241
IENG 442	Industrial Engineering Design	3	-	3	IENG 312
IENG 451	Control Systems	3	-	3	MATH 214
IENG 452	Industrial Automation	3		3	IENG 451
IENG 493	Special Topics in Industrial Engineering	3	-	3	Department Consent

Graduate Studies

Admission to Graduate Studies

The American University of Ras Al Khaimah offers Masters Programs that respond to the needs of Ras Al Khaimah and the region. Our programs meet the highest international standards, and our students will be well prepared for the professional challenges they will face in their careers. The programs engage relevant contemporary issues as well as crucial intellectual contexts. Students can expect to engage with one another and their professors in stimulating discussions and challenging assignments. They will study with experienced faculty from many of the best university in North America, Europe, Asia, and the Middle East.

Degree Offerings

AURAK currently offers 3 programs of graduate studies leading to the master's degree. These are:

- Master of Education in Educational Leadership
- Master of Business Administration
- Executive Master of Business Administration
- Master of Science in Engineering Project Management

Application Process

Matriculating Students

Applications for all AURAK graduate programs are processed through the Admissions Office and the School of Graduate Studies and Research.

Prospective students may apply for full-time or part-time status. To maintain full-time status a graduate student must be enrolled for a minimum of 9 credit hours.

To apply to a graduate program at AURAK, an applicant must:

- complete the official graduate application form available from the Admissions Office or through the AURAK website
- pay the application fee
- submit official transcripts and TOEFL scores to the Admissions Office
- submit to the Admissions Office an equivalency of his/her degree from the UAE Ministry of Higher Education and Scientific Research (applies only to applicants with a bachelor's degree obtained outside the UAE)

Incomplete applications are not processed.

Upon receiving a complete application, the Admissions Office coordinates with the School of Graduate Studies and Research to determine if the applicant meets the general university requirements. Graduate Admission Committees for each degree program will review the applications of those applicants who meet the general requirements and make recommendations to the School of Graduate Studies and Research. The Graduate Studies Committee, chaired by the Dean of the School of Graduate Studies and Research, will make all final admissions decisions. Applicants must satisfy the general university requirements for graduate admissions as well as the criteria specific to each graduate program.

The Office of Admissions will notify the applicant of the university's final decision and provide all relevant information.

Application Deadlines

Applicants must submit completed application forms and all supporting documents to the Admissions Office by the following dates:

Fall Semester 2013

1 June

Spring Semester 2014

1 December

Applications received after these deadlines will be considered only if space is available.

International Applicants

International applicants (i.e., graduates of universities located outside the UAE) are required to submit completed application forms and all supporting documents to the Admissions Office according to the following deadlines:

Fall Semester 2013

1 June

Spring Semester 2014

1 December

Graduates of universities outside the UAE are required to present an equivalency of their degree from the UAE Ministry of Higher Education and Scientific Research located in Abu Dhabi, UAE. The procedure for obtaining an equivalency can be obtained from the Ministry by calling +971 2 695 1300 or +971 2 642 8000, or at www.mohe.gov.ae/equicert.

Admitted international students who need visas for the UAE should submit the visa application form, which is available from the Office of Admissions, at least one month prior to the first day of class.

Admission is valid only for the semester immediately following the admission decision. If an admitted student would like to have the admission date delayed, he or she must submit a formal request in writing to the Office of Admissions. After consultation with the School of Graduate Studies and Research and the dean of the school in which the admitted student's degree program is located, the student will be informed of the university's decision concerning delay of admission.

University Requirements for Admission to Graduate Programs

To be considered for admission, all applicants must meet the general university requirements for graduate admission. There are also program-specific requirements, information about which applicants will find in the section of the catalog in which the specific program is described.

For admission to a graduate degree program at AURAK, an applicant must:

- hold a four-year bachelor's degree from an independently accredited university recognized by AURAK (applicants with a bachelor's degree obtained outside the UAE must submit an equivalency of their degree from the UAE Ministry of Higher Education and Scientific Research)
- have attained a minimum Internet-Based TOEFL score of 80 (an IELTS score of 6 or above may be considered)

Program-Specific Requirements

- Master of Education requirements:
 - Recognized Bachelor's in a relevant or related field to Education
 - Minimum of two (2) years of experience of teaching or equivalent work experience

- Master of Business Administration requirements:
 - Recognized Bachelor's degree in a relevant or related field to Business Administration Economics, Finance, Marketing, Operations, etc.) or post-graduate diploma in Business Administration or 12 credits in Business Administration undergraduate courses as preparation for the MBA.
 - This MBA program will be geared toward applicants with 0 - 5 years of work experience

- Master of Engineering Project Management
 - Qualified applicants requiring prerequisite courses may be required to take such courses in addition to their regular graduate program. (Specifically, Students with no prior background in probability and statistics will be required to take IE 241 Engineering Statistics. Students with no prior background in engineering economy will be required to take IE 321 Engineering Economy)

Conditional Admission

AURAK offers conditional admission under specific circumstances and to those who meet the following requirements:

- hold a four-year bachelor's degree from an independently accredited university recognized by AURAK
- have attained a minimum Internet-Based TOEFL score of 71 (applicable to all programs except TESOL)

To receive full admission into a graduate program, a conditional admission student must before the beginning of the second semester achieve the required TOEFL score for full admission (Internet-Based TOEFL score of 80).

If the English proficiency requirement is not met by the beginning of the second semester of study the student will not be allowed to continue his or her studies at AURAK.

There may also be program-specific prerequisite courses for conditional admission students. Credits from these courses do not satisfy credit requirements for the degree and are not used to calculate the graduate cumulative GPA.

Non-Matriculating Admission

A non-matriculating graduate student is one who would like to take AURAK courses for academic credit but who does not seek a master's degree. Students are admitted to AURAK

with non-degree status if they meet the normal requirements for graduate admission. Complete applications should be submitted to the Office of Admissions.

A non-matriculating graduate student may take a maximum of nine credit hours at the graduate level.

Visiting Students Admission

A visiting student is one who is not formally admitted to the American University of Ras Al Khaimah, and who is not participating in a formal exchange agreement between AURAK and a partner university, but is typically enrolled in a degree program at another university. Such a student may take courses at AURAK for transfer to the student's home institution. It is wise for visiting students to check with their home institutions to confirm the transferability of AURAK credits

To be admitted as a visiting graduate student, a student must be enrolled in a graduate program at an accredited institution and be in good academic standing in his/her current institution.

Students must also have attained a minimum Internet-Based TOEFL score of 80

Applicants seeking visiting student status must submit to AURAK's Office of Admissions a complete application form and evidence of current enrollment in another university's graduate program, typically an official transcript. The application will be considered by the School of Graduate Studies and Research, and visiting students will be admitted as space allows. Registration in courses is subject to approval by the relevant graduate program director.

Change of Status

A student may apply at any time for a change of status from non-degree to degree status, or from visiting to degree status. To change status a student should submit a complete application through the Office of Admissions. All admissions and program requirements in place at the time of the change of status request must be met in order to be admitted and to graduate.

Courses already taken at may be accepted with the approval of the graduate program director. Grades earned in courses taken at AURAK that are accepted will count in the cumulative GPA (CGPA). University rules and regulations governing transfer courses and credits will apply.

Transfer Credit Policy

A maximum of nine graduate credits from a graduate school at an accredited university may be transferred to a program of study at AURAK, subject to program-specific rules and regulations. Credits for transfer must be approved by the Dean of the School of Graduate Studies and Research in consultation with the director of the appropriate graduate degree program. Such credits should have been earned not more than five years prior to the transfer and the student must have earned a grade of B or higher for any graduate-level course that is requested to be transferred. As a general practice, transfer credit will not be accepted for research or thesis/dissertation work.

Grades earned in transferred courses do not count in the student's cumulative GPA (CGPA), though transferred credits count toward the cumulative earned hours and may apply towards meeting graduation requirements.

Applicants must request that credit transfers be reviewed at the time of application.

Tuition and Fees

Graduate student tuition and additional fees are given in the tables below. Non-degree, transient and visiting students must pay the same tuition and fees as regular students.

Graduate Program	Amount (AED)	Due by:
Application	500	Application submission, non-refundable
Enrollment Deposit Fee	2000	Issuance of Admission Letter; Non-refundable
Tuition (AED per credit)		
Master of Education in Educational Leadership	1750	First Day of Classes
Master of Science in Engineering Project	2600	First Day of Classes
Master of Business Administration (Professional)	2400	First Day of Classes
Master of Business Administration (Executive)	3000	First Day of Classes
Miscellaneous Fees		
Technology / Activity Services	500	Per semester, non-refundable
Lab	500	Per semester, per lab and non-refundable
Security deposit	1,000	One time, refundable if no damage charges due
Graduation	500	One time, non-refundable

Visa	1,200	100% due at time of admission payment, non-refundable
Visa change of status	700	100% due at time of admission payment, or when applicable, non-refundable
TOEFL Test	500	Per test
Transportation	2,500	Per Semester for Ras Al Khaimah, optional
Transportation	4,000	Per Semester for Dubai, Sharjah, Ajman, Um Al Quwain,
Transportation	6,000	Per Semester for Abu Dhabi (only on weekend or per two-way trip AED 300), optional
Health Insurance	1,600	Optional

Payment Policies and Procedures

Tuition and all other fees must be paid by the first day of classes, with the exception of the application fee and enrollment deposit. Fees can be paid by cash, check, and wire transfer or credit card. Credit card payments require a surcharge of 3% of the total fee.

Students who do not pay their fees by the specified deadline will be put on financial hold. Students on financial hold are not allowed to register for classes or take final exams and will not be issued official transcripts until all fees are paid.

Students are responsible for full tuition payment for all courses in which they are registered unless their registration is canceled for nonpayment, canceled administratively due to academic suspension, dismissal or termination, or the course is dropped before the tuition liability begins

Refund Policies

Tuition fees are refundable subject to the following rate:

Withdraw By	% of Refund
The end of the 1st week of the semester	100%
The end of the 2nd week of the semester	75%
The end of the 3rd week of the semester	50%
The end of the 4th week of the semester	25%
Beyond the end of the 4th semester week	No Refund

The following fees are non-refundable

- Application fee
- Admission fee
- Visa fee
- Technology fee
- Lab fee
- Activity fee

Financial Responsibilities

Students are responsible for maintaining current addresses with AURAK and for activating and checking their personal AURAK e-mail accounts.

The registration process shall not be considered complete until all outstanding balances from the prior term are paid in full.

By registering for classes, students accept responsibility for charges for the entire semester.

Failure to receive a reminder bill confirming charges does not waive the requirement for payment when due.

Students are responsible for dropping unwanted courses by the drop dates and using the drop and withdrawal procedures published in each term's class schedule. Full or partial tuition liability may apply.

Non-returning students are responsible for submitting a written withdrawal to the Registrar's Office.

Penalties may apply.

For further assistance and information, please contact the School of Graduate Studies and Research.

Academic Integrity

AURAK Honor Code

“To promote a stronger sense of mutual responsibility, respect, trust and fairness among all members of the AURAK community and with the desire for greater academic and personal achievement, we, the student members of the university community, have set forth this honor code:

Student members of the American University of Ras Al Khaimah community pledge not to cheat, plagiarize, steal, or lie in matters related to academic work”.

Student Academic Integrity Code

The AURAK Student Academic Integrity Code describes standards for students' rights, academic conduct, and responsibilities as members of an academic community. It also illustrates procedures for handling allegations of academic dishonesty. Students are responsible for understanding the above honor code's provisions. Honor Code violations include Cheating, plagiarism, lying, and stealing of academic work and related materials. Academic integrity is paramount to the academic experience. American University of Ras Al Khaimah respects the integrity of individual work and gives uttermost regard to its importance. As an institution of higher learning, AURAK takes academic integrity seriously and will be treated as an educational as well as a judicial issue.

Students are expected to conform to the regulations of the university, and all examinations, tests, papers and other assignments will be completed according to the standards set forth by the university.

Students are responsible for becoming familiar with, and understanding the requirements, their rights and responsibilities as defined by the academic discipline. Students should abide by the code when participating in activities such as collaborative work, use of study aids and take-home examinations. Students are also responsible for learning the conventions of documentation and acknowledgment of sources required in academic work.

Faculty members are also responsible for maintaining the integrity of the learning and testing process. Faculty members may actively proctor exams, prohibit the use of mobile phones in class, or take any other actions they believe are warranted.

Plagiarism

This is a serious academic offense which constitutes the use of someone else's ideas, words, projects, artwork, phrasing, sentence structure or other work without properly acknowledging its source. Plagiarism is dishonest because it misrepresents the work of someone else as one's own. It is intellectual theft as it robs others of credit for their work. For a student found plagiarizing, the punishment can range from receiving a failing grade on that particular assignment without the right to redo the assignment to receiving a failing grade for the entire course.

Plagiarism takes many forms and includes:

- Using someone else's words without putting those words in quotation marks.
- Handing in as 'original' work prepared by someone else or preparing/completing someone else's work.
- Using unique, original ideas, phrases, sentences, paragraphs, etc. from a single source or a variety of sources such as a text, journal, web page, electronic source, design, artwork, etc. in one's work without citing all sources.
- Using the same work to satisfy the requirements of two or more courses (during the same or different terms).
- Having someone else rewrite a rough draft or rewriting a rough draft that is not your own work.

Instances of plagiarism are subject to evaluation according to the criterion of "reasonable doubt". Any violation of the university's academic rules, regulations or directives must be reported as soon as possible and may result in one or all of the following disciplinary measures:

- Verbal or written warning
- Repeating the course
- Repeating the term
- Dismissal from the university

Inappropriate Collaboration

Participation in close collaboration on academic work requires acknowledgment. Inappropriate collaboration means a student is working with someone else in organizing or developing a project which includes a research or design assignment, a written paper, an oral presentation, or a take-home examination, without acknowledging the partner's help.

Examination Dishonesty and Submitted Work Dishonesty

For all academic assignments, project work, and presentations, students need to ensure that due acknowledgement is given to the source of any information which they incorporate into their work. Students must ask their professors if they are unsure whether or not something constitutes academic misconduct in any form. The following are some examples of academic misconduct:

- Cheating or using unfair means in examinations as determined by the professor.
- Significant paraphrasing in written academic work.
- Unacknowledged use of information or ideas unless such ideas are commonplace.
- Citing sources which the student has not read or referred to.
- Breaching the word limit of assignments and/or intentionally mentioning the wrong word count.

Cheating may take many forms, for example:

- Copying from another student's paper during an exam, or allowing or encouraging another student to copy from your paper during an exam.
- Having someone else take your exam in your place, or taking an exam for someone else.
- Obtaining unauthorized access to exams and accepting exams obtained by unauthorized access.

Work Completed for One Course and Submitted to Another

No two courses will accept the same work to fulfill an assignment. Only collaborating faculty members may permit a significant research result to satisfy requirements in two courses. Prior arrangements and agreements must be established by both professors.

Copyright Violations

Students must observe all existing copyright laws and the laws of Ras Al Khaimah and the federal laws of the UAE. Such laws govern practices such as duplication of computer software,

the use of printed materials, duplication of images, photocopying copyrighted materials and reproducing audio/visual works.

Reporting Violations of Academic Integrity/Misconduct

All incidents of plagiarism will be reported by the faculty to the Dean of Graduate Studies and Research. The dean will report the incident to the Graduate Studies Committee at AURAK that is responsible for handling such issues, to examine the case on the basis of the University's plagiarism policy. If a case of plagiarism is identified, the student's faculty advisor will be notified, a copy of the decision will be inserted into the student's records, and the Registrar's Office will also maintain a copy of the report in the student's file. Once adopted, this process will ensure that plagiarism is tracked at two levels.

The Disciplinary Process

The Dean of Graduate Studies and Research will make the student under investigation, as well as all committee members, fully aware of the charges. During the hearing, both the student and the faculty member bringing the charges will be allowed to state their case before the members of the committee. If requested, the parties involved will be allowed an advisor during the proceedings from inside the university community or from the student's immediate family.

Once the committee has heard the evidence, it will reach a judgment and determine sanctions, if warranted, within two working days of the hearing. The judgment and sanctions will be formally submitted in writing to the dean who will then inform the student immediately and administer the sanctions.

The student is allowed to lodge a formal, written appeal with the Dean of Graduate Studies and Research within seven working days after the committee's findings. Appeals can be granted only on the basis of new evidence, procedural irregularity, or other grounds of a serious nature. The dean shall review the case and determine the final disposition of the case.

Student Records

Custody of Records

All transcripts and other documents students submitted from other institutions at time of admission or later are the property of AURAK, and, are part of the student record that is under the custody of the Office of the Registrar. The university is not required to provide copies of these documents. Transcripts submitted to AURAK for admission or credit transfer cannot be returned to the student or forwarded to other institutions.

Students Privacy Rights

Students have the right to inspect and review information contained in their educational records. The university is not required to provide copies of these documents. The university allows, nevertheless, copies to be made of specific documents included in a student's record. Copies of such documents will only be provided upon submission of a signed request from the student concerned.

Students have the right to request non-disclosure, within the extent of UAE federal and local laws, of personally identifiable information from education records. The university reserves the right to disclose students' records to the immediate guardian of the student and to the private or public authority sponsoring the student. For further information on students' records, please check with the Office of the Registrar.

Academic Transcripts

A permanent record reflecting the academic achievements of each student who registers at the university (i.e., transcript) is maintained by the Office of the Registrar. Official transcripts are available, on request.

Records on Academic Integrity Code Violations

The retention of records on academic integrity code violations is governed by the following:

All records pertaining to the infringement of the code are maintained by the student's school. If the student does not graduate from AURAK, the records are retained for five years after the student's last registration. If the student graduates from AURAK, these records are destroyed by the school upon the student's graduation.

Official Verifications and Certifications

All certificates related to a student's status at AURAK must be requested from the Office of the Registrar. A nominal fee applies.

Academic Policies

Each student is responsible for knowing AURAK's rules, regulations, requirements, and academic policies. Both the graduate information in the catalog and the institutional website are repositories of policy statements. Corrections, changes, or interpretations may be communicated by other means, including electronically. Any student in doubt about an academic matter should consult the Office of the Registrar or their assigned faculty advisor. Students are subject to the university's stated policies regarding patents and copyrights.

Academic Advising

AURAK is committed to helping its graduate students achieve success in their course of study. Ensuring that students receive appropriate academic advising is part of that commitment.

New students are first advised during a required Orientation Program in which they learn about university policies and procedures and receive a current catalog. At the initial meeting with their faculty advisor during orientation, each student is informed of program procedures, course of studies, and the importance of understanding the information in the graduate section of the catalog. Advisors also answer specific questions concerning the academic program.

Faculty advisors are required to post office hours for advising that coincide with students' availability. The faculty advisor is to maintain advising files for all advisees that contain a log of meetings with a brief description of major issues discussed or advice given. Any information contained in these files shall remain confidential.

Students on probation are required to meet with their Advisor on a regular basis to assess their progress and to report their use of AURAK's various resources for academic support. Students violating AURAK's attendance policy or doing poorly at mid-term are also required to meet with their Advisors.

If students have concerns, comments, or recommendations about their educational experiences at AURAK, they should contact the Office of the Dean of Graduate Studies and Research.

Attendance Policies

Because students benefit from the lectures and activities prepared by their instructors and discussions with their fellow students, class attendance is required. Students are expected to attend all the classes, or other scheduled sessions for the courses in which they are registered, including make-up classes.

Faculty members expect graduate students to be present at all classes, and may apply penalties in cases of unexcused absences.

It is the policy of AURAK to make every reasonable effort to allow members of the university community to observe their religious holidays without academic penalty. Absence from class or examinations for religious reasons does not, however, relieve students from responsibility for any part of the course work required during the period of absence.

Courses and Course Schedules

Each course offered by the university has a designated course prefix (or code) and number. The course prefix represents the discipline or field of study, the number indicates the level of the course content.

Courses are offered at the discretion of the Vice President of Academic Affairs/Provost and the respective deans and department chairs. Not every course is offered every semester.

Course Credit

Each course has a credit value. A credit represents the in-class instruction and out-of-class study per week during the sixteen week semester. Normally one credit represents 50 minutes of class instruction per week per semester.

Course Pre-requisites and Co-requisites

Course pre-requisites or co-requisites state requirements for student entry into courses, and reflect necessary preparation for attempting a course. It is the student's responsibility to be aware of these requirements as stated in the catalog, and to have taken pre-requisites recently enough to be of value. The instructor of the course may drop students who have enrolled in a course for which they have not met the pre-requisites.

Course Selection and Registration

By mid-semester, the class schedule for the following semester is available through the Office of the Registrar and on the website. Students may select courses in consultation with their faculty/academic advisor and they can then register online or submit a completed “Course Request Form” to the Office of the Registrar by the published deadlines.

Registration Criteria

The normal graduate student load is 9 credit hours. However,

- A student with a cumulative GPA of 3.5 or above is entitled to register for 12 credit hours the following semester.
- A student with a cumulative GPA of less than 3.0 is entitled to register for 6 credit hours the following semester.
- Only 3 credit hours are allowed during a summer term.

Summer Term

Summer Courses outside AURAK

Requirements

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

- The student must be in good academic standing at AURAK.
- The summer courses at the host university must not be taken as attempts to repeat AURAK courses in which F grades were previously earned.
- The host university must be recognized by the UAE Ministry of Higher Education and Scientific Research.
- The host university must provide learning experiences similar to those offered by AURAK.
- Contact/credit hours for the course at the host university must be equivalent to or greater than the contact/credit hours required for its equivalent course at AURAK.
- The language of instruction of the course(s) taken at the host university must be English (except for language courses conducted in other languages), unless otherwise approved by AURAK.
- The student must obtain approval from AURAK prior to registering the summer course(s)

- Some programs may reserve the right not to allow for any courses to be taken at another college/university.

Final Semester Grades

Final grades are made available on-line through the Office of the Registrar. Official transcripts and official semester grade reports are obtained through the Office of the Registrar.

Students may access and print an unofficial record of their semester grades and other academic information from the website by logging onto their account. Official transcripts are available on request.

Change of Grade

Once a final grade has been recorded, it can be changed only in cases of computational or recording error, or pursuant to a successful appeal of grade. Additional work of any type submitted to improve a grade after the final grade has been assigned is never accepted. All changes of final grades must be initiated, approved, and recorded no later than after two weeks of classes of the next regular semester (spring for fall grades and fall for spring grades).

Appeal of a Grade

Although faculty members are generally the best judge of student performance, sometimes a student believes a grade is unfair. If the student is not satisfied with a grade in a course, an appeal may be made to the Instructor. If the instructor is no longer associated with the University, the Vice President of Academic Affairs/Provost will appoint a faculty surrogate, who will assume the authority of the instructor. If a satisfactory resolution of the situation is not reached, the student may appeal to the Department Chair, then to the Dean of the School. If the student is still not satisfied, an appeal may be made to the Vice President of Academic Affairs/Provost who has the final authority to decide the merit of the appeal.

If the instructor is no longer associated with the University, the decision of the Vice President of Academic Affairs/Provost is not subject to further appeal.

In the case a graduate student, If the student believes that the grade appeal review by the school was affected by procedural errors or the lack of consideration of factors relevant to the case, then an appeal may be submitted to the Dean of Graduate Studies and Research. The student must clearly state the reasons for the appeal and submit all relevant materials to the Dean of Graduate Studies and Research.

Grading System

University course work is measured in terms of quantity and quality. A credit normally represents 50 minutes per week of lecture throughout a semester. The number of credits is a measure of quantity. The grade is a measure of quality. The university system for graduate grading is as follows:

Grade	GPA Points	Percentage Scores
A	4.0	90-100
B+	3.5	85-89
B	3.0	80-84
C+	2.5	75-79
C	2.0	70-74
F	0	0-69

Grade Point Average (GPA)

Grade or quality point values are assigned to letter grades as indicated in the grading system table. A quality or grade point score is computed by multiplying the value of a letter grade by the number of credits for the course. For example, a student receiving an A in a 3-credit course earns 12 quality points. The GPA is computed by dividing the quality points earned by the number of credits graded A through F (GPA hours).

Additional Grade Notations

Satisfactory/Unsatisfactory (S/U):

An S grade reflects passing work in a course; a U grade reflects a failure. S and U have no effect on grade point average.

Incomplete (I):

This grade is given to students who are passing a course but are unable to complete all the course work or the final exam for a verified reason beyond their control. The student must then complete all the requirements by the end of the next semester, not including any summer term, and the instructor must turn in the final grade by the end of the that semester's grading deadline. Unless an explicit written extension is filed, the grade of I is changed to an F if the course requirements have not been fulfilled. Students who have filed their intention to

graduate have only six weeks from the date of degree conferral to resolve any incomplete grades. An I grade is not calculated in a student's grade point average.

In Progress (IP):

The grade of IP indicates that the student is making progress in a course, writing a thesis or dissertation, or participating in an internship that extends beyond one semester or summer term. The grade of IP has no effect on the student's grade point average.

Withdrawal (W):

The grade of W on a course indicates that the student has dropped the course. While it has no effect on the GPA, dropped courses are part of attempted course credits that serve as the basis for the student's credit level. A W for all courses in a given semester and the transcript notation "withdrawn" indicates that the student withdrew from AURAK.

Repeating a Course

Normally, graduate courses cannot be repeated. With the recommendation of the dean of the student's school, and with the approval of the Dean of Graduate Studies and Research, a graduate student may be allowed to repeat any course in which a grade of C+ or C is received. The original grade and the new grade will appear on the transcript, but only the new grade will be calculated into the GPA.

No course may be taken more than twice.

Students may not repeat courses in an independent course format.

Note: Normally, graduate students who receive an F in a graduate course will not be allowed to continue in the program.

Academic Progress / GPA Retention Levels

Satisfactory Progress

To make satisfactory progress toward degree completion, student must attain a cumulative GPA of 3.0 ("B") or better.

Academic Probation

At the end of each semester, the Office of the Registrar will identify cases of non-compliance with the academic standards. If a graduate student's cumulative GPA is below 3.00, the student is placed on academic probation. During probation status, the following conditions apply:

- A graduate student on probation may not register for more than six credit hours in a semester. The dean of the student's school may restrict the summer course load of a graduate student on probation to three credit hours.
- A graduate student on probation may not register for thesis or final project credit hours until a cumulative GPA of 3.00 is achieved.

Probation will be removed at the end of any semester in which the student attains a CGPA of 3.00.

Academic Dismissal

A graduate student on probation who does not achieve good academic standing by the end of the regular semester following the term in which the cumulative GPA fell below 3.00 will be dismissed from the university.

Normally, graduate students who receive an F in a graduate course will not be allowed to continue in the university.

Students who have been dismissed as a result of failing to meet the requirements for good standing or who receive an F in a graduate course may petition for reinstatement. Students seeking to move to another graduate program must petition to the Dean of Graduate Studies and Research. Petitions must be submitted to the Office of the Registrar.

Petitions will be reviewed by the dean of the student's school. The dean will then provide a written recommendation and forward the petition to the Dean of Graduate Studies and Research.

Decisions regarding continuation in the program will be made by the Dean of Graduate Studies and Research in consultation with the appropriate dean or appointed designee.

Students who have been academically dismissed, readmitted and subsequently dismissed will normally not be readmitted.

University Withdrawal

Official withdrawal removes students from any academic program and cancels student status at AURAK. In order to return to the university, students need to apply for readmission through the Admissions Office. Students who wish to withdraw have to complete a 'withdrawal form' available at the Office of the Registrar and get clearance from all university departments. If the withdrawal process is completed satisfactorily and all financial obligations to the university are cleared, the effective date of withdrawal is noted on the student's permanent academic record. The effective date is the date used for calculating billing or refunds. No grades other than a W for the current semester are recorded.

Leave of Absence

Occasionally, students are forced to leave the university for a semester or two because of circumstances beyond their control. Others find they simply need a break from studying. In such circumstances, taking a leave of absence might be wise. Students who have an approved leave of absence for a semester or a year may register for the semester in which they plan to return without applying for readmission. Unless there are extenuating circumstances such as illness, a leave of absence is not normally given to a student who leaves the university during a term.

Fields of Study

Degree Offerings

American University of Ras Al Khaimah has four schools that offer both undergraduate and graduate degree programs. Graduate programs are listed below.

- Master of Education in Educational Leadership
- Master of Science in Engineering Project Management
- Master of Business Administration
- Executive Master of Business Administration

Transferring from Non-Degree or Visiting to Degree Status

Students may request a change of status from non-degree to degree status or from visiting to degree status by submitting a complete application through the Office of Admissions. All admissions requirements in place at the time of the change-of-status request must be met.

Courses taken while under the non-degree or the visiting status may apply towards the degree program given the approval of the dean of the student's school. Grades earned in courses that are accepted will count in the cumulative GPA (CGPA). The university rules and regulations governing transfer courses and credits will apply.

The graduation requirements will be determined by the catalog that is effective when the student joins a degree program.

Change of Program

Students seeking to change their graduate degree program must complete the Change of Major Form available from the Office of the Registrar. Requests for a change of program should be submitted to the dean of the school of the program of the student's choice by the last day of the 12th week of classes of the fall or spring semester. The dean will forward the approved forms to the Office of the Registrar. Forms received by the Office of the Registrar by the end of the Add and Drop period will be effective as of the following semester.

To be eligible for a change of program, the graduate student must meet the requirements for admission to the new program. Please refer to the relevant program's catalog section for information on admission requirements.

Concentrations

Some programs allow students the choice of an area of concentration. This option offers students more in-depth knowledge of a subject area. Please refer to the relevant program section for concentration requirements.

If a concentration is mandatory, a student must declare his or her choice when applying to the program.

Change of Concentration forms must be submitted to the office of the dean of the school in which the new program is located by the last day of the 12th week of classes of the fall or spring semester. The dean will forward the approved forms to the Office of the Registrar. Forms submitted by the deadline will be effective as of the following semester. The Change of Concentration Form is available from the Office of the Registrar.

Student Petitions and Appeals

Students' Responsibility

All official university communications are distributed through the AURAK-issued email address. These are considered official notifications. Students are responsible for checking their AURAK email accounts and for responding to or acting upon messages accordingly.

Students should keep their own records of all transactions with the university (e.g., registration schedules and forms, grade reports, payment records, etc.). It is also advisable to keep copies of all tests, digital files, papers and so forth submitted in fulfillment of course work. Students should keep copies of all course syllabi.

Appeal of Academic-Related Issues

If a student wishes to discuss an issue pertaining to a course, instructor or other academic-related issues, the student may direct his or her concern to the involved faculty member. If a satisfactory resolution of the situation is not reached, the student may appeal to the Department Chair, then to the Dean of the School, and finally to the Vice President for Academic Affairs, who has the final authority to decide the merit of the appeal.

If the instructor is no longer associated with the University, the Vice President for Academic Affairs will appoint a faculty surrogate, who will assume the authority of the instructor. If the matter is not resolved at this point, the Vice President for Academic Affairs will hear the case and make a decision that is not subject to further appeal. Academic appeals requests must be submitted no later than the end of the first day of orientation week of the following semester.

Appeal of a Grade

Although faculty members are generally the best judge of student performance, sometimes a student believes a grade is unfair. If the student is not satisfied with a grade in a course, an appeal may be made to the Instructor. If the instructor is no longer associated with the University, the Vice President of Academic Affairs/Provost will appoint a faculty surrogate, who will assume the authority of the instructor. If a satisfactory resolution of the situation is not reached, the student may appeal to the Department Chair, then to the Dean of the School. If the student is still not satisfied, an appeal may be made to the Vice President of Academic Affairs/Provost who has the final authority to decide the merit of the appeal.

If the instructor is no longer associated with the University, the decision of the Vice President of Academic Affairs/Provost is not subject to further appeal.

In the case a graduate student, If the student believes that the grade appeal review by the school was affected by procedural errors or the lack of consideration of factors relevant to the case, then an appeal may be submitted to the Dean of Graduate Studies and Research. The student must clearly state the reasons for the appeal and submit all relevant materials to the Dean of Graduate Studies and Research.

Graduation

Thesis and Final Project

Master's theses or final project reports document research conducted by AURAK graduate students under the guidance and supervision of AURAK faculty members. They are the culmination of the students' programs of study and are expected to reflect appropriate scholarly depth and rigor. Theses and final projects are defended publicly.

The Office of the Dean of Graduate Studies and Research in collaboration with the Graduate Studies Committee establishes and oversees the regulations and requirements for theses and final projects at AURAK. It is AURAK policy to maintain master's theses in the AURAK Archives and also to make theses available to other students and scholars. The AURAK Library is responsible for the archiving and binding of the master's thesis.

Registering for Thesis/Final Project Credit

Graduate students registering for thesis/final project credits must register through the Office of the Registrar.

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

Thesis/Final Project First Registration

In the first semester of thesis/final project work (usually no earlier than the second semester of enrollment in the graduate program), a student normally registers for three thesis/final project credit hours.

Before the end of the add/drop period, the dean of the student's school must provide the Office of the Registrar with a list of all students who will be registered for the thesis/final project, along with their thesis/final project titles and the names of their advisors.

The thesis proposal must be orally presented to the thesis committee before the end of the first semester that the student is registered for thesis/final project. The thesis proposal must be approved in writing by the thesis committee. Final project proposals are approved by the dean of the student's school

Students who do not demonstrate adequate progress by the end of the 10th week of the semester will be withdrawn from the thesis/final project course by their advisors. Tuition refunds will not be allowed if a student is withdrawn from the thesis/final project course due to insufficient progress.

Thesis/Final Project Continuous Enrollment

Students who do not complete their thesis/final project after one semester of thesis/final project work will need to maintain continuous enrollment in the thesis/final project.

Before the end of the Add and Drop period, the deans will email the Office of the Registrar a list of the names and ID numbers of those students maintaining continuous enrollment for registration in their respective thesis/final project courses, along with their thesis/final project titles, the names of their advisors and the appropriate credit and billing hours. **Graduation**

Requirements

The graduation requirements for any individual student are normally determined by the catalog that was effective when the student began matriculated studies in the degree program. Every individual student is personally responsible for meeting all graduation requirements as detailed in his or her catalog year.

If a required course within a graduate program changes its number of credits, then the number of credits required by the program for graduation may, at the discretion of the school, change by the same amount provided the minimum total number of credits for graduation is 30 and the CGPA is at least 3.00. In case of substantial changes in course offerings, equivalent graduation requirements are determined by the dean of the student's school.

Important: Course information, content and prerequisites may be subject to change as a result of the university's commitment to a process of continual improvement in academic programs. Students must comply with the most up-to-date course requirements.

Grading of Thesis/Final Project

A thesis/final project grade will be awarded after completion and public defense of the thesis/final project.

If the thesis/final project work continues into a second semester, an IP grade will be assigned and the student must register for the thesis/final project course.

The IP designation will be used until completion and successful defense of the thesis/final project.

Graduation Residence Requirements

In order to obtain a master's degree from AURAK, students must complete at least three semesters in residence at AURAK.

Time Limit on Duration of Study and Course Year Limit

All degree requirements must be completed within five years of admission to AURAK as a graduate student, inclusive of any leave.

In addition, credits more than eight years old (courses transferred to AURAK) at the time of graduation may not be counted toward the fulfillment of a graduate degree program.

Academic Standing Requirement

A student must be in good academic standing to be eligible for graduation.

Application for Graduation

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

Students who fail to complete all degree requirements by the end of the term for which they apply to graduate need not reapply for graduation. Their previous application will be automatically moved to the following semester.

Conferral of Degrees

Only students who have successfully completed degree requirements and all thesis requirements, including corrections and final submission of the completed thesis to the library, by the end of the term for which they have applied to graduate are certified for conferral of a degree. Degrees are conferred at the end of the semester in which requirements have been met. Conferral of the degree is noted on the academic transcript of the graduate with the date of graduation.

Names on Degrees

The names of AURAK students will be spelled in English exactly as they appear on their passports or identity cards when printed on degrees. If a name on a passport or an identity card does not appear in English, then the spelling of the name will be printed according to the personal preference of the student.

Attestation of Degrees and Transcripts

The Office of the Registrar provides information relevant to the attestation of degrees and transcripts with the UAE Ministry of Higher Education and Scientific Research.

Academic Programs

The Master's of Education in Educational Leadership

The Master's of Education in Educational Leadership is an innovative program designed to prepare and develop educational leaders and practitioners in directing school improvement, aimed at successful student learning and achievement. The program allows experienced educational professionals to earn the M.Ed. degree while continuing with their careers. A unique aspect of this program is the contextualization of education issues to the challenges that face educational administrators, teachers and students in RAK, the UAE and the greater region. The program has two tracks, one in teaching and learning with a focus on teachers who want to improve their practice and the other in school leadership with a focus on teachers and other school personnel who want to continue or advance into administration.

The program focuses on school personnel who are employed and who desire to enhance their skills in their current capacity and on assisting teachers, school personnel and administrators to move into new positions. Graduates of this program will be able to become teacher leaders, school administrators, district administrators, employees of the Ministry of Education or the Ministry of Higher Education and Scientific Research, educational researchers, and school consultants, among others.

The Master's of Education in Educational Leadership is a 33 hour graduate program, consisting of six (6) core courses (18 credits) and two tracks from which students are to pick one: the Teaching and Learning Track with five (5) courses (15 credits) or the Educational Leadership Track with five (5) courses (15 credits). The language of instruction is English. The program will be part-time, consisting of two (2) courses per semester, and course work in two summers. The program can be completed in two academic years and two summers. The courses are prescribed according to a pre-set schedule. Courses are offered in a face-to-face instructional environment, with designated out-of-classroom experiences/activities conducted in teams/groups or independently to complement course content and interactions. The program is interactive. The teaching and learning model for the program will include interactive lectures, discussion, seminars, case studies, simulations, and interaction with schools. A student-centered, active learning, and enquiry-based approach will undergird the teaching and learning model, and the entire program will incorporate reflective learning. All courses are based on 15 contact hours per credit, except the project course.

Program Mission

The Master's of Education in Educational Leadership program (M.Ed.) is designed to prepare teachers and administrators to become effective educational leaders and practitioners in schools who are able to bring about improvements in the teaching and learning process. The program is underpinned by the belief that educated, committed and well-prepared instructional staff and school administrative leaders will help meet the diverse challenges that school systems face in the 21st century.

Program Goals

The specific program goals of the Master's of Education in Educational Leadership are to

1. Provide a graduate degree in education to teachers and administrators in RAK, the UAE and the region that addresses the needs of the local education context while assuring the program to be both relevant and rigorous.
2. Apply the central concepts, tools of inquiry, structures and theories relating professional practice and persona to new understandings in developing educational excellence.
3. Create effective learning environments at the teacher and administration levels to promote excellence in teaching and learning.
4. Synthesize research, theory and practice to inform practice and implement educational change.
5. Foster a culture of educational discourse, research and practice, through exploring contemporary issues, aimed at improving the educational experience of all stakeholders.
6. Employ internationally recognized best practice in education in professional contexts, drawing on a wide range of paradigms and practices.
7. Promote lifelong or independent learning and discovery through research

Program Student Learning Outcomes

Graduates of the Master's of Education in Educational Leadership program are expected to

1. Acquire advanced knowledge through key concepts and integrate this knowledge into their professional practice.
2. Apply pedagogical and area knowledge into professional identities.
3. Act as agents for positive change in schools, keeping school improvement at the forefront of practice.
4. Become reflective practitioners and/or administrators who continually evaluate the effect of their practice and actions on teaching, learning and student life.
5. Apply current issues in education to their own professional situation.
6. Apply education theory, research and philosophy to their teaching and/or administrative practice.
7. Link theoretical knowledge and practice to increase school and student effectiveness.
8. Cultivate a commitment to continually reflect and develop professional practice, becoming career-long learners.
9. Continue to engage in professional development throughout their careers in education.

Degree Requirements

The Master's of Education in Educational Leadership is a 33 credit hour program with specified courses. The core courses are to be taken first, and they are pre-requisites for track courses. As student enrollment increases, additional courses will be added to each track so that students have more course options in each track. A 3 credit project course is required of all students in both the Teaching and Learning Track or the Educational Leadership Track. The course outline details the requirements of the project course for each track.

Assuming students do not interrupt their study, the degree is designed to be completed in two years. Students who withdraw or take a leave of absence from the program must meet requirements for returning that are outlined in the American University of Ras Al Khaimah *Catalog*. Students must meet specific standards to progress and do so within the maximum time allowed to complete the program; these standards and time allotment are detailed in the *Catalog*. If a degree is not completed within a period of six years all coursework in the degree may be re-evaluated for its current relevance.

The Master's of Education in Educational Leadership requires the completion of 33 credits in the following areas of study:

Requirement	No. of Credits
I. Program Core Course Requirements	18
II. Track Course Requirements (Educational Leadership Track or Teaching and Learning Track) Compulsory Courses	15
TOTAL	33

Program Core Course Requirements

Course Number	Title	No. of Credits
EDUL 510	Overview of Educational Inquiry	3
EDUL 515	Assessment of Student Learning	3
EDUL 520	Theories of Teaching and Learning	3
EDUL 525	Leadership for Educational Improvement	3
EDUL 615	School Governance, Politics, and Community Engagement	3
EDUL 625	Using Research for Educational Change	3
	TOTAL	18

Educational Leadership Track

Course Number	Title	No. of Credits
EDUL 610	Administration and Leadership in Schools	3
EDUL 620	Supervision and Evaluation of Instruction	3
EDUL 630	Implementation and Evaluation of Comprehensive School Reform	3
EDUL 665	Internship in Education (field –based)	3
EDUL 666	Internship in Education (class –based)	3
	TOTAL	15

Teaching and Learning Track

Course Number	Title	No. of Credits
EDUL 640	Curriculum Design and Implementation	3
EDUL 650	Effective Classroom Management	3
EDUL 655	Strategies for Effective Student Learning	3
EDUL 665	Internship in Education (field –based)	3
EDUL 666	Internship in Education (class –based)	3
	TOTAL	15

M.Ed. Two Year Plan

Course No.	Description	Lecture	Lab.	Credit Hours
Year 1				
First Semester (Fall)				
EDUL 520	Theories of Teaching and Learning	3	0	3
EDUL 525	Leadership for Educational Improvement	3	0	3
Total				6
Second Semester (Spring)				
EDUL 515	Assessment of Student Learning	3	0	3

EDUL 620	Supervision and Evaluation of Instruction (Leadership)	3	0	3
EDUL 655	Strategies for Effective Student Learning (Teaching and Learning)	3	0	3
Total				6
Third Semester (Summer)				
EDUL 610	Administration and Leadership in Schools (Leadership)	3	0	3
EDUL 640	Curriculum Design and Implementation (T & L)	3	0	3
				3

Course No.	Description	Lecture	Lab.	Credit Hours
Year 2				
Fourth Semester (Fall)				
EDUL 510	Overview of Educational Inquiry	3	0	3
EDUL 630	Implementation and Evaluation of Comprehensive School Reform (Leadership)	3	0	3
EDUL 650	Effective Classroom Management (T & L)	3	0	3
Total				6
Fifth Semester (Spring)				
EDUL 625	Using Research for Educational Change (Leadership)	3	0	3
EDUL 660	Research Findings and the Improvement of Curriculum and Instruction (T & L)	3	0	3

EDUL 665	Internship I	0	3	3
Total				6
Sixth Semester (Summer)				
EDUL 615	School governance, Politics and Community Engagement	3	0	3
EDUL 666	Internship 2	3	0	3
Total				6

MS IN ENGINEERING PROJECT MANAGEMENT

Program overview

The curriculum consists of 36 credit hours that provide the students with balanced coverage of project management; nine core courses, and three elective courses. The core courses include a field application project; a capstone course in which the graduate student evidences the ability to apply the program outcomes to an applied project that integrates all basic elements of project management; planning, organizing, securing, managing, leading, and controlling resources to result in achievable specific goals project. The student will work with an instructor advisor to achieve project approval.

Vision and Mission

Program Vision

With the commitment of the American University of Ras Al Khaimah to create a sustainable world and enhance the global quality of life, the vision of the program of Master of Science in Engineering Project Management is to be a first-ranked industrial engineering program nationally as well as regionally recognized for providing education, research, outreach, and engineering management consultancies.

Program Mission

The Master of Science in Engineering Project Management program at the American University of Ras Al Khaimah (AURAK) mission is to meet the needs of graduates in disciplines requiring an advanced understanding of the theoretical and practical principles of the project management function.

Engineering Project Management program require students to apply principles of engineering, and management science; to contribute to the growing body of knowledge in project management. The program will prepare project managers from diverse engineering disciplines to efficiently manage complex project in the UAE and the Gulf region countries. The program provides students with excellent technical and managerial skills; Change Control, Cost Management, Documentation Management, Information / Communication Management, Procurement, Project Context / Environment, Quality Management, Reporting, Resource Management, Risk Management, Time Management / Scheduling / Planning, Stakeholder / Relationship Management, Team Building / Development / Teamwork, Work Content and Scope Management, to better satisfy customer needs. After completing the requirements for the degree, students will be able to apply engineering and management knowledge to successfully lead and execute engineering projects. Students will be trained to design, model, manage and control complex projects and prepared to play leadership roles in industry and government.

Objectives and Learning Outcomes

PROGRAM GOALS AND OBJECTIVES

The Program Goals describe the expected accomplishments of graduates during their first few years after graduation. The program goals have been derived from and support the mission statement of the American University of Ras Al Khaimah. On successful completion of the Master of Science in Engineering Project Management a graduate should have:

1. Acquired skills in the initiation of projects, methods and techniques to control time cost and quality, resource management and long term stewardship of assets
2. Acquired a comprehensive understanding of the whole process of project procurement
3. Gained project team leadership skills
4. Understood the establishment of staff employment conditions

PROGRAM OUTCOMES

The outcomes of the Engineering Project Management Program are in line with those of the Project Management Institute (PMI), Global Accreditation Center (GAC) and with level 9 descriptors of the QF Emirates. Students who successfully complete this program will be able to:

- a) *Demonstrate the capability to successfully manage projects across a broad range of scale, complexity, scope, environments and inherent risks.*

- b) *Select and employ the full range of project management tools and techniques to best satisfy industry and agency stakeholder requirements.*
- c) *Establish and conduct research that significantly contributes to and expands the diverse project management body of knowledge and produces a field application project that demonstrates academic and project management success.*
- d) *Plan and execute project management activities across a broad range of industry sectors and organizations, and to employ the appropriate engineering project management tools and techniques across a wide spectrum of project types, technologies and requirements.*
- e) *Determine the needs and balance the interests of project stakeholders in any organizational context and within cross-cultural business environments.*
- f) *Apply the principles of scope management, risk management, cost planning and control, quality planning and management, resource allocation and management, time management and project scheduling, and change management in the project environment.*
- g) *Demonstrate a facility for comprehensive and objective analysis, structured decision-making, process optimization, and problem solving in the engineering project management environment.*
- h) *Employ the principles of cost-benefit analysis, strategic alignment, project portfolio management and project performance analysis and metrics to effectively achieve project outcomes.*
- i) *Associate the project planning and execution optimization and control concepts in the context of project engineering, scope, schedule, and budget.*
- j) *Act with integrity and fairness in an ethical manner, understanding and demonstrating adherence to the principles of the Project Management Code of Ethics and Professional Conduct.*
- k) *Demonstrate effective engineering project management communications and problem-solving techniques related to project team management, project status reporting, conflict management and project stakeholder management.*

Program Requirements

Degree Requirements

The requirements of the Master of Science in Engineering Project Management are thirty six (36) Credit hours as follow; twenty seven (27) credit hours are compulsory and nine (9) are electives.

e) **Compulsory: (27) Credit Hours include the following courses:**

Course No.	Course Title	Credit Hours	Prerequisite
MEPM 521	Project Cost Accounting and Finance	3	IE 321
MEPM 511	Project Management Fundamentals	3	PM532 co-
MEPM 512	Engineering Contracts and Procurement	3	PM511, PM521
MEPM 513	Project Implementation and Performance	3	IE 241, PM 511
MEPM 541	Organizational Behavior and Project Team Management	3	PM 511, PM 532
MEPM 543	Risk Management for Project Managers	3	IE 241, PM 511
MEPM 515	Project Scheduling	3	PM 511
MEPM 532	Engineering Management	3	-
MEPM 519	Field Application Project	3	Final Semester
Total		27	

f) **Electives: (9) Credit Hours selected from the following list of courses:**

Course No.	Course Title	Credit Hours	Prerequisite
MEPM 514	Global Projects Management	3	PM 511
MEPM 522	Financial Analysis and Decision Making	3	PM 521
MEPM 531	Operation Research	3	IE 241
MEPM 533	Information Systems for Project Management	3	-

Course No.	Course Title	Credit Hours	Prerequisite
MEPM 516	Project Quality Management	3	-
MEPM 542	Supply Chain Management for Project Managers	3	-

Full Time Time Study Plan

Course No.	Course Title	Lectures	Lab.	Credit Hours
1st Year				
First Semester (Fall)				
MEPM 511	Project Management Fundamentals	3	0	3
MEPM 532	Engineering Management	3	0	3
MEPM 521	Project Cost Accounting and Finance	3	0	3
Total				9
Second Semester (Spring)				
MEPM 512	Engineering Contracts and Procurement	3	0	3
MEPM 515	Project Scheduling	3	0	3
MEPM 543	Risk Management for Project Managers	3	0	3
Total				9
Course No.	Course Title	Lectures	Lab.	Credit Hours
2nd Year				

Course No.	Course Title	Lectures	Lab.	Credit Hours
First Semester (Fall)				
MEPM 513	Project Implementation and Performance	3	0	3
MEPM 541	Organizational Behavior and Project Team Management	3	0	3
	MEPM Elective	3	0	3
Total				9
Second Semester (Spring)				
	MEPM Elective (2)	3	0	3
	MEPM Elective (3)	3	0	3
MEPM 519	Field Application Project	3	0	3
Total				9

MBA/EMBA Program Entry Requirements

English Language Proficiency Requirements:

As the language of instruction on the MBA program is English, the following minimum English language requirements apply to both forms of the AURAK MBA –

Prospective candidates for the MBA program who are non-native speakers of English must have a minimum TOEFL score of 550 on the Paper-Based, 213 on the Computer-Based, or 79 on the Internet-Based test, or its equivalent in a standardized English language test, such as 5.5 or 6.0 IELTS, or another standardized, internationally recognized test.

The following exemptions from the previously stated English language requirements rule apply –

- *A native speaker of English who has completed their undergraduate education in an English-medium institution and in a country where English is the official language*

- *An applicant with an undergraduate qualification from an English-medium institution who can provide evidence of acquiring a minimum TOEFL score of 550 on the Paper-Based test, or its equivalent on another approved standardized test, at the time of admission to their first-degree program.*

Graduate MBA Program

To be eligible for admission onto the Graduate MBA Program, the applicant will need to have completed one of the following –

- A Bachelor of Science (BS) degree in Business Administration, with a minimum cumulative grade point average (GPA) of 3.00 on a 4.0 scale, or its established equivalent, in the applicant's undergraduate degree program.

OR

- A Bachelor's degree, or its equivalent, with a major or minor in Business Studies, Marketing, Finance, Accounting, Economics or Management/Business Information Systems, with a minimum cumulative GPA of 3.00 on a 4.0 scale, or its recognized equivalent, in the applicant's undergraduate degree program.

OR

- A Bachelor's degree, or its equivalent in a non-business field, with a minimum cumulative GPA of 3.00, followed by a Postgraduate Certificate or Diploma in a Business-related field. Where the candidate has not completed a Postgraduate Certificate or Diploma qualification, they may be required to successfully complete prior credit hours of study on stipulated Undergraduate-level Business Administration courses, prior to admission on the MBA Program (please refer to the last section on MBA/EMBA Preparatory courses).

Executive MBA Program

To qualify for admission on to the Executive MBA Program, the candidate should have:

- Met the requirements for admission onto the Graduate MBA program listed in the previous section.

And should additionally –

- Have been employed in a managerial capacity within an organization for a period of at least 5 years from their date of Bachelors/Higher Degree Graduation.

Note, that for the first condition, the following caveat may be applied at the discretion of the University –

- A Bachelor's degree, or its equivalent, in a non-business field may suffice for admission on to the Executive MBA without the added requirement of a follow-up business related qualification.

MBA Preparatory Course Requirements

Where the candidate for admission to the MBA or EMBA program holds a Bachelor's degree, or its equivalent in a non-business field, with a minimum cumulative GPA of 3.00, and has not completed a subsequent Business-related Postgraduate Certificate or Diploma qualification, they may be required to successfully complete a specified number of credit hours of study on stipulated Undergraduate-level Business Administration courses at the University, prior to admission on to the MBA Program.

The decision as to which preparatory courses to take will be made by the AURAK Course Team and Graduate School, working in conjunction with the Admissions Office, on a case-by-case basis, based on the candidate's background.

It is expected that the specified preparatory courses will be taken typically over a one-semester period, prior to starting the MBA program. The preparatory courses will normally be scheduled to run at times compatible with the main MBA course. So, for example, for evening attendance MBA course applicants, the preparatory courses will be run in the evening.

Where feasible, the preparatory courses may be run in condensed format (e.g. as condensed multi-weekend course modules) provided the learning outcomes remain unchanged and achievable.

AURAK will also accept candidates who have taken and passed the MBA preparatory courses at other UAE Ministry of Higher Education-accredited Universities, provided the courses taken have compatible syllabi and learning outcomes.

MBA COURSE STRUCTURE & COMPLETION REQUIREMENTS

MBA Graduation/Degree-Completion Requirements

To graduate with an MBA, the candidate must complete the following –

1. A minimum of **36** credits at graduate level, composed of courses listed in the MBA Program catalog, categorized as follows –

a) Generalist Strand:

	<u>Credits</u>
Core Courses	30
Generalist Elective Courses	6
	—
Total:	36
	—

b) Specialist Strand:

	<u>Credits</u>
Core Courses	27
Specialist Elective Courses	9
	—
Total:	36
	—

2. Attain an overall or cumulative GPA of 3.0 or higher.

For both the Graduate and Executive MBA programs, the candidate must complete Business or Management-related Research culminating in a Dissertation or Thesis, accompanied by a formal oral defense (viva-voce) of the work.

In addition, for the Graduate MBA, the candidate is required to complete a semester-long postgraduate internship within an organization, such that the candidate is exposed to a representative range of managerial work functions.

Generalist MBA Course Structure

Generalist Stream	MBA Courses		
Course Category	Subjects & Credits		
Required Courses (30 Credits)	MBMG 510	3	30
	MBFN 514	3	
	MBMG 515	3	
	MBMI 520	3	
	MBAC 512	3	
	MBMK 518	3	
	MBIB 524	3	
	MBGN 525	3	
	MBGN 535	3	
	MBGN 545	3	
Electives – Do any two other MBA courses (6 Credits)	MBOM 522	3	6
	Any other course on MBA Concentration list not already taken	3	
	Any other course on MBA Concentration list not already taken	3	
	Total Credits		36

Specialist MBA Course Structure

Specialist Stream		MBA Courses		
Course Category		Subjects & Credits		
Required Courses (27 Credits)		MBMG 510	3	27
		MBFN 514	3	
		MBMG 515	3	
		MBMI 520	3	
		MBAC 512	3	
		MBMK 518	3	
		MBIB 524	3	
		MBGN 525	3	
		MBGN 545	3	
Specialist Domain Courses (DCs) - select one concentration (9 Credits)	Finance Concentration*	MBFN 560	3	9
		MBFN 562	3	
		MBFN 564	3	
	International Business Concentration	MBMK 570	3	
		MBHR 572	3	
		MBFN 574	3	
	Information Systems Management Concentration	MBMI 580	3	
		MBMI 582	3	
		MBMI 584	3	
	Human Resources Management	MBHR 590	3	
		MBHR 592	3	

	Concentration*	MBHR 594	3	
		Total Credits		36

**Only two concentrations to run in first year of MBA course offering.*

MBA List of Courses

Legend (for Course Prefixes):

<u>Code</u>		<u>Course Type</u>
MBUS	:	Business
MBMG	:	Management
MBAC	:	Accounting
MBFN	:	Finance
MBMK	:	Marketing
MBOM	:	Operations/Production Management
MBGN	:	General MBA (non-subject-specific)
MBMI	:	Information Systems Management
MBHR	:	Human Resource Management

Note – For equivalent EMBA course replace initial two letters of prefix with letters “EM”.

Graduate & Executive MBA Courses

Core Courses

MBMG 510	:	Leadership and Managing People
MBFN 514	:	Managerial Finance
MBMG 515	:	Strategic Management
MBMI 520	:	Managing Information Systems Performance
MBAC 512	:	Managerial and Financial Accounting
MBMK 518	:	Marketing Management
MBIB 524	:	International Business
MBGN 525	:	Research Methods for Business
MBGN 535	:	MBA Internship**
MBGN 545	:	MBA Investigative Study - Project or Seminar-based (Capstone)

**Graduate MBA candidates have to complete a compulsory management internship as a part of the MBA. If they are currently employed, the present employer will serve as the internship provider, for the purposes of achieving these credits.

Concentration Courses (for Specialist Option)

Finance Concentration:

MBFN 560	:	International Corporate Finance
MBFN 562	:	Investment Planning & Management
MBFN 564	:	Financial Markets & Institutions

International Business Concentration:

- MBMK 570 : International Marketing
- MBHR 572 : International Human Resource Management
- MBFN 574 : International Finance

Information Systems Management Concentration:

- MBMI 580 : Managing Enterprise Information Systems
- MBMI 582 : Managing Corporate Networks and Databases
- MBMI 584 : Information Systems Project Management

Human Resources Management Concentration:

- MBHR 590 : Applied and Strategic Human Resource Management
- MBHR 592 : Managing Change and Innovation
- MBHR 594 : Employee Relations and Compensation Management

Generalist (Elective) Courses (Available for Generalist Option)

- MBOM 522 : Production, Operations and Supply Chain Management

AND/OR - Any other MBA concentration course not already taken (1)

AND/OR - Any other MBA concentration course not already taken (2)

Thesis/Final Project Time Extensions

Students who do not complete the thesis/final project after registering for full credits must register for the full thesis/final project credits the subsequent semester.

All students must be registered in the semester in which they defend their thesis.

Note: A student must complete all degree requirements within five years from the time of initial enrollment into the program.

Switching from Final Project to Thesis and Vice Versa

Graduate students who wish to switch from a thesis to a final project (or vice versa) must submit their requests within the published deadlines. The petition must be approved by the dean of the student's school. A student who switches from thesis to final project (or vice versa) will be given an IP for 'in progress' for the thesis/final project credit hours completed for the first option selected. The student must pay for any additional credit hours or courses required as a result of switching from thesis to final project (or vice versa).

Course Descriptions

Course Title	Previous Code	New Code
Accounting	-----	ACCT
Anthropology	-----	ANTH
Arabic	GEAR	ARAB
Art / Art History	GEAT	ARTT
Biology, Bioinformatics, Biotechnology	-----	BIOL
Business	BUSM / BULW	BUSN
Chemistry	SCCH	CHEM
Communication	GECM	COMM
Computer Engineering	-----	CENG
Computer Sciences	SCCS	CSCI
Economics	GEEC	ECON
Electronics & Communication	ECE	ECEN
Engineering	SCEN	ENGR
English Language Program	ELP	ELPR
Environmental Science	-----	ENVS
Finance	BUFN	FNAN
Geography	GEGO	GEOG
History	GEHS	HIST
Human Resource Management	-----	HRMT
Information Technology	SCIT	ITEC
Management	BUMG	MGMT
Management Information Systems	BUMI	MIST
Marketing	BUMK	MKTG
Mathematics	SCMT	MATH
Middle Eastern Studies	-----	MEST
Operations Management	-----	OPMT
Philosophy	-----	PHIL
Physics	SCPH	PHYS
Political Sciences	GEGT	POLS
Psychology	GEPS	PSYC
Sociology	GESO	SOCI
Statistics	SCST	STAT
Strategic Communications & Media	-----	SCMS
University Studies	GEUN	UNIV

Course Descriptions

Course titles are followed by numbers in parentheses (0:0:0), separated by colons. The first number refers to the number of credits; the second number, hours of lecture or seminar per week; and the third number, hours of laboratory or studio per week. For independent study, readings, topics, or similar courses, individual instructors set hours.

Courses numbered 499 and below are undergraduate courses. Course numbers in the 100 series are customarily taken by first year students, the 200 series by second year students, the 300 series by third year students, and the 400 series by fourth year students. The number designations of the course descriptions in this chapter have the following significance:

- Single number (BIOL 100) indicates the course is complete within a single semester, and the semester course may be taken separately with credit toward a degree.
- Double number separated by a comma indicates that the subject matter or content of the course extends through two semesters, but that either semester may be taken by itself.
- Unless otherwise specified, the first semester is not a pre-requisite to the second semester.

ACCT 203 (BUAC 203) Survey of Accounting

(3:3:0)

Pre-requisite: ECON 103

Introduction to financial and managerial accounting emphasizes the ethical use of accounting information. Topics include: transactions analysis, the accounting cycle, financial statement analysis, revenue recognition and cost measurement, present value, costs systems, analyzing cost-volume-profit relationships and operating budgets, and ethical decision-making.

ACCT 301 (BUAC 301) Financial Accounting & Managerial Decision-Making

(3.3.0)

Pre-requisites: ACCT 203 or equivalent and sophomore standing.

Introduction to financial statements and business decisions, investing and financing decisions and the balance sheet, operating decisions and the income statement, adjustment financial statements, communicating/interpreting financial information, reporting and interpreting liabilities, owner's equity, and bonds.

ACCT 311 (BUAC 311) Managerial and Cost Accounting (3:3:0)

Pre-requisites: ACCT 301

Develops skills in identifying business processes, transforming data into useful information, and making managerial decisions. Includes analyzing and managing costs, developing cost systems that facilitate decision-making, identifying opportunities for improving business process, creating financial and operating budgets for planning and control, and developing measures to assess performance.

ARAB 101 Beginner Level Arabic – I (3:3:0)

Pre-requisite:

Co-requisite:

This course has been designed for students who wish to begin their study of Arabic. It is only for students with no prior knowledge of the Arabic language.

ARAB 102 Beginner Level Arabic – I (3:3:0)

Pre-requisite: ARAB 101

Co-requisite:

Beginner Level Arabic II is a direct continuation of Beginner Level Arabic I. This course is designed to enhance the reading, speaking and listening skills. With this course, students can increase their vocabulary and improve their grammar in Arabic.

ARAB 110 Introduction to Arabic Literature (3:3:0)

Pre-requisite: ENGL 100/101

Co-requisite:

Arabic literature has developed many traditions though originating from a common source. The course is an introduction to representative texts from contemporary Arab writers, and their connections with the traditions of the past. The method is comparative, with a study of literary, political social and religious aspects, as well as the application of a theoretical framework of analysis.

ARAB 201 Intermediate Arabic – I (3:3:0)

Pre-requisite: ARAB 102; passing level score on Arabic placement test.

Co-requisite:

The course provides an introduction to academic sources of the language. This program is specially designed to teach Arabic to university level Arabic students.

ARAB 202 Intermediate Arabic – II (3:3:0)

Pre-requisite: ARAB 201

Co-requisite:

Students engage in simple Arabic conversation on a range of everyday subjects so students properly introduce themselves, and engage in simple conversation on a range of everyday topics. Building upon the basic foundation provided in Level 1, topics include the definite article. Proper pronunciation and listening skills continue to be emphasized. In addition,

BBSN 301 Business Communications**(3:3:0)****Pre-requisite: COMM 100**

This is an introductory course in cost/managerial accounting. It discusses a range of fundamental managerial accounting topics such as cost measurement and terminology, costs systems; analyzing cost-volume-profit relationships, job order and process costing, operating budgets, standard costing, introduction to capital budgeting and ethical managerial accounting-related decision-making.

This course Introduces fundamentals of business models, and writing as a learning tool. The interrelationships between accounting, finance, information systems, marketing, and operations are the subject of several “learning by writing” deliverables. The course teaches business students effective methods for communicating business-related issues to clients, management and fellow employees.

BBSN 302 Commercial Law**(3:3:0)****Pre-requisite: Sophomore Status**

The course provides exposure to general legal environment of business, emphasizing government regulatory process, business ethics, and social responsibility. Regulatory topics include torts and crimes, product liability, intellectual property and cyber-law, contracts, and issues related to employment and competition. Learning and course delivery is through lectures, discussions and cases.

BBSN 305 Research Methodology**(3:3:0)****Pre-requisites: BOPM 210 & Sophomore Standing**

This course provides essential underpinning support for research elements of higher-level business courses. It allows candidates to make informed decisions and appropriate choices pertaining to research methodology. A range of business research tools, approaches and analytical techniques are discussed, and guidance is given on optimal structuring of research work in the business field, and the generation of research proposals.

BBSN 306 International Business**(3:3:0)****Pre-requisites: ECON 104**

This course offers a multi-disciplinary approach to global economic issues from the viewpoint of managing international business. It introduces salient aspects of managing in a globalised environment, including consideration of theoretical concepts. It provides a practical treatment of political-economic aspects of international trade. The course discusses foreign direct investment, global monetary systems, and strategy formulation for international business.

BBSN 311 Business Environment in the UAE**(3:3:0)****Pre-requisite: ECON 103**

This course focuses on the business environment of the United Arab Emirates. The upsurge in business activity in the UAE has generated the need for greater knowledge of the business attributes of this region. This encompasses legal, trade, financial and managerial characteristics of the business environment. The course will provide a comparative treatment of the different Emirates of the UAE, in terms of setting up and operating businesses. The course will offer the student specialized treatment of Free Trade Zones, intra-company cultural diversity, the impact of Emiratisation initiatives and other unique features of the UAE business environment.

BBSN 492: Internship**(3:0:0)****Pre-requisite: Prior completion of 60 credits**

The Internship is designed for candidates on the undergraduate business and accounting programs. It lasts for six weeks (180 hours), and provides exposure to business practices and issues, in appropriate settings. Candidates will typically opt to carry out internship with local UAE-based companies. The internship program is viewed as a "stepping stone" for a career in the field of business. Students will receive orientation, induction and relevant on-the-job training during their internship. The initial induction and orientation takes place at the beginning of the internship, and will serve to introduce the student to real-world business practices, culture and management, and provide them with a knowledge base to draw upon throughout the remainder of the internship

BBSN 498 Strategic Management**(3:3:0)****Pre-requisite: Senior Standing**

This course is designed to help students apply functional knowledge gained from earlier courses and integrate these with more practical information and real-life experiences. The course takes the general management point of view, emphasizing the creation, implementation and evaluation of strategy in organizations. Students adopt the viewpoint of upper management, strategize and make essential "Big Picture" decisions, using standard strategic analysis frameworks. Students develop expertise in the analysis of complex business situations and in clearly presenting strategic findings both orally and in writing. They will also further develop their ability to work effectively in teams.

BFIN 300 Principles of Finance (3:3:0)

Pre-requisite: None

This course teaches students the fundamental principles of finance, in which knowledge is gained and applied, to achieve financial objectives in business or investment operations. Students will be introduced to different types of financial markets and financial intermediaries; how changes in the cost of money affect the value of stocks and bonds; how knowledge of leverage is used in the financial forecasting and control process and why financial planning is critical to firm survival. They will also learn what risks and returns are involved when investing, and how to compute the risks and returns of an investment; together with the relevant cash flows that must be forecasted to make informed capital budgeting decisions.

BIOL 100 Humankind in a Biological World (3:3:0)

Pre-requisite:

Co-requisite:

Human beings interact with, affect and are affected by other living organisms. This course explores the ways in which human activities have had an impact on other life on earth, mankind and disease and the development of scientific thought.

BIOL 112 University Biology I (3:3:0)

Co-requisite: BIOL 113

This course is intended for science majors and pre-professionals in life sciences and provides an introduction to cell chemistry and plant biology.

BIOL 113 University Biology I Lab (1:0:2)

Co-requisite: BIOL 112

This course encompasses the basic techniques in Biology for science majors and pre-professionals in life sciences that accompany BIOL 112.

BIOL 114 University Biology II (3:3:0)

Pre-requisite: BIOL 112; Co-requisite: BIOL 115

This course is intended for science majors and pre-professionals in life sciences and provides an introduction to Genetics, Microbiology and animal form and function.

BIOL 115 University Biology II Lab (1:0:2)

Co-requisite: BIOL 114

This course encompasses the basic techniques in Biology for science majors and pre-professionals in life sciences that accompany BIOL 114.

BIOL 230 General Microbiology (3:3:0)

Pre-requisite: BIOL 114 (BIOL 108); Co-requisite: BIOL 231

This course covers the classification of microorganisms, microbial metabolism, microbial growth, microbial genetics, structure of eubacteria, archaea, bacteria, fungi, and viruses, specific defenses and diseases.

BIOL 331 (BIOL 433) Techniques in Applied and Industrial Microbiology Lab (1:0:2)
Co-requisite: BIOL 330 (BIOL 432)

This course includes laboratory exercises that illustrate applied methodologies in microbiology, including isolation of commercially useful strains and discusses the production and purification of industrial products.

BIOL 352 General Biochemistry (3:3:0)
Pre-requisite: BIOL 114 and CHEM 217(BIOL 320); Co-requisite: BIOL 353

This course encompasses the structure and function of proteins, carbohydrates and lipids, enzymology, metabolism and its control.

BIOL 353 Biomolecules Analysis Lab (1:0:2)
Co-requisite: BIOL 352

This course provides students with hands-on experience of some important biochemistry techniques. One part of this course includes wet lab exercises in which students practice separation, identification, and quantitation techniques that exploit properties of biological molecules. The second part of this course includes dry/computer lab exercises in which students use RASMOL to study the 3D structures of biological macromolecules from PDB (Protein Data Bank) files.

BIOL 354 Biophysics (3:3:0)
Pre-requisite: PHYS 110 and BIOL 114 (PHYS 110, CHEM 213, MATH 113, BIOL 230);
Co-requisite: BIOL 355

This course introduces students to the use of physical methods in the study of biological systems. The pertinence of the material to life processes is stressed by the use of realistic biological examples to illustrate each physical principle.

BIOL 355 Biophysics Lab (1:0:2)
Co-requisite: BIOL 354

This course introduces students to common laboratory techniques used in Biophysics.

BIOL 356 Virology (3:3:0)
Pre-requisite: BIOL 230 (BIOL 320)

This course provides an overview of the characteristics of major families of viruses, the intrinsic properties of viruses that cause disease, their development and life cycles, interaction with host cells, genetics, tumor-inducing properties and epidemiology.

BIOL 360 Developmental Biology (3:3:0)
Pre-requisite: BIOL 270 (BIOL 320)

This course exposes students to the principles of embryonic development and differentiation in animal species at the cellular, molecular, tissue, and whole organism levels.

BIOL 361 Immunology (3:3:0)

Pre-requisite: BIOL 320

See BIOL 436

BIOL 370 Foundations in Mathematical Biology (3:3:0)

Pre-requisite: BIOL 114 and STAT 110 (CHEM 213, MATH 114, BIOL 110)

This course is designed to introduce the mathematically apt to some of the basic models and methods of mathematical biology. Knowledge of first-year biology is necessary, a strong calculus and probability background is a must, and some knowledge of differential equations is desirable. Topics covered in this course include models of population dynamics, reaction kinetics, diseases, and cells that can be written as ordinary differential equations, discrete-time dynamical systems, and stochastic models of diffusion and genetics.

BIOL 380 Biotechnology and Genetic Engineering (3:3:0)

Pre-requisite: BIOL 270 (CHEM 213, MATH 113, BIOL 320); Co-requisite: BIOL 381

This course emphasizes the theory and applications (including significance and societal applications) of Biotechnology to real-world problems.

BIOL 381 Biotechnology Lab Methods and Techniques (1:0:2)

Co-requisite: BIOL 380

This course focuses on the fundamental practical techniques used in Biotechnology research and industry.

BIOL 420 Molecular Biology and Genetics (3:3:0)

Pre-requisite: BIOL 270 (BIOL 320); Co-requisite: BIOL 421

This course focuses on the basic concepts of structure and function of genetic material at the molecular level. Topics such as DNA replication, chromosome structure, gene expression and mutation, DNA repair and transposable elements are covered in molecular detail.

BIOL 421 Molecular Biology & Recombinant DNA Lab (1:0:2)

Co-requisite: BIOL 420

This course covers modern molecular biology techniques such as restriction mapping, isolation of DNA and RNA from eukaryotic cells, Southern hybridization, reverse transcription, and polymerase chain reaction.

BIOL 423 Advanced Molecular Biology and Forensic Sciences (3:3:0)

Pre-requisite: BIOL 270

This course focuses on the molecular genetic principles that underlie forensics.

BIOL 430 Cell Culture Theory and Technology (3:3:0)

Pre-requisite: BIOL 270 (BIOL 320); Co-requisite: BIOL 431

This course aims at providing a strong foundation in the structure, growth and function of plant and animal cells as well as the technology involved in cell and tissue culture, cell preservation, protoplast culture and fusion, cell cloning and fusion, monoclonal antibody production, breeding and genetic engineering. The applications of stem cells to therapy will also be emphasized in this course.

BIOL 431 Cell Culture Techniques Lab (1:0:2)

Co-requisite: BIOL 430

This course deals with the principles and practical applications of animal tissue culture. The emphasis in this course will be on the conditions for growth and maintenance of animal cells as well as commonly used techniques for manipulation of animal cell culture systems.

BIOL 432 Applied and Industrial Microbiology (3:3:0)

Pre-requisite: BIOL 230, CHEM 213; Co-requisite: BIOL 433

See BIOL 330

BIOL 433 Techniques in Applied and Industrial Microbiology (1:0:2)

Co-requisite: BIOL 432

See BIOL 331

BIOL 434 Cell communication and Signal Transduction (3:3:0)

Pre-requisite: BIOL 270

This course focuses on how cells communicate with each other and their microenvironment, the signaling events that result from these interactions and their translation into cellular responses.

BIOL 435 Stem Cell Biology and Regenerative Medicine (3:3:0)

Pre-requisite: BIOL 270

This course provides a broad overview of the biological principles influencing stem cell populations and emphasizes the functional role of stem cells in regulating normal development and contributing to disease as well as examines the therapeutic potential of stem cells in regenerative medicine.

BIOL 436 (BIOL 361) Immunology (3:3:0)

Pre-requisite: BIOL 270 (BIOL 320)

This course focuses on the structure and function of immunoglobulins, the role of cell mediated immunity, the protective role of the immune system, and disease and injury related to malfunctions of the immune system.

BIOL 440 Medical Microbiology (3:3:0)

Pre-requisite: BIOL 230; Co-requisite: BIOL 441

This course focuses on mechanisms of microbial pathogenesis, the host response, and the scientific approaches used to investigate these processes.

BIOL 441 Medical Microbiology Lab (1:0:2)

Co-requisite: BIOL 440

This course focuses on the tools and techniques of Medical Microbiology used in clinical laboratory diagnosis of microorganisms.

BIOL 442 Molecular Diagnostics (3:3:0)

Pre-requisite: BIOL 270; Co-requisite: BIOL 443

This course provides a comprehensive overview of the fundamental principles underlying molecular diagnostics and the application of molecular techniques to disease diagnosis.

BIOL 443 Molecular Diagnostics Lab (1:0:2)

Co-requisite: BIOL 442

This course provides hands-on experience in the basic techniques used in Molecular Diagnostics.

BIOL 450 Bioethics (2:2:0)

Pre-requisite: BIOL 270 (BIOL 320)

This course examines selected ethical issues arising from the application of modern biotechnology to microorganisms, plants, animals, and humans. It also discusses the ethics and misconduct in research, authorship and peer-review.

BIOL 472 Computer skills for Biotechnology (3:3:0)

Pre-requisite: BIOL 320

This course involves the application of computational and analytical methods to problems in biotechnology including the use and theoretical basis of software tools employed in biotechnology and bioinformatics research.

BIOL 473 Bioinformatics and Computational Biology (3:3:0)

Pre-requisite: BIOL 270 (BIOL 320)

This course is designed to provide instruction in the scientific concepts and computer skills currently used in searching biological databases, comparing sequences, analyzing protein and DNA characteristics and answering biological and biomedical questions using databases.

BIOL 480 Food Biotechnology (3:3:0)

Pre-requisite: BIOL 270 (BIOL 320)

This course introduces students to the impact of Biotechnology on food production, the genetic tools applied in Food Biotechnology, the improvement of microbes used in food production by modern biotechnological approaches and also discusses related ethical, legal and regulatory issues.

BIOL 481 Bioprocessing Technology in Pharmaceuticals Industry (3:3:0)

Pre-requisite: BIOL 352 and BIOL 380 (BIOL 352 and BIOL 420)

This course provides an overview of the main elements, theory and application of biotechnology procedures, bioprocess design settings and operations related to the development of biopharmaceutical products including good manufacturing practices and bioprocessing equipment standards. The course lays emphasis on fermentation, harvest, primary and final purification, media and buffer preparation, equipment cleaning and sterilization, and critical process utilities.

BIOL 491 Senior Seminar (1:1:0)

Pre-requisite: Senior year (90 credits and Departmental approval)

This is a Capstone course and involves student participation in seminars on various Biotechnology topics.

BIOL 492 Special Topics in Biotechnology (2:2:0)

Pre-requisite: Senior year (90 credits and Departmental approval)

This course focuses on the major advances in genomics, proteomics, and metabolomics and their significance in biotechnological applications.

BIOL 493 Research Methodology in the Biological Sciences (2:2:0)

Pre-requisite: Senior year

This course is intended for senior year Biotechnology students to develop essential skills in research methodology and introduces the student to a variety of methods in conducting scientific research and scientific communication. Under the guidance of Biotechnology faculty mentors, students will design a research project and write a literature review and research proposal.

BIOL 494 Senior Project (4:0:4)

Pre-requisite: Senior year and BIOL 493

Under the guidance of Biotechnology faculty mentors, students will conduct a research project and present their research findings in both oral and written formats.

BMGM 301 Principles of Management & Organizational Behavior (3:3:0)

Pre-requisite: Sophomore Standing

This course presents essential management and organizational behavior theories and concepts. It examines the nature of managerial work under a range of business models and under rapidly changing business conditions. Managerial functions and activities such as planning, strategizing, organizing, controlling, and directing are examined in depth, and in the context of current organizational practice and scenarios.

BMIS 301 Introduction to Business Information Systems (3:3:0)

Pre-requisite: Sophomore Standing

This course introduces fundamentals of computer hardware, software, networking, the Internet and its technological components. The discussions are centered on the role of technology in contemporary business, and include basic relational storage concepts, with hands-on experience in building business database applications and web sites. The course also features a mini-project.

BMKT 301 Principles of Marketing (3:3:0)

Pre-requisite: ECON 103 & Sophomore Standing

This course examines marketing principles, concepts, strategies, tactics, and analytical tools used by profit and non-profit organizations to market ideas, products, or services to selected target groups. The course emphasizes how to promote, distribute, and price a firm's offering in dynamic economic, social, political, and international environments.

BOPM 210 Statistical Analysis for Management (3:3:0)

Pre-requisites: C or higher in MATH 108 or MATH 113

The prime objective of this course is to introduce students to statistical techniques necessary for a comprehensive description and analysis of business management and economics data with a view to making rational business decisions.

BOPM 301 Operations Management (3:3:0)

Pre-requisite: BOPM 210

The course examines principal aspects of organizational operations in various settings. It emphasizes planning and decision-making activities associated with managing operations, with particular focus on production and service operations. It uses analytical models to describe key operations planning and control activities.

BUSN 301 (BUSM 301) Business Communication (3:3:0)

Pre-requisites: COMM 100/COMM101

Introduces fundamentals of business writing models and writing as a learning tool. Writing about interrelationships among accounting, finance, information systems, marketing, and operations

BUSN 302 (BULW 302) Legal Environment of Business (3:3:0)

Emphasizes government regulatory process, business ethics, and social responsibility. Regulatory topics include torts and crimes, product liability, intellectual property and cyber law, contracts, and issues related to employment and competition.

BUSN 303 Introduction to Entrepreneurship (3:3:0)

Pre-requisite: ECON 103

Focuses on the vital role played by entrepreneurs and entrepreneurship in the 21st century global economy, examines the process of successfully launching and growing an entrepreneurial venture by applying the entrepreneurial process. Integrates different disciplines, mixes theory with practice, and applies principles, concepts, and frameworks to real world situations.

BUSN 305 (BUSM 305) International Business (3:3:0)

Pre-requisites: ECON 103 and ECON 104

Multidisciplinary approach to the global business environment from the viewpoint of managing international business. Introduces unique aspects of managing in the global economy, including theory of political economy of international trade and foreign direct investment, global monetary system, and strategy of international business.

BUSN 498 (BUSM 498) Capstone Course: Advanced Business Models (3:3:0)

Pre-requisites: Senior standing

Integrated exploration of business models and industry dynamics based on case analyses to assess competition, organizational strategy, and firm performance. Examination of strategic change in organizations from multiple perspectives, integrating knowledge from core course work into several papers and major presentations.

CENG 315 Microprocessors (3:3:0)

Pre-requisites: CSCI 112 and ECEN 331

Microprocessors as components in a computer system; programmer's view of a microprocessor's architecture; microprocessor instruction set; assembly language programming; interrupts; input and output; interfacing a microprocessor to memory and I/O devices from the programmer's view

CENG 431 Embedded Systems Design (3:3:0)

Pre-requisite: CENG 315 and ECEN 333;

Co-requisite 432

Introduction to the design of embedded and ubiquitous computing systems including their hardware and software architectures, design methodologies and tools, and communication protocols. Comprehensive project to design , implement and evaluate a prototype embedded system.

CENG 432 Embedded Systems Design Lab (1:0:2)

Co-requisite: CENG 431

Laboratory to accompany CENG 431

CENG 435 Advanced Computer Architecture (3:3:0)

Pre-requisites: CENG 315 and 335

Principles of pipelining, parallelism, and memory management. Topics include cache and virtual memory, pipelining techniques, and vector processors, multiprocessors, and distributed computing systems.

CENG 437 Introduction to Robotics (3:3:0)

Pre-requisite: CENG 431

Fundamental Concepts I Robotics, including coordinate transformations, sensors, path planning, kinematics, feedback and feed forward control, stressing the importance of integrating sensors, effectors and control. Exemplified with LEGO Robot Kits.

CENG 461 Network Security (3:3:0)

Pre-requisites: ECEN 462 and MATH 225

Examines information security services and mechanisms in network context. Topics include symmetric and asymmetric cryptography; message authentication codes, hash functions and digital signatures, digital certificates and public key infrastructure; access control including hardware and biometrics; intrusion detection and securing network-enabled applications including e-mail and web browsing.

CENG 466 Wireless Communications and Networking (3:3:0)

Pre-requisite: ECEN 462

Fundamental principles underlying wireless communications and networking. Topics include wireless transmission principles, protocols, satellite communications, cellular wireless networks, cordless systems, the wireless local loop, mobile IP, and wireless networking technologies, including IEEE 802.11 and Bluetooth standards.

CENG 499 Special Topics in CENG (3:3:0)

Pre-requisite: Instructor Permission

Advanced and emerging topics in computer engineering. Topics are announced through class schedules.

CHEM 100,101 Chemistry in Everyday Life (4:3:2)

Pre-requisite:

Co-requisite: CHEM 101

The main focus of this course is on how chemistry involves in our everyday life. It covers the basic chemical principles that impact us with their immediate applications. It addresses the effect of chemicals in everyday life and introduces the techniques that make our lives easier.

CHEM 111 Principles of General Chemistry (3:3:0)

Co-requisite: CHEM 112

This course provides the fundamentals of general chemistry which integrates inorganic and physical chemistry as well as an introduction to organic chemistry.

CHEM 112 Principles of General Chemistry Lab (1:0:2)

Co-requisite: CHEM 111

This course introduces chemistry lab techniques and provides hands-on experience in conducting chemical reactions that accompany the course CHEM111. This course provides experience in basic techniques for the synthesis of coordination complexes and physical chemistry-based experiments.

CHEM 211 General Chemistry (3:3:0)

Pre-requisite:

Co-requisite:

Basic facts and principles of chemistry, including atomic and molecular structure, gas laws, kinetics, equilibrium, electrochemistry, nuclear chemistry, thermo chemistry and properties and uses of the more important elements and their compounds. Students majoring in science, engineering, or mathematics should choose this course.

CHEM 212 General Chemistry I Lab (1:0:2)

Co-requisite: CHEM 211

Laboratory techniques to accompany General Chemistry I.

CHEM 213 (SCCH 212) General Chemistry II (3:3:0)

Pre-requisite: CHEM 211;

Co-requisite: CHEM 214

Foundation of chemical concepts; basic facts and principles of chemistry including states of matter, reaction kinetics, homogeneous and heterogeneous reaction equilibrium, electrochemistry, nuclear chemistry, and properties and uses of the more important elements and their compounds. For science and engineering majors.

CHEM 214 General Chemistry II Lab (1:0:3)

Co-requisite: CHEM 213

Laboratory techniques to accompany General Chemistry II

CHEM 315 (SCCH 314) Organic Chemistry II (3:3:0)

Prerequisite: CHEM 313

Co-requisite: CHEM 316;

The chemical nature of bio-organic molecules and bio-macromolecules, with a focus on biophysical properties, synthesis and modification, purification, identification and separation. Fundamentals of techniques used in the biotechnology industry such as spectroscopy, UV-VIS, IR, NMR, MS, chromatography, electrophoresis and fluorescence microscopy.

CHEM 316 (SCCH 318) Bio-Organic Chemistry II Lab (2:0:4)

Co-requisite: CHEM 315

Prerequisite: CHEM 313

Practical experience with common techniques for synthesis, separation, purification, and identification of bio-organic molecules including spectroscopy, chromatography, electrophoresis, MS, NMR, IR, UV- VIS, ultra centrifugation, isotope tracers, chemiluminescence, and fluorescence microscopy.

CHEM 411 Medicinal Chemistry (3:3:0)

Pre-requisite: CHEM 217

This course examines principles of structural, physical, and physical-organic chemistry, including mechanistic considerations involved in synthetic organic chemistry, bioorganic chemistry, and design of chemotherapeutic agents. This course includes mechanisms of action and factors that influence drug action within specific drug classes of pharmacodynamic and chemotherapeutic nature, drug structures, chiral drugs, and structure-activity relationships of drugs.

CIEN 201 Computer Aided Drawings (3:1:6)

Introduction to computer graphics. Includes the following topics: geometric construction; line convention; orthographic projections, isometric projections; oblique projections; Perspective projections; dimensioning, and sectional views. Computer-aided design; and elements of computer programming and problem-solving techniques. Uses computer software AutoCAD in data analysis, data display and visualization techniques. Prepare drawings in civil and infrastructure engineering.

CIEN 211 Statics (3:3:0)

Prerequisite: MATH 113 & PHYS 110

Vectors, force systems (2D and 3D), equilibrium of particles and rigid bodies (2D and 3D), structures (trusses, cables, frames and machines), distributed forces (centroids and centers of mass), internal forces (shearing force and bending moment diagrams), friction, and moment of inertia.

CIEN 212 Mechanics of Materials (3:3:0)

Prerequisite: CIEN 211

Types of loads, structures and supports, axial stress and strain, normal and bending moment diagrams, torsion, bending of beams, compound stresses, combined stresses, shearing stress and strain, Mohr's circle of stress and strain, thin walled pressure vessels, deflection of simple beams.

CIEN 241 Infrastructure Management (3:3:0)

Prerequisite: ECON 103

Focuses on the complexities of human behavior in the workplace, and how group and organizational structures affect individual behavior. Topics include individual differences, groups and teams, organizational structure and culture, managing conflict, negotiation, managerial characteristics, leadership, motivational theories and technique.

CIEN 250 Engineering in Global Environment (2:2:0)

Introduction to environmental engineering as practiced in different societies around the world. Defining environmental engineering as organizational and physical infrastructure to manage natural resources. Focuses on how different societies respond to environmental challenges related to engineering opportunities. Identify and explain the global, economic, environmental, and societal impacts of specified civil and infrastructure engineering systems. Issues for sustainability in engineering practice. Include case studies of sustainable engineering in developing and developed world.

CIEN 251 Fluid Mechanics (3:3:0)

Prerequisite: MATH 213 & CIEN 211

Properties of fluids, flow regimes, pressure and force calculations under hydrostatic conditions, manometers, buoyancy and stability of floating and submerged bodies, elementary fluid dynamics, conservation equations: mass, energy and momentum, continuity and Bernoulli equations, hydraulic gradient line and total energy line, linear and angular momentum equations.

CIEN 261 Surveying (1:0:3)

Prerequisite: CIEN 201

Principles of surveying by conducting tests on distance measurements, levels and theodolites, directions and angular measurements, topographic surveys, areas and volumes; traverse surveys; Setting out horizontal and vertical curves, Training on Total Station.

CIEN 301 Numerical Analysis (3:3:0)

Prerequisite: MATH 214 & CSCI 112

Matrix Algebra: Matrix operations, inverse, determinant, Eigen vectors, Eigen Values and solutions of systems of linear equations. Application of computers to solve civil and infrastructure engineering problems using various numerical methods, mathematical modeling and error analysis, solution of algebraic and differential equations, numerical differentiation and integration and curve fittings.

CIEN 311 Structural Analysis (3:3:0)

Prerequisite: CIEN 212

Structural forms, reactions, determinate structures, degree of determinacy, shear and moment diagrams for beams and frames, influence lines for beams, deflections (principle of virtual work and conjugate-beam methods), Analysis of indeterminate structures by moment distribution method, and stiffness method.

CIEN 321 Reinforced Concrete (3:3:0)

Prerequisite: CIEN 311 & CIEN 331

Properties of concrete and steel, cracked and uncracked section analysis, strength design, stress block, design for bending and shear, singly, doubly reinforced sections, rectangular sections, and T-sections, design of continuous beams, load cases and moment envelopes, bond requirements, development length and bar cutoffs, one-way solid and one-way ribbed slabs, design of short columns.

CIEN 331 Construction Materials (3:3:0)

Prerequisite: CIEN 212 & CHEM 211

Cement (types, manufacture, properties and hydration), aggregates, fresh concrete, hardened concrete (strength, strength development, shrinkage, creep), concrete in severe environment (hot and cold), durability, mix design by ACI and DoE methods, use of masonry, fiber reinforcement and metal form decking and structural steel joists.

CIEN 332 Construction Materials Lab. (1:0:3)

Prerequisite: CIEN 212, CHEM 211

Co-requisite: CIEN 331

Introduction to testing & specifications, concrete and mortar tests, aggregate testing, fresh and hardened concrete testing, non-destructive tests, design & testing of concrete mixes, brick testing, tests on steel beams, and tests on bolted connections.

CIEN 333 Geotechnical Engineering (3:3:0)

Prerequisite: CIEN 212 & CHEM 211

Index and classification of soils, water flow in soils (one and two dimensional water flow), soil stresses, soil compaction, distribution of stresses in soil due to external loads, consolidation and consolidation settlement, shear strength of soils, slope stability.

CIEN 334 Civil Engineering Testing and Materials (1:0:3)

Prerequisite: CIEN 331, CIEN 333

Co-requisite: CIEN 361

Tests on soils: specific gravity, grain size distribution, consistency limits, coefficient of permeability (constant and falling head), consolidation test, direct shear and tri-axial and CBR. Tests on fluids: Center of pressure, orifice and jet flow, Pressure variation in flowing fluid, momentum principle, flow through pipelines and closed conduits and uniform flow and roughness coefficient. Tests on asphalts: Asphalt cement tests, penetration, softening point, flash point, ductility, viscosity, specific gravity and marshal mix design.

CIEN 351 Environmental Engineering (2:2:0)

Prerequisite: CIEN 251, CHEM 211

Introduces principles of environmental engineering management and design pertaining to water supply and treatment, wastewater treatment, solid waste management, air pollution control, noise pollution measurement and control, and environmental impact assessment. Includes case studies from UAE.

CIEN 361 Highway Engineering and Design (3:3:0)

Prerequisite: CIEN 331

Pavement types; Materials used in flexible pavement layers (soil, aggregate, and asphalt); Calculation of Equivalent Standard Axle Loads (ESAL); flexible pavement thickness design, Hot Mix Asphalt (HMA) design using Marshall Procedure; Highway construction operations; highway drainage and drainage facilities, highway maintenance.

CIEN 362 Transportation Engineering (3:3:0)

Prerequisite: CIEN 261

Role of transportation engineering; Transportation system issues and challenges; Modes of transportation, Main components of highway, mode of transportation (driver, pedestrian, traffic, road); Geometric design of highways and highway facilities; Highway functional classification and special facilities; Intersection design and control, capacity analysis of two lane and multi-lane highways. Introduction to rail, air, and water transportation.

CIEN 411 Computer Applications in Structural Engineering (3:3:0)

Prerequisite: CIEN 311

This course reviews the fundamentals of the stiffness and finite elements methods, introduces the analysis and design of different elements in different types of structures using available computer packages such as SAP 2000, STAAD Pro, ETAB.

CIEN 421 Structural Steel Design (3:3:0)

Prerequisite: CIEN 311

Properties of structural steel, load resistant factor design (LRFD), design of tension members, design of concentric compression elements, design of beams, beam-column elements, design of column base plates, simple welding and bolting connections.

CIEN 422 Advanced Reinforced Concrete Design (3:3:0)

Prerequisite: CIEN 321

Structural layout, estimation of dead and live loads, serviceability, deflections and crack control, design for torsion, design of frames, moment redistribution, slender columns, biaxial bending of columns, design of deep beams, approximate methods for two-way slabs, design of footings detailing of reinforcement.

CIEN 423 Fundamentals of Earthquake Engineering (3:3:0)

Prerequisite: CIEN 321

Effects of earthquakes on structures and of design of structures to resist earthquake motions; earthquake mechanisms and ground motions; response of structures to earthquake motions; behavior of materials, structural elements and assemblages subjected to earthquakes; principles of earthquake-resistant design practice; soil-structure interaction; and special topics.

CIEN 424 Bridge Design (3:3:0)

Prerequisite: CIEN 321

Covers design of highway bridges; history, classification and aesthetics of bridge structures; design philosophy; loading, girder distribution factors; and load combinations; design of concrete deck slab; design of reinforced concrete T-beam and box girders bridges; and design of piers, bearings and abutments. Introduces pre-stressed concrete bridges.

CIEN 43 Foundation Engineering (3:3:0)

Prerequisite: CIEN 333

Site investigation, bearing capacity of shallow foundation, distribution of stresses in soils, settlement of shallow foundation, factors to be considered in foundation design, introduction to deep foundation, lateral earth pressure and retaining walls, sheet pile walls, braced excavations.

CIEN 434 Advanced Concrete Technology (3:3:0)

Prerequisite: CIEN 331

Covers mix design, production, applications and quality control of high performance concrete. Includes the following topics: concrete strength, effect of thermal stresses on durability, marine concrete, deterioration, maintenance and repair materials and methods; application of admixtures and cement replacement in various advanced concrete types; green concrete and the prediction of service life and cost of repair.

CIEN 440 Infrastructure Financing (3:3:0)

Prerequisite: CIEN 241

Fundamentals of infrastructure project financing, financial analysis which include time value of money, interest rate, present and annual worth analysis, benefit cost ratio, life cycle costing, capital cost, gradient and break even analysis. Includes case studies related to public private partnerships for infrastructure project, cash flows, infrastructure funds, valuation of projects, risk allocation and structured finance.

CIEN 441 Construction Management (3:3:0)

Prerequisite: CIEN 331

Basic concepts of construction project management, Construction planning, project time Management, project cost management, project quality management, value engineering and project life cycle, construction process optimization, construction contracts, contracting methods, project specifications, bidding, procurement methods and contractor applications for payment procedures.

CIEN 442 Construction Planning & Scheduling (3:3:0)

Prerequisite: CIEN 441

Principles of planning, monitoring, and controlling construction projects. Developing schedules using bar charts, precedence diagrams, program evaluation and review techniques (PERT), and linear schedules. Resource histograms and s-curves. Resource allocation and resource leveling. Schedule constraints. Earned value concept. Includes MS project and Primavera Project Planner software.

CIEN 443 Construction Methods and Equipment (3:3:0)

Prerequisite: CIEN 331

Study of construction operations as dynamic production processes. Earthmoving materials and operation, excavating and lifting, loading and hauling operations, compacting and finishing, paving and surface treatment operations, measuring and improving productivity, construction equipment economics.

CIEN 444 Construction Cost Analysis & Estimating (3:3:0)

Prerequisite: CIEN 441

Perceptions of construction cost, engineering economic analysis, risk and uncertainty, range estimating, cost fundamentals, types of cost estimating, estimating construction materials cost, estimating construction labor cost, direct versus indirect costs, estimating construction equipment cost, cost of concrete structures, estimating project cost, time/cost trade-off analysis and contractor general requirements.

CIEN 451 Infrastructure Systems (3:3:0)

Prerequisite: CIEN 351& CIEN 362

Role of planning, system demands and networking in infrastructure systems, energy systems, water and waste water infrastructure, transportation systems, waste disposal and resources conservation, smart growth and effects of infrastructure on the environment, models of creating sustainable future development, planning, design and architecture in sustainable communities, and integrated infrastructure system models.

CIEN 452 Hydraulics (3:3:0)

Prerequisite: CIEN 351

Steady open channel flow, uniform flow, normal depth, Chezy and Manning equations, design of sections, specific energy, critical depth, non-uniform flow, rapidly varied flow, hydraulic jump, gradually varied flow, backwater curves. Hydraulic machines, Pumps and turbines.

CIEN 453 Groundwater Hydrology (3:3:0)

Prerequisite: CIEN 351

This course covers fundamentals of subsurface flow and transport, emphasizing the role of groundwater in the hydrologic cycle, the relation of groundwater flow to geologic structure, and the management of contaminated groundwater. The course will cover the following topics: Darcy equation, flow nets, mass conservation, the aquifer flow equation, heterogeneity and anisotropy, storage properties, regional circulation, unsaturated flow, recharge, stream-aquifer interaction, well hydraulics, flow through fractured rock, numerical models, groundwater quality, contaminant transport processes, dispersion, decay, and adsorption.

CIEN 454 Water and Wastewater Supply (3:3:0)

Prerequisite: CIEN 351

Sources of water, requirements for water supply projects, population's studies, rates of water consumption, variation in water demand, collection and distribution of water, distribution networks. Sources of wastewater, quantities and quality, sewage collection works, sewage purification works and disposal, primary treatment, secondary treatment, activated sludge system, design of sewer systems.

CIEN 455 Solid Waste Management (3:3:0)

Prerequisite: CIEN 351

Evolution of solid waste management, integrated approach to solid waste management, sources, composition, and properties of solid waste, physical, chemical and biological properties of MSW and household hazardous wastes. Waste handling, separation, storage and collection. Building a sustainable future, application of life-cycle analysis to waste management systems, reuse technologies, energy recovery from liquid and solid wastes and product recovery from oily wastes.

CIEN 456 Sustainable Urban Building Sites (3:3:0)

Prerequisite: CIEN 351

Concept of sustainability, how sustainability applies to infrastructure projects and programs, measuring sustainability, identification and design of sustainable technologies associated with water and energy management for infrastructure projects, green buildings and sustainable housing, sustainable transportation, energy, use of materials and waste management and water use. Includes case studies in sustainability.

CIEN 462 Advanced Pavement Design (3:3:0)

Prerequisite: CIEN 361

Pavement types, Pavement materials; subgrade stabilization methods; Principles of mix design using SUPERPAVE; Analysis of stresses in flexible and rigid pavement, Design methods of highway flexible and rigid pavements; Overlay design, Computer applications.

CIEN 463 Traffic Engineering (3:3:0)

Prerequisite: CIEN 362

Traffic Flow Theory; Traffic Studies (volume, speed, travel time, and parking); Traffic control devices; Introduction to traffic signal timing, Parking facilities; Traffic safety studies. Accidents and road safety: the problem; Traffic safety studies, capacity analysis of basic freeway segments, multilane, and two-lane highways, vehicle, roadway and driver characteristics, Computer applications, Traffic control methods and devices.

CIEN 464 Airport Planning and Design (3:3:0)

Prerequisite: CIEN 362

Examines airport master planning, forecasting air travel demand and sustainable design of airports, including lighting, terminal facilities, noise-level control, aircraft control, airspace utilization and automobile parking.

CIEN 465 Geographic Information System (GIS) (3:3:0)

Prerequisite: CIEN 362

This course exposes students to the principles of GIS (hardware, software, people, data, and methods) and its environmental and infrastructure management applications. Subjects also include the acquisition and compilation of data from maps, field surveys, air photographs and satellite images. The course includes hands-on GIS state-of-the-art software.

CIEN 491 Senior Design Project (1) (2:0:0)

Prerequisite: Senior Standing

Preparation and starting of project in civil and infrastructure engineering. The project is a multidisciplinary interaction for infrastructure design and management that includes system analysis and inculcates sustainable engineering principles. Includes use of engineering software's especially project management such as MS project, Primavera Project Planner and CYCLONE.

CIEN 492 Senior Design Project (2) (4:0:0)

Prerequisite: CIEN 491

Continuation of the senior design project I. The project is a multidisciplinary interaction for infrastructure design and management that includes system analysis and inculcates sustainable engineering principles. Includes use of engineering software's especially project management software such as MS project, Primavera Project Planner and CYCLONE, writing a technical report and developing project drawings, specifications and details.

CIEN 493 Special Topics in Civil and Infrastructure Engineering (3:3:0)

Prerequisite: Department Consent

Special up-to-date topic in the civil and infrastructure engineering.

COMM 100 (GECM 100) Public Speaking (3:3:0)

Pre-requisite: ENGL 100/101

This course is designed to provide an overview of principles to develop effective presentations for public and professional settings while integrating appropriate technologies. Course content and assignments emphasize audience analysis, effective and coherent composition development, research strategies and skills, and presentation delivery methods to strengthen confidence and credibility.

COMM 101 (GECM 101) Interpersonal Communication and Group Interaction (3:3:0)

Pre-requisite: ENGL 100/101

The course presents the principles to develop appropriate and effective communication strategies in one-to-one and small group communication settings. It emphasizes analyzing and assessing communication skills to create and sustain effective communication in personal and professional relationships.

COMM 102 Reading Image and Film (3:3:0)

Pre-requisite:

Co-requisite:

This course allows learners to study aesthetic effects and strategies of persuasion in contemporary visual images. Learning engagement include images in electronic media, film, photographs, cartoons, advertisements, and public performances and events.

COMM 104 Photography and Communication (3:3:0)

Pre-requisite:

Co-requisite:

Perceptions of the world are recorded visually in different ways. The course is an introduction to the techniques of digital photography and trains learners in the visual competence of reading, analyzing, composing and communicating effective visual messages.

COMM 111 Introduction to Mass Communication (3:3:0)

Pre-requisite: COMM 110

This course surveys the history and characteristics of mass communication as a field and set of intertwining industries and professions. Learners explore the role of mass media in modern society by considering the impact of technology, culture, government, and economics. Trends are considered in historical context.

COMM 112 Introduction to Public Relations (3:3:0)

Pre-requisite: COMM 110

This course provides learners with basic knowledge about the theories, concepts, and best practices in communication within the public relations field.

COMM 212 Media Writing (3:3:0)

Pre-requisite: ENGL 100/101

This course introduces learners to the basic norms, values, standards and practices for writing for the mass media.

COMM 213 Public Relations Writing (3:3:0)

Pre-requisite: COMM 212

Learners improve their media-related writing skills with a focus on standard, professional presentation of information and messages in the public relations setting.

COMM 222 Intercultural Mass Communication (3:3:0)

Pre-requisite: COMM 110

This course explores the communication strategies and techniques within a specific cultural milieu and how those strategies and techniques differ among various cultural milieu, and learners practice in a variety of communication modes how best to accommodate their rhetorical strategies in communicating to both intracultural and intercultural audiences.

COMM 223 Globalization and Media Cultures (3:3:0)

Pre-requisite: COMM 110

Learners in this course apply communication strategies to and investigate real-world case study challenges with a global worldview of various issues of global media cultures. Students learn how to develop a *Weltanschauung* from which to best communicate in modern technologies with world audience.

COMM 311 Ethics of Communication (3:3:0)

Pre-requisites: PHIL 101 and COMM 111

Learners engage the philosophical underpinnings of ethics and the core principles of journalism and mass communication to develop an understanding and appreciation of the field's normative ethical values. Students will learn how to apply an ethical decision-making framework to a variety of challenges.

COMM 321 Theories of Media Communication (3:3:0)

Pre-requisite: COMM 111

Learners identify the major concepts, issues, and theories of media communication, and learners identify and use communication theories in a variety of best practices to demonstrate effective use of the theories learned in the course.

COMM 322 Digital Resources and Content (3:2:1)

Co-requisite: COMM 212

This course allows learners to explore the Internet for data; to assess data found online; to produce "value-added" research from online databases; and, to understand the principles behind turning original data into a useable online resource.

COMM 323 Advanced Journalism (3:3:0)

Pre-requisite: COMM 111, COMM 213, and COMM 311

This course will engage learners in the values, norms and professional practices newsgathering and writing. Emphasis is on traditional reporting methods, including interviewing and observation, and on the ethical, reliable presentation of news in print/digital formats

COMM 329 Survey of Tools and Technology in Communication (3:2:1)

Pre-requisites: ITEC 103L; COMM 321 OR COMM 323

This course provides learners with an overview of the development and history of media technologies with a focus on their influence on form, content, and the practices of news media professionals and consumers.

COMM 334 Communication Transformation (3:3:0)

Pre-requisite: COMM 323

This course introduces multimedia production skills to students. Learners integrate text, audio, photos and video to produce online media packages that are attractive, accessible, easy to navigate, and appropriate for the platform and the audience.

COMM 337 Public Relations Cases (3:3:0)

Pre-requisite: COMM 112 and COMM 343

This course gives learners the context, knowledge, and skills to examine and critically analyze real-world public relations problems and cases. Students will study and apply communication and public relations theories to case studies and problems. Learners examine the four steps included in the design of public relations programs that include research, planning, implementation, and evaluation.

COMM 343 Public Relations Research Methods (3:3:0)

Pre-requisite: COMM 112 This course provides learners with the tools to outline, execute and evaluate mass media research. The primary focus is on using research for public relations programs and campaigns—planning, monitoring and evaluating. The course focuses on research methods used in the field, including content analysis, focus groups, in-depth interviews, surveys, and experiments.

COMM 421 Social Media: Audiences and Messages (3:3:0)

Pre-requisite: COMM 110 AND COMM 111 OR COMM 112

Learners explore social media as a unique platform for interaction with multiple audiences and learn how to plan strategies to engage with key stakeholders and disseminate persuasive, effective messages.

COMM 422 Streaming (3:3:0)

Pre-requisite: COMM 322

The course covers basic desktop digital video and audio applications, video streaming, and basic design for web and mobile products with a focus on aesthetics, functionality, and access.

COMM 423 Digital Practicum (3:3:0)

Pre-requisite: COMM 323

This course allows students to explore magazine-style writing, editing, and presentation in the digital environment. Students collectively produce an online, magazine-style, publication.

COMM 424 Capstone: Multimedia Storytelling (3:2:1)

Pre-requisite: COMM 423

Co-requisite: COMM 322

In this course, learners apply skills in newsgathering, writing, and multimedia to produce an individual and a group project of publication quality that demonstrates their proficiency in multimedia storytelling.

COMM 426 Advanced Interpersonal Communication (3:3:0)

Pre-requisite: COMM 322

Learners in this course examine more complicated and complex interpersonal communication theories and research. Learning is facilitated regarding the role of communication through the life cycle of relationships from their initiation and maintenance to their deterioration or escalation.

COMM 427 Capstone: Media Production in Public Relations (3:3:0)

Pre-requisite: COMM 213

Co-requisite: COMM 343

The course provides learners with practical instruction and experience in a variety of media modes of communication. Students focus on producing clear, persuasive messages in attractive formats.

COMM 448 Technological Perspectives in Communication (3:3:0)

Co-requisite: COMM 322

Learners focus on one aspect of technology and communication. This may be related to a general communication challenge, the work of a specific scholar in the communication field, a specific kind of media, or a specific technology.

COMM 491 Communication Research Methodology (2:2:0)

Co-requisite: COMM 492

This course provides an introduction to research methods and the philosophical underpinnings of research inquiry in the field of communication. It includes the topic adherence, overviews of quantitative, qualitative, and mixed-method research methodologies, a range of alternative research methods, including observation, archival research, questionnaire surveys, case studies, and experimentation, research design, data collection, and data analysis, the ethical implications of research with human and non-human subjects, and appropriate connections between research questions and methodologies.

COMM 492 Public Relations Campaigns (3:3:0)

Co-requisite: COMM 491

Learners identify a communications problem, write a literature review, conduct an original research study, and present their research with the guidance of faculty mentors. The project will be a capstone project that displays evidence of core general education and major competencies developed during the student's academic career.

CSCI 104 Introduction to Computing (3:3:0)

Pre-requisite:

Co-requisite:

Introduction to essential concepts and practices in computing. Students will have the opportunity to Design, assemble, and operate basic computer hardware and software in a collaborative environment. Students will be provided examples of various Computer Science and Engineering (CSE) experiences, activities, interactions, and learning. Students will be provided exposure to the culture and society of CSE, and to those components of CSE that provide enjoyment, reward, and satisfaction.

CSCI 112, 113, Introduction to Computer Programming (4:3:2)

Pre-requisite:

Co-requisite: CSCI 113

This course introduces the use of computer programming as a problem-solving tool. Topics in procedural programming include expressions, control structures, simple data types, input/output, graphical interfaces, testing, debugging and programming environments.

CSCI 211 Object-Oriented Programming (3:3:0)

Prerequisite: CSCI 112

This course focuses on object oriented programming through problem solving, testing and debugging. Topics include pointers and dynamic memory, classes, inheritance, packages,

collections, exceptions, and polymorphism. Examples in the course include the use of basic data structures.

CSCI 215 Data Structure (3:3:0)

Prerequisite: CSCI 211 and MATH 225

Data structures and algorithms fundamentals for computer science; abstract data-type concepts; stacks, queues, lists and iterators. Search techniques including binary search, multi-dimensional search trees, measures of program running time and time complexity.

CSCI 232 Computer Organization (3:3:0)

Prerequisite: CSCI 112

Computer organization including main building blocks: CPU, busses and memory. Instruction sets, machine code, and assembly language. Address translation and virtual memory. Examples of input/output devices interrupt handling and multi-tasking systems.

CSCI 312 Operating Systems Fundamentals (3:1:3)

Prerequisite: CSCI 215

This course focuses on the principles, components, and design of modern operating systems, focusing on the UNIX platform. Topics include: concurrent processes, inter-process communication, processor management, virtual and real memory management, deadlock, file systems, disk management, performance issues, case studies, etc.

CSCI 314 (SCCS 312) Formal Methods and Models (3:3:0)

Pre-requisite: CSCI 211

Abstract concepts that underlie much advanced work in computer science, with major emphasis on formal languages, models of computation, logic, and proof strategies.

CSCI 315 Analysis of Algorithms (3:3:0)

Prerequisite: CSCI 215

The design and analysis of algorithms is the core subject of this course. Given a computational problem, the goal is to first find an algorithm to solve the problem, and to prove that the algorithm solves the problem correctly. This involves knowledge of the problem domain as well as a thorough knowledge of the data structures that are available and suitable for solving the problem at hand. The course focuses on studying useful algorithmic design techniques and methods for analyzing algorithms.

CSCI 323 (SCCS 323) Computer Systems and Programming (3:3:0)

Pre-requisite: Junior standing or approval from the Program Chair.

The ways in which high-level language control and data structures are represented at machine level. Introduces systems programming.

CSCI 326 Database Systems (3:3:0)

Prerequisite: CSCI 215 and CSCI 232

Fundamentals of database architecture, database management, and database systems. Physical data organization, Principles and methodologies of database design and data manipulation, database programming and database integrity and security.

CSCI 372 Compiler Design (3:3:0)

Prerequisite: CSCI 215

An introduction to the theory and practice of compilation. Topics covered include lexical and syntax analysis, syntax-directed translation, type checking, issues with the run-time environment, code generation and code optimization. Focus will be on the design and implementation of the following four stages of compilation for a subset of a modern imperative programming language: lexical analysis, parsing, code generation and code optimization.

CSCI 388 Programming Languages (3:3:0)

Prerequisite: CSCI 215

This course is an introduction to basic concepts in the design of programming languages. The focus will be on the concepts of programming languages. The course outlines the concepts that are commonly available in widely used programming languages. It covers topics such as formal semantics, concurrency and parallel programming.

CSCI 411 (SCCS 411) Analysis of Algorithms (3:3:0)

Pre-requisite: Senior standing or approval from the Program Chair

Analyzes computational resources for important problem types by alternative algorithms and their associated data structures, using mathematically rigorous techniques. Specific algorithms analyzed and improved.

CSCI 413 Software Engineering (3:3:0)

Pre-requisites: CSCI 211 and 215

Examines software development in detail. Topics include software life-cycle models; architectural and design approaches; various techniques for systematic software testing; coding and documentation strategies; project management; customer relations; the social, ethical, and legal aspects of computing; and the impact of economic, environmental, safety, manufacturability, and sustainability factors on design.

CSCI 415 Introduction to Parallel Programming (3:3:0)

Pre-requisite: CSCI 211 and 215

Introduction to programming in the Unix environment. Fundamental issues in design and development of parallel programs for various types of parallel computers. Various programming models according to both machine type and application area. Cost models, debugging, and performance evaluation of parallel programs.

CSCI 440 Formal Methods (3:3:0)

Prerequisite: CSCI 388

Introduces the application of formal methods to the practice of software engineering. Formal methods are best described as a variety of mathematical modeling techniques, which are used to model the behavior of a computer system and to verify required functionality and design safety. This is a course in formal mechanisms and methodologies for specifying, validating, verifying and constructing correct software systems.

CSCI 462 Data Communications and Computer Networks (3:3:0)

Prerequisite: SCST 346 and CSCI 112

Introduces modern data communications and computer networks. Topics include digital modulation, transmission and synchronization, coding, error detection, interfacing, computer networks, packet switching and multiplexing, multi-access and broadcasting; local area and wide area networks; architectures and protocols for computer networks; routing algorithms and protocols, provides examples of data networks.

CSCI 463 Data Communications and Computer Networks Lab (0:3:1)

Prerequisite: CSCI 462

This course introduces the functions of data communications and networking in hands on lab environment. Topics include introduction to packets and how they get transmitted in the seven OSI layers, packet switching techniques and transmission media. Cisco routers and switches interfaces, functions and some CLI commands, routing and routed protocols, LAN, WAN and Wireless networks, and some troubleshooting techniques.

CSCI 492 Senior Design Project I (0:0:2)

Prerequisite: Senior standing

All students must complete a capstone project during their final. The project must include a significant analytical/experimental piece of work that is of high standard. The course involves literature review of the project, define problematic and action for the project. Work includes developing preliminary design and implementation plan.

CSCI 493 Senior Design Project II (0:0:4)

Prerequisite: CSCI 492

Implementation of project for which preliminary work was done in CSCI 492. Project includes designing and constructing/writing software or/and software/hardware, conducting experiments or/and theoretical studies, testing and validating complete system. Requires oral and written reports during project and at completion.

ECEN 101 (ECE 101) Information Technology for Electrical Engineers (3:3:0)

Co-requisite: ECEN 102

Provides fundamental engineering skills and technical underpinning for state-of-the-art applications and study of information technology related to ethics, professionalism, historical development, and social implications.

ECEN 102 Information Technology for Electrical Engineers Lab (0:0:1)

Co-requisite: ECEN 101

Laboratory embedded in ECEN 101.

ECEN 201 (ECE 201) Introduction to Signal Analysis (3:3:0)

Pre-requisite: MATH 113.

Co-requisite: ECEN 202

Provides technical introduction to problems and tools commonly encountered by electrical engineers. Introduces mathematical modeling of engineering problems and their solutions. Introduces standard software packages for electrical engineering as tools to simulate engineering problems.

ECEN 202 Introduction to Signal Analysis Lab (0:0:1)

Co-requisite: ECEN 201

Laboratory embedded in ECEN 201.

ECEN 220 (ECE 220) Signal and Systems I (3:3:0)

Pre-requisite: ECEN 201.

Co-requisites: MATH 203 and 214, ECEN 221.

Introduction to methods of representing continuous-time signals and systems, and interaction between signals and systems. Analysis of signals and systems through differential equations and transform methods; Laplace and Fourier transforms as convenient analysis tools; frequency response of systems; and stability of systems in time and frequency domains. Presents application examples from communications, circuits, control, and signal processing.

ECEN 221 Signal and Systems I Lab (0:0:1)

Co-requisite: ECEN 220.

Laboratory embedded in ECEN 220.

ECEN 260 (ECE 260) Modern Telecommunications (3:3:0)
Comprehensive overview, including current status and future directions. Topics include review of evolution of telecommunications; voice and data services; basics of signaling, digital transmission, network architecture, and protocols; local area, metropolitan, and wide area networks and narrow band ISDN; asynchronous transfer mode and broadband ISDN; and satellite systems, optical communications, cellular radio, personal communication systems, and multimedia services.

ECEN 280 (ECE 280) Electric Circuit Analysis (4:4:0)
Pre-requisites: PHYS 220 and 221;
Co-requisite: ECEN 281.
Circuit analysis using superposition, equivalent circuits, and transient and steady state analysis of RL, RC, and RLC circuits; applications of Laplace transform in circuit analysis; sinusoidal excitations and phasors; resonance; filters; AC steady - state analysis; coupled coils; and three-phase circuits. Labs demonstrate and investigate circuit analysis concepts.

ECEN 281 Electric Circuit Analysis Lab (1:0:2)
Co-requisite: ECEN 280
Laboratory to accompany ECEN 280.

ECEN 305 (ECE 305) Electromagnetic Theory (3:3:0)
Pre-requisites: PHYS 220 and MATH 214
Static and time-varying electric and magnetic fields, dielectrics, magnetization, Maxwell's Equations, and introduction to transmission lines. Course uses vector calculus and algebra of complex numbers.

ECEN 320 (ECE 320) Signal and Systems II (3:3:0)
Pre-requisites: ECEN 220 and MATH 203.
Co-requisite: ECEN 321
Methods of representing and analyzing discrete time signals and systems. Effects of converting from continuous -time to discrete time, and Ztransform as convenient analysis tool. Emphasizes powerful concept of frequency response of systems developed in first semester. Studies random signals in continuous and discrete time. Presents application examples from communications, circuits, control, and signal processing.

ECEN 321 Signal and Systems II Lab (0:0:1)
Co-requisite: ECEN 320
Laboratory embedded in ECEN 320

- ECEN 331 (ECE 331) Digital System Design (3:3:0)**
Co-requisites: ECEN 280 and 332.
Principles of digital logic and digital system design and implementation in VHDL. Topics include number systems; Boolean algebra; analysis, design, and minimization of combinational logic circuits; analysis and design of synchronous and asynchronous finite state machines; and introduction to VHDL and behavioral modeling of combinational and sequential circuits.
- ECEN 332 (ECE 332) Digital Systems Design Lab (1:0:3)**
Pre-requisite: PHYS 221.
Co-requisite: ECEN 331
- ECEN 333 (ECE 333) Linear Electronics I (3:3:0)**
Pre-requisite: ECEN 280
Principles of operation and application of electron devices and linear circuits. Topics include semiconductor properties, diodes, bipolar and field effect transistors, biasing, amplifiers, frequency response, operational amplifiers and analog design.
- ECEN 334 (ECE 334) Linear Electronics Lab I (1:0:3)**
Pre-requisite: PHYS 221.
Co-requisite: ECEN 333.
- ECEN 430 (ECE 430) Principles of Semiconductor Devices (3:3:0)**
Pre-requisites: ECEN 333 and MATH 214
Crystal properties, energy bands, semiconductor charge carriers, p-n junctions, field-effect transistors, bipolar junction transistors, optoelectronic devices, integrated circuits.
- ECEN 431 (ECE 431) Digital Circuit Design (3:3:0)**
Pre-requisites: ECEN 331 and 333
Analysis and design of discrete and integrated switching circuits. Topics include transient characteristics of diodes, bipolar, and field-effect transistors; MOS and bipolar inverters; non-regenerative and regenerative circuits; TTL, ECL, IIL, NMOS, and CMOS technologies; semiconductor memories; VLSI design principles; and SPICE circuit analysis.
- ECEN 433 (ECE 433) Linear Electronics II 3:3:0)**
Pre-requisite: ECEN 333.
Differential amplifiers, feedback circuits, power amplifiers, feedback amplifier frequency response, analog integrated circuits, operational amplifier systems, oscillators, wide band and microwave amplifiers, and computer-aided design.
- ECEN 434 (ECE 434) Linear Electronics Lab II (1:0:3)**
Pre-requisite: ECEN 334. Co-requisite: ECEN 433

ECEN 435 Introduction to Optical Electronics (3:3:0)

Pre-requisites: ECEN 305 and 333

Introduces optoelectronic devices for generation, detection, and modulation of light. Topics include electro-optic modulators, gas, solid state and semiconductor lasers, photo-detectors, and detector arrays.

ECEN 437 Power Electronics (3:3:0)

Pre-requisite: ECEN 333

Applications of power diodes and silicon controlled rectifiers, static converters, AC voltage controllers, DC power supplies, Choppers, Inverters in power systems.

ECEN 460 (ECE 460) Communication & Information Theory (3:3:0)

Pre-requisites: ECEN 220 and STAT 346

Introduction to analog and digital communications. Topics include review of important concepts from signals and systems theory and probability theory; Gaussian processes and power spectral density; digital transmission through additive white Gaussian channels; sampling and pulse code modulation; analog signal transmission and reception using amplitude, frequency and phase modulation; and affects of noise on analog communication systems.

ECEN 461 (ECE 461) Communication Engineering Lab (1:0:3)

Pre-requisites: ECEN 460 and 334

ECEN 462 (ECE 462) Data and Computer Communications (3:3:0)

Pre-requisites: ECEN 220 and STAT 346

Introduction to modern data communications and computer networks. Topics include point - to-point communication links and transmission of digital information, modems, and codecs; packet switching, multiplexing, and concentrator design; multi-access and broadcasting; local area and wide area networks; ISDN; architectures and protocols for computer networks; OSI reference model and seven layers; physical interfaces and protocols; and data link control layer and network layer.

ECEN 463 (ECE 463) Data and Computer Communication Lab (1:0:3)

Co-requisite: ECEN 462

ECEN 464 Digital Communication Systems (3:3:0)

Pre-requisite: ECEN 460

Introduces digital transmission systems. Topics include quantization, digital coding of analog waveforms, PCM, DPCM, DM, base band transmission, digital modulation schemes, ASK, FSK, PSK, MSK, QAM, pulse shaping, inter symbol interference, partial response, voice band and wideband modems, digital cable systems, regenerative repeaters, clock recovery and jitter, multi path fading, digital radio design, optimal receiver design, MAP receiver, and probability of error.

- ECEN 465 Computer Networking Protocols (3:3:0)**
Pre-requisite: ECEN 462
 Introduces computer networking protocols and concepts, emphasizing Internet and Internet Protocol Suite. Covers computer networking protocols at application, transport, and network layers, including multimedia networking protocols, and network security and management.
- ECEN 466 Digital Signal Processing (3:3:0)**
Pre-requisites: ECEN 320 and STAT 346
 Provides a thorough treatment of digital signal processing including the fundamental theorems and properties of discrete-time linear systems, filtering, sampling, and discrete-time Fourier Analysis.
- ECEN 467 Mobile and Wireless Communications (3:3:0)**
Pre-requisite: ECEN 464
 Cellular systems design fundamentals, Fading and multipath channels, Modulation techniques for mobile radio systems, Diversity and combining techniques for mobile radio systems, Multiple access techniques for mobile systems, Mobile systems and standards.
- ECEN 481 Concepts of Multimedia Processing and Transmission (3:3:0)**
Pre-requisite: ECEN 320
 Fundamentals of signal and image processing, including algorithms for signal processing that have applications to multimedia (voice and streaming video applications). Topics included: voice coding and recognition, CD and DVD technology, streaming video, WANS and LANS, and videoconferencing technology.
- ECEN 488 Fundamentals of Satellite Communication (3:3:0)**
Pre-requisite: ECEN 460
 Offers appreciation for space environment and implications for space-based operations. Discusses engineering, scientific, political and legal aspects of space exploration and exploitation. Presents different uses of space communication and future trends.
- ECEN 491 (ECE 491) Engineering Seminar (1:1:0)**
Pre-requisite: 90 credits
Engineering ethics, professionalism, the role of engineers in society, current topics, and employment opportunities.
- ECEN 492 (ECE 492) Senior Design Project I (2:2:0)**
Pre-requisite: Senior Standing
 Conception of senior design project and determine of feasibility of proposed project. Includes development of a preliminary design and implementation plan.

ECEN 493 (ECE 493) Senior Design Project II (4:4:0)

Pre-requisite: ECEN 492 preferably in preceding semester.

Implementation of project from ECEN 492. Project includes designing and constructing hardware, writing required software, conducting experiments or studies, and testing complete system. Requires oral and written reports during project and at completion.

ECEN 499 (ECE 499 Special Topics in ECEN) (3:3:0)

Pre-requisite: Instructor Permission

Advanced and emerging topics in electronics and communication engineering. Topics are announced through the Schedule of Classes.

ECON 103 (GEEC 103) Principles of Microeconomics (3:3:0)

Pre-requisite:

Co-requisite:

This course introduces learners to microeconomics in the context of current problems. It explores how market mechanism allocates scarce resources among competing uses. It uses supply, demand, production, and distribution theory to analyze problems.

ECON 104 (GEEC 104) Principle of Macroeconomics (3:3:0)

Pre-requisite: ECON 103

This course introduces students to the fundamental principles of macroeconomics in the context of current problems and its application to business decision making and economic policy. Students will be introduced to the economic way of thinking and how key concepts, theories and methods of modern economic analysis can be applied to everyday economic issues and problems. Key areas covered include demand and supply analysis and government policies; consumers, producers and the efficiency of markets; international trade; the national economy; business cycles; inflation; economic growth and stability; unemployment; and monetary and fiscal policy. Particular emphasis is placed on reviewing contemporary economic issues and how economics permeates almost every aspect of business, highlighting economics as the fundamental discipline underpinning the study of most business specialisations.

ECON 306 (GEEC 306) Intermediate Microeconomics (3:3:0)

Pre-requisites: ECON 103 and 104, and MATH 108 or 113.

Basic factors of price and distribution theory: analysis of demand, costs of production and supply relationships, and price and output determination under various market structures.

ECON 310 (GEEC 310) Money and Banking (3:3:0)

Pre-requisites: ECON 103 and ECON 104

The role of money in the economy and the institutional characteristics of the banking system and financial markets. Topics include money, monetary policy, interest rate, present value, bond prices, stock market, foreign exchange markets, commercial and central banking system, monetary policy and International finance.

ECON 311 (GEEC 311) Intermediate Macroeconomics (3:3:0)

Pre-requisites: ECON 103 and 104, or permission of instructor

Aggregate economic accounts, including measuring national income; determinants of levels of income and output; and causes and solutions for problems of unemployment, inflation, and economic growth.

ECON 316 (GEEC 316) Economic Growth and Business Cycle (3:3:0)

Pre-requisite: ECON 310 or 311, or permission of instructor.

Factors contributing to sustained economic growth, emphasizing business fluctuations and their measurement. Topics include classical economic theory, Keynesian economic theory, fiscal and monetary policies, and measurement of total output (GDP).

ECON 360 (GEEC 360) Economics of Developing Areas (3:3:0)

Pre-requisites: ECON 103 and 104, or permission of instructor.

Economic growth characteristics of developing countries. Economic development, obstacles to development, policies, and planning.

ECON 390 (GEEC 390) International Economics (3:3:0)

Pre-requisites: ECON 306 and 311 or permission of instructor.

Foreign exchange market, balance of payment, foreign trade policies, and theories of international trade.

ECON 420 (GEEC 420) International Money and Finance (3:3:0)

Pre-requisites: ECON 306 and 311, or permission of instructor.

Examines models of balance of payments, exchange rate behavior, and open economy macroeconomics. Includes international financial system and issues such as globalization and international financial instability.

EDUL 510 Overview of Educational Inquiry: (3:0:0)

Introduction to quantitative and qualitative educational research traditions, procedures, theories, and methods. Practical research applications to educational problems; outline of various research designs that are appropriate for examining educational issues; quantitative and qualitative strategies include statistical analyses, survey and questionnaire design, interviews, thematic analysis, case studies and narrative inquiry.

EDUL 515 Assessment of Student Learning: (3:0:0)

Concepts, theories and ethical issues underlying assessment practices. Methods of assessing learning applied to different educational learning environments; processes and problems related to course learning assessments; evaluating programmatic outcomes; designing measures to evaluate learner and curricular outcomes. Assessment practices and ways in which they are appropriate in the UAE.

EDUL 520 Theories of Teaching & Learning: (3:0:0)

Major theories regarding teaching and learning are examined, such as behaviorism, constructivism, cognitivism, and post-modernism. An overview of the major theorists who have contributed to the study of learning is provided in order to frame contemporary learning theories, models, and approaches. Through theoretical frameworks, students

EDUL 525 Leadership for Educational Improvement: (3:0:0)

Exploration of the nature of leadership in educational settings; improvement strategies; application of contemporary theories of leadership; the functioning of organizations and leadership choices within organizations.

EDUL 610 Administration and Leadership in Schools: (3:0:0)

Pre-requisite: EDUL 510, 515, 520, and 525

Principles of educational administration; contemporary leadership in schools; strategic planning at the school level; human resource theory and practice; resource allocation; management in educational settings.

EDUL 615 School Governance, Politics and Community Engagement: (3:0:0)

Pre-requisite: EDUL 510, 515, 520, and 525

Applying social science theory and research to the UAE education situation, this course explores the governance of schools from political and sociological contexts and the building of constructive relationships between schools and communities.

EDUL 620 Supervision and Evaluation of Instruction: (3:0:0)

Pre-requisite: EDUL 510, 515, 520, and 525

Theory, research and practice of supervision; approaches to staff development; assessment and evaluation; clinical supervision techniques.

EDUL 625 Using Research for Educational Change: (3:0:0)

EDUL510,515,520,and525

Role of research in the work of school leaders; ways leaders use research to identify opportunities for improvement and change; relationship between theory, research, and practice; role of research and benchmarking in school improvement; examination of change principles in effective educational leadership; strategies for change in education; implementing and managing effective educational change.

EDUL 630 Implementation and Evaluation of Comprehensive School Reform: (3:0:0)

: EDUL 510, 515, 520, and 525

Comprehensive school reform; when is it needed; what is needed; how do you know it is needed; program evaluation; strategic planning for reforms; social, economic, political, and educational forces that drive reform; benefits, roles, responsibilities and challenges of reform for stakeholders (schools, teachers, students, communities); implementation of reforms; road-blocks to reforms; evaluation of reforms.

EDUL 640 Curriculum Design and Implementation: (3:0:0)

Pre-requisite: EDUL 510, 515, 520, and 525

Theoretical and practical approaches to curriculum design, planning, implementation and evaluation; socio-political and educational factors that influence the decision making process in curriculum development.

EDUL 650 Effective Classroom Management: (3:0:0)

Pre-requisite:EDUL510,515,520,and525

Creating positive learning situations; exploring effective classroom management strategies; understanding child learning processes; techniques to encourage students' positive social interactions, active engagement in learning and self-motivation.

EDUL 655: Strategies for Effective Student Learning (3:0:0)

Pre-requisite:EDUL510,515,520,and525

Best practices and research based strategies to promote various learning styles and create an active learning environment that increases student success; relationship between the school and classroom settings, methodologies of teaching and student learning needs.

EDUL 665 Internship 1: Field-Based: (3:0:0)

Pre-requisite: EDUL 510, 515, 520, 525 and at least 2 courses in the chosen track

This field-based portion of the internship in educational leadership (EDUL 665) provides students with a work experience that enables them to apply concepts and theories learned in the classroom to actual practice in the workplace, to develop their skills, and to gain experience and knowledge for future employment. When followed by the class-based course (EDUL 666)

the students will have completed the internship with a strong research base in developing and implementing some aspect of educational reform and improvement. Over the term of 15 weeks, the intern is required to commit from 6 to 9 hours per week of on-site time for 90 to 135 hours of on-site work to explore a problem, design an investigation, review the research literature, collect data and recommend an appropriate intervention and possible implementation approaches. The intern will commit additional personal time as required.

EDUL 666 Internship 2: Class-Based: (3:0:0)

Pre-requisite: EDUL 665

Along with the field-based course (EDUL 665), the students will have completed the internship with a strong research base in developing and implementing some aspect of educational reform and improvement.

ENGL 100/101 (GEEN 103/100/101) Composition (3:3:0)

Pre-requisite: *requisite score in the English Placement Test*

Co-requisite:

The course provides learners intensive practice in drafting, revising, and editing expository essays of some length and complexity. It studies logical, rhetorical, and linguistic structure of expository prose and trains the student in the methods and conventions of preparing research papers.

ENGL 111 Introduction to the Study of Language (3:3:0)

Pre-requisite:

Co-requisite:

This course introduces students to the core subfields of linguistics (phonetics, phonology, morphology, syntax, and semantics/pragmatics), focusing on the formalisms and techniques needed to pursue more specialized coursework in the field. Through direct engagement with data from the Arabic language from a comparative perspective, students gain experience in describing linguistic structures and formulating testable hypotheses about the organization of mental grammar.

ENGL 112 The Structure of English (3:3:0)

Pre-requisite:

Co-requisite:

This course will provide knowledge about English grammatical concepts and structures, the basic tools of sentence analysis, classification of words, representations of the structure of clauses, and functions in the clause and syntactic operations.

ENGL 201 (GEEN 201) Literature across Cultures**(3:3:0)*****Pre-requisite: COMM 100 or COMM 101***

Close analysis of literary texts, including but not limited to poetry, fiction, and drama. Emphasizes reading and writing exercises to develop basic interpretive skills. Examines figurative language, central ideas, relationship between structure and meaning, narrative point of view.

ENGL 203 Contemporary Arabic Literature**(3:3:0)*****Pre-requisite: COMM 100 or COMM 101***

Study of literature by Arabic writers in English and in translation.

ENGL 211 Phonetics and Phonology**(3:3:0)****Pre-requisite:****Co-requisite:**

This course is an introduction to phonetics and phonology of English at an elementary level. Topics include the description and analysis of speech sounds, the anatomy and physiology of speech, speech acoustics, and phonological processes. Students will develop skills to distinguish and produce sounds used in English and to transcribe them using the International Phonetic Alphabet.

ENGL 212 Language, Society and Communication**(3:3:0)****Pre-requisite:****Co-requisite:**

This course is an introduction to the relationship between language and its sociocultural foundations. Specifically, the sociolinguistics course focuses on English from a comparative perspective with Arabic where appropriate. The course covers the main topics in sociolinguistics, such as language contact, bilingualism and multilingualism, language variation, social identity, codeswitching and code mixing, and diglossia.

ENGL 214 Semantics and Pragmatics**(3:3:0)****Pre-requisite:****Co-requisite:**

The course aims to provide an understanding of the principles underlying the expression of meanings through language. It surveys basic topics in semantics such as sense and reference, lexical semantics and basic sense relations, and semantics and grammar. It also provides an introduction to pragmatics and the negotiation of interpersonal meanings in contexts of situation.

ENGL 221 English as a Global Language (3:3:0)

Pre-requisite:

Co-requisite:

The course provides an overview of the function and spread of English as an international language, and the development of English from a single language, to “Englishes,” the various nativized varieties of English around the world. It also studies the sociolinguistic, literary, pedagogical, and ideological impact of global Englishes on users in a globalized world.

ENGL 222 Psycholinguistics (3:3:0)

Pre-requisite:

Co-requisite:

This course provides a basic introduction to the scientific study of language comprehension, language production, language development, and information processing from the perspective of experimental cognitive psychology.

ENGL 223 Applied Linguistics (3:3:0)

Pre-requisite:

Co-requisite:

This course deals with foreign language teaching and learning, and first, second, and foreign language acquisition. In addition, this course explains the professional application of linguistics and investigates real-world problems in which language is involved and provides an overview of different issues surrounding contemporary language use today.

ENGL 302 (ENGL 302) Advanced Composition (3:3:0)

Pre-requisite: Completion of 45 credits

Intensive practice in writing and analyzing expository forms such as essay, article, proposal, and technical or scientific reports with emphasis on research related to student’s major field.

ENGL 311 Gender and Language (3:3:0)

Pre-requisite: ENGL 212

Co-requisite:

This course is an exploration of the social construction of gender and how gender relates to language. It considers the experiences, beliefs, stereotypes, and the representation and enactment of gender in forms of language in different communities and groups and in different cultural events.

ENGL 320 Introduction to Translation Studies (3:3:0)

Pre-requisite:

Co-requisite:

This course aims to give students an overview of the rapidly developing area of translation studies and raise students’ awareness of current issues in the field of translation. The course

seeks to provide an overview of the key concepts and theories in translation studies and explore the different approaches employed in translation.

ENGL 322 Practical Translation: English into Arabic (3:3:0)

Pre-requisite:

Co-requisite: ENGL 323

The goal of this course is to provide students instruction and practical experience in translating documents of various genres from English into Arabic. The course deals with the problems, e.g. stylistic, syntactic, cultural, terminological, and technical, encountered in the English-Arabic translation process.

ENGL 323 Practical Translation: Arabic into English (3:3:0)

Pre-requisite:

Co-requisite: ENGL 322

The course provides focused training in translating texts from Arabic into English from a variety of contexts to enable a deeper understanding of the issues related to inter-linguistic translation.

ENGL 331 Introduction to the Teaching of English (3:3:0)

Pre-requisite:

Co-requisite:

This course is an introduction to the teaching of English to speakers of other languages (TESOL). Students will have a strong foundation in teaching English grammar, pronunciation, vocabulary, reading, writing, speaking and listening, so that they understand the challenges faced by learners. They will learn to use a communicative and integrative approach in teaching English, and will also locate, critique, and use a variety of teaching materials.

ENGL 332 Second Language Acquisition (3:3:0)

Pre-requisite:

Co-requisite:

The course provides a foundation in second language acquisition. Topics include bilingualism, language aptitude, and the cultural context of language acquisition. Students are introduced to empirical and theoretical issues in the field by considering both learner-internal and learner-external factors that shape second language acquisition.

ENGL 333 Theories and Methods of Teaching of English (3:3:0)

Pre-requisite:

Co-requisite:

The course focusses on cultural, historical and contemporary developments in English language teaching, and techniques for teaching listening, speaking, reading, writing, vocabulary, and grammar.

ENGL 334 Curriculum Planning, Development and Assessment (3:3:0)

Pre-requisite:

Co-requisite:

This course focuses on the study and development of techniques for the teaching and evaluation of English as a Second Language, studies theoretical underpinnings of curriculum, and the strategies to evaluate school curriculum. It studies the relationship between curriculum theory, design, evaluation, and policy.

ENGL 341 Introduction to the Study of Literature (3:3:0)

Pre-requisite:

Co-requisite:

The course introduces students to different ways of thinking, speaking and writing about literary texts. It explores what constitutes literature and through an analysis of drama, poetry, and prose, examines different genres of literature. Students engage in a variety of literary texts in order to demonstrate the diversity and complexity of literature, to enhance a critical appreciation of literature, and to find connections between literature, culture, ourselves, the world, and the human condition

ENGL 342 World Literature – I (3:3:0)

Pre-requisite: ENGL 341

Co-requisite:

Students explore themes of representative major works of world literature in English or in English translation. Students engage a variety of works in a variety of genres including epic and lyric poetry, tragic drama and a variety of narrative prose forms. Students discuss, research, and write about literature from the period.

ENGL 343 World Literature – II (3:3:0)

Pre-requisite: ENGL 341

Co-requisite:

Students explore themes of representative major works of world literature in English or in English translation to critically evaluate it. Students engage a variety of works in a variety of genres including but not limited to Shakespearean tragedy, the philosophical tale, Romantic poetry, Naturalist drama, and Realist, Modernist and Post-modernist fiction. Students discuss, research, and write about literature from the period.

ENGL 344 American Literature – (3:3:0)

Pre-requisite: ENGL 341

Co-requisite:

Students learn and use the major themes of representative major works of American literature to critically evaluate it. Students will read such writers as Edwards, Franklin, Hawthorne, and Emerson in order to understand the place of genres such as the sermon, autobiography, the novel, and lyric poetry during both the colonial period and the early years of the republic.

Students discuss, research, and write about literature from the period.

ENGL 420 Tools and Technology in Translation (3:2:2)

Pre-requisite: ITEC 103

Co-requisite:

This course trains students to apply their theoretical and conceptual background to a very practical approach to translation, ranging from using machine translation (MT) and computer-aided translation (CAT) tools in the tasks of translation memory (TM) management, terminology database (TD) management, translation project management, translation of documentation, and software localization to exploiting translation resources available on the internet.

ENGL 421 Interpretation and the Community (3:3:0)

Pre-requisite:

Co-requisite:

This course has been designed to assist individuals with a second or third language to become qualified as professional community interpreters, both from English into Arabic and from Arabic into English. It is particularly useful for individuals who deliver interpreting services on a voluntary basis and who would like to formalize their experience in this area of work and will enable you to develop, improve and practice interpreting and translation skills.

ENGL 422 Technical Translation: Scientific and Legal Texts (3:3:0)

Pre-requisite: ENGL 322

Co-requisite:

This course is designed to provide instruction and supervised practice in technical translation from English into Arabic. During the course, students will be working with various types of scientific and legal texts. Students will learn how to translate specialized texts from English into Arabic successfully dealing with major syntactic and lexical problems while accurately conveying meaning both at a denotative and at a connotative level.

ENGL 423 Media Translation (3:3:0)

Pre-requisite:

Co-requisite:

This course aims to provide students with practice in the translation of English media texts into Arabic. The course is designed to familiarize students with media style, format and features which play a role in the translation process. In addition, the course aims to familiarize students with the linguistic, socio-cultural and technical dimensions that characterize media translation. Examples of the text genres to be studied are editorials, press reports, news stories, and magazine and newspapers articles.

ENGL 432 Teaching Literature (3:3:0)

Pre-requisite:

Co-requisite:

This course is designed to introduce students to practical and theoretical concerns in teaching literature. Students will learn to construct a syllabus, set teaching objectives, organize a course; review theories on teaching methods (focusing on literature workshops), evaluation and assessment, as well as ways to handle problems and pitfalls.

ENGL 433 Classroom Management and Student Engagement (3:3:0)

Pre-requisite:

Co-requisite:

The course provides knowledge about foundational theories and strategies to manage classrooms. The emphasis is on the application of these concepts and strategies in the teaching of English to foster a motivated and effective classroom atmosphere that enhances student learning of English as a foreign language.

ENGL 434 Technology and Teaching of English (3:2:2)

Pre-requisite: ITEC 103

Co-requisite:

This course will focus on the role various forms of electronic and digital technology can play in English language Learning. In addition to developing specific technological skills, students will explore different ways of using technology in instruction, assessment, research, and professional development. Other topics are current technological trends, pedagogical issues, and scholarly research addressing the integration of technology in English language teaching and learning.

ENGL 440 American Literature – II (3:3:0)

Pre-requisite: ENGL 341

Co-requisite:

Students learn and use the major themes of representative major works of American literature to critically evaluate it. Students engage a variety of genres and movements in studying the Realist fiction of writers such as Dreiser and James, the poetry of Whitman, Dickinson, Modernist writers of fiction and poetry such as Hemingway, Faulkner, Eliot and Plath, and an array of contemporary fiction and poetry. Students discuss, research, and write about literature from the period.

ENGL 441 Literary Perspectives (3:3:0)

Pre-requisite: ENGL 341

Co-requisite:

Students focus on one aspect of World Literature chosen at the discretion of the instructor. This may be related to genre; for example, a study of epic poetry, or of the short story; a significant literary figure; for example, Shakespeare, Austen, Dickens, Whitman; specific periods and/or literary forms: neo-Classical poetry or the nineteenth century European novel; movements such as Romanticism, Modernism, post-Modernism; or common themes through literature such as love, honor, war, and heroism. While the content will vary, students are expected to analyze texts by applying the literary approaches that they have learned in studying literature.

ENGL 442 British Literature – I (3:3:0)

Pre-requisite: ENGL 341

Co-requisite:

The course encompasses major prose and poetry of English writers from the Anglo-Saxon period up until the eighteenth century. Students study representative works from the medieval period by authors such as Chaucer, from the Renaissance by dramatists and poets such as Shakespeare and Milton, and from the eighteenth century by writers such as Pope and Swift. It focuses on understanding the ideas and literary genres that define these periods. All readings are presented in a literary and historical context so that students gain an understanding of the historical, cultural, and philosophical influences that shape the texts.

ENGL 443 British Literature - II (3:3:0)

Pre-requisite: ENGL 341

Co-requisite:

Students survey some of the major literary movements of the period through studying representative works from, for example, poets such as Wordsworth and Keats from the Romantic period, from fiction writers of the Victorian era such as Gaskell and Dickens, and Modernist authors such as Joyce and Eliot.

ENGL 444 Special Topics in Literature (3:3:0)

Pre-requisite: ENGL 341 and two other Literature courses at the 200 or above level

Co-requisite:

The content of the course is on critical examination of a genre, historical period, literary movement, writer, theme, or critical approach with the object of producing a sustained piece of literary critical writing.

ENGL 490 Research Methodolog (2:2:0)

Pre-requisite:

Co-requisite:

The aim of the course is to provide comprehensive understanding of the diverse research methods used, and to convey the necessary practical skills required for their application in the areas of Translation, Teaching of English and Literature. Through lectures, seminars and practical workshops, the course will provide students with relevant knowledge of major research methods, their respective uses and usefulness, and their relevance for the study of contemporary research issues in their concentrations.

ENGL 492 Senior Research Project (3:3:0)

Pre-requisite: ENGL 490

Co-requisite:

Students will identify, conduct research, conduct a literature review, design a research project, and present their research, in the area of their concentration with the guidance of faculty mentors.

ENGR 107 (SCEN 107) Introduction to Engineering (2:2:0)

Co-requisite: Math Placement Test score qualifying student for MATH 113

Introduces engineering profession fundamentals and problem-solving. Topics include description of engineering disciplines, functions of the engineer, professionalism, ethics and registration, problem solving and representation of technical information, estimation and approximations, and analysis and design.

ENGR 390 Internship (3:0:3)

Pre-requisite: Completion of 90 credits and a cumulative GPA of 2.0 or higher

Supervised field experience of professional-level duties for 180 to 240 hours at an approved internship site under the guidance of a designated site supervisor in coordination with a faculty supervisor.

ENGR 399 Undergraduate Research Project (3:0:0)

Prerequisite: Department Consent

Individual investigations, studies or research of any phase of engineering selected by the student and approved by the department.

ENVS 100,101 Energy and Environmental Science (4:3:3)

Pre-requisite:

Co-requisite: ENVS 101

The course is an inter-disciplinary study of environmental disruption and management, natural environmental systems, and the human impact on them. Other topics include energy procurement and use, waste management, water resources and water pollution, acid rain, global warming and ozone depletion.

ENVS 102 Sustainability and Human-Environment Relations (3:3:0)

Pre-requisite:

Co-requisite:

The course examines the interactions between human and environmental systems, and its effect on the future of environmental sustainability. Topics covered include global and local environmental change, conservation of the ecosystem, biodiversity, water management and climate change.

FNAN 301 (BUFN 301) Financial Management (3:3:0)

Pre-requisites: ECON 103

Understanding the criteria and process for making decisions to manage a firm's financial resources in order to maximize wealth. Includes management of working capital, fixed-asset investment, and cost of capital, capital structure, and dividend decision analysis.

FNAN 302 (BUFN 302) Financial Analysis and Forecasting (3:3:0)

Pre-requisites: FNAN 301

Techniques for analyzing, understanding, and applying financial information in decisions. Topics include analysis of financial statement, development of financial models, and financial planning and forecasting.

FNAN 311 (BUFN 311) Principles of Investment (3:3:0)

Pre-requisite: FNAN 301

Analysis of the valuation of equity and debt securities given modern capital market theory. Portfolio analysis as related to valuation of securities.

FNAN 321 (BUFN 321) Financial Institutions (3:3:0)

Pre-requisite: FNAN 301

Examines basic objectives of financial institutions in light of industry structure and regulatory environment, and decision variables that management should concentrate on to achieve objectives. Includes role of financial institutions in allocation of funds in financial markets.

FNAN 331 (BUFN 331) Principles of Real Estate (3:3:0)

Pre-requisite: FNAN 301

Dimensions and specialties involved in public control and private development, sale, finance, and management of real estate. Topics include, land planning, land-use control, appraisal, finance, brokerage, property management and investment. Course includes lectures, discussion, and computer- assisted research.

FNAN 401 (BUFN 401) Advanced Financial Management (3:3:0)

Pre-requisite: FNAN 301

Analysis of decision-making in firms, emphasizing conceptual structure of problems and using advanced analytic techniques. Includes current asset management, capital budgeting and structure, dividend policy, long-term financing, mergers, and corporate planning models.

FNAN 411 (BUFN 411) Investment Analysis and Portfolio Management (3:3:0)

Pre-requisites: FNAN 301 and FNAN 311

Analysis of modern techniques of portfolio management including evaluating standards for selecting individual securities to include or delete from portfolios. Presents risk-return analysis for portfolios and portfolio performance measures.

FNAN 412 (BUFN 412) Futures and Options Markets (3:3:0)

Pre-requisites: FNAN 301 and FNAN 311

Introduces options, commodity, and financial future markets as they function to provide pricing mechanisms and alternative investment vehicles. Lecture, discussion, and computer assisted research and weekly seminar.

FNAN 421 (BUFN 421) Money and Capital Markets (3:3:0)

Pre-requisites: FNAN 301 and FNAN 321

The organization of capital markets, their role in the allocation of funds to various market segments, and interaction between markets. Topics include aggregate flow of funds analysis; and money, government, corporate, and mortgage markets.

FNAN 431 (BUFN 431) International Financial Management (3:3:0)

Pre-requisites: FNAN 301

Management of contemporary firms' international financial operations. Topics include foreign exchange risk, political risk, returns and risks of international projects, international money and capital markets, financial accounting, capital structure, and cost of capital.

FNAN 441 (BUFN 441) Real Estate Finance (3:3:0)

Pre-requisites: FNAN 301 and FNAN 331

Mechanisms of real estate finance, sources of funds, loan contracts, principles of mortgage risk analysis, and secondary mortgage markets. Develop analytical skills including using microcomputer and appropriate software.

GEOG 200 World Regional Geography (3:3:0)

Pre-requisite:

Co-requisite:

This course will examine a broad range of geographical perspectives covering all of the major regions of the world. Student will review the basic theories of the discipline of geography, the relationship of world population and resources and the factors affecting development, and survey the major regions of the world to identify each region's distinguishing geographic characteristics. The basic geographic components of each region, both physical and human, are discussed. For each of the world's realms, a regional issue is identified and current issues will be incorporated into classes as they arise.

GLST 100 Topics in Global Perspectives, Problems and Prospects

The course addresses contemporary issues impacting international and global affairs, and the major political, social, economic and environmental forces confronting global communities.

GLST 200 Clash of Civilizations

The course explores the impact of war and conflict on society from ancient times to the present and the effect of various means, strategies and methods for peace-building.

HIST 100 Contemporary Middle Eastern History (3:3:0)

Pre-requisite:

Co-requisite:

The course is designed to acquaint students with an in-depth understanding of the major issues affecting the Middle East in the 21st century, will review the origins and development of the modern Middle East and understand the social, economic, and political foundations that set the stage for the region this century. Students will also become familiar with original source material that frame the key issues in the modern Middle East and engage in discussion of key issues.

HIST 101 Ancient History of the Arabian Peninsula (3:3:0)

Pre-requisite:

Co-requisite:

This course concentrates on the geographical background of the Arabian Peninsula, including its location, and descriptions of its provinces, routes, its flora and fauna. It also focuses on the commercial importance and its political situation during the period from the third Millennium B.C. to the rise of Islam or to the seventh century A.D. There are some details about archaeological sites in the Peninsula. It also studies in details about the ancient kingdoms, civilizations, people and societies of Arabia. This course deals with religious, political, commercial and social situations in Arabia before the Rise of Islam. The course also studies the relations between the ancient Arabs and their neighbors.

HIST 111 (GEHS 111) Introduction to World History (3:3:0)

Analytical approach to an overview of world history that surveys the major features of principal existing civilizations of the world, as originally formed and as altered by key global processes, including forces of modernity.

HIST 281 (GEHS 210) Survey of Middle Eastern Civilization I (3:3:0)

Survey of Middle Eastern history from rise of Islam to present, emphasizing processes that led to emergence of economic, cultural, social, and political institutions that characterize region today. HIST

210 surveys the period from rise of Islam in 570 to medieval period (ca. 1258).

HIST 282 (GEHS 211) Survey of Middle Eastern Civilization II (3:3:0)
Second half of the survey of Middle Eastern history. HIST 282 surveys the period from about 1258 to the present.

IENG 231 Engineering Materials: (3:0:3)
Prerequisite: (CHEM 211)
Bonding forces and energies, classification of engineering materials, crystals graph, imperfection and strengthening mechanisms diffusion, metallographic, thermal equilibrium diagram & relative cost of materials.

IENG 232 Materials lab.: (0:3:1)
Prerequisite: CIEN 212)
Co-req. (IENG 231)
Tensile and hardness testing of different materials, impact testing, non-destructive testing microscopic testing, thermal conductivity and electrical resistivity of materials.

IENG 241 Engineering Statistics: (3:0:3)
Prerequisite: (MATH 114)
Probability concepts, discrete and continuous random variables, joint probability distribution covariance and correlations of random variables sampling and empirical distributions. Point and interval estimation, test of hypotheses, goodness of fit test, contingency tables, design and analysis of single factor experiments, simple linear regression and factorial design.

IENG 311 Manufacturing Processes I : (3:0:3)
Prerequisite: (IENG 231)
Mechanical behaviour and forming of metals different types of mechanical behaviour and main factors affecting it, yield criteria, representative stress and representative strain, work due to plastic deformation, classification of forming processes with respect to temperature and strain rate, bulk deformation processes (forging, extrusion, rolling), rod and wire drawing sheet forming processes (blanking and piercing, deep drawing and bending, introduction to high energy rate forming processes).

IENG 411 CAD/CAM: (3:0:3)

Prerequisite: (CIEN 212)

This course introduces students to the analytical basis to CAD software and the three main ways to represent an entity, namely wireframe, surface and solid modeling. The course can be broken down into three main stages. The first stage of the course aims at introducing the concept and importance of CAD as part of the design process. The second stage focuses on mathematical representation and manipulation of geometrical entities. The final stage discusses current applications of CAD in academic and industrial fields, especially ones related to the instructor's field of expertise.

IENG 412 Product Design: (3:0:3)

Prerequisite: (CIEN 212)

Product life cycle, value analysis and engineering, design and development approaches, feasibility study, market and competitive products analysis, analytical techniques of product design and development, predating quality, cost and time parameters analysis.

IENG 413 Metrology: (3:0:3)

Prerequisite: (IENG 311)

Errors, linear, angular and contour measurements, sine bar, rotating table fits and tolerances, interchangeability, ISO shaft and hole systems of fits and tolerances, thread and gear metrology, surface texture, out of roundness and flatness measurement, sensing devices, transducers, smart sensors and transmitters, force, torque and train measurements, design of load cells, temperature, pressure and flow measurements.

IENG 421 Production Planning and control: (3:0:3)

Prerequisite: (IENG 241)

Strategic issues in designing production planning and control systems, aggregate planning, master production scheduling, material requirements, planning capacity, planning and scheduling.

IENG 422 Facilities Planning: (3:0:3)

Prerequisite: (IENG 421)

Strategic facilities planning, plant location, product, process and schedule design, flow, space and activity relationship, personnel requirements, materials handling, computer-aided- layout, warehouse operations.

IENG 423 Total Quality Management: (3:0:3)

Prerequisite: (IENG 322)

Leadership, customer focus, employee involvement, suppliers partnership, performance measures, tools of TQM, quality assurance systems.

IENG 424 Time and Motion Study: (3:0:3)

Prerequisite: (IENG 323)

Study of manufacturing, service methods and processes, analytical techniques of process flow and efficiency, improving processes study of time and movement, standardization of methods and time measurement.

IENG 425 Project Management: (3:0:3)

Prerequisite: (IENG 341)

Basics of project management and its importance in project success and the achievements of objectives within constraints of time, budget and standards, compressive integrated planning for all activities required for a project.

IENG 426 Safety Engineering: (3:0:3)

Hazards in workplace, analytical tools of hazards and accidents, probabilistic concepts, safety and health systems, national regulations and requirements, hazard control, safety and health management.

IENG 428 Operation Research II: (3:0:3)

Prerequisite: (IENG 341)

Probabilistic and stochastic models used in industrial engineering systems, mark or processes, stochastic processes, queuing and it's applications, discrete and continues processes.

IENG 441 Statistical Analysis: (3:0:3)

Prerequisite: (IENG 241)

Probabilistic and stochastic models used in industrial engineering systems, mark or processes, stochastic processes, queuing and it's applications, discrete and continues processes.

IENG 442 Industrial Engineering Design: (3:0:3)

Prerequisite: (IENG 312)

The course introduces students to design for manufacturability and design for manufacturing processes, with emphasis on four areas; manufacturing processes, equipment/control, design for manufacturability, and cost. The course exposes students to integration of engineering and management disciplines for determining manufacturing rate, cost, quality and flexibility. Topics covered include process physics, equipment design and automation/control, quality, design for manufacturing, industrial management, and systems design and operation. This is a project-based course where students will work in teams to complete one project thus each student will obtain experience creating a proper design report.

IENG 451 Control Systems: (3:0:3)

Prerequisite: (MATH 241)

Modeling of dynamical systems, linearization, sensors, transfer function, time response of 1st order and 2nd order systems, block diagrams, stability, Routh-Hurwitz criterion, time domain and frequency domain response, root locus techniques, Bode diagrams, Nyquist criterion, Phase-Lag compensator design, Phase-Lead compensator design, PID compensator design.

IENG 452 Industrial Automation: (3:0:3)

Prerequisite: (IENG 451)

Introduction to the various technologies used in manufacturing automation. Building blocks of automation: sensors, analyzers, actuators, and drives. Numerical Control and CAD/CAM: Introduction to NC machines, classification of NC machines, CNC programming, computer-aided design, computer-aided manufacturing, CAD/CAM integration, computer-integrated manufacturing. Introduction to robotics: robots geometry, drives, tooling, types of robot motion, industrial applications of robots. Programmable logic controllers: design and ladder programming.

IENG 491 Senior Design Project I: (0:2:2)

Prerequisite: (Senior Standing)

Planning, design, construction and/or management of an industrial engineering project. Writing a technical report. Preparation of technical engineering drawings.

IENG 492 Senior Design Project II: (0:4:4)

Prerequisite: (IENG 491)

Continuation of phase (1) including; writing a technical report and drawing the project drawings and details.

IENG 493 Special Topics in Industrial Engineering: (3:0:3)

Prerequisite: (Dept. Approval)

Special up-to-date topic in one of the industrial engineering streams, manufacturing, or engineering management.

I TEC 103 (SCIT 103) Introduction to Computing (3:1:2)

Students who are experienced computer users may request to test out of this requirement at Orientation or before the end of the Add period and take another computer science course or general education elective instead.

The nature and uses of computers with an introduction to word processing, spreadsheets, databases, and presentation software and related lab projects. Computer systems organizations, communications and networking, legal and ethical issues, effective presentation of information, computer security, and the internet.

MATH 101 Numbers and Data Interpretation (3:3:0)

Pre-requisite:

Co-requisite:

This course will be designed to improve the level of quantitative awareness of students using familiar situations that provide a sense of purpose for studying mathematics and to develop understanding of the techniques involved in the construction of mathematical models using problem solving strategies from mathematics and statistics. The topics of the course will include sets and logic; linear, quadratic, logarithmic and exponential models of growth; Financial mathematics; interest theory, loans, annuities; probability and descriptive statistics and estimation.

MATH 102 Mathematics in Civilization (3:3:0)

Throughout the history of mankind the mathematical spirit has been the driving force in the development of the civilized world. This course creates an understanding of the impact of the mathematical way of thinking on the arts, society, history, science and technology. The goal is to illuminate Mathematics' role in the development of Eastern and Western civilizations and shed some light on the whole site of human civilization from a mathematical point of view.

MATH 103 Intermediate Algebra (3:3:0)

Pre-requisites: Math Placement Test.

Basic algebraic skills including factoring, solving basic linear and quadratic equations, and rules of exponents and radicals, basic concepts of functions with specific examples such as polynomial and rational functions. Prerequisite to MATH 108. Not for degree credit.

MATH 105 Pre-calculus (3:3:0)

Pre-requisites: Math Placement Test.

Reviews mathematical skills essential to studying calculus. Topics include inequalities, absolute values, graphs, functions, exponential and logarithmic functions, and trigonometry. Prerequisite to MATH 113. Not for degree credit.

MATH 108 Business Calculus (3:3:0)

Pre-requisite: MATH 105, or appropriate score on Math Placement test

Co-requisite:

The course covers topics such as functions, limits, derivative, and integral calculus as well as applications of differentiation and integration.

MATH 110 (SCMT 110) Introductory Probability and Statistics (3:3:0)

Pre-requisite: Acceptable score on the Math Placement Test Elementary set theory, probability, and statistics.

MATH 111 Calculus for Life Sciences (4:3:0)

Pre-requisite: MATH 105, or appropriate score on Math Placement test

Co-requisite:

This course provides students with the knowledge and skills necessary to describe a system, translate appropriate aspects into equations, and interpret the results in terms of the original problem. All the concepts are presented through biological and medical applications. Since this is for college freshmen, the examples are chosen so that no formal training in biology is needed. Standard topics from calculus courses are covered, with particular emphasis on those areas connected with modeling such as discrete-time dynamical systems and differential equations.

MATH 113 Calculus I (4:3:0)

Pre-requisite: MATH 105, or appropriate score on Math Placement test

Co-requisite:

The concept of derivative (instantaneous rate of change) is an essential factor in solving real-world problems. One of the objectives of this course is to understand the conceptual foundation of derivative, and learn different techniques of computing the derivative, as well as learning how to apply it to solve real-world problems. Another objective is to understand the concept of integration and learn basic integration technique.

MATH 114 Analytic Geometry and Calculus II (4:4:0)

Pre-requisite: MATH 113

Methods of integration, conic sections, parametric equations, infinite series, and power series.

MATH 203 Matrix Algebra (3:3:0)

Pre-requisite: MATH 114

Systems of linear equations, linear independence, linear transformations, inverse of a matrix, determinants, vector spaces, eigen values, eigen vectors, and orthogonalization.

MATH 213 Calculus III (3:3:0)

Pre-requisite: MATH 114

Partial differentiation, multiple integrals, line and surface integrals, and three-dimensional analytic geometry.

MATH 214 Elementary Differential Equations (3:3:0)

Pre-requisite: MATH 213

First-order ODEs, higher-order ODEs, Laplace transforms, linear systems, nonlinear systems, numerical approximations, and modeling.

MATH 225 Discrete Mathematics (3:3:0)

Pre-requisite: MATH 113

Logic and proof techniques, sequences and summations, set theory and combinatorics, probability, recurrence relations and asymptotic growth of functions, graph theory, finite-state machines, and Turing machines.

MBAC 512 Managerial and Financial Accounting (3:0:0)

Pre-requisite: Graduate Standing

The course deals with managerial and financial accounting techniques and practices. The course examines the impact of cost and cost allocation on business performance analysis, using a variety of costing schemes. It presents accounting as an information system construct, and looks at methods for recording, presenting and analyzing accounting information. The course also looks at budgeting, ratio analysis and other fiscal management measures. The course discusses the impact, on Management and Financial Accounting, of contemporary management philosophies and techniques including JIT practices, quality assurance and performance measurement.

MBFN 514 Managerial Finance (3:0:0)

Pre-requisites: Graduate Standing

The course provides detailed critical treatment of the theory and practice of financial management within organizations. Topics covered include financial modeling, breakeven analysis, investment decision-making (NPV, IRR, etc.), capital budgeting and structure, working capital management, analysis of financial statements, and risk analysis. There is additional treatment of managerial economics

MBFN 560 International Corporate Finance (3:0:0)

Pre-requisites: MBFN 514

The course provides an advanced treatment of techniques for managing international financial operations for a range of business types. Topics covered include financial analysis for investment decisions in an international setting, international money operations and capital markets, management of foreign exchange risk, working capital management, direct foreign investment, funding of international projects, political risk analysis, currency derivatives and swap markets.

MBFN 562 Investment Planning & Management (3:0:0)

Pre-requisites: MBFN 514

The course deals with the advanced analysis of equity securities and investment portfolios, predicated on relevant market hypothesis and capital market theory. The course looks at investment risk-return trade-off, asset pricing models, and stock price behavior. Added emphasis is placed on stocks, bonds, and financial futures and options.

MBFN 564 Financial Markets & Institutions (3:0:0)

Pre-requisites: MBFN 514

The course deals with financial markets, primarily global equity markets. It looks at markets for handling government debt instruments, and exchange-traded and over-the-counter financial derivative instruments such as futures, options, swaps, and asset-backed securities. There is detailed treatment of derivatives theories, derivatives exchanges, and valuation of derivatives, including standard and other non-standard options on a variety of underlying assets, in relation to relevant financial markets. The course also discusses emerging financial markets, and the effective management of risks emanating from these markets.

MBFN 574 International Finance (3:0:0)

Pre-requisites: MBFN 514

This course deals with management of international financial operations. It discusses issues pertaining to foreign exchange risk, political risk, returns and risks of international projects. It also looks at international money and capital markets, international financial accounting, capital structure, and cost of capital, in an international context.

MBGN 525 Research Methods for Business (3:0:0)

Pre-requisites: Prior completion of 9 MBA program credits

This course provides the necessary underpinning support for the MBA dissertation and general business domain research. It allows candidates to make informed decisions and appropriate choices pertaining to research methodology. A range of business research tools, approaches and analytical techniques are discussed, and guidance is given on optimal structuring of business research documents and MBA dissertations.

MBGN 545 MBA Investigative Study: Project or Seminar –based (Capstone) (3:0:0)

Pre-requisites: MBGN 525 and prior completion of 24 MBA program credits

This course acts as a capstone course, serving to integrate the various specialist and generalist strands that have been studied in the program. If taken in Project mode, the dissertation itself is an extended piece of work necessitating empirical fieldwork and the collection of primary data pertaining to the business under study. Analysis of field data is expected to generate critical commentary and recommendations. If taken in Seminar mode, the course entails the carrying out of an extended investigative study of a business domain problem, using secondary data.

MBGN 555 MBA Internship (3:0:0)

Pre-requisites: Prior completion of 24 MBA program credits

The MBA Internship is designed for candidates on the Graduate MBA program. It provides exposure to high level managerial practice and issues, in appropriate settings. Candidates will be able to opt for internship with local UAE-based companies, or international collaborating companies overseas. It will also be possible to base the MBA Project Dissertation on work carried out with the internship company, provided it satisfies relevant academic and postgraduate research criteria.

MBHR 572 International Human Resource Management (3:0:0)

Pre-requisites: MBMG 520

The course focuses on the application of HRM in an international context. Cultural, managerial and operational factors are inter-woven to provide a detailed but coherent conceptual analysis framework that can be applied for effective and efficient management of the international workforce. A number of contemporary I-HRM models are also discussed and utilized, with particular reference to I-HRM within and outside of the UAE/GCC.

MBHR 590 Applied and Strategic Human Resource Management (3:0:0)

Pre-requisites: MBMG 510

The course deals with key areas of applied and strategic human resource management, essential for providing supervisors and human resource specialists with a thorough understanding of the strategic role of human resource management and the techniques available to management for making effective use of the human resources of an organization. The material is delivered from the perspective of strategic and applied HRM practice in both the UAE/GCC and internationally.

MBHR 592 Managing Change and Innovation (3:0:0)

Pre-requisites: MBMG 510

This course discusses issues relating to the management of change in organizations. The different types of change typically encountered in organizations are characterized using well defined analysis frameworks. The effective management of corporate innovation is also considered, looking in detail at the ideas generation, development and diffusion phases.

MBHR 594 Employee Relations and Compensation Management (3:0:0)

Pre-requisites: MBMG 510

This course deals with legal and regulatory issues pertaining to employee relations from a number of perspectives. The compensation management aspect focuses on the theories underlying direct compensation and reward systems in organizations, and the practical administrative practices used to implement such systems, with particular reference to the UAE/GCC sub-region. Compensation management practices, including the analysis and evaluation of jobs, criteria and procedures for determining wage levels, individual wage determination, forms of pay, and incentive systems will be covered.

MBIB 524 International Business (3:0:0)

Pre-requisites: Graduate Standing

The course looks in-depth at salient aspects of managing in a globalized environment, including consideration of theoretical concepts. It offers a practical treatment of political-economic aspects of international trade. The course discusses foreign direct investment, global monetary systems, and strategy formulation for international business practice. The course additionally places stress on international business case analysis, within the UAE/GCC context.

MBMG 510 Leadership and Managing People (3:0:0)

Pre-requisites: Graduate Standing

This course provides an in-depth study of concepts relating to leadership and people management within organizations. The work integrates theory, research and applications, with an emphasis on context-driven learning. Students apply principles of leadership and people management to their own occupational situations and will investigate topical case studies. The material is delivered from the perspective of people-management practice in both the UAE/GCC and internationally.

MBMG 515 Strategic Management (3:0:0)

Pre-requisites: Graduate Standing

The course deals with the formulation, implementation and evaluation of strategies designed to give organizations a competitive edge. Corporate, business and operational – level strategy types are treated, and the use of various strategy analysis frameworks and models are discussed. Additional emphasis is placed on strategy formulation in the context of business practice in the UAE/GCC.

MBMI 520 Managing Information Systems Performance (3:0:0)

Pre-requisites: Graduate Standing

The course studies techniques and practices for analyzing business information systems performance with emphasis on support for business processes. The course gives a strategic and integrated view of the exploitation of information and communication technology, with particular emphasis on e-business for improving business performance and business efficiency. The course discusses IT-driven business strategy, and reviews IT-related factors that are necessary for enhancing the performance of organizations in the current competitive global business environment.

MBMI 580 Managing Enterprise Information Systems (3:0:0)

Pre-requisites: MBMI 520

The course provides a focused treatment of concepts and techniques relating to the management of complex, enterprise-wide, information systems. Topics covered included EIS systems design, implementation, tuning and evaluation, together with an in-depth consideration of responsiveness, availability, security and fault-tolerance issues.

MBMI 582 Managing Corporate Networks and Databases (3:0:0)

Pre-requisites: MBMI 520

The course provides detailed treatment of managerial aspects of commercial network and database systems. It offers advanced concepts and techniques for the effective design and implementation of infrastructural networks and back-end database schemes. The course discusses standards, administration and quality issues, together with disaster recovery measures, and service integrity.

MBMI 584 MBMI 584 – Information Systems Project Management (3:0:0)

Pre-requisites: MBMI 520

The course deals with the effective management of I.S. projects, from inception to roll-out. It looks at the structured project management schemes, together with current trends for 'agile' systems development and management of I.S. Projects. Aspects considered include scope, time and cost management, project portfolio management, scheduling and project control approaches.

MBMK 518 Marketing Management (3:0:0)

Pre-requisites: Graduate Standing

The course looks in-depth at techniques for crafting effective marketing strategies, for a variety of market environments. Customer-focused marketing strategy design, implementation and management are discussed using contemporary frameworks within a market-driven setting. The course emphasizes managerial aspects of marketing, including integrating specific elements of the marketing process. The course additionally places stress on case analysis, within the UAE/GCC context.

MBMK 570 International Marketing (3:0:0)

Pre-requisites: MBIB 524 & MBMK 518

The course deals with strategies and techniques for marketing goods and services internationally. The course reviews a number of frameworks, factors and practices pertaining to international market selection and entry, in addition to methods for choosing optional modes for engaging in international business.

MBOM 522 Production, Operations and Supply Chain Management (3:0:0)

Pre-requisites: Prior completion of 9 MBA program credits

This course deals with the business logistics of production, operations and supply chain systems. The course also examines inventory management, input/output distribution and process design applicable to a range of business types.

MENG 211 Thermodynamics I: (3:0:3)
Prerequisite: (CHEM 211)

Thermodynamics concepts and definitions, states, properties, systems, control volume, processes, cycles, units, tables of properties, work and heat, first law, internal energy and enthalpy, conservation of mass, steady-state and uniform state processes, second law, heat engines and refrigerators, reversible processes, entropy, clausius inequality, principle of the increase of entropy, efficiencies, irreversibility and availability.

MENG 212 Thermodynamics II: (3:0:3)
Prerequisite: (MENG 211)

The basic concepts of classical thermodynamics are continued in this course as was introduced in Thermodynamics 1. It introduces the students to basic laws and principles applications to gas power and refrigeration cycles, vapor and combined power cycles, mixtures of gases and vapors, psychrometry, chemical reactions, Thermodynamic property relations, and exergy analysis.

MENG 221 Dynamics: (3:0:3)
Prerequisite: (CIEN 211)

Position. Velocity. Acceleration. Potential and Kinetic Energy. Work. Linear Impulse. General Plane Motion. Projectile Motion. Angular Impulse. Mass Moment of Inertia. Parallel-Axis Theorem. Radius of Gyration. Power. Impacts. Angular Velocity. Relative Motion. Linear Momentum, Angular Acceleration. Center of Percussion. Newton's Laws. Angular Momentum. Instantaneous Center. Rotating Frame.

MENG 311 Internal Combustion Engines: (3:0:3)
Prerequisite: (MENG 212)

Engine classifications and terminology. Engine operating characteristics and performance parameters. Air standard engine cycles including: Otto, Diesel, Dual and two-stroke cycles. Common fuels used in IC engines, combustion reactions and the associated thermochemical calculations. Engine emissions and their control technologies and strategies. Air and fuel induction methods and technologies, the physics of the combustion phenomena. Friction losses, lubricants and lubrication systems. Engine-based experiments,

MENG 321 Mechanical Vibration: (3:0:3)
Prerequisite: (MENG 221)

Concepts of spring-mass-damper physical modeling of single and multi-degree of Freedom (or lumped masses) systems. Writing governing Equations of motion using Newton's and energy methods. Undamped and damped systems including viscous, hysteretic and Coulomb friction damping. Free and forced excitations systems: external force and base as well as rotating unbalance excitations. Mathematical techniques of solving the model governing equations and interpreting system characteristics: natural frequencies, resonances and mode shapes. Basic principles of vibrations measurements. Design of Vibration isolators. Lab. sessions include experiments of free and forced excitation as well as static and dynamic rotating unbalance.

MENG 341 Fluid Mechanics: (3:0:3)

Prerequisite: (MATH 214)

Flow classification, fluid properties, fluid in statics, pressure measurements, buoyancy, fluids in motion, continuity equation, pressure gradient in fluid flow, Bernolli's, momentum and energy equations, dimensional analysis and similitude, and flow in conduits

MENG 343 Thermo-Fluids : (3:0:3)

Prerequisite: (CIEN 211, MATH 213)

Thermodynamics concepts and definitions, states, properties, systems, control volume, processes, cycles, units, tables of properties, work and heat, first law, internal energy and enthalpy, conservation of mass, steady-state and uniform state processes, Flow classification, fluid properties, fluid in statics, pressure measurements, buoyancy, fluids in motion, continuity equation, pressure gradient in fluid flow, Bernolli's, momentum and energy equations

MENG 361 Heat Transfer: (3:0:3)

Prerequisite: (MENG 212 & MATH 214)

Introduction to heat transfer mechanisms, heat conduction equation, steady heat conduction including the thermal resistance networks, transient heat conduction, lumped systems, fundamental of convection and thermal boundary layers, external and internal forced convection, natural convection, boiling and condensation, thermal radiation, and heat exchangers

MENG 451 Mechanical Design I: (3:0:3)

Prerequisite: (CIEN 212, IENG 231)

The Machine Design I course includes various materials needed to design mechanical elements. Initially students will be familiar with some concepts and definitions, and then they will be introduced to general considerations & procedure of machine design: general principles of machine design, reliability and statistical considerations, engineering materials & their mechanical properties, factor of safety, fits & tolerances, deflections and stress analysis for the different types of elements, buckling, static strength and failure theories, fatigue strength and failure theories. Finally, the students will be introduced to the basic design principles of some machine elements and their selection (power screws, fasteners, weldments and mechanical springs). Also, the students will be introduced to the ethical and social impacts of mechanical design.

MENG 452 Mechanical Design II: (3:0:3)

Prerequisite: (MENG 451)

This course is a continuation to the machine design I course. Students will be introduced to the analysis and design concepts of various types of machine elements that include: bearings (journal and anti-friction); spur, helical and bevel gears; flexible drives and flywheels; clutches and brakes; shafts.

MEPM 511 Project Management Fundamentals**(3:0:3)**

Introduction to engineering project management including: overview and concepts of project management; principles, body of knowledge, and strategies, planning successful projects; defining, specifying, delivery options, scheduling, and budgeting, implementing; organizing the team, work assignments, team building, and effective leadership, executing; performance measurement, maintaining the schedule, adjustments/mid-course corrections, record keeping, status reporting, communications, managing conflict, and time management, and closeout; performance measurement, contract documentation, data transfer, lessons learned, and administrative closure.

MEPM 512 Engineering Contracts and Procurement**(3:0:3)**

Commercial management of engineering projects including the role and responsibilities of corporate managers, market analysis, structuring of procurement options, development of contractual terms and conditions, the pricing of work. Estimating and tendering engineering construction works via work breakdown structures, work method statements, risk identification and tendering principles. Contract administration and project control functions and techniques including time and money negotiations and cash flow management are also covered through the use of detailed case study material, ethics and professional responsibility.

MEPM 513 Project Implementation and Performance**(3:0:3)**

Examination of various techniques and models used to measure the performance of projects. Project structuring: Work breakdown structure, project scheduling, project organization, project cost estimation and budget. Earned value and earned schedule earned value management: project control using earned value measurement (EVM), earned schedule and resource management, project risk management. Quality control and quality assurance: quality management, quality management methods, scope management, quality assurance, commissioning

MEPM 514 Global Projects Management**(3:0:3)**

Overview of Global Project Management Characteristics of global projects Global project management challenges Global project management skills. Initiating Global Projects; identifying global business opportunities, criteria for selecting a global project, global risks and threats conducting a pre-project country study. Planning Global Projects; defining global project requirements and scope, the global scope, management plan, the Staffing management plan and the project team, risk management planning for globally dispersed projects. Implementing global projects political, social, economic, infrastructure, legal and industry-specific

considerations, joint ventures and strategic alliances, negotiation norms and styles Intellectual property rights and laws. Controlling global projects complexity factors in controlling global projects, characteristics of an effective project control system, and organizational considerations for controlling projects across multiple countries, schedule, cost and quality control in global projects. Closing out global projects; challenges of financial and administrative closeout of a global project repatriation challenges.

MEPM 515 Project Scheduling

(3:0:3)

This course teaches students about the various scheduling approaches that are currently being used in the design and engineering industry: how to plan a project by defining items of work for the project, setting up calendars & activity coding structure, creating activities & relationships between them, and assigning resources to activities using CPM scheduling software. On completion of the schedule, students will learn how to organize, format and filter the schedule, as well as assign target schedules for managing and troubleshooting the project and communicate the schedule by setting up reports, using Primavera Post Office & Email and the Web Publishing Wizard.

MEPM 516 Project Quality Management

Introduction to quality management principles including its history, the role of total quality, and the philosophical perspectives supporting total quality. In-depth look at the management system and its relationship to total quality. Investigation of technical issues and the role of tools and techniques in the quality management process including methods, quality improvement and associated management models, and reliability in design and production. Exploration of methods of building and sustaining quality organizations.

MEPM 519 Field Application Project

(3:0:3)

The field application project is a capstone course in which the graduate student evidences the ability to apply the program outcomes to an applied project that integrates all basic elements of project management; planning, organizing, securing, managing, leading, and controlling resources to result in achievable specific goals project. The student will work with an instructor advisor to achieve project approval.

MEPM 521 Project Cost Accounting and Finance**(3:0:3)**

This course reviews the fundamentals of accounting, examines project cost accounting principles, applications, and impact on profitability; examines the principles of activity based costing; covers the elements involved in cash management; introduces the framework for how projects are financed and the potential impact financing has on the projects; and a framework for evaluating PC based systems and what resources are needed for an effective project cost system.

MEPM 522 Financial Analysis and Decision Making**(3:0:3)**

This course will help student learn to present the costs and value creation opportunity of future and ongoing projects to make good resource usage decisions for the organization and to be able to increase chances of obtaining financial support and resources for projects. The course includes treatment of some theoretical issues in finance, as well as practical application of those topics. Topics include: ethics, global issues in finance, time value of money, cost of capital, financial forecasting, firm valuation, capital budgeting, risk analysis, capital structure and dividend and firm reinvestment issues.

MEPM 531 Operation Research**(3:0:3)**

An introduction to the key aspects of operations research methodology. Students will model and solve a variety of problems using deterministic and stochastic operations research techniques. Topics include basic theory, modeling, the use of computer tools, and interpreting results.

MEPM 532 Engineering Management**(3:0:3)**

The fundamentals of management science, major management functions of the firm, with emphasis on project management including: organization, planning, coordination, and control of operations, managerial decision making; linear and integer programming, goal programming, multi-objective optimization, simulation, decision analysis, Analytic Hierarchy Process (AHP), deterministic and stochastic dynamic programming. Applications will be drawn from the Critical Path Method (CPM), resource management, and other areas of Project management.

MEPM 533 Information Systems for Project Management**(3:0:3)**

There are two parts to this course: analysis and syntheses. During analysis, students identify how both web services and traditional software can solve project management problems. Both project management problems and solutions are separated into parts in order to better understand them during analysis. During synthesis web services are specified. In addition, they will study how an organization is impacted by economic, social, legal and ethical aspects of this technology.

MEPM 541 Organization Behavior and Project Team Management**(3:0:3)**

Managing the human elements of project management is as challenging as mastering the technical aspects. Innovative approaches are employed to successfully motivate, communicate, negotiate and resolve conflicts among the team members and stakeholders. In this course, students develop an understanding of the individual, the group and the project team. Proven techniques to make conflict constructive, rather than a destructive experience, are discovered. Students develop effective communication, negotiation, and conflict resolution skills to successfully lead both domestic and global projects.

The three key elements of the course will be: 1) the behavior of individuals in organizations, 2) groups in the organization, and 3) the organization system and how these behaviors affect the overall performance of organizations. Students in Organizational Behavior and Project Team Behavior will have an opportunity to increase their ability to be a better manager by developing greater understanding of the dynamics of personality and perception, attitudes and values, motivation, group work, leadership, power and politics, conflict, organizational culture and change. This course also develops ethics skills through a series of case studies. We will use readings and class discussions integrated with case studies, exercises, self-assessments, team projects and other experiential activities to find links between theory, research, and practice.

MEPM 542 Operations Management**(3:0:3)**

The intent of this course is to provide management and analytical concepts and tools for the management of operations and the decision-making process within the scope of the supply chain. Competitive advantage driven by supply chain strategy has been a common practice in the business environment in the past few years. Most of the strategies involve improving operational efficiency either through cost reductions or increase capital efficiency. Decision-making regarding operational issues is one of the most common tasks within organizations. This course will enhance students' ability to perform the quantitative analysis necessary and understand the management issues in order to make good operational decisions within the supply chain. Coverage is topical and will include supply chains issue and strategy, operations management framework, the Six Sigma approach, quality management, demand and supply planning, inventory deployment/control, and transportation networks optimization.

MEPM 543 Risk Management for Project Managers**(3:0:3)**

Quantitative approaches to identifying, analyzing, assessing, and managing risks inherent to engineering projects. This is a quantitative course which addresses fundamental issues, principles, and theory: Probability modeling, choice, and value theory. Schedule and cost risk. Risk mitigation and transfer, including insurance and alternate risk transfer instruments. Legal and ethical considerations of project risk. Examples drawn from large engineering projects in the UAE and Gulf countries; oil and gas industry, construction and infrastructure, ICT projects, and systems integration.

MEST 100 Introduction to Islam in World Culture**(3:3:0)****Pre-requisite:****Co-requisite:**

The course provides an introduction to the basic sources and historical contexts for the origins of Islam; some of the basic spiritual principles expressed in those sources; the contexts and practices that exemplify the spiritual principles; contributions Islam has made to civilization and to the political, social and cultural identity of the UAE. It will illustrate the concept of Islamic studies through a global, interdisciplinary and comparative approach and examine contemporary global and local issues that impact and are impacted by Islamic culture.

MGMT 301 (BUMG 301) Managing People and Organizations**(3:3:0)**

Focuses on the complexities of human behavior in organizational settings. Performance expectations and determinants at the individual, team and organizational levels are examined.

MGMT 311 (BUMG 312) Principles and Practices of Management**(3:3:0)*****Pre-requisites: MGMT 301.***

Examination of the nature of managerial work under a range of business models and under rapidly- changing business conditions. Managerial functions and activities such as planning, strategizing, organizing, controlling, and directing examined in depth and in context of current organizational examples and scenarios.

MGMT 403 (BUMG 403) Cross and Global Management**(3:3:0)*****Pre-requisites: MGMT 301***

The theory and practice of managing culturally diverse organizations in local and international contexts. Topics include management customs and practices in different world regions, cross-cultural communication and learning, and the developing culturally-and internationally-sophisticated and managers.

MGMT 411 (BUMG 411) Competitive Strategy (3:3:0)

Pre-requisites: MGMT 301

The industry structures and competitive behavior of firms with attention to how firms use tangible, intangible, and human resources to develop a sustainable competitive advantage, and how competitors interact in the market place. Introduces tools and concepts to analyze industry dynamics and competitive interactions of firms in these industries.

MIST 102 (BUMI 102) Spreadsheet Applications for Business (1:0:1)

Business examples used to teach fundamentals of spreadsheets and their use in business applications. Hands-on course using spreadsheet package. Graded as S/NC.

MIST 301 (BUMI 301) Introduction to Business Information Systems (3:3:0)

Pre-requisite: sophomore standing

Introduces fundamentals of hardware, software, networking, internet, and technology components.

Includes role of technology in contemporary business, basic relational concepts, hands-on experience in building business database applications and websites. Projects required.

MKTG 301 (BUMK 301) Principles of Marketing (3:3:0)

Pre-requisites: ECON 103

Marketing principles, concepts, strategies, tactics, and analytical tools used by profit and nonprofit organizations to sell ideas, products, or services to selected target groups. Emphasizes how to promote, distribute, and price firm's offering in dynamic economic, social, political, and international environment.

MKTG 311 (BUMK 311) Sales Management (3:3:0)

Pre-requisites: MKTG 301

The marketing-sales interfaces including the role and capabilities of the sales force, personal selling strategies, organizational relationships, and responsibilities of sales managers including training, motivating, and evaluating sales force.

MKTG 312 (BUMK 312) Consumer Behavior (3:3:0)

Pre-requisites: MKTG 301

The implications of concepts and propositions that comprise the processes by which consumers make decisions. Emphasizes lifestyle, situation, and information-processing.

MKTG 313 (BUMK 313) Integrated Marketing Communications (3:3:0)

Pre-requisite: MKTG 301

In-depth study and application of advertising and other forms of marketing communication with an emphasis on its role in marketing planning. Study includes identification of relevant data to analyze marketing situation, development of product position, marketing and marketing communications objectives, creative strategy, media planning, and evaluation.

MKTG 315 (BUMK 315) Internet Marketing (3:3:0)

Pre-requisites: MKTG 301 and MIST 301

The impact of internet technology on marketing strategy and practice. Topics include opportunities and challenges created by internet in areas such as advertising and promotion, customer service, pricing, retailing (including electronic commerce), distribution channels, and customer relationship management.

MKTG 321 (BUMK 321) Retailing and E-Commerce Management (3:3:0)

Pre-requisites: MKTG 301

Comprehensive view of retailing as it relates to total marketing process. Emphasizes retail decision alternatives used when formulating retail strategies, particularly Internet.

MKTG 331 (BUMK 331) Business to Business Marketing

(3:3:0)

Pre-requisites: MKTG 301

Examines unique challenges and opportunities of marketing systems among suppliers, manufacturers, resellers and government.

MKTG 333 (BUMK 333) Marketing Research Techniques and Applications (3:3:0)

Pre-requisites: OPMT 210 and MKTG 301

Concepts, theories, and principles underlying the process of marketing research. Focuses on the development and evaluation of research designs for gathering marketing information.

MKTG 407 (BUMK 407) International Marketing (3:3:0)

Pre-requisites: MKTG 301

Multidisciplinary approach to international marketing from the perspective of business management. Examines major marketing issues affecting companies operating in a global environment and the economic, political, and cultural differences among nations as they affect marketing opportunities and operations.

MKTG 471 Marketing Management (3:3:0)

Pre-requisites: MKTG 312 and MKTG 333

Case analyses of the managerial aspects of marketing, including developing and executing marketing strategies and plans and integrating specific elements of the marketing process.

OPMT 210 (BUOM 210) Statistical Analysis for Management (4:4:0)

Prerequisites: MATH 108 or 113

Application of statistical methods to support quantitative decision analysis in resolving business problems.

OPMT 301 (BUOM 301) Operations Management (3:3:0)

Prerequisite: OPMT 210

Examines principal aspects of organization's operations. Planning and decision-making activities associated with managing operations in various settings, with a focus on service operations. Uses analytical models to describe key planning and control activities.

OPTM 311 (BUOM 311) Methods and Models of Management Science (3:3:0)

Pre-requisite: OPMT 210

Linear programming, integer programming, goals programming, network flow models, queering models, transportation problems, Markov processes, decision theory of games, and Monte Carlo simulation.

OPMT 405 Supply Chain Management (3:3:0)

Pre-requisite: OPMT 301

The concepts, processes, and strategies of this systems approach to managing the entire flow of information, materials, and services from raw material suppliers through factories and warehouses to the final end-customer. Specific topics include global supply chain management, procurement, electronic commerce, information technologies, and logistics activities.

PHIL 100 Critical Thinking and Reasoning (3:3:0)

Pre-requisite:

Co-requisite:

This introduction to basic principles of reasoning and critical thinking enhances the learner's abilities to evaluate various forms of reasoning in everyday life and in academic disciplines. The course explores such topics as inductive and deductive reasoning, the nature and function of definitions, fallacy types, statistic use and misuse, and the rudiments of logic.

PHIL 101 Ethics in Today's World (3:3:0)

Pre-requisite:

Co-requisite:

The course provides learners with an understanding of the theoretical foundations of ethical thought, and a background to the traditions and movements in the development of ethical theory and methods of reasoning. Contemporary ethical, moral, and social issues that are of global concern, such as justice, decisions about right and wrong, responses to technological changes, responsibility for the environment, human rights and responsibility for other human beings, and other major business, legal, and medical issues are among the topics exposed by learners. Students apply ethical principles and perspectives to analyze, compare and critically

evaluate relevant personal, social and professional problems and engage in ethical reasoning and decision making processes.

PHIL 102 World Philosophies (3:3:0)

Pre-requisite:

Co-requisite:

The course surveys the major philosophers from the most important world philosophical traditions: European, Indian, Chinese, etc. Some of the topics addressed include the internal world of personal identity, the nature of knowledge, the concept of happiness, the nature of reality and the external world, the relation of language to the world, meaning, and truth.

PHYS 110 (SCPH 110) University Physics I (3:3:0)

Co-requisite: MATH 114

First course in a three-semester, calculus-based, introductory physics sequence, designed primarily for science and engineering majors, focusing on mechanics.

PHYS 111 (SCPH 111) University Physics I Lab (1:0:3)

Co-requisites: PHYS110 and MATH 114

Experiments in mechanics.

PHYS 220 (SCPH 220) University Physics II (3:3:0)

Pre-requisite: PHYS 110;

Co-requisite: PHYS 221 and MATH 213

Second course in sequence focusing on waves, electricity and magnetism.

PHYS 221 (SCPH 221) University Physics II Lab (3:3:0)

Co-requisites: MATH 213 and PHYS 220.

Experiments in waves, electricity, and magnetism.

PHYS 222 (SCPH 222) University Physics III (3:3:0)

Prerequisite: PHYS 220; Co-requisite: MATH 214, PHYS 223

Third course in sequence that emphasizes thermodynamics, optics, and modern physics.

PHYS 223 (SCPH 223) University Physics III Lab (1:0:3)

Prerequisites: PHYS 221;

Co-requisite: PHYS 222. Experiments in optics and modern physics.

POLI 100 Contemporary Global Issues (3:3:0)

Pre-requisite:

Co-requisite:

The course addresses contemporary issues impacting international and global affairs, and the major political, social, economic and environmental forces confronting global communities. Some of the themes are democracy and human rights, nationalism and conditions of conflict and stability, economic globalization, resource distribution and depletion, responsibilities of international and transnational organizations, technological development and environmental concerns, cultural diversity and identity, and the possibility of global stability and future world order.

POLI 101 Politics of Scarcity (3:3:0)

Pre-requisite:

Co-requisite:

The problems of scarcity and security are as much political as they are economic or technological. This course identifies the political aspects of global economic exchange and distribution, flows of labor and capital, and international cooperation, global security and conflict.

POLI 102 State and Society in the UAE (3:3:0)

Pre-requisite:

Co-requisite:

The course traces the history of the UAE, the establishment of the federation and the development of the UAE as a nation with significant global impact. It covers contemporary life, the economy, society, population, political system, social customs and traditions, and current changes.

PSYC 100 Introduction to Psychology (3:3:0)

Pre-requisite:

Co-requisite:

This course provides an overview of major areas in the field of psychology. The following topics will be covered in this course: history of psychology; research methods used in psychology; organization of human brain and biological basis of behavior; sensation; perception; basic principles of learning; cognition; language; intelligence; emotion; motivation; developmental psychology; personality theories and assessment, stress and its effect on health; abnormal behavior and therapies; and, social psychology.

PSYC 102 Self and Society (3:3:0)

Study of how society shapes us as individuals and how we as individuals shape society. Explores how we experience life as individuals and as members of cultural systems that shape

our personalities, behavior, and perceptions of the world.

SOCI 100 (GESO 101) Introduction to Sociology (3:3:0)

Introduction to basic sociological concepts. Examines aspects of human behavior in cultural framework including: individual and group interaction, social mobility and stratification, status and class, race and gender relations, urbanism, crime and criminology, and social change and reform.

SOCI 101 Contemporary Social Issues (3:3:0)

Pre-requisite:

Co-requisite:

The course is an introduction to basic sociological concepts and examines aspects of human behavior in a cultural framework including: individual and group interaction, social mobility and stratification, status and class, race and gender relations, urbanism, crime and criminology, and social change and reform.

STAT 100 Statistics (3:3:0)

Pre-requisite:

Co-requisite:

This course provides learners with the knowledge and skills of statistics. It covers descriptive statistics and graphs; random variables; data collection; introduction to the probability principles and sampling distribution.

STAT 110 Introductory Probability and Statistics (3:3:0)

Pre-requisite: MATH 111 or MATH 114

This course introduces students to the basics of probability theory and statistical inference with examples and applications in sciences. Standard topics from probability and statistics courses are covered, with particular emphasis on those areas connected with modeling such as stochastic processes, the concept of diffusion through a Markov chain describing the random behavior of an individual molecule, and the Poisson process.

STAT 210 Probability and Statistics for Life Sciences (3:3:0)

Pre-requisite: STAT 110

This course involves the use of probability and descriptive and inferential statistical techniques in interpreting biological data.

STAT 346 (SCST 346) Probability for Engineers (3:3:0)

Pre-requisite: MATH 114 and permission of instructor.

Probability applied to electrical and computer engineering, operations research, information technology, and economics. Basic concepts of probability, conditional probability, random variables and moments, specific probability distributions, multivariate distributions, moment generating functions limit theorems, and sampling distributions.

UNIV 100 University Freshman Transition

(1:1:0)

Pre-requisite:

Co-requisite:

Students in this course transition to university life by focusing on academic adjustment, by developing decision-making skills, and by learning about services and opportunities for involvement. Although all classes have a core body of knowledge, each class specializes in a particular aspect of university life.

UNIV 350 Independent Study (1–4 credits)

Pre-requisites: Completion of a minimum of sixty credits, a 3.0 (B) or better GPA, and approval of a completed "Permission for Independent Study" form.

Advanced work for undergraduates under the close supervision of a faculty member that enables students to pursue problems or issues of special interest with the guidance of the instructor in conferences. Students meet weekly with the project instructor for guidance in research, analysis, and composition of the project report or presentation.

UNIV 390 Internship (3 credits, 180 - 240 hours of work experience)

Pre-requisites: Completion of 90 credits; good standing.

Approved, monitored work experience providing the opportunity to apply concepts and theories learned in the classroom to actual practice in the workplace, in order to develop skills and to gain experience and knowledge for future employment. Students must apply for an internship a semester before the summer of the internship and comply with all requirements outlined in the *Internship Manual*.