College of Engineering

Establishment and Goals:

The College of Engineering was established in 1980/1981, and was tasked with preparing and graduating national engineers for the UAE community that can meet the current and future challenges and technological requirements of the modern world and contribute to the industrial development of the nation. The University provided the necessary facilities for engineering education such as drawing studios, the workshops and laboratories, and the computer network. Curricula were modeled after the latest international standards, delivering both the theoretical and practical aspects while also taking care of training the students inside and outside the college facilities, focusing on developing the hands-on skills for students in designing and running experiments and using computer applications, and employing new interactive educational methods.

Also, College of Engineering focused on establishing pillars of strong and permanent relations with the public and private organizations in the nation. The College of Engineering was the first college in the university to initiate the internship program, as an inseparable aspect of the graduation requirements. The college also sought to connect its curricula with the needs of employers by preparing its graduating students to acquire the skills and experiences necessary for the workplace. In addition to the internship system, the college established the graduation project as a requirement for students in the senior year. Graduation projects consist of a comprehensive design for a system or a component and present a solution to one of the existing technical challenges facing the engineering and industrial organizations.

The College of Engineering also focuses on scientific research and considers it a strategic part of its mission, as its faculty members carry out basic and applied research directed at serving the industry and community. The college, especially over the last decade, carried out several major research projects supported by the major players in the community, and some in collaboration with external research centers. The College also participates in graduate study programs, and its faculty members are encouraged to have joint supervision of graduate theses.

Development of Academic Departments:

The College of Engineering was established with two academic departments – the Department of Civil Engineering and the Department of Chemical and Petroleum Engineering, which offered programs for male students only. The Architectural Engineering Department, The Electrical Engineering Department and The Mechanical Engineering Department soon followed in the academic year 1981/1982. Due to the large numbers of female students desiring to study engineering, an electronic engineering specialization for female students was initiated. The first group of female students was admitted in the academic year 1984/1985. Also, the first group of female students in the Architecture Specialization was admitted in the academic year 1986/1987. The college split the Chemical and Petroleum Engineering specialization into two separate degree programs, namely, Chemical Engineering and Petroleum Engineering. Students began to be admitted to either of these two specializations starting with the academic year 1989/1990. The College also offered more programs to women starting with the Civil Engineering and Chemical Engineering programs in 1992, and the Mechanical Engineering and Electrical Engineering (Communications) program in 2002 and 2003. Finally, the University Board approved in 2002 changing the name of Civil Engineering Department into the Civil and Environmental Engineering Department.

Engineering Curricula:

Currently, the College has seven engineering specializations: Architectural Engineering, Chemical Engineering, Civil Engineering, Electrical Engineering, Electrical Engineering with a focus on “Communication", Mechanical Engineering, and Petroleum Engineering, with all these specializations – except Petroleum Eng. – are also offered to women. The engineering curricula also include a number of technical elective courses in tracks to enable students to take more specialized courses in these sub-specializations.

The engineering curricula include in its early study levels (the first and second levels and part of the third level) courses in Math and Basic Sciences such as Physics and Chemistry, Engineering Sciences, and Social Sciences. These form the foundation for the upper-level courses in the specialized engineering disciplines and engineering designs. A graduation project is implemented at the senior year of study, which consist of a capstone design project

that give students a chance to demonstrate their engineering acquired skills and knowledge on a practical problem in industry.

The curricula were updated in the 1993 to keep pace with the new developments in the fields of specializations. The graduation requirements are now set at 168 credit hours, distributed as follows: University General Requirements (30) credit hours, General Education courses (6) credit hours, College Requirements (38) credit hours, Specialization Requirements (specialized courses + supporting courses) 88 credit hours, and free elective courses (6) credit hours.

To coordinate the work among the academic departments, a new unit was established on the level of the academic department called: "General College Requirement Unit". It is responsible for the first year general engineering science courses and for coordinating the co-teaching with College of Science faculty of the Math and Basic Science courses. Also, the college established another new unit on the academic department level to follow up the industrial training program and coordinate offering graduation projects.

Faculty Members and Students:

The number of faculty members grew from four beside the Dean in the first year for the College of Engineering to twenty-nine five years later. In the academic year 2003/2004, the number of faculty members in the college reached ninety-six, (19) of which are in the Civil and Environmental Engineering Department, (21) in the Chemical and Petroleum Engineering Department, (20) in the Architectural Engineering Department, (19) in the Electrical Engineering Department and (17) faculty members in the Mechanical Engineering department. Also, there are number of instructors and teaching assistants working in the college “General Requirements Unity”, and the different departments.

The student numbers also increased from (34) male students in the 1980/81, to (336) male and female students after ten years. Currently in 2003/2004, the number of students has reached (1482) including (725) male students and (757) female students.

The first group of (17) male students graduated from the college in 1984/1985. The first group of (11) female students graduated in the following year. By the 10th anniversary of establishing the college, (222) students had graduated including (150) male graduates and (72) female graduates. By the beginning of 2003/2004, the cumulative number of graduates from the college has reached (1500) students. Engineering graduates find work in various areas including the construction business, including engineering of highways, transportation, bridges and airports, in engineering management, in the petroleum industry, including upstream reservoir engineering, and downstream in oil treatment, oil refineries, and petrochemicals. They also work for departments of water and electricity, in telecommunications companies, radio and TV stations, and other electronic companies. Engineering graduate also find work in the refrigeration and air conditioning industry, in consulting offices, and others. Also, a number of the graduates have successfully completed Master and Ph.D. degrees in leading in the U.S.A. and the U.K., with some coming back to the College as faculty members.

College and Community:

The College has been keen since its establishment to establish long-term contacts with relevant organizations in UAE community. The College initiated a number of seminars, workshops, and conferences to establish communications channels including holding a number of training courses for the engineers working in the nation with the aim of upgrading their professional skills.

Among the community activities for the College is, "The Engineer Day Exhibition" (ENGEX) which is held every two years in cooperation with the UAE armed forces and leading petroleum and industrial companies and governmental departments in the country. The "Engineer Day" has become an occasion where innovative student works mainly on graduation projects are show cased; also the exhibits of the companies and engineering-related governmental departments provide an opportunity for these organizations to familiarize the recruit the graduates.

As part of the continuing efforts of the College of Engineering to be responsive to the community's need, including development of the curricula and providing suitable facilities,

the college currently has two advisory councils. These are the "Academic Advisory Council" comprised of engineering deans and leading professors and educators from the U.S, and the "Industrial Advisory Council" comprised of leading figures and decision makers in manpower planning from major oil and industrial companies and governmental organizations that employ the graduates of the college. These councils help direct the plans and activities to better serve the community and keep the curricula up-to-date with leading U.S Universities.

College and Scientific Research

Engineering faculty members, since the inception of the college, have strongly contributed to the research activities of the university. The college encourages its faculty to form joint teams to research and provide solutions to applied problems facing the country in all areas of engineering. Also, as per the requirements of the research problem, to form joint teams with faculty from other departments inside and outside the college.

The college also holds on average one scientific conference or symposium every academic year to highlight a specific topic relevant to the U.A.E. The list of conferences/symposia held include the followings:

1- The 9th Arab Structural Engineering Conference, 2003
2- The 1st International Conference on Geotechnical, Geoenvironmental Engineering and Management in the Arid Areas, November 2000.
3- The Renewable Energy Conference, May 2000
4- Water Sustainability in Architecture in the Arid Areas, November 1999.
5- Sustainability in Architecture in the Arid Areas, November 1999.
6- The 3rd International Conference on Intelligent Applications in Communication and Power Systems (IACPS), April 1997.
7- The International UAE conference on the Air Conditioning in the Gulf Region, April 1996.
8- New Trends in the Engineering Education Symposium, April 1995.
9- The 1st International Conference for the Reinforced Concrete Materials in the Hot Climates, April 1994.
10- The Gulf Desalination Conference, 1992

11- Symposium on Electrical Power Networks Connection the in UAE, November 1991.
12- The 3rd Arab Structural Engineering Conference, March 1989.
13- Symposium on Electrical Power: Its Generation and Distribution in UAE, April 1988.
14- Housing and Urban Planning Symposium in UAE, March 1986.
15- Petroleum and Energy in UAE Symposium, March 1984.

Also, engineering faculty members provide various consultations, such as serving on refereeing committees for architectural design projects, carrying out technical studies relevant to refereeing in disputes, reviewing proposed specifications for products in the nation to verify that they are compatible with standard specifications, and others.

The office of the Assistant Dean for Research was established in 1992 to coordinate research activities including conferences and symposia, and participation of faculty members in international scientific conferences. The college faculty members publish between (100-150) technical papers and articles in refereed scientific conferences and journals annually.

Also, the college issues a specialized journal in engineering research called the "Emirates Journal for Engineering Research", in which results of applied engineering research relevant to the country are reviewed and published.

Units and Academic Departments

Advising Unit:

This unit seeks to provide sound advice to students in planning their studies at the college and registering for specific courses. As the university has adopted the credit hours system, the advising unit plays an important role in making sure the students were aware of this system which gives them a greater flexibility in selecting the courses offered by the academic department.

The college carries out early general advising for the high school students in the nation. This starts before the student is admitted in the college which it aims to make the student aware of the university's principles and system and asserting on showing the college's goals, explaining the admission and registration system and providing the information that help the students in selecting the specialization available in the college which are suitable to the capabilities and tendencies.

The specialized advising of the university students which the student subjects to it after his joining the university till his graduation, begins with allocating an academic advisor to the student starting from his study in the University Requirement Unit, College Requirement Unit then during his study in the academic department for the supervision on setting a detailed curriculum for each student which include a transcript for all his graduation requirements distributed on the various semesters. The student is to be given a copy from the curriculum. The advisor keeps the transcript of the student and adds the advising information till the student's graduation.

“College of Engineering Advising Unit” supervised by Assistant Dean for Student Affairs performs these tasks of advising and counseling. The unit has an effective role; it is the communication link among the student, advisor and department chairs. As the university is interested to provide its students with the newest technologies and distinguished services, it sought for developing the registration system by the use of the student information system "Banner". The unit plays a chief and effective role in the success of the registration operations. It overcomes any difficulties may face the students in the registration operation through the services done by the program after the important role performed by the advising

unit in feeding and entering the data and information of the college in the designed program. Tasks performed by the unit could be summarized in the followings:

- Preparing the studying schedules for the students through carrying out the necessary changes in cooperation with the academic departments for meeting the actual requirements of students according to their approved curricula.
- Performing the advising works and preparing for the registration through typing the transcripts, registration notices and providing the departments with them, distributing the handouts and brochures for registration services by internet and telephone (IVR), pin code number for students for registering by it.
- Carrying out the necessary changes in the restriction on the courses in the program in coordination with the academic department for controlling the registration operation.
- Entering data of faculty members, in turn, the course professor can register the student's absence automatically and record data of exams through the program designed for this purpose and linked with the student information program network (Banner).
- Opening, increasing the ceiling and closing the sections through the program according to the powers authorized by the Student Advising and Counseling Center and Student Information Center (Banner) for doing so.
- Carrying out procedures of drop and addition, coordinating with the Admission and Registration Department and concerned parties for completing operations of drop, addition, orientation and organization for the progress of this operation correctly within the limits of student services.
- Following up the registration violations of student cases whether registered more than or less than the load, or the other registration violations, in coordination with the academic advisor and Admission and Registration Department and working to solve them during the period of withdrawal without penalty.
- Following-up cases of students who did not registered, temporary withdrawal, withdrawal without penalty, incomplete grades and other cases, submitting them to the College Board or Student Cases Committee, following-up the related decrees and providing the concerned parties with them.
- Preparing lists of the registered students for each semester and distributing them on chairs of academic departments in the college.

- Carry out the advising orientation in coordination with the academic department through holding orientation meetings for the students for explaining the specializations in the college departments, employment areas and other advising seminars.
- Preparing the specialization wishes of students admitted or enrolled in College of Engineering.
- Carrying out procedures of changing the curricula which will be entered in the program (CAPP) that will also be linked with the student information system program (Banner).
- Changing and evaluating the curricula of the transferred students which their specializations were changed, for following up with the academic departments and notifying the concerned departments with this.
- Preparing the final exams schedules.
- Preparing the statistics and annual reports about the rates in terms of (The registered students, admitted students, transferred students and graduates).
- Following-up the academic probations, attendance and absence during the semester through the program of the reports designed and linked with the student information program (Banner).
- Opening a transcript for each student and keep all documents related the student since his joining the university till his graduation.
- Following-up the student inquiries, referring them to the concerned departments, and solving their academic problems, if possible.

Advising aims to highlight the university and its goals in the various academic fields, academic system, various academic fields, academic departments and specializations available in, also, the credit hours system, elements of the curricula. It also aims to provide the information that helps the students to select the specializations suitable to their capabilities and tendencies, supervise on setting a detailed curriculum for each student including recording all his graduation requirements distributed on the semesters and follow up the implementation of the students' curricula under the supervision of the department chair.

General College Requirement Unit (CRU)

Continuous developments in all technological fields have mandated that engineers should be effective in taking the sound decisions based on their scientific background and a comprehensive understanding of the impact of technology. Engineers are also required to have good communication skills to convey the technical details and work requirements and to provide their technical services effectively. Therefore, preparation of students in the College of Engineering from the early academic stages takes into consideration these international requirements. The academic program for the first year students in CRU is based on four pillars; the first pillar is to train the student on the technical requirements of the engineering profession early; the second pillar is to teach the student the math and basic courses, which form part of the fundamentals of engineering, in conjunction with engineering applications; the third one is to provide engineering and design upfront in the curriculum to make the student aware of the requirements of the profession, and the fourth pillar is to instill the self-learning ability in students and advance their communications skills in preparing and presenting technical reports.

Goals of the Unit

The CRU aims to provide the scientific and technological skills and capabilities in students to enable them to achieve the highest degree of academic preparedness to carry out their specialized study in the academic departments. Also, CRU aims to instill in students the ability for continuous self-learning and have the confidence to make sound technical decisions to tackle engineering problems and preparing the relevant reports.

Teaching Methods

To achieve the educational goals of the unit, the college initiated a group of courses, called the "Freshman Lab", the "Fundamentals of Engineering" and "Engineering Materials". Along with these courses, CRU coordinates joint teaching in Math and Basic Science courses (Mathematics, Physics, and Chemistry) to bring to students the engineering applications associated with these courses. . To assist the students in their written reports, the CRU unit provides an English Language Service supervised by specialists from the University General Requirement Unit (UGRU). Teaching methods for the engineering courses in CRU consist of a combination of lectures, Laboratory experiments, and analysis using mathematical models,

and usages of specialized programs and other spreadsheet programs by students supervised by teams of faculty members and teaching assistants. Faculty members conduct these classes in an interactive manner to have students practice the application of topics covered.

Teaching Staff

The ideas of providing students with "engineering upfront" in the curriculum using "teaching teams" has been adopted by the college of engineering as part of the pillars for the new engineering education philosophy. This then requires faculty members of the various college specializations to form integrated teams to teach the pre-specialization courses, to collaborate in establishing the common scientific fundamentals of the various specializations, and assure the sustainability and continued development of the common college requirements program. Another benefit for this collaboration is to make the students aware of the job opportunities available to them early before the specialization. Therefore, teaching teams of CRU courses are composed of faculty members from the various academic departments in the college.

Civil and Environmental Engineering Department

Civil Engineering is concerned with designing, constructing and maintaining the facilities with their various kinds such as buildings, bridges, factories, airports, ports and others. Also, it is concerned with the transportation engineering, ways of water supply and treatment and ways of preserving the environment from the pollution.

Goals of the Department

Study in the department aims to prepare the efficient engineer who is well qualified to work in all civil and environmental engineering fields through his study to specialized courses designed carefully for covering all the civil engineering areas. Also, it includes some elective courses that help in consolidating him in one area of the abovementioned specializations.

The department labs were provided with the most modern educational equipment in addition to the developed research equipment that help in carrying out the studies in the fields of the constructions, soil mechanics and foundation engineering, materials resistance and test, engineering measurements, preparation of surveying maps and hydraulics, environmental engineering, transportation and highway engineering. The new computer center in the college is considered as one of the most important factors in developing the specialized courses in the department, which the practical applications by computer were included in the various courses.

Specializations and Academic Degrees:

Graduates of the department are given the Bachelor Degree in Civil Engineering Sciences from UAEU.

Employment Areas

Graduates of Civil and Environmental Engineering Department, work in the various sectors of the nation and in many areas such as construction management engineering, engineering studies and consultations, besides, water engineering, environmental engineering, transportation and highway engineering, bridges, airports, high buildings, surveying, engineering business management. In general, civil engineering is considered as one of the most diverse areas of engineering since covering many tracks.

Faculty Members

The department includes nine faculty members, out of them, three professors, seven associate professors and nine assistant professors. Their specializations and research areas include the environmental engineering, transportation and highway engineering, construction engineering, surveying, geo-technology, soil mechanics and foundation engineering, material engineering, concrete technologies, water resources, fluid mechanics, construction dynamics and construction management.

Department of Chemical and Petroleum Engineering

The Chemical and Petroleum Engineering department offers two of the most important specializations needed by the UAE, which is gifted with large oil reserves of 98 billion barrels, about 9% of worldwide oil reserves, making it the second most important oil nation in the Gulf. Additionally, the refining and petrochemical industry comprise more than 50% of industrial output - by value - in the U.A.E. Therefore, there is a significant and growing need for specialized male and female engineers in chemical and petroleum engineering to contribute to managing the producing oil fields, in developing methods for improved oil recovery, in production and processing of the crude oil and natural gas, and refining, gas processing, and petrochemicals and many other industrial fields related the petroleum and petrochemical products.

Goals of the Department

The department aims to prepare efficient engineers in the field of chemical and petroleum engineering through studying the fundamentals of chemical and petroleum engineering, providing the students with a suitable and balanced background of the basic and engineering sciences and involving them to be trained in the factories and various production units inside and outside the nation. Also, the student is to be assigned to prepare applied research projects, design projects as a chief and complementary part to the academic structure in the department.

Specializations and Academic Degrees:

The department includes two specializations, one of them related the chemical engineering and the other one related the petroleum engineering.

Chemical Engineering Specialization

The specialization of Chemical Engineering is concerned with studies of designing the processing equipment and devices necessary for chemical and petroleum industries such as separating the natural gas from its components, oil refining operations, building material industry, petrochemical industries, also, the contribution in studies of designing operations for treating the industrial pollution, equipment protection, decreasing energy loss in addition to preparing the economic feasibility studies for the projects. Graduates of this specialization are awarded the Bachelor of Science Degree in the Chemical Engineering.

Employment Areas

This academic pattern secures preparing the student for the contribution, upon his graduation, in the various professional fields as an engineer qualified to work in the factories, companies, ministries, research centers and universities, among the fields are the followings:

- Petroleum industries (prospecting, finding out, production).
- Natural gas processing.
- Production of vegetable oils, fats and glycerin.
- Industries of soap, detergents, cosmetics and perfumes.
- Desalination plants.
- Water treatment of environment protection.
- Industry of paints and painting materials.
- Oil refineries.
- Petrochemical industries.
- Industry of fertilizers.
- Industry of cement and ceramics
- Drug industries.
- Food processing and preservation.

Petroleum Engineering Specialization

The specialization of petroleum engineering is concerned with the prospecting operations for finding out the oil reservoirs, evaluating their reserves and optimum production rates, operations of oil well drilling and completion, carrying out the tests necessary for the surface and non-surface production equipment, equipment of separating, treating, transferring and storing the oil. Graduates of this specialization are awarded the Bachelor of Science Degree in the Petroleum Engineering.

Employment Areas:

- Planning and evaluating the drilling of oil and gas wells.
- Innovating and planning the development programs for the discovered oil fields.
- Evaluating and installing the equipment necessary for the oil production operations.

- Conducting the lab and analytic tests for finding the optimum methods for oil production.
- Managing the oil and gas fields.
- Conducting the researches necessary for improving and producing the petroleum reserves.
- Conducting the engineering consultations for the oil companies.
- Measurements of oil wells.
- Operations of the oil well completion.

Faculty Members

Twenty-one faculty members take over the responsibility of teaching in the chemical and petroleum engineering department. Out of these, five are professors, seven associate professors, and nine are assistant professors. Their specializations and research interests include fields of modeling and simulation, process and plant design, polymers engineering, reservoir engineering, heat transfer, reactor design, oil refining engineering, drilling engineering, unit operations, reservoir characterization, and others.

Department of Architectural Engineering

Architectural Engineering is the most comprehensive engineering specialization. It includes the application of the engineering scientific method and technological sciences, besides taking care of the technical and esthetic values and human sciences. The architectural work is considered from the most important civilized products that reflect the community culture, also, it affects on the future community trends. The department was established in 1981 for male and female students. The first group of students was graduated from the department in 1985.

Goals of the Department

Emerging from the general goals of UAEU and College of Engineering, Department of Architectural Engineering, the department aims to:

- Graduating the architect who is provided with all scientific fundamentals and theories, engineering skills and applied experiences necessary for providing the engineering and technical consultations in the fields of design and supervision on implementing all kinds of the architectural and planning engineering.
- Graduating the architect who is able, through practicing the profession, on organizing and leading the engineering work team that include all engineering specializations to achieve the project's desired goals in the community service.
- Conducting the researches in the architectural and planning fields that aim to finding out the solutions that serve the community and corporations working in the fields of planning, housing and building in the nation.
- Organizing the seminars, lectures and training courses with the aim of developing the architectural awareness for non-specialized people and upgrading the scientific and professional level of the engineers in the nation and notifying them with the most recent scientific and technological developments in all fields related to the architecture and planning. Also, providing the engineering and technical consultations and refereeing the projects to the various departments scientific method of the college, university and institutions of the nation. The scientific method in the architectural engineering field focuses on two main chains in the field of teaching the design and implementation of facilities architecturally. Besides, studying the history and theories of architectural engineering, urban planning and design, Arabian and Islamic

architectural heritage. The curriculum is also include the building engineering sciences such as acoustics, illumination and heat in the buildings, computer applications, technical installations and fittings in the buildings, the environmental control, project management and some civil engineering sciences such as surveying and constructional designs of the buildings.

Specializations and Academic Degrees:

Graduates of the department are given the Bachelor Degree in the Architectural Engineering from UAEU.

Employment Areas:

The academic pattern of Architectural Engineering Department gives the opportunity to the student, upon his graduation, to work as an architect in the various professional fields in the ministries, municipalities, companies, advisory corporations, research centers and universities.

Faculty Members:

Twenty faculty members take over the responsibility of teaching in the department, out of these, two are professors, six associate professors and twelve are assistant professors. Their specializations and research interests include the architectural design, environmental studies, computer-aided architectural engineering, building engineering and technology, history and theories of architecture, urban planning, architecture and interior design. Also, the department invites the visiting professors and distinguished speakers from all over the world.

Department of Electrical Engineering:

The Electrical Engineering Department at UAE University was established in 1981, offering a general B.Sc. degree in Electrical Engineering for male students. In the academic year 1985-86, the department graduated its first group of male students, and started admitting female engineering students. Since then, the Department has played an important role in serving the UAE community. The EE Department is committed to continuous innovation and improvement in its academic instruction to provide graduates with required personal and technical skills needed in today's workplace. Our undergraduate programs have obtained "substantial equivalency" accreditation by the Accreditation Board for Engineering and Technology (ABET) which accredits engineering and technology programs in the USA and provides "substantial equivalency" for international programs abroad. The Electrical Engineering Department is poised to meet the challenges presented by the revolution in information and communication technology through continued assessment, revision, and improvement of its accredited programs.

Specializations and Academic Degrees:

The department offers two undergraduate degree programs leading to:

- Bachelor of Science Degree in Electrical Engineering
- Bachelor of Science Degree in Electrical Engineering (Communications Track).

Goals and Educational Objectives of the Departmental Programs:

The EE Department goals go in line with those of the College and University and help ensure the fulfillment of the EE Department mission. These goals are:

1. The Department of Electrical Engineering will continue to be recognized for its academic excellence in education in the country and abroad.
2. Become more student focused.
3. Maintain world-class curricula.
4. Recruit, motivate and reward distinguished faculty members.
5. Develop graduate programs and increase research and scholarly activity.
6. Communicate and collaborate more effectively with society.
7. Develop a service-oriented, responsive, accountable administration.

8. Maintain and further develop modern facilities.
9. Diversify financial resources.

The EE programs are specifically designed to provide the EE graduates with the knowledge and skills needed to succeed in today's workplace. The specific educational objectives applicable to both Electrical Engineering degree programs are:

1. Graduates should have adequate skills including, problem solving, analysis, design and hands-on experience, necessary for successful careers in industry or for pursuing graduate studies.

2. Graduates take pride in their profession and are aware of ethical work conduct as well as environmental and societal implications of engineering solutions.

3. Graduates should be self-confident and have the necessary communication skills and attitude to become teamwork leaders.

4. Graduates should be able to develop and update their knowledge and skills in order to keep up with rapidly evolving technologies.

The EE Communication Track program has the following additional objective:

5. Graduates should have more in-depth knowledge in communication engineering concepts, design and applications.

Employment Areas:

The EE graduates are employed in mostly all UAE industries and government authorities including: Armed forces, Etisalat, Electric Utilities, Petrochemical and Oil Companies, Industrial Companies, Municipalities, Airports, Computer systems and networking companies, Trading establishments, Radio and TV studios, as well as working in Universities.

Faculty Members:

Nineteen faculty members take over the responsibility of teaching in the department; out of which there is one professor, five associate professors, and thirteen assistant professors. Their specializations and research fields span the major areas of Electronics, Power Engineering, Control Systems, Computer Engineering, Communications and Signal Processing, and Electromagnetic Field Applications.

Department of Mechanical Engineering:

The Mechanical engineering science relates in one way or another to all new technological fields, which make it more interesting and attractive, among all engineering fields, to the engineering students all over the world. During the last century, mechanical engineers exerted their utmost in making the machines generating the energy and using the generated energy in operating the machines in many useful applications, also, using the machines in the purposes of transporting the people and goods and controlling the industrial processes. In addition to these traditional fields of the mechanical engineering applications in the different life aspects, the mechanical engineer is concerned with developing new products and innovative processing operations, alloys and engineering materials as well, which make the final product more cheaper and better. Also, the mechanical engineering applications include developing the power stations for making them more efficient, developing the cooling and air conditioning equipment for making our life more easier and simpler and developing the transportation systems as vehicles, trains, aircrafts and ships.

The rapid development of Mechanical Engineering Department in UAEU was closely related to the great industrial and economic development in the nation during the last three decades. This also reflects the increasing expectations of UAE nationals to build their modern state, the promising opportunities to employ the young nationals and also the increasing importance of UAE as a chief source of energy in the world. Department of Mechanical Engineering in UAEU is located in the heart of this great industrial development in the nation, not only because it is the oldest one of similar departments in nation which it was established in 1981, but also because it offers excellent opportunities for the good engineering education that furnish the student with all modern requirements necessary for getting promising job opportunities and meeting the modern technological challenges in confidence and ability.

Academic Goals of the Department:

For achieving the goals required from the mechanical engineer and realizing his ambitions, Department of Mechanical Engineering in UAEU sets his sights on developing and updating the curricula and labs continuously to make the mechanical engineering teaching not only goes with the new international line in this field but also to become interesting and attractive to the ambitious youth who look forward to build his nation and participate in the industrial development efforts for developing UAE Community. Therefore, the department's curriculum

requires a large training on the mechanical engineering fundamentals, which it should not be limited on the theoretical aspect but include, in addition to that, the practical and applied aspect.

Curriculum of the Department:

Curriculum of the department was designed to give the fresh student a sufficient dose in the engineering fundamentals in an attractive and lovable way during his first years in the university. After that, the student is given the freedom in selecting a number of courses that suit the tendencies and personal skills of each student. These elective courses include some of the new technological topics such as "Regenerated energy, Automatic control and Automation, production and manufacturing engineering". Before his graduation, student should submit his graduation project that enable him of developing both of his self-capabilities and engineering abilities in applying the information he studied in designing, implementing and operating an equipment, machine or even an advanced engineering process. It is worthy mentioning that the department is in line for the preparations to introduce two new specializations in the biomechanical engineering and mechatronics in which student can select any one of them through the elective courses and graduation project.

Employment Areas for Mechanical Engineer:

The department's curriculum qualifies the student to work in many industrial areas immediately after his graduation, in addition to enabling him of completing his graduate studies of Master and Ph.D. degrees, if desired. It is known that job opportunities for graduates from Mechanical Engineering Department in UAEU were and still always great because our world is developed and technology with its industrial applications are changed continuously and rapidly. Specifically, job opportunities for graduates from Mechanical Engineering Department in UAEU are greatly excellent and available due to specific factors in the nation, among them, the huge and rapid industrial development and great ambition to set up new industries, in addition to the other development projects in all the nation's fields. This requires availability of big number of mechanical engineers who are well-qualified which this is what Mechanical Engineering Department in UAEU is swiftly striving to provide.

Faculty Members:

Seventeen faculty members take over the responsibility of teaching in the department, out of these, three are professors, four associate professors, and ten are assistant professors, in addition to a group of lab engineers and technicians who support the teaching operation. Specializations and research interests of faculty members include many topics such as energy transfer, combustion and fuel, fluid flow, manufacturing and production engineering, dynamics and mechanical vibrations, automatic control and automation; and industrial automatic robotics.

Finally, Department of Mechanical Engineering welcomes to all your inquiries. You may contact all faculty members in the department on telephone (03) 7051564/ (03)7051584

The Assistant Dean's office and Scientific Publication

The Assistant Dean for Research office was established in 1992. The office is concerned with organizing all aspects of engineering research including research activities such as seminars and the annual scientific conference of the college. College faculty members, engineers, technicians and research assistants participate in the research activities.

Two types of research are funded internally in the university's Scientific Research Council; the individual research proposals submitted by faculty members from the academic departments, and the interdisciplinary research projects proposed by faculty from different specializations. Also, the relevant industrial companies may fund proposals in areas of high priority for UAE. The Assistant Dean for Research help organize research groups that meet the research needs of the country.

Scientific Publication

Publication in Conferences and Refereed Scientific Journals

Faculty members publish from 100-150 articles and scientific researches yearly. Office of Dean Assistant for Research Affairs issues a yearly publication about the scientific publication of faculty members in College of Engineering titled: (*Scientific Publication*). Such catalogue includes a summary about the achieved research projects, new and continuous research projects, seminars and conferences organized by the college yearly and their recommendations in addition to the scientific publication in the international conferences and specialized scientific journals done by faculty members in the various academic departments. This catalogue is considered as a reference, through which, benefit could be gotten in knowing the college faculty members and their academic specializations, in addition to the researches that are done by them and the scientific publication during each academic year.

Emirates Journal for Engineering Research:

Upon UAEU Chancellor's decree no. 42/1987 concerning the scientific journals of the colleges, College of Engineering Board decided in its first session for the academic year 1987/1988 to form an editorial board for College of Engineering Scientific Journal chaired by the college dean and faculty members representing the academic departments of Civil Engineering, Chemical and Petroleum Engineering, Architectural Engineering, Electrical

Engineering and Mechanical Engineering for carrying out the arrangements necessary for issuing the College Scientific Journal under the name (Dirasat Handasiyyah/Engineering Studies). On October 1988, the first issue of the first volume was issued. In 1996, the Journal name was changed to be "Emirates Journal for Engineering Research" as the unique journal specialized in publishing the engineering researches in the nation. Number of the issued journal volumes reached fifteen issues. Editorial Board of the Journal was formed of five faculty members who are known as efficient in the field of scientific research and publication.

Horizons of Journal Development:

Through the general approach of academic and administrative development of College of Engineering and based on directives of HH Sheik Nahyan Mubarak Al Nahyan, Minister of Higher Education and Scientific Research and Chancellor of the University, College of Engineering decided the necessity of developing the college scientific journal to cope with this development and to be the mirror reflecting it, specially in the field of developing the scientific research in the college, supporting its channels and attracting international writers interested in the Gulf region which give the journal an international importance and reputation and expand its distribution circle. Also, a webpage of the journal was posted on the electronic site of College of Engineering on the Internet. It includes the information of the journal and an electronic copy of the published researches and articles, which help in advancing the journal on the international level.

The journal is distributed to the college faculty members, all UAEU colleges, research centers and administrative units. Distribution includes all the governmental departments, engineering companies working in the nation, all universities and research institutes in the Arab countries. A copy is sent to each professor of the referees approved by the journal editorial board. Distribution, also, included all departments requested a copy of the journal. Last copy of the Journal reached 400 issues up till now. The referees and others who received the journal volumes praised the journal standard in terms of production and scientific value of the researches published in it.

Academic Accreditation:

The UAE College of Engineering, under the leadership of HH. Sheikh Nahyan Mubarak Al Nahyan, Minister of Higher Education and Scientific Research and Chancellor of the

University, had made tremendous strides in developing and improving the curricula in its departments. In the recent period, this effort was resulted in upgrading its programs standard, which get the college, qualified to attain the academic accreditation from the most, internationally, important and deep-rooted agencies. The Accreditation Board for Engineering and Technology (ABET) is considered as the chief agency to reviewing and accrediting the engineering programs, technology and applied science programs internationally.

ABET is a non-governmental federation of 31 professional and scientific societies which was established before 15 years. Specialists evaluate programs, each one as relevant to his area for assuring standard and quality of the offered programs. Accreditation means to any educational institution that ABET verified that quality of the offered engineering programs meets the international criteria and qualifies the graduates through providing the knowledge and skills necessary for successful careers. Engineering programs at only three universities in the Arab nations have received this recognition; King Fahad University of Petroleum and Minerals, Kuwait University and United Arab Emirates University.

This means that engineering programs at the UAE University are comparable in content and educational experience with the high quality ABET-accredited engineering programs in the United States. For attaining the accreditation, engineering programs must tangibly demonstrate that their graduates can apply knowledge of mathematics, science, and engineering; that they can design, conduct experiments, analyze and interpret data; they can design a system, component, or process to meet desired needs; they can function effectively on multi-disciplinary teams; they can identify, formulate, and solve engineering problems;; they communicate effectively; they have the broad education necessary to understand the impact of engineering solutions in a global and societal context; and they have the ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

Since ABET recognition assures that UAE University engineering programs are recognized as programs "substantially equivalent" from all fundamental aspects to similar accredited programs in the US:

- Employers can feel confident that engineers graduating from the UAE University are as well prepared as graduates from the best universities in the world.
- UAEU graduates can confidently compete with their peers because the quality of their education has been among the best in the world.

- UAEU graduates also are more likely to be admitted to graduate schools worldwide to obtain M.Sc. or Ph.D. Degrees because their baccalaureate degree is from a recognized and accredited engineering program.
- The UAEU, in its stride for quality and high standards, has shown the quality of its engineering programs to be competitive with the best programs anywhere.

Quality of engineering education represents specific significance to UAE that seek for using the technologies to diversify and support its economy and preserve its environment and national heritage. Also, mission of College of Engineering is to develop its students' awareness with the Arabic and Islamic culture and pride of the national heritage. Meanwhile, it aims to contribute in the cultural and economic development in the nation and develop the awareness of the engineering solution impact in UAE Community. International accreditation of the quality of Engineering College's programs is a part of the university's trend for the quality in its all programs. The object also is to secure an academic education parallel to the best education offered by the international universities, with the preservation of its identify as an Arabian and Islamic University acts to meet UAE needs of qualified national leaders.