

Dean

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Mission Statement

The American University of Sharjah (AUS) is a dynamic co-education institution of higher education. As such, it offers to its students an innovative educational environment. The university's degree programs are adapted to the needs of the citizenry of the United Arab Emirates and the Gulf Cooperation Council (GCC). In order to fulfill current and projected needs, while maintaining an American-style curriculum, the School of Engineering has the following mission:

The School of Engineering at the American University of Sharjah aspires to be the recognized leader in engineering education in Sharjah, across the UAE and the GCC, and to become a top choice by students, parents, faculty and staff who choose to contribute to engineering higher education.

The school's degree programs offer the highest level of professional and technical preparation, global preparedness and leadership development in an environment of English language education and partnership between faculty and students.

School of Engineering B.S. Degrees

The School of Engineering offers Bachelor of Science (B.S.) degrees in the following disciplines:

- 1- Computer Engineering
- 2- Electrical Engineering
- 3- Civil Engineering
- 4- Mechanical Engineering
- 5- Chemical Engineering
- 6- Computer Science

All B.S. Engineering degrees require 140 credit hours degrees while Computer Science degree is made up of 130 credit hours. These are all comprehensive curricula that emphasize quality, communication skills, application to real-world situations, interdisciplinary learning and team building. AUS Engineering graduates are well equipped to face the future. An AUS engineering degree gives its holder access to a learned profession with opportunities for practice in industry, government, business, consulting and entrepreneurship.

Accreditation

The School of Engineering programs are designed to satisfy the general university requirements and to meet the program criteria adopted by engineering accreditation agencies both in the United Arab Emirates and in the United States. The American University of Sharjah (AUS) has been granted accreditation by the Middle States Commission on Higher Education in the United States of America. The AUS engineering faculty provides an educational experience that is equivalent to those offered by leading state and private universities in the United States and Europe. The School of Engineering programs expect to be reviewed for full ABET accreditation next year. ~~making them the first programs to have full ABET accreditation in the GCC region.~~

Admission

The AUS places particular emphasis on quality education. Engineering graduates will work in an international and very competitive environment. Therefore, graduates must possess English fluency in both written and spoken forms. English fluency is especially critical as more multinational corporations adopt English as the corporate language. AUS emphasizes the use of English in daily practice. To enhance the international communication skills of our graduates, instruction and interaction between students and faculty members are conducted in English. As a minimum requirement a score of 500 (173 computer-based) in the TOFEL is needed for admission to AUS. For admission consideration, secondary school grades must meet the minimum established standards as set by the university.

Learning Methodologies

The degree programs emphasize learning the effective use of technology, information resources and communication methods. The program instills in its graduates leadership qualities anchored in moral and ethical principles.

All engineering degree freshmen take the same courses to ensure a sound, broadly based preparation in general education knowledge as well as a firm understanding of the principles and practices of all engineering disciplines.

In various formats, the oral, written, graphical and software communication skills of a student are developed, demonstrated and assessed. This is accomplished foremost in the required laboratories, research papers, senior projects and internships. Also, independent study one-on-one with faculty is a valuable option available to the student. The critical use of paper and electronic forms of published literature is taught from the first semester in all curricula in the School of Engineering.

Throughout the degree plan, students must use and are assessed on their ability to discover, understand and critically judge

the quality of publicly available literature. Well-equipped computer labs are provided for students during and after classes and laboratories. The menu of software systems available for design, analysis and synthesis tasks in classes, labs, senior projects and courses in other parts of campus is determined by what the faculty members teach in all of their courses. Each student must complete a team-based extensive senior project focused on a real-world problem that requires specifications, design, analysis and synthesis as the problem-solving process is utilized. Additionally each student must complete a summer internship or training program with a regional or international industry or institutions. Many employers participate in this valuable experience.

Faculty

The School of Engineering faculty members are distinguished experts in their fields. They are both educators and scholars. All engineering faculty members have earned doctorate degrees in engineering or computer science from leading US, Canadian and European universities and have had significant industrial and educational experiences.

Objectives and Outcomes

In order to help students be successful at AUS, the major educational objectives of the School of Engineering are:

- 1- To assist students in achieving their potential through preparation for a successful and satisfying career in the engineering and computer science professions
- 2- To prepare well-educated graduates able to serve in regional and international practice with consideration of multicultural environments
- 3- To prepare a B.S.-level graduate to be successful in graduate studies in a related area
- 4- To offer undergraduate and graduate academic programs that are critical to the sustainable development of society and the quality of life in the region
- 5- To offer broad-based curricula worthy of accreditation nationally and internationally due to a thorough, balanced foundation in math, science and design principles, as well as the humanities and social sciences

The graduates of the School of Engineering are educated to be able to demonstrate the following outcomes:

- 1- Approach the system stages of problem identification, needs analysis, requirements definition, design, implementation, maintenance and phase out using the life-cycle concept
- 2- Write, read and speak in private and public to peers, supervisors and employers in a coherent, organized fashion that demonstrates understanding of problems and solutions that are practical and implementable.
- 3- Utilize in a variety of settings the fundamentals of math, science and engineering principles
- 4- Keep abreast of and utilize in work current computer and software technologies that are relevant to the engineering field chosen by the student and graduate
- 5- Achieve a recognized level of engineering practice and certification available to an engineering graduate serving in professional practice
- 6- Participate in, as well as lead, team based activities using current technology, engineering practices and science principles
- 7- Make and implement ethical choices in all professional endeavors

Graduate Studies and Research

The School of Engineering strives to be a center for education and research and to serve as a resource for development, sustainability and advancement. To this end, the School of Engineering has established multi disciplinary M.S. degrees in the following fields:

- 1- Engineering Systems Management
- 2- Mechatronics Engineering

The two programs target the needs of the local community and the Gulf region and are recognized by the Commission for Academic Accreditation of the Ministry of Higher Education and Scientific Research of the UAE. Students in these programs seek career advancement opportunities and personal enrichment.

The Engineering Systems Management MS program is a 36 credit hours degree designed to significantly increase the opportunities for practicing, degreed engineers working in engineering management and in systems engineering positions to be successful in their efforts to build effective teams, lead and manage major engineering projects, and expand economic development for the private and public sectors of UAE and the GCC.

The Mechatronics Engineering M.S. program is a 30 credit hours degree committed to being an international, multidisciplinary center of excellence in synergistic applications of the latest techniques in embedded systems, precision engineering, control theory, computer and science and electronics through education, research and outreach.

The School of Engineering seeks to attract to its graduate programs motivated students who demonstrate the ability to do creative and original work. A recognized four-year bachelor's degree from an accredited institution, as well as a minimum score of 530 TOFEL score and specified GPA value are necessary requirements for admission.

Research Centers

In its effort to advance research in the region and to play an active role in addressing the needs of the region, the School of Engineering has established the following research centers:

1- Institute of Materials Systems that has the following objectives:

- Conduct scientific research focused on materials properties and applications taking into consideration the severe environment in the region.
- Take an active role with governmental departments in establishing local and regional codes of practice.
- Provide an independent technical evaluation and consultation services on materials related issues.
- Enhance ~~materials education for undergraduate and postgraduate levels~~ through, seminars, conferences, ~~new courses and graduate programs.~~ And short courses.
- ~~Build~~ Establish collaboration with similar worldwide centers of excellence. ~~and raise the flag of AUS nationally and internationally.~~

2- Mechtronics Center has the following objectives:

- Assume a leadership role in research and development of advanced engineering systems and high-tech transfer to the region.
- Promote multidisciplinary research activities among faculty to serve the needs of local community.
- Provide services to and cooperates with industry and government agencies where extensive integration of instrumentation, control systems, electronics, intelligent software and computer is required.
Areas of expertise within the center include modern industrial installations and systems; computer integrated manufacturing systems, maintenance diagnosis and troubleshooting, mirco-electro-mechanical systems, vehicle manufacturing and design, robotics, electrical drives and automated production systems.