CHEMICAL ENGINEERING PROGRAM

Chemical engineering is a broad field of engineering and thus requires a diverse preparation in science and engineering. Distinguishing chemical engineering from other engineering disciplines is its use of chemical and biochemical reactions to produce products and materials for society. Traditionally, chemical engineers have provided leadership in the petrochemical, refining, chemical, polymer and food processing industries. Because of strengths in the foundation sciences of mathematics, chemistry, physics and biology, as well as in engineering, this leadership role has now extended to the biochemical, biomedical, high-tech materials, semiconductor and microelectronics, nanotechnology, and environmental quality and safety industries, and a host of other areas. Chemical engineers have consistently commanded starting salaries among the highest of all college graduates because of the combined breadth and depth of their education.

Program Mission

- The mission of the Chemical Engineering Program (CHEN) at Texas A&M at Qatar is to meet the educational, research and service needs of the State of Qatar by the following:
  - Chemical engineering at Texas A&M at Qatar will provide the best environment possible for students, staff and faculty to aspire to excellence and to develop to the maximum of their potential.
  - Graduates will have the competencies to become leaders in the process industries, business, government and education.
  - State-of-the-art facilities, equipment and tools will be provided for teaching and research. Members of the program will participate with the international community to help develop creative solutions to problems of national and international importance.

Program Educational Objectives

The objectives of the Chemical Engineering Program at Texas A&M at Qatar are:

1. Graduates will apply the foundation, depth and breadth of knowledge for successful chemical engineering careers in industry or government.
2. Graduates will apply effective communication, leadership and teaming skills.
3. Graduates will have a sense of responsibility, be ethical in the conduct of their profession, and have an appreciation for the impact of their profession on society.

The chemical engineering curriculum provides a balanced education in virtually all aspects of chemical engineering principles and practice, and includes education in economics, humanities and communication. Chemical engineering courses emphasize fundamentals and methods that are applicable to the analysis, development, design and operation of a wide variety of chemical engineering systems and processes, thereby providing the necessary background for entry into the wide array of activities described above. At the same time, specific example applications provide the student with insight into the ability of chemical engineers to work in such a variety of areas. The sequence of courses converges in the senior year into a comprehensive capstone design course that includes elements of economics, safety and environmental issues. The course provides an experience much like that of an industry design project. It is this philosophy of fundamentals, applications and design that has enabled the chemical engineering graduates to adapt readily to a dynamic and rapidly changing world and to solve problems they have not previously experienced.

To supplement course work, well-equipped laboratories provide the students with experiences in operating and analyzing a variety of unit operations and process control equipment and in using modern computational tools and software used in chemical engineering.

The CHEN electives are to be taken from a prescribed list. Other courses may also be acceptable, with special approval.

The undergraduate program in Chemical Engineering at Texas A&M University at Qatar is accredited by the Engineering Accreditation Commission of ABET, www.abet.org, and compares favorably with the best in the nation.

Majors

- Bachelor of Science in Chemical Engineering (http://catalog.tamu.edu/undergraduate/qatar/chemical-engineering-program/chemical-engineering-bs)

Minors

- Chemical Engineering Minor (http://catalog.tamu.edu/undergraduate/engineering/chemical/minor)