Chemical engineers are leading new developments in medicine, advanced materials, energy, consumer products, manufacturing and environmental solutions.

Applying their knowledge of chemistry, physics, biology and mathematics, chemical engineers create processes and products that are safe, environmentally friendly, energy efficient and economical. From developing more efficient fuel cells to creating innovations that advance space exploration, our chemical engineering students and faculty are at the forefront of research.

**What will I study?**

**Energy**
Chemical engineers are used in the energy sector to explore new reserves of oil and gas, process these raw materials into fuels and other useful chemicals, and developed new technologies like solar, wind, batteries and fuel cells that are sustainable and more environmentally sound.

**Advanced Materials and Specialty Chemicals**
Chemical engineers design, construct and operate unique processes to produce a range of highly tailored chemicals like lubricants, composites, polymers.

**Pharmaceuticals**
Chemical engineers are involved in the conception, design, construction, and operation of research facilities and manufacturing plants that develop and produce valuable pharmaceuticals and pharmaceutical therapies.

**Biotechnology**
Chemical engineers leverage molecular-level insight and fundamental biological understanding with engineering principles to develop processes for producing products from natural materials that can range from biofuels to synthetic tissue.

**Food Processing**
Chemical engineers in the food and beverage industries formulate new flavors and preservatives, develop new processes that provide more consistent texture, flavor and appearance, and design packaging to ensure a longer shelf life.

**Environmental Health and Safety**
Pick an industry and chemical engineers are working there to improve the environment, minimize waste, and protect the personal health and safety of employees and the surrounding community.

**Microelectronics**
The microelectronics industry is not just for electrical engineers. Many steps in the production of microelectronics involved chemistry, from electroplating to etching.
Our People
We develop high quality chemical engineers by continuously improving our undergraduate and graduate programs. We conduct world class research and innovative teaching, provide an environment for professional development, and are an effective resource for industry, government, and academia.

Our Research
Our research comprises a number of specific areas related to fundamental knowledge, technical applications, and integrated systems.

General Areas
- Biomedical Engineering
- Electrochemical Engineering
- Materials & Separations
- Catalyst Design & Evaluation
- Computational Modeling
- Molecular Engineering

Degree Programs
The chemical engineering department awards degrees at both the undergraduate and graduate levels in chemical engineering.

Within six years of graduation, our B.S.E. graduates are expected to achieve one or more of the following milestones:

- **Advance** professionally in the chemical process industries or in their chosen career field.
- **Earn** advanced degrees in chemical engineering (or related technical disciplines), medicine, law, or business.
- **Attain** leadership positions in today’s rapidly changing, increasingly technological, global society.

Undergraduate Programs
**Chemical Engineering, B.S.E.**
Our 131 semester-hour undergraduate program leads to the bachelor of science degree. In this program you will explore wide-ranging topics including mathematics, chemistry, biology, and physics. Our B.S.E. program prepares you for a career in chemical process industries, or preparation for advanced degrees in chemical engineering, medicine, law, or, business. Undergraduate students also can choose to follow concentrations in biomolecular engineering, interdisciplinary engineering, materials or energy. Students also have the option to pursue a B.S.E with Distinction degree.

Graduate Programs
**Master of Science in Chemical Engineering**
Our 30 semester-hour program includes a thesis and serves traditional chemical engineers who wish to obtain advance training in chemical process areas, or science majors who wish to receive quantitative training, to enhance their qualifications for industry or medical practice.

**Master of Engineering in Chemical Engineering**
Our 30 semester-hour M.E. degree program offers intensive, focused training in the professional practice of chemical engineering.

**Doctor of Philosophy in Chemical Engineering**
Our 60 semester-hour doctoral program prepares graduates of the program to meet the growing demands for advanced level research, development, and entrepreneurial positions in the chemical industry. You will focus on specialized research with a dissertation.