Chemical Engineering, B.S.E.

Educational Objectives

The chemical engineering program produces graduates with a strong foundation of scientific and technical knowledge who are equipped with problem-solving, teamwork, and communication skills that will serve them throughout their careers consistent with the following educational objectives. Within a few years following graduation, graduates will:

- attain careers as practicing chemical engineers in fields such as biotechnology, chemicals, computation, energy, environmental engineering, food processing, microelectronics, pharmaceuticals, or polymers/advanced materials;
- pursue advanced studies in disciplines such as business, chemical engineering, dentistry, environmental engineering, law, medicine, or pharmaceuticals; or
- assume professional leadership roles.

The following methods and strategies are used in the chemical engineering undergraduate program to achieve these program educational objectives:

- foster a unique and personalized undergraduate experience by leveraging the advantages of a small college atmosphere within a comprehensive liberal arts and research university;
- provide a diverse, inclusive, and equitable environment for all students;
- enrich the undergraduate experience through cultural diversity, international opportunities, and/or experiential learning;
- provide a solid foundation and understanding of the fundamental principles of mathematics, science, and engineering;
- provide students with experience in learning and applying tools, and analyzing and interpreting data, to solve theoretical and open-ended chemical engineering problems;
- provide students with opportunities to participate in collaborative teams;
- develop students’ written and oral communication skills to a wide range of audiences;
- provide students with opportunities to design and conduct chemical engineering experiments and to design systems, components, and chemical processes to meet specific needs and constraints;
- provide a contemporary grounding in ethical and professional responsibility, including global, economic, environmental, safety, and societal impacts of engineering decisions; and
- instill the desire and the understanding of the need for lifelong learning.