MAJOR IN CHEMICAL AND BIOLOGICAL ENGINEERING, BIOMANUFACTURING CONCENTRATION

An education in chemical and biological engineering provides the intellectual foundation for our graduates to work on solutions to society's biggest problems (both current and future problems). For example, our graduates could go on to develop innovative materials and products, to design new devices to improve animal or human health or environmental health, and to design processes for the safe production of chemicals and biochemicals, the production of alternative energy sources, and prevention of hazardous waste. The possibilities are limitless. Chemical and biological engineering is a powerful blend of basic sciences and the skills to quantitatively describe, predict, and control all changes of matter. Our curriculum is based on the sciences of physics, chemistry, biology, and mathematics. It includes engineering science and design methods, as well as humanities and social sciences. The Chemical and Biological Engineering program provides an environment that promotes a sense of professionalism, the development of project management skills, and an appreciation for the value of life-long learning. Graduates of our program are well prepared to enter a variety of professions, or to pursue further advanced education. The broad, strong scientific basis of chemical and biological engineering has kept our graduates consistently near or at the top in salary and demand among B.S. graduates.

Biomanufacturing Concentration

Biomanufacturing is a broad and growing field that combines biology and engineering to produce valuable products on a large scale using living organisms like bacteria, yeast, or mammalian cells.#It is a field that has significant impact on various industries such as pharmaceuticals, agriculture, food and beverage production, and other bioproducts such as fuels, chemicals, and materials. The biomanufacturing concentration offers students a chemical and biological engineering foundation with specialized training in biomanufacturing.#Coursework will focus on further building biological and engineering core competencies in various areas of biomanufacturing. These courses will enable and encourage students to solve complex engineering problems in biomanufacturing. #Professionals in this field are in demand to develop and manage bioproduction processes. It is a field that is constantly evolving and holds promise for addressing various global challenges, such as healthcare, energy, and sustainability.

The Chemical and Biological Engineering major is accredited by the Engineering Accreditation Commission of ABET (http://abet.org/).