WHAT'S THE DIFFERENCE BETWEEN ENGINEERING MAJORS?

AEROSPACE ENGINEERING

Aerospace Engineers are involved in all aspects of aeronautics (working with aircraft) and astronautics (working with spacecraft). They conduct research, as well as design and develop vehicles and systems for atmospheric and space environments. These engineers often specialize in one of many areas, including aerodynamics, propulsion, flight mechanics, orbital mechanics, fluids, structures, guidance and control, and computation.

ARCHITECTURAL ENGINEERING

The curriculum in architectural engineering prepares a student for a career in one or more of the following areas: structures, building environmental systems, and building construction/materials. The curriculum is heavily oriented toward buildings and all aspects of their safe and economical design and construction. Architectural engineering also provides the student with a basic appreciation for the interaction of engineering and architecture.

BIOMEDICAL ENGINEERING

Biomedical Engineering offers a curriculum that encompasses aspects of chemical, mechanical, electrical, and computer engineering as well as intensive study of the biological sciences as they apply to living systems. Students have the opportunity to choose research, industrial, clinical, and medical internships to synthesize technical knowledge in imaging, nano-sensors and devices, tissue engineering, drug delivery, computational biology and bioinformatics.

CHEMICAL ENGINEERING

Chemical engineering's field of practice covers the development, design, and control of processes and products that involve molecular change and the operation of such processes. It also covers the adaptation to commercial use of discoveries in molecular biology, advanced materials and solid-state devices. Chemical engineers serve in industries ranging from chemical and energy companies to producers of all types of consumer and specialty products, pharmaceuticals, textiles, and polymers.

CIVIL ENGINEERING

Civil engineering historically has been the profession that has provided safe and economical shelter, water, and mobility for humanity. These broad goals are accomplished through education in such specialties as structures, geotechnical, environmental, transportation, construction materials, and water resource engineering, as well as construction engineering and project management. Study within these areas include planning, design, and synthesis of the built environment.

ELECTRICAL AND COMPUTER ENGINEERING

The electrical engineering curriculum prepares students for careers involving a wide range of activities, including design, research and development, teaching, and management. Areas in which electrical and computer engineers contribute include biomedical engineering, communications and networking, electromagnetic engineering, electronics, electronic materials and devices, power systems and energy conversion, robotics and controls, signal and image processing, computer design, embedded systems, VLSI design, and software engineering.

GEOSYSTEMS ENGINEERING AND HYDROGEOLOGY

Geosystems engineers and hydrogeologists are concerned with the development and use of engineering approaches in the management of natural resources from the earth's surface and subsurface. They are involved with environmental restoration of subsurface sites and other processes related to earth sciences. This degree program is offered jointly by the College of Engineering and the College of Natural Sciences.

MECHANICAL ENGINEERING

Mechanical engineers are directly and broadly concerned with the engineering systems used to control and transform energy to meet the needs of humanity. They design, develop, and produce devices and systems from space probes to washing machines, from turbojet engines to lawn mowers, from automatic machine tools and vending machines, to computer controlled systems.

PETROLEUM ENGINEERING

Producing oil, gas, and other mineral resources from the earth is the primary challenge of the petroleum engineer. Petroleum engineers evaluate potential producing reservoirs, oversee drilling activities, select and implement recovery schemes, and design surface collection and treatment facilities.