Mechanical Engineering

Mechanical engineering is one of the oldest and broadest engineering fields. Mechanical engineers are vital team members in virtually any industrial activity ranging from concept to design, and analysis to manufacturing, from aircraft and automotive to consumer products and building equipment. In these jobs, mechanical engineers design products, machines and develop processes for manufacturing. They analyze, test and develop devices, systems and processes to attain the best performance and durability within cost and time constraints. Examples of specific mechanical engineering jobs include:

- Design, development and manufacturing of automotive engines and vehicle systems;
- Design, development and manufacturing of gas turbine and other aircraft engines;
- Design and construction of electrical power plant energy conversion and generating systems;
- Design, development and manufacturing of consumer products, ranging from appliances such as refrigerators, washers and electric drills, to the manufacturing systems for producing facial tissue and processed foods and packaging of these items;
- Design and specification of heating, air conditioning and ventilating systems used in aircraft, automobiles and buildings;
- Analysis of the complex flow of gases and fluids such as air flow in aircraft inlet ducts and fluid flow in hydraulic and pumping systems;
- Study of heat flow, ranging from boilers and automotive radiators to heat management problems in orbiting spacecraft;
- Study of globalization, moral, ethical, economic and business issues related to mechanical engineering; and
- Design and analysis of robotic systems.

Students in the mechanical engineering program are prepared specifically for these job possibilities, and are also empowered to continue their education, i.e., graduate school. This is accomplished through a broad course of study that covers not only the technical aspects required, but the ethical, professional, communication, economic and business skills needed to be a successful practicing engineer. The program includes components in mathematics and natural sciences, written and oral communication skills, humanities and social sciences, a core of engineering science subjects, and a specified set of required technical courses covering the basic areas of mechanical engineering. In addition, students select elective courses that allow them to develop additional specialized knowledge in engineering such as robotics, manufacturing, entrepreneurship, biomechanics, materials structure and behavior, heat transfer and energy conversion. Modern laboratories and a wide variety of computer facilities provide students with hands-on experience in experimental work and computer-aided design and engineering. The undergraduate program in mechanical engineering is accredited by the Engineering Accreditation Commission of ABET (http://www.abet.org).

Majors in Mechanical Engineering

- Accelerated BS to MS in Mechanical Engineering (http://catalog.wichita.edu/undergraduate/engineering/mechanical-engineering/accelerated-bs-ms-mechanical-engineering/)
- BS in Mechanical Engineering (http://catalog.wichita.edu/undergraduate/engineering/mechanical-engineering/mechanical-engineering-bs/)

Minors in Mechanical Engineering

- Minor in Mechanical Engineering (http://catalog.wichita.edu/undergraduate/engineering/mechanical-engineering/mechanical-engineering-minor/)

Certificates in Mechanical Engineering

- Certificate in Energy and Environment (http://catalog.wichita.edu/undergraduate/engineering/mechanical-engineering/certificate-energy-environment/)
- Certificate in Sustainable Materials and Design (http://catalog.wichita.edu/undergraduate/engineering/mechanical-engineering/certificate-in-sustainable-materials-and-design/)

Courses in Mechanical Engineering

- Mechanical Engineering (ME) (http://catalog.wichita.edu/undergraduate/courses/me/)