



A civil engineer evaluates a site on the Ala Wai Canal, Honolulu, Hawaii. (Photo courtesy USDA)

What Can I Do With an Engineering Major?

WHAT IS ENGINEERING?

Engineering is the application of the theories and principles of science and mathematics to solve problems. Engineers design and help build the cars that we drive, the water purification systems that keep our drinking water free of harmful pathogens, the medical equipment that helps detect and treat diseases such as cancer, and the computers we use to make our daily lives easier. Other engineers help extract raw materials, such as petroleum and natural gas, that keep our transportation industry moving; design and help build bridges, highways, and skyscrapers; and develop systems that keep our homes and offices safe from fire and other natural hazards. Approximately 1.5 million engineers are employed in more than 20 engineering disciplines. The five most popular engineering fields are electrical and electronics engineering,

civil engineering, mechanical engineering, industrial engineering (including safety and health), and computer hardware engineering. On average, engineers earn much higher salaries than the typical worker in the United States. In 2002, engineers earned median salaries of \$54,900, according to the US Department of Labor.

HOW DO I BECOME AN ENGINEER?

In high school, take the following classes: physics, algebra, geometry, trigonometry, calculus, biology, computer science, and chemistry, as well as classes such as English and speech that will help you develop your communication skills. You will need at least a bachelor's degree in the engineering specialty of your choice to enter this field. Most employers require an advanced degree for top positions. If you plan on majoring in engineering, be sure that you attend one of the 330 engineering schools that are accredited by the Accreditation Board for Engineering and Technology. Visit the Board's Web site, www.abet.org, to access a searchable (by discipline, region, and/or state) database of accredited engineering and engineering technology programs in the United States. Nearly 59,000 students received a bachelor's degree in engineering in 2000-01, according to the US Department of Education—a decline of more than 24 percent since 1985-86.

HOW CAN I LEARN MORE ABOUT ENGINEERING MAJORS AND CAREERS?

WEB SITES

- ✓ National Engineers Week (www.eweek.org). Visit this site for a wealth of information, including a list of suggested high school classes, activities you can do while in high school, and profiles of 50 engineers.
- ✓ Junior Engineering Technical Society (www.jets.org). The Society's Web site has a test that you can take to determine your engineering aptitude, information about pre-college programs, and career guidance brochures for 17 engineering specialties, including aerospace, audio, biological, electrical, fire protection, manufacturing, and materials engineering.
- ✓ Engineering Your Future (www.asee.org/precollege). This site is loaded with information for high school students interested in engineering. The Finding and Affording the Right School section has links to hundreds of engineering colleges in the US and around the world and tips on financial aid. The Engineering Disciplines section describes more than 20 specialties, including biomedical, civil, environmental, mineral and mining, ocean, and transportation engineering.
- ✓ Sloan Career Cornerstone Center (www.careercornerstone.org). Visit this site for educational and career information for the following areas: engineering, mathematics, information technology, and the physical sciences.

