

# Engineering

Engineering is primarily concerned with the application of the knowledge gained about the laws of nature and material on our planet for the design of better products, more efficient equipment or means to protect the environment.

**Graduate Education:** Students pursuing a graduate program in engineering may earn a Master of Engineering (MEng), a one-year professional degree; a Master of Science (MS) in Engineering, with either a thesis or non-thesis option; or a Doctor of Philosophy (PhD) in Engineering, typically a five-year program with thesis or dissertation. Graduate engineering students usually will choose among a variety of specializations within the field such as aeronautical, agricultural, biomedical, chemical, civil, computer, electrical, environmental, industrial, mechanical, petroleum, or software. According to U.S. Department of Labor, the most popular fields of engineering include electrical, electronic, mechanical and civil. In recent years, students have increasingly pursued degrees in architectural, biomedical and computer engineering.

- Electrical Engineering is the branch of engineering science that studies the uses of electricity and the equipment for power generation and distribution and the control of machines and communication.
- Mechanical Engineering is the branch of engineering that deals with the design, construction and operation of machinery. Mechanical engineers use principles such as heat, force, and the conservation of mass and energy to analyze static and dynamic physical systems.
- Civil Engineering is the branch of engineering that incorporates the design, construction and maintenance of the physical and natural environment, such as bridges, roads and buildings.
- Industrial Engineering is the branch of engineering that and evaluates processes to develop and implement more efficient and integrated systems to reduce costs, delays, and waste.

## Occupations in Engineering:

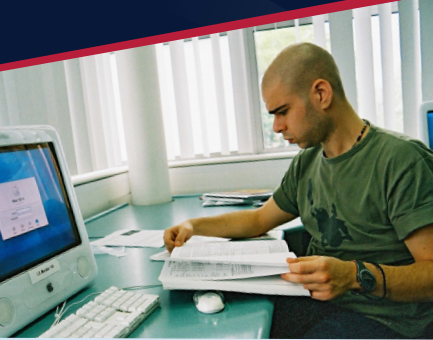
With a degree in engineering, consider your professional opportunities in manufacturing industries and scientific and technical services. Many engineers also work in the construction, telecommunications, and wholesale trade industries.

## Choosing an Engineering Program:

If you are considering continuing your education in this field, you should become familiar with academic trends and current research developments. Utilize current literature and consider the existing research of professors in matching your academic and career goals with the right institutions for you. EducationUSA Centers provide advising services and a diverse collection of materials to assist students searching for schools and financial aid program. To find the nearest EducationUSA Advising Center, visit [www.educationusa.info/centers.php](http://www.educationusa.info/centers.php).

In addition to researching regionally accredited colleges and universities which offer study in engineering, prospective students, particularly for graduate-level study, can also identify academic programs with professional accreditation. The professional accrediting organization for the field of engineering is the Accreditation Board for Engineering and Technology ([www.abet.org](http://www.abet.org)).





## Graduate Program Search Print and Online Resources:

- Peterson's, [www.petersons.com](http://www.petersons.com)
- Peterson's Graduate Programs in Engineering and Applied Sciences; Book 5
- Lazarus, B., Ritter, L., Ambrose, S., The Woman's Guide to Navigating the Ph.D. in Engineering & Science. IEEE Press, 2001.

## Find Scholarships to Study Engineering:

- EducationUSA Financial Aid links, [www.educationusa.state.gov/finaidlinks.htm](http://www.educationusa.state.gov/finaidlinks.htm)
- Funding U.S. Study, [www.fundingusstudy.org](http://www.fundingusstudy.org)
- Peterson's Scholarship Directory, [www.petersons.com](http://www.petersons.com)
- American Water Works Association, [www.awwa.org](http://www.awwa.org)
- Intern-American Development Bank, [www.iadb.org](http://www.iadb.org)
- Semiconductor Research Corporation, [www.src.org](http://www.src.org)
- Institute of Electrical and Electronics Engineers, [www.ieee.org](http://www.ieee.org)
- Association for Women in Science, [www.awis.org](http://www.awis.org)
- The Fulbright Program, <http://fulbright.state.gov>

## Associations and Organizations Affiliated with the Study of Engineering:

- Accreditation Board for Engineering & Technology, [www.abet.org](http://www.abet.org)
- American Society for Engineering Education, [www.asee.org](http://www.asee.org)
- National Council of Examiners for Engineering and Surveying, [www.ncees.org](http://www.ncees.org)
- National Society of Professional Engineers, [www.nspe.org](http://www.nspe.org)
- Society of Women Engineers, [www.swe.org](http://www.swe.org)
- Aerospace Industries Association, [www.aia-aerospace.org](http://www.aia-aerospace.org)
- American Institute of Aeronautics and Astronautics, [www.aiaa.org](http://www.aiaa.org)
- American Society of Agricultural and Biological Engineers, [www.asabe.org](http://www.asabe.org)
- Biomedical Engineering Society, [www.bmes.org](http://www.bmes.org)
- American Institute of Chemical Engineers, [www.aiche.org](http://www.aiche.org)
- American Society of Civil Engineers, [www.asce.org](http://www.asce.org)
- IEEE Computer Society, [www.computer.org](http://www.computer.org)
- Institute of Electrical and Electronics Engineers, [www.ieeeusa.org](http://www.ieeeusa.org)
- American Academy of Environmental Engineers, [www.aeee.net](http://www.aeee.net)
- American Society of Safety Engineers, [www.asse.org](http://www.asse.org)
- Institute of Industrial Engineers, [www.iienet.org](http://www.iienet.org)
- Society of Naval Architects and Marine Engineers, [www.sname.org](http://www.sname.org)
- ASM International, [www.asminternational.org](http://www.asminternational.org)
- Minerals, Metals, and Materials Society, [www.tms.org](http://www.tms.org)
- American Society of Heating, Refrigerating, and Air-Conditioning Engineers, [www.ashrae.org](http://www.ashrae.org)
- American Society of Mechanical Engineers, [www.asme.org](http://www.asme.org)
- SAE International, [www.sae.org](http://www.sae.org)
- Society for Mining, Metallurgy, and Exploration, [www.smenet.org](http://www.smenet.org)
- American Nuclear Society, [www.ans.org](http://www.ans.org)
- Society of Petroleum Engineers, [www.spe.org](http://www.spe.org)

**If you are interested in pursuing higher education in the U.S. and would like further guidance please contact your local EducationUSA Advising Center**