



What Can I Do With A Degree In . . .

Ready Reference ♦ A-6

College of Engineering, Architecture & Technology ♦ Career Services

A degree in Engineering, Architecture or Technology provides the knowledge and tools for problem solving. The following descriptions given below give a brief and general outline of the different engineering disciplines. Be aware that the actual work that engineers perform will vary depending on the company and industry in which they work. Some engineers work in a research or development capacity, while others serve in management roles. The work environment also varies, including outdoor work, work in an office setting, or a combination.

AEROSPACE ENGINEERING - Aerospace Engineers design, develop, test, and help manufacture commercial and military aircraft, missiles, and spacecraft. They develop new technologies specializing in areas such as commercial transports, helicopters, spacecraft, or rockets. Further areas of specialization include: aerodynamics, propulsion, thermodynamics, structures, celestial mechanics, acoustics, and guidance and control systems.

OSU Mechanical & Aerospace Engineering Homepage

<http://www.mae.okstate.edu>

American Institute of Aeronautics and Astronautics

<http://www.aiaa.org>

ARCHITECTURE - Architecture is the art and science of the design and construction of the built environment. Architects develop design concepts into building images that can then be constructed by others who are part of a team. Projects may range in size from a room to a city, and may involve the planning of a new building or the renovation of an old one.

OSU School of Architecture homepage

<http://architecture.ceat.okstate.edu>

American Institute of Architects

<http://www.aia.org>

American Institute of Architecture Students

<http://www.aias.org>

ARCHITECTURAL ENGINEERING - Architectural Engineers work closely with architects on the design of buildings. Where the architect focuses primarily on space utilization and aesthetics, the architectural engineer is concerned with structure, safety, cost, and sound construction methods.

OSU School of Architecture homepage

<http://architecture.ceat.okstate.edu>

Architectural Engineering Institute

<http://www.aeinstitutione.org>

BIOSYSTEMS & AGRICULTURAL ENGINEERING - Biosystems and Agricultural Engineering involves designing sustainable systems to produce food, fuel, clothing, and shelter, while providing for a clean and healthy environment. Biosystems and Agricultural Engineering students may choose degree options in

Biomechanical, Environmental & Natural Resources, Food or Bioprocessing.

OSU Biosystems Engineering Homepage

<http://biosystems.okstate.edu>

American Society of Agricultural Engineers

<http://www.asabe.org>

CHEMICAL ENGINEERING - Chemical Engineers apply principles of chemistry, physics, and engineering to the design and operation of plants for the production of materials that undergo chemical changes during manufacturing. The plants and processes they design produce items we use in daily life, and develop processes to keep our environment clean.

OSU School of Chemical Engineering Homepage

<http://www.cheng.okstate.edu>

American Institute of Chemical Engineers

<http://www.aiche.org>

American Chemical Society

<http://www.acs.org>

Association of Consulting Chemists & Chemical Engineers

<http://www.chemconsult.org>

CIVIL & ENVIRONMENTAL ENGINEERING -

Civil engineers plan, design, and supervise the construction of facilities essential to modern life such as mass transit systems, airports, water treatment facilities, high-rise buildings, offshore drilling platforms, and other projects.

OSU School of Civil Engineering Homepage

<http://cive.okstate.edu>

American Society of Civil Engineers

<http://www.asce.org>

Chi Epsilon Civil Engineering Honor Society

<http://www.chi-epsilon.org>

COMPUTER ENGINEERING - Computer Engineers are involved with the design, construction, and operations of computer systems. In addition to hardware, computer engineers also work with programming.

OSU School of Electrical and Computer Engineering Homepage

<http://www.ece.okstate.edu>

Institute of Electrical and Electronics Engineers

<http://www.ieee.org>

CONSTRUCTION MANAGEMENT TECHNOLOGY-

Construction Managers use both technical and management skills to plan and build facilities that other engineers and architects design, including buildings, bridges, tunnels, and dams. Construction managers are involved with planning the job from start to finish, estimating construction costs, determining the equipment and personnel needs, and supervising the construction. These professionals apply knowledge of construction methods and equipment along with principles of planning, organizing, managing, and operating construction enterprises.

OSU Construction Management Technology Homepage

<http://cmt.okstate.edu>

Associated General Contractors

<http://www.agc.org>

Construction Education Connection

<http://www.constructioneducation.com>

Association for Project Managers

<http://www.apminfo.com>

ELECTRICAL ENGINEERING - Electrical

Engineering is the largest of the engineering disciplines. Electrical engineers are concerned with electrical devices and systems, and with the use of electrical industries. Virtually every industry utilizes electrical engineers.

OSU School of Electrical and Computer Engineering Homepage

<http://www.ece.okstate.edu>

Institute of Electrical and Electronics Engineers

<http://www.ieee.org>

ELECTRICAL ENGINEERING TECHNOLOGY -

Electrical Engineering Technology is a relatively specialized application of technical knowledge to produce products and services in the electronics industry. Electrical engineering technology is used in many areas of industry and government, which depend upon electronics for control, communication, and computation. Electrical Engineering Technology is "hands-on", rather than theoretical and requires a lesser concentration on mathematical principles.

OSU Electrical Engineering Technology Homepage

<http://eet.okstate.edu>

Institute of Electrical and Electronics Engineers

<http://www.ieee.org>

Eta Kappa Nu

<http://www.hkn.org>

FIRE PROTECTION & SAFETY TECHNOLOGY -

Fire Protection and Safety Technology focuses on industrial loss control. Reducing loss potential involves designing facilities with special emphasis on life safety, fire resistivity, automatic detection and extinguishing systems. Other areas addressed by fire protection and

safety technologists include redesigning equipment and processes, air sampling, noise level monitoring, developing practical approaches to compliance, occupational safety, and risk management.

OSU Fire Protection & Safety Technology Homepage

<http://fpst.okstate.edu>

National Fire Protection Association

<http://www.nfpa.org>

Occupational Health & Safety Administration

<http://www.osha.gov>

INDUSTRIAL ENGINEERING & MANAGEMENT -

Industrial Engineers determine the most effective ways for an organization to use the basic factors of production, people, machines, materials, information, and energy to make or process a product. Industrial engineering is involved with the human and organizational aspects of developing systems.

OSU School of Industrial Engineering and Management Homepage

<http://www.okstate.edu/ceat/iem/newweb/home/>

Institute of Industrial Engineers

<http://www.iienet.org>

MECHANICAL ENGINEERING- Mechanical

Engineers apply the principles of mechanics and energy to the design of machines and devices. Perhaps the broadest of the engineering disciplines, mechanical engineering includes three broad technical areas energy, structures and motions in mechanical systems, and manufacturing.

OSU Mechanical Engineering Homepage

<http://www.mae.okstate.edu/>

American Society of Mechanical Engineers

<http://www.asme.org>

MECHANICAL ENGINEERING TECHNOLOGY -

Mechanical Engineering Technology comprises a wide range of technical and engineering related activities including design, development, testing, manufacturing and production, field service engineering, and marketing and sales. The scope of mechanical engineering technology includes transportation, power generation, fluid power, energy conversion, climate control, machine design, manufacturing and automation, and process control.

OSU Mechanical Engineering Technology Homepage

<http://met.okstate.edu>

Society of Manufacturing Engineers

<http://www.sme.org>

Fluid Power Society

<http://www.ifps.org>

American Society of Mechanical Engineers

<http://www.asme.org>

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