

Engineers apply the theories and principles of science and mathematics to research and develop economical solutions to technical problems. Their work is the link between scientific discoveries and commercial applications. Most engineers specialize in specific areas: **Aerospace Engineers** design and develop technology for commercial aviation, the national defense, and space exploration. **Agricultural Engineers** design farm and food processing equipment; construct crop storage and livestock buildings; and develop systems for drainage, irrigation, and waste disposal. **Architectural Engineers** focus on the safety, cost, and construction methods of designing a building. **Bioengineers** and **Biomedical Engineers** work closely with biologists and medical doctors to develop medical instruments, artificial organs, and prosthetic devices, and investigate health issues. **Ceramic Engineers** direct processes that convert clay, nonmetallic minerals, or silicates to ceramic products such as automobile parts, tiles on space shuttles, and solar panels. **Chemical Engineering** involves the processing and treating of liquids and gases. **Civil Engineers** plan, design, and supervise the construction of facilities such as high-rise buildings, airports, water treatment centers, and sanitation plants.

Environmental Engineers assist with the development of water distribution systems, recycling methods, sewage treatment plants, and other pollution prevention and control systems in the water, air, and land. **Industrial Engineers** organize the people, information, energy, materials, and machines involved in the production process. **Mechanical Engineers** use mechanics and energy principles to design machines such as engines and motors. **Metallurgical and Materials Engineers** extract, process, refine, combine, and manufacture natural substances to create new materials that are stronger and resist corrosion. Metallurgical engineers work with metal only. **Mineral and Mining Engineers** locate, remove, and appraise minerals they find in the earth. **Nuclear Engineers** design, develop, and control plants that use nuclear energy for fuel and medical purposes. **Transportation Engineers** design streets, highways, and other transit systems that allow people and goods to move safely and efficiently.

Salary Information:

- Engineering:
\$89,080 Median Salary (U.S. Bureau of Labor Statistics, 2008)
- **Engineers for the Rochester, New York area:**
\$76,600 Median Salary (Career One Stop, 2008)
[*Salary varies based on education/advanced degree, work-experience & setting/location]

Transfer Information:

- A Bachelor's degree is required for entry-level positions in the engineering field.

Additional Information:

- American Society for Engineering Education: www.asee.org
- Engineer Career Profiles:
www.graduatingengineer.com/careerprofiles/index.html

