

Career Spotlight

Chemical Engineer

Chemical engineers combine physical sciences, life sciences, and mathematics in order to convert raw materials and chemicals into more useful or valuable forms. In addition to producing useful materials, modern chemical engineering is also concerned with pioneering valuable new materials and techniques.



EDUCATION

Engineers typically enter the occupation with a bachelor's degree in mathematics or an engineering speciality, but some basic research positions may require a graduate degree. Most engineering programs involve a concentration of study in an engineering specialty, along with courses in both mathematics and the physical and life sciences. Engineers offering their services directly to the public must be licensed. Continuing education to keep current with rapidly changing technology is important for engineers.

WHEN MATH IS USED

Much of chemical engineers' mathematical work involves the planning and theoretical "modeling" of production processes, which takes place on a computer or in preliminary reports.

POTENTIAL EMPLOYERS

About 37 percent of engineering jobs are in the manufacturing industry. Twenty-eight percent of jobs are in professional, scientific, and technical services, primarily in architectural, engineering, and related services. Many engineers also work in the construction, telecommunications, and wholesale trade industries. Some engineers also work for federal, state, and local governments in highway and public works departments. Ultimately, the type of engineer determines the type of potential employer.

FACTS

Chemical engineers use math frequently in the laboratory. They use advanced computer software to aid in their research and production processes to model theoretical synthesis techniques and properties of chemical compounds.

CITATIONS

http://en.wikipedia.org/wiki/Chemical_engineering

<http://www.bls.gov/oes/current/oes172041.htm>

<http://www.princetonreview.com/careers.aspx?cid=33>

MATH REQUIRED

- College Algebra
- Geometry
- Trigonometry
- Calculus I and II
- Linear Algebra
- Differential Equations
- Statistics

Low-end Salary: \$59,470/yr

Median Salary: \$97,360/yr

High-end Salary: \$157,160/yr