STEM Career Spotlight - Chemical Engineer

Chemical Engineers apply the laws of chemistry and physics to solve real world problems. They design, develop and test equipment, processes and products that involve chemicals. A chemical engineer usually works in manufacturing, biotechnology or health care. Job duties can include the design and development of equipment, products, including plastic, paper, detergent and gasoline or processes to use and manufacture chemicals or biochemicals. Building on initial discoveries made by chemists, chemical engineers use computer models and other processes to test the efficacy of these products and their safety for consumers, laborers and the environment.

Education

A bachelor's degree in Chemistry or Chemical Engineering is required to find work as a chemical engineer. Chemical engineers need a strong academic background in advanced mathematics and science with some introductory courses in engineering. Many chemical engineers pursue Professional Engineer licensing after graduating from college, a licensure required of all engineers whose work serves the public. To obtain the PE license, candidates must first pass the Fundamentals of Engineering exam, obtain an experience on the job and pass the Principles and Practice of Engineering Exam. Bachelor's Degree programs for Chemical Engineers offer a broad education in the essential theories of chemistry, physics, mathematics, and engineering technology.

Employment Opportunities

Chemical Engineers use their accumulated knowledge of mathematics, physics, and chemistry to solve the real world problems and challenges faced when using chemical processes in an industrial setting. Chemical engineers find work in all stages of the manufacturing process, from raw materials to finished products. Some Chemical Engineers work in product design, applying their education in chemical theory to increase efficiency of new products.

Not all Chemical Engineers find work in the private sector. According to the American Chemical Society (ACS), www.acs.org, almost 8% of chemistry professionals hold government positions. There are many jobs available in the local, state, and federal governments for skilled Chemical Engineers.
Chemical Engineers can also find their education suitable for teaching at the high school or college level. Holders of Bachelor's Degrees may find that teaching high school science or chemistry is their true calling. Master's Degree holders and Ph.D.'s can hold teaching positions at universities or community colleges. Some academics also perform consulting work when not teaching.

**Salary Information**

According to the US Department of Labor, [www.bls.gov](http://www.bls.gov), the median yearly salaries for Chemical Engineers is as follows:

- Bachelor’s Degree - $54,000
- Master's Degree - $58,000
- Ph.D. - $80,000

**Educational Requirements for Entering the Field of Chemical Engineering**

**Job Duties, Occupational Outlook, and Education Requirements for Chemical Engineers**

**Highlighted Product**

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