



CAREER PROFILE

Chemical Engineer / Chemist¹

JOB OUTLOOK

Employment for chemical engineers will grow by 8% by 2026.² As innovations in the energy sector continue, chemical engineers and chemists will be critical to support these innovations and new technologies in the oil and gas industry.

SALARY RANGE

\$53,000 to \$142,000

EDUCATION/TRAINING

In addition to a bachelor's degree, this position may require:

- A degree from an ABET-accredited engineering program
- A passing score on the Fundamentals of Engineering (FE) exam
- A passing score on the Professional Engineering (PE) exam
- State license and any continuing education required by the state

WHO ARE THEY?

Chemical Engineers use the principles of chemistry, biology, physics, and math to find solutions to problems. Their projects cover anything that uses or produces chemicals, fuel, drugs, and food, to name a few. Chemical Engineers take responsibility for designing the processes and equipment for large-scale manufacturing as well as production methods. They also plan for processes that safely handle the byproducts of all reactions. Chemical Engineers are also often responsible for managing the day to day operations of lab.

WHAT DO THEY DO?

Chemical Engineers conduct research focused on the innovative manufacturing process. They establish safety protocols for dangerous chemicals. They evaluate equipment and methods to verify they meet all local, state, federal, and industry regulations and standards. Chemical Engineers can specialize in a particular industry such as polymerization (making of plastics and resins). Others focus on a field of studies such as nanomaterials or specific products like gasoline. The Chemical Engineer can find a job in many areas, including energy, life sciences, biotechnology, and business services.

HOW DO I BECOME ONE?

Chemical Engineers must have a bachelor's degree in chemical engineering or related field. Some universities offer a 5-year engineering program that leads to both a bachelor's degree and a masters' degree. A Ph.D. may be needed for some levels of research and development. Many postsecondary schools offer internships and/or cooperative programs in partnership with industry, allowing for practical work experience. The school of choice should be an ABET-accredited university.

¹ Bureau of Labor Statistics, U.S. Department of Labor, Occupational Outlook Handbook, Chemical Engineers,

² Mit News, New type of electrolyte could enhance supercapacitor performance , On the internet <http://news.mit.edu/2019/new-electrolyte-supercapacitor-0812> (August 19, 2019)