

## Chemical Engineering

### CAREER PROFILE

#### What is chemical engineering?



Chemical engineering is one of the four major branches of engineering (along with civil, mechanical, and electrical). It involves the design and management of large-scale industrial processes that convert raw materials into valuable products (usually through physical or chemical change). Examples include making biodegradable plastics, developing fertilizers, improving food processing, or even creating special paints that change color on demand.

#### What do chemical engineers do?

Chemical engineers use chemistry to design the processes that convert chemicals or raw materials into valuable products like food, fuels, fashion, and pharmaceuticals. They also help design the machines and factories where all these things are made. Chemical engineers help make sure that these chemical processes are safe, efficient, and cost-effective.



#### How do you become a chemical engineer?

**Physics, chemistry, and mathematics** are essential. Therefore, you need to take these subjects in school, and do well in them.

Here are some general tips for choosing a university or college:

- Make sure the program is **fully accredited** locally and/or internationally.
- Almost all engineering schools offer a **bachelor's degree** in chemical engineering.
- You can consider furthering your skills and experience by pursuing a **post-graduate degree** in chemical engineering, process engineering, environmental engineering, or other related fields.
- Consider accredited engineering programs offered by **technical or community colleges** or pursuing on-the-job training in chemical engineering.

#### What are the careers prospects for a chemical engineer?

Chemical engineers are in great demand because many industries depend on the synthesis and processing of chemicals and materials at industrial scale. Besides the more traditional careers in chemicals, energy, and oil, there is also demand in biotechnology, pharmaceuticals, electronic device fabrication, and environmental engineering for their skills. Chemical engineers are **highly valued and very well paid**.

#### WHAT IS CHEMICAL ENGINEERING?



#### WHAT DO CHEMICAL ENGINEERS DO?



#### TYPICAL EMPLOYERS

Typical employers include large mining and manufacturing companies, research organizations, and healthcare organizations:

- Mines and refineries
- Proctor & Gamble
- Bayer
- AECI
- Research institutions and universities



## Meet some chemical engineers

Watch the following videos to meet some inspiring chemical engineers.

### ANITA KALATHIL

Anita works for Proctor & Gamble as a chemical engineer helping to design the manufacturing processes needed to make many of the everyday items we take for granted.



### MUHAMMED KARIM

Muhammed makes and tests diabetic test strips to help diabetic patients calculate how much insulin they need each day.



### SUSANA TAPIA HARPER

Susana tests materials and components before they are taken to the International Space Station to make sure that they are safe .

