SKILLS IN SCRANTON
Greater Scranton Chamber of Commerce

Career Pathways: Chemical Engineering

A chemical engineer applies the principles of math, physics, biology, and chemistry to resolve issues involving the use or production of food, drugs, fuel, chemicals, and several other products. They plan and test byproducts treatment and production methods, design equipment and processes for large-scale manufacturing and direct facility operations. Chemical engineers can also research business services, biotechnology, and life sciences.

Chemical engineers usually work in laboratories or offices with some time being spent in refineries, industrial plants, and other locations where they can direct or monitor operations or resolve onsite issues. Chemical engineers work with others responsible for designing systems as well as the mechanics and technicians who put the designs into practice. Some chemical engineers have extensive travel to work sites and plants both domestic and abroad associated with their positions.

About Chemical Engineering

The chemicals sector encompasses a wide variety of processes and job roles. It covers a huge range of products including food products and additives, pharmaceuticals, fertilizers, catalysts, plastics, batteries, detergents, solvents, paints, cosmetics, petrochemicals, metal refining and much more. Graduates within the chemicals industry will usually find work in one of four areas: research and development (R&D), design, commissioning, or operations.

Key Tasks

- Conduct research to develop new and improved manufacturing processes
- Establish safety procedures for those working with dangerous chemicals
- Develop processes for separating components of liquids and gases, or for generating electrical currents, by using controlled chemical processes
- Design and plan the layout of equipment
- Conduct tests and monitor the performance of processes throughout production
- Troubleshoot problems with manufacturing processes
- Evaluate equipment and processes to ensure compliance with safety and environmental regulations
- Estimate production costs for management

Key Skills

- Math skills
- Communication skills
- Microsoft Excel
- Microsoft Office
- Process engineering
- Problem-solving skills
- Analytical skills
- Creativity
- Ingenuity
- Interpersonal skills

Education & Certifications

- Bachelor's degree in chemical engineering or a related field
- A degree from an ABET-accredited engineering program
- Professional Engineering (PE) license
- A passing score on the Fundamentals of Engineering (FE) exam
- A passing score on the Professional Engineering (PE) exam
- Six Sigma Certification

Local College/ University Programs

- Lafayette College
- Lehigh University

Industry Sector Employers

- Sanofi
- Mitsubishi Chemical Advanced Materials
- Noble Biomaterials
- Lockheed Martin
- The Procter & Gamble Paper Products Company
- Tobyhanna Army Depot

**List above shows a sampling of sector employers and is not limited to the list above.*

Learn more about chemical engineering and other career pathways at **ScrantonChamber.com**

Sources:
work.chron.com
www.indeed.com
targetjobs.co.uk
www.bls.gov