

Chemical Engineering

Chemical engineering is one of the emerging careers that deal with designing and supervision of chemical reactions in an industry for the purpose of energy production or human development. In the current scenario, chemical engineering is significant as there is a global shift towards renewable resources such as hydroelectric and solar. These fields require innovation and development to make sure that these resources can meet our energy needs. The major responsibility of the chemical engineers is to apply the principles of physics, chemistry, mathematics and biology to solve the problems that involve the production or use of chemicals, drugs, food and many other products. The design equipment and processes for large-scale manufacturing and direct facility operations.

Types of Job Roles Chemical Engineer

Chemical Engineers are required for diverse jobs. The following are some of the job profiles that chemical engineers can take up after obtaining the necessary skills.

- **Analytical Chemist:** An analytical chemist is a scientist who studies and tests the chemical compositions and behaviours of varied substances.
- **Energy Manager:** An energy manager monitors the usage of energy across the industry or organisation. He/ She also undertake energy audits.
- **Environmental Engineer:** These engineers use the principles of biology, chemistry, soil science and engineering to develop solutions to environmental problems. They also involved in different initiatives to improve recycling, public health, waste disposal and water & air pollution control.
- **Manufacturing Engineer:** the major responsibility of manufacturing engineer is to evaluate manufacturing processes by designing and conducting research programmes. They also apply their knowledge of various activities involved in the manufacturing process.
- **Materials Engineer:** These engineers specialise in metals, ceramics or plastics. They also develop composite materials and study the atomic structure of materials.
- **Mining Engineer:** Mining engineers play a vital role in extracting the underground resources such as minerals, oil, gas and metals.
- **Production Manager:** The major responsibility of the production managers is to assess project and resource requirements. They also plan and organise production schedules.
- **Lecturer:** Chemical engineers can also become lectures in universities and colleges after attaining the necessary qualifications.

Top Recruiting Agencies for Chemical Engineers

Some of the top companies and industries require skilled chemical engineers for various positions. The list of top recruiting companies for chemical engineers can be checked below.

- Reliance Industries
 - Essar Oil Limited
 - Deepak Fertilisers and Petrochemicals
 - Arofine Polymers
 - Reliance Petroleum Limited
 - Colour-Chem Ltd
 - Gujarat Gas Company Limited
 - Gujarat Alkalies & Chemicals Ltd
 - Godavari Fertilisers & Chemicals
 - L & T
-

Ceramic Engineering

What is Ceramic Engineering?

Ceramic engineering is an emerging and developing branch of engineering that deals with the study of the manufacture, properties, design and uses of ceramic related things. Ceramic engineers are involved in manufacturing objects which assist computers and electronic devices operate, enhance the health of individuals in various ways and help in the global telecommunication process. Ceramic engineering course prepares students concerning the manufacturing aspect of ceramic designs and their properties.

Skills required to be a Ceramic Engineer

Ceramic engineers are specialised engineers who work with inorganic ceramics and non-metallic materials which are processed at very high temperatures. Ceramic engineers work with a vast range of products, spanning from electronic and glassware components to nuclear reactors and linings for jet engines and blast furnaces. Therefore, aspiring ceramic engineers should have a sound understanding of the policies and processes of working with several different forms of ceramic materials.

Job and Career Prospects for Ceramic Engineering

Since this is a new branch of engineering, job opportunities in the core sector are few; nevertheless, there is scope in R&D. Salaries in this sector vary depending on the job profile; however, if candidates have completed the course from a reputed institute such as NIT or an IIT, the salary packages can be very lucrative. Ceramic engineers can find many job opportunities in different domains such as mining, medicine, food, aerospace, chemical industry, refinery, electronics, industrial and transmission of electricity, among others.

Job Profile	Description	Average Annual Salary in INR
Polymer Chemist	Studying complex, large, molecules and understand in what way monomers combine to form polymers.	2.19 lakhs
Ceramic Designer	Working with porcelain, clay, stoneware, and bone china to design and make homeware (tile/flooring) sculptures, pottery items, cookware, and tableware.	6.50 lakhs
Ceramic Technologist	Undertaking work related to science and technology of ceramic materials. They work in R&D, quality control and production and specialise in the designing of new products or testing raw materials.	3.5 lakhs
Ceramic Research Engineer	Propel research program via technology readiness levels, practical formulation of ceramic compositions, collaborating with engineers to make sintered components, among others	4.5 lakhs