**About -**

**1.** Chemical engineers are in great demand because of the large number of industries that depend on the synthesis and processing of chemicals and materials. In addition to traditional careers in the chemical, energy and oil industries, chemical engineers enjoy increasing opportunities in biotechnology, pharmaceuticals, electronic device fabrication and environmental engineering. The unique training of the chemical engineer becomes essential in these areas when processes involve the chemical or physical transformation of matter.

For example, chemical engineers working in the chemical industry investigate the creation of new polymeric materials with important electrical, optical or mechanical properties. This requires attention not only to the synthesis of the polymer, but also to the flow and forming processes necessary to create a final product. In biotechnology, chemical engineers help design production facilities that use microorganisms and enzymes to synthesize new drugs. Problems in environmental engineering that engage chemical engineers include the development of processes (catalytic converters, effluent treatment facilities) to minimize the release of or deactivate products harmful to the environment.(source: cheme.stanford.edu)

**2.** Chemical engineers apply the principles of chemistry, biology, physics, and math to solve problems that involve the use of fuel, drugs, food, and many other products.(source:bls.gov)

**3.** In the field of engineering, a **chemical engineer** is a professional, equipped with the knowledge of [chemical engineering](https://en.wikipedia.org/wiki/Chemical_engineering), who works principally in the [chemical industry](https://en.wikipedia.org/wiki/Chemical_industry) to convert basic raw materials into a variety of products and deals with the design and operation of plants and equipment.[[1]](https://en.wikipedia.org/wiki/Chemical_engineer#cite_note-1) In general, a chemical engineer is one who applies and uses principles of chemical engineering in any of its various practical applications; these often include

1. design, manufacture, troubleshoot, and operation of plants and machinery in industrial chemical and related processes ("chemical process engineers");
2. development of new or adapted substances for products ranging from foods and beverages to cosmetics to cleaners to pharmaceutical ingredients, among many other products ("chemical product engineers"); and
3. development of new technologies such as [fuel cells](https://en.wikipedia.org/wiki/Fuel_cells), [hydrogen power](https://en.wikipedia.org/wiki/Hydrogen_power) and [nanotechnology](https://en.wikipedia.org/wiki/Nanotechnology), as well as working in fields wholly or partially derived from chemical engineering such as [materials science](https://en.wikipedia.org/wiki/Materials_science), [polymer engineering](https://en.wikipedia.org/wiki/Polymer_engineering), and [biomedical engineering](https://en.wikipedia.org/wiki/Biomedical_engineering).

**What all can a chemical Engineer do:**

For Chemical Engineering graduates there are many good opportunities. You can join any below listed company as per your field of interest:

1. Oil & gas:

Royal Dutch Shell, Exxon Mobil, Technip, BP, Total, Chevron ONGC, HPCL, BPCL, Reliance Petroleum Ltd., Indian Oil Corporation, GAIL

1. Chemical processing:

BASF, DowDuPont Inc. (merging of Dow Chemical & Du Pont) Tata Chemicals, Gujarat Fluorochemicals Ltd., Aarti Industries

1. Agriculture:

GNFC, Coromandel International, UPL, Chambal Fertilisers, Rashtriya Chemicals, Zuari Agro Chemicals, GSFC, NFL, Rallis India, PotashCorp, Yara International, Bayer Crop Science

1. Pharmaceutical

Pfizer, Roche, GlaxoSmithKline, Cipla, Lupin, Glenmark, Sun pharma

1. Engineering services & consulting:,

Schlumberger, Linde Engineering, Halliburton, Baker Hughes, Engineers India Ltd., Tata Consulting Engineers Ltd., Larsen & Toubro Hydrocarbon Engineering

1. Chemical engineering software

Aspen Technology, Honeywell

1. Automotive

Toyota, General Motors, Tata Motors, Mahindra & Mahindra

1. Textile

Bombay Dyeing, Grasim Industries, Century Textiles and Industries Ltd.

1. Food

Nestle, PepsiCo, Amul, Britannia Industries

1. Consumer products

Procter & Gamble, Hindustan Unilever, Godrej Consumer Products Ltd., Asian Paints, Pidilite Industries

1. Nuclear energy:

Nuclear Power Corporation of India Ltd., Bhabha Atomic Research Centre

**Chemical At MNNIT-**

**LABS-**

Lab facilities available in the department:

1. Mass Transfer laboratory

* Bubble Cap Distillation Column
* Forced Draft Tray Drier
* Vapour -Liquid Equilibrium
* Diffusion of an Organic Vapour in Air
* Adsorption in Packed Bed
* Swenson-Waker Crystallizer
* Steam Distillation Unit
* Water Cooling Tower

2. Chemical Technology laboratory

* Bomb Calorimeter
* Pensky Martin Flash point Apparatus
* Clereland's Flash and Fire point Apparatus
* Muffle Furnace
* Distillation Unit

3. Environmental laboratory

* Flocculation test Unit
* Aeration Unit
* Elutriator
* Orbital shaking Incubator cum BOD incubator
* Turbiditymeter
* DO Meter
* Vortex Shaker
* Vacuum cum pressure pump

4. Process Dynamics & Control laboratory

* Cascade Control Trainer
* Two Tank Interacting System
* Two Tank Non Interacting System
* I to P and P to I trainer kit
* Dynamic Behaviour of First Order System in Series
* Control Valve Characteristics

5. FFM laboratory

* Plate And Frame Filter Press
* Sedimentation Apparatus
* Vibrating Screen
* Hammer mill Pulverizer

6. Chemical Reaction Engineering laboratory

* Isothermal Batch Reactor With Air Compressor
* PIsothermal Plug Flow Reactor
* Semi Batch Reactor
* Combined CSTR and PFR
* RTD Studies in CSTR
* RTD Studies in Packed Bed Reactor
* Hydrodynamics of Trickle Bed Reactor
* Plug Flow and Tubular Reactor with Air Compressor
* CSTRs in Series with Air Compressor

**Research at MNNIT:**

The research interests of the department include:

1.      Advance Separation processes

2.      Convective heat transfer

3.      Multiphase Flow and Heat Transfer

4.      Chemical Reaction Engineering

5.      Process Modeling and Simulation

6.      Computational Fluid Dynamics

7.      Boiling & condensation.

8.      Process Control & Optimization

9.      Membrane Separation

10.    Polymer Technology

11.    Environmental Engineering

12.    Industrial Waste treatment & recycle

13.    Industrial Pollution abatement

14.    Hydrocarbon Engineering

15.    Catalytic reactions

16.    Nanotechnology

17.    CAD of Process Equipment.

18. Food Technology and Colloid Science.

**Placements-**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Year** | **Eligible Candidates** | **Placed** | **Job offers** | **%placement** | **Average CTC (in lacs)** | **Max CTC (in lacs)** |
| 2019 | 41 | 41 | 48 | 100 | 8.72 | 17.3 |
| 2018 | 33 | 28 | 35 | 84.85 | 10.003 | 17.37 |
| 2017 | 36 | 28 | 31 | 77.78 | 6.01 | 9.95 |
| 2016 | 35 | 32 | 43 | 91.43 | 6.06 | 10.64 |
| 2015 | 36 | 24 | 28 | 66.67 | 5.59 | 11 |
| 2014 | 34 | 23 | 31 | 67.64 | 4.8 | 6 |
| 2013 | 34 | 17 | NA | 50 | 4.22 | 5.5 |
| 2012 | 26 | 21 | NA | 80.77 | 6.16 | 11.8 |
| 2011 | 23 | 17 | NA | 73.19 | 4.19 | 8.50 |

**Past Recruiters**:

* BPCL (Bharat petroleum corporation Ltd.)
* Berger paints
* Coal India
* Crompton Greaves
* DRDO (Defence research and development organisation)
* EIL (Engineers India Ltd. A Navratna Oil and Natural Gas PSU)
* GAIL (Gas authority of India Ltd.)
* GSK (Glaxo Smith Kline)
* Hindalco
* HLS Asia (Oilfield service company)
* HPCL (Hindustan petroleum corporation Ltd.)
* HUL (Hindustan Unilever)
* IGL (Indraprastha gas Ltd.)
* Indogulf Fertilizers
* IOCL (Indian oil corporation Ltd.)
* JSPL (Jindal steel and power plant)
* Jubilant
* KSFL (Kribhco fertilizers Ltd.)
* Matrix Fertilizer
* Nestle
* PepsiCo
* Polyplex Corporation
* Reliance Industries Limited
* Schlumberger
* Tata Chemicals Limited
* Trident