

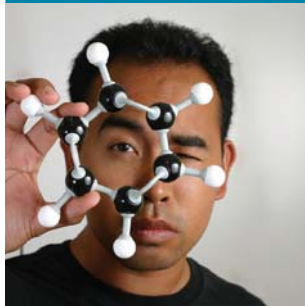
# What is Chemical Engineering?

Chemical engineering involves the challenge of solving the problems concerned with making and using chemicals and biochemicals. It is based on a mixture of chemistry, physics, biology and mathematics. Chemical engineering is responsible for the production of chemicals for use in our everyday lives including water and waste water treatment, oil refinement for petrol production and petrochemicals, generating electricity, producing our food and beverages, cosmetics and textiles: the list is endless!

## What do Chemical Engineers do?

Chemical engineers strive to create and develop the best possible methods to manufacture useful products and services. They respond to society's growing demands for new innovative products and for improved use of our limited natural resources. They achieve these goals in a variety of ways including:

- Pilot testing new methods for manufacturing products such as paper, pharmaceuticals or coronary stents, and overseeing the implementation of those methods in full-scale production.



- Developing novel and cost-effective processes for recovering valuable raw materials, such as fossil fuels or anti-cancer agents from inaccessible areas of the world or from limited supply stocks.
- Generating and efficiently mass-producing new medicines to improve the quality of human and animal life.
- Producing new, cleaner fuels, from plants or other renewable resources.
- Designing pollution prevention technologies to protect water, air and human health.



## Career Opportunities

The chemical and biopharmaceutical industries are among the fastest growing sectors in Ireland and there are ample exciting and rewarding career opportunities for graduates, both at home and abroad. As a chemical engineer, technologist or technician, you can anticipate a challenging, varied, interesting and well-paid position in any one of a variety of different fields.

- **Research and development:** collaborating with scientists and engineers from other disciplines in the design and implementation of new products and new production techniques.
- **Design and construction:** complete design and construction of a chemical plant.
- **Consultancy:** providing engineering services to manufacturing companies or government bodies.
- **Manufacturing:** supervising a multi-disciplinary production team; trouble-shooting new and existing processes.
- **Other sectors:** chemical engineers have highly transferable skills and are also employed in many other engineering disciplines or non-engineering sectors.

### Did you know?

Chemical engineers are developing hydrogen fuel cells to supply heat and power. This will reduce burning of fossil fuels and help our environment.

*Engineering provides a host of exciting opportunities for individual enterprise and job flexibility with rapid progress to creative, responsible and financially rewarding careers.*

*For more information look up [www.steps.ie](http://www.steps.ie)*

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Electronic Engineering	Nanotechnology
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Mechanical Engineering	Process

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### As a Chemical Engineering graduate you can:

- Develop and implement processes to make the products essential for our modern society, including food and drinks, fuels, electricity, artificial fibres, pharmaceuticals, plastics and micro-electronics.
- Help sustain the environment through the effective management of natural resources and efficient recycling of materials.

### Employers of Chemical Engineering graduates include:

Bausch & Lomb, BOC Gases, Coca-Cola, Diageo, Eli Lilly, FMC, GlaxoSmithKline, Intel, Irish Cement, Jacobs, PM, Pfizer, Proctor & Gamble, Roche, Unilever, Wyeth, to name but a few.



*STEPS to engineering is an Engineers Ireland programme supported by Discover Science & Engineering, the Department of Education & Science, FÁS and industry.*