

BACHELOR'S DEGREE IN CHEMICAL ENGINEERING

UPC MANRESA
Manresa School of Engineering



UNIVERSITAT POLITÈCNICA
DE CATALUNYA
BARCELONATECH

International Campus of Excellence

BACHELOR'S DEGREE IN CHEMICAL ENGINEERING

If you look at the products that you often have around you, you will find a whole range of objects, such as clothes; food; medicines; metal, plastic and wooden utensils, etc. Have you ever asked yourself what the clothes you wear are made of? What do you know about the food you eat? What do you know about the medicines you take? How are these products designed and obtained?

The bachelor's degree in Chemical Engineering allows you to answer these questions and many more. If you train in chemical engineering, you will be able to work in obtaining and manufacturing materials and products that are part of daily life, and you will always take the environment and personal protection and safety into account.

92%

of graduates would study at the same school again*

*Source: Graduate employment survey of Catalan universities by the Catalan University Quality Assurance Agency (AQU Catalunya) 2020.

92%

of graduates are in work*

*Source: Graduate employment survey of Catalan universities by the Catalan University Quality Assurance Agency (AQU Catalunya) 2020.

25%

of students have produced a research-related bachelor's thesis

What will I learn?

- To intervene in processes in which matter undergoes a change in state, energy or composition.
- To calculate, design, build and operate facilities and equipment in which chemical processes take place.
- To analyse and assess the social and environmental impact of designed or proposed technical solutions.

You will do all of this in an atmosphere in which there is close interaction between students and teaching staff, who carefully monitor and guide students in their learning, and work groups are small.

Research

Future graduates in Chemical Engineering in Manresa can carry out their bachelor's theses in areas related to research in biotechnology, environmental engineering and other cutting-edge fields, because professors carry out research in various disciplines in collaboration with other

universities and with companies. This is a good option for students who wish to pursue research in the areas related to the doctoral degree.

Professional opportunities

Training on the bachelor's degree in Chemical Engineering is multidisciplinary. It will allow you to work in technical and managerial positions in the chemical, pharmaceutical, food, paper, metallurgy and petrochemical industries. You may find employment in the chemical analysis and quality control laboratories of chemical companies or companies in a range of other sectors in which the training of Chemical Engineering graduates is required. Your versatile training also equips you for work in public administration, teaching and research.

In addition, the bachelor's degree in Chemical Engineering qualifies you for professional freelance practice.

What we offer you?

- Innovative teaching materials and the support of computer tools.
- Chemical engineering laboratories equipped with a range of pilot plants for practicals that are closely related to industrial practice and state-of-the-art instrumental equipment.
- Work placements through educational cooperation agreements.
- In-company courses through curricular placements.
- Study abroad through the Erasmus programme.

Curriculum

This information may be subject to change. Up-to-date information is available at upc.edu

240 ECTS

1st year

1st semester

Mathematics I	6
Physics I	6
Informatics	6
Chemistry	6
Environmental Technologies and Sustainability	6

2nd semester

Mathematics II	6
Physics II	6
Graphic Expression	6
Statistics	6
Materials Science and Technology	6

2nd year

1st semester

Mathematics III	6
Business	6
Mechanical Systems	6
Electrical Systems	6
Thermodynamics and Fluid Mechanics	6

2nd semester

Strength of Materials	6
Electronic Systems	6
Industrial Control and Automation	6
Operations Management	6
Foundations of Chemical Engineering	6

3rd year

1st semester

Biotechnology	6
Chemical Reaction Engineering	6
Fluid Transport Engineering and Heat Transmission	6
Physical Chemistry	6
Organic Chemistry	6

2nd semester

Process and Product Engineering	6
Chemical Analysis	6
Separation Operations	6
Experimentation in Chemical Engineering I	6
Project Methodology, Management and Orientation	6

4th year

1st semester

Optional subjects*	24
Simulation and Control for Chemical Processes	6

2nd semester

Optional subject*	6
Bachelor's Thesis	24

* Optional subjects
Environmental Technologies I / Chemistry for Industry / Business English / Quality Management and Integrated Quality, Safety and Environmental Systems / Energy Resources / Further Process and Product Engineering / Maintenance Management / Experimentation in Chemical Engineering II / Prevention of Occupational Risks

Basic training

Subjects shared with the industrial engineering branch of knowledge

Specific training

BACHELOR'S DEGREE IN CHEMICAL ENGINEERING

At the Manresa School of Engineering you will find:

- teaching staff who are committed to students' learning and well-being,
- cutting-edge research,
- degrees that integrate theoretical and practical education through work on real projects,
- many options to extend your CV, such as international mobility programmes, work placements and a job bank.

This bachelor's degree qualifies you to officially practise as:

- A technical industrial engineer.
- An industrial engineer, by taking the master's degree in Industrial Engineering.
- A chemical engineer, by taking the master's degree in Chemical Engineering. With the master's degree, the bachelor's degree constitutes an integrated academic programme.



Training the engineers of the future



Further information:

comunicacio.epsem@upc.edu

epsem.upc.edu

manresa.upc.edu

Follow us on:



@upcmanresa



@upcmanresa



@upcmanresa



UNIVERSITAT POLITÈCNICA DE CATALUNYA
BARCELONATECH

Manresa School of Engineering