

Bachelor's degree in Chemical Engineering

Manresa School of Engineering (EPSEM)

On the **bachelor's degree in Chemical Engineering** you will train to be a multidisciplinary professional who can analyse, design, test and operate equipment and processes in which there are changes in the state, internal energy or composition of matter. You will acquire the knowledge and skills needed to design and control chemical plant production and to supervise quality control and environmental management projects. You will understand experimental, testing and process characterisation methods and monitoring, control and product optimisation systems and technologies.

GENERAL DETAILS

Duration

4 academic years

Study load

240 ECTS credits (including the bachelor's thesis). One credit is equivalent to a study load of 25-30 hours.

Delivery

Face-to-face

Language of instruction

Check the language of instruction for each subject (and timetable) in the course guide in the curriculum.

Information on [language use in the classroom and students' language rights](#).

Fees and grants

Approximate fees per academic year: €1,107 (€2,553 for non-EU residents). [Consult the public fees system based on income \(grants and payment options\)](#).

Location

[Manresa School of Engineering \(EPSEM\)](#)

Official degree

[Recorded in the Ministry of Education's degree register](#)

ADMISSION

Places

180

Registration and enrolment

[What are the requirements to enrol in a bachelor's degree course?](#)

Legalisation of foreign documents

All documents issued in non-EU countries must be [legalised and bear the corresponding apostille](#).

DOUBLE-DEGREE AGREEMENTS

Double-degree pathways at the UPC

You have the possibility of complementing this bachelor's degree with a specific pathway towards a double degree by taking an additional number of credits from one of the other degrees taught at the School. Generally, this involves an additional year

of study. To gain admission to a double degree of this kind you must have taken a minimum number of credits on one of the bachelor's degrees. The number of places is limited.

- Bachelor's degree in Chemical Engineering + Bachelor's degree in Mechanical Engineering
- Bachelor's degree in Chemical engineering + Bachelor's degree in Mineral Resource Engineering and Mineral Engineering

PROFESSIONAL OPPORTUNITIES

Professional opportunities

- Design, operation, management, commercial organisation and installation and equipment supervision in chemical, pharmaceutical, agrifood, biotechnology, energy, petrochemical and service industries.
- Design and control of production and quality in chemical plants.
- Energy auditing and environmental management.
- Chemical analysis, testing and process and product characterisation in laboratories.
- Development of research, development and innovation projects.
- Drafting of technical, advisory and feasibility reports.
- Public administration.
- Teaching and research.

ORGANISATION: ACADEMIC CALENDAR AND REGULATIONS

Academic calendar

[General academic calendar for bachelor’s, master’s and doctoral degrees courses](#)

Academic regulations

[Academic regulations for bachelor’s degree courses at the UPC](#)

Language certification and credit recognition

Queries about [language courses and certification](#)

Manresa School of Engineering (EPSEM)

This bachelor’s degree is also taught at

- Barcelona · EEBE · [Show degree](#)
- Terrassa · ESEIAAT · [Show degree](#)

CURRICULUM

Subjects	ECTS credits	Type
FIRST SEMESTER		
Chemistry	6	Compulsory
Environmental Technologies and Sustainability	6	Compulsory
Introduction to Computing	6	Compulsory
Mathematics I	6	Compulsory
Physics I	6	Compulsory
SECOND SEMESTER		
Graphic Expression	6	Compulsory
Materials Science and Technology	6	Compulsory
Mathematics II	6	Compulsory
Physics II	6	Compulsory

Subjects	ECTS credits	Type
Statistics	6	Compulsory
THIRD SEMESTER		
Business	6	Compulsory
Electrical Systems	6	Compulsory
Mathematics III	6	Compulsory
Mechanical Systems	6	Compulsory
Thermodynamics and Fluid Mechanics	6	Compulsory
FOURTH SEMESTER		
Chemical Engineering Fundamentals	6	Compulsory
Electronic Systems	6	Compulsory
Engineering Skills	6	Optional
Industrial Control and Automation	6	Compulsory
Operations Management	6	Compulsory
Strength of Materials	6	Compulsory
FIFTH SEMESTER		
Biotechnology	6	Compulsory
Chemical Reaction Engineering	6	Compulsory
Fluid Transport Engineering and Heat Transmission	6	Compulsory
Organic Chemistry	6	Compulsory
Physical Chemistry	6	Compulsory
SIXTH SEMESTER		
Chemical Analysis	6	Compulsory
Experimentation in Chemical Engineering	6	Compulsory
Process and Product Engineering	6	Compulsory
Project Methodology, Management and Orientation	6	Compulsory
Separation Operations	6	Compulsory
SEVENTH SEMESTER		
Advanced Programming	6	Optional
Biotechnological Industrial Processes	6	Optional
Business English	6	Optional
Chemistry for Industry	6	Optional
Construction Material Factories	6	Optional
Construction Materials	6	Optional
Data Management and Storage	6	Optional
Decision Optimisation and Theory	6	Optional
Drillings Applied to Engeneering	6	Optional
Energy Resources	6	Optional
Energy Technology	6	Optional

Subjects	ECTS credits	Type
Environmental Management	6	Optional
Environmental Waste and Soil Technology	6	Optional
Environments Technology I	6	Optional
Environments Technology II	6	Optional
Experimentation in Chemical Engineering II	6	Optional
Fuels and Thermal Processes	6	Optional
Further Chemical Analysis	6	Optional
Further Process and Product Engineering	6	Optional
Geotechnical Engineering	6	Optional
Graphical User Interfaces	6	Optional
Hydrology and Hydrogeology	6	Optional
Innovation, People Management and Business Start-Up	6	Optional
Maintenance Management	6	Optional
Natural Resource Management	6	Optional
Nuclear Technology	6	Optional
Prevention of Occupational Risks	6	Optional
Quality Management and Integrated Quality, Safety and Environmental Management Systems	6	Optional
Simulation and Control for Chemical Processes	6	Compulsory
Transport Phenomena	6	Optional
EIGHTH SEMESTER		
Bachelor's Thesis	24	Project