Master's degree in Chemical Engineering

Chemical engineering is directly concerned with obtaining various products (fuels, solvents, medicines, paints, plastics, detergents, etc.) and services (water and energy supply, waste management and valorisation, etc.) that ensure our quality of life and without which modern life as we know it would be impossible. In addition, society demands that the most innovative technologies be used in these processes to ensure that they are efficient, sustainable, economically viable, safe and environmentally friendly.

The global demand for these products and services and, as a result, for experts in this sector grows year on year. The **master's degree in Chemical Engineering** (**master's degree website**): Smart Chemical Factories aims to produce engineers with the high-level competencies that will allow them to deal with current challenges in chemical engineering (sustainability, circular economy, climate change, etc.) and to take advantage of the opportunities that Industry 4.0 technology can afford.

The master's degree provides advanced training for chemical engineers who will easily adapt to positions of responsibility in companies, research centres, universities and public administrations.

Specialisations

- Smart Polymer Engineering
- Green Chemical Process Engineering

GENERAL DETAILS

Duration and start date

Two academic years, 120 ECTS credits. Starting September

Timetable and delivery

Afternoons. Face-to-face

Fees and grants

Approximate fees for the master's degree, **excluding other costs** (does not include non-teaching academic fees and issuing of the degree certificate):
€2,215 (€12,662 for non-EU residents).
More information about fees and payment options
More information about grants and loans

Language of instruction

English

Information on language use in the classroom and students' language rights.

Location

Barcelona East School of Engineering (EEBE)

Official degree

Recorded in the Ministry of Education's degree register

ADMISSION

General requirements

Academic requirements for admission to master's degrees

Specific requirements

Candidates must be in possession of a bachelor's degree in Chemistry (with bridging courses), Chemical Engineering, Biotechnology (with bridging courses) or Environmental Sciences (with bridging courses).

English level B2 are required. Proof must be submitted on enrolment.

Admission criteria

- Academic record.
- First degree and university of origin.
- Professional experience.

Places

60

Pre-enrolment

Pre-enrolment closed (consult the new pre-enrolment periods in the academic calendar).
How to pre-enrol

Enrolment

How to enrol

Legalisation of foreign documents

All documents issued in non-EU countries must be legalised and bear the corresponding apostille.

DOUBLE-DEGREE AGREEMENTS

With international universities

- Bachelor's degree EEBE (Biomedical, Electrial, Industrial Electronic and Automatic Control, Energy, Mechanical, Materials, Chemical) / Bs. C. Ecole Centrale + Master's degree EEBE (Advanced Materials Science and Engineering, Master in Interdisciplinary and Innovative Engineering, Chemical Engineering) (Ecole Centrale Lille - Centrale de Lyon - Ecole Centrale Marseille - Ecole Centrale de Nantes - CentraleSupélec - Francia)

ORGANISATION: ACADEMIC CALENDAR AND REGULATIONS

UPC school

Barcelona East School of Engineering (EEBE)

Academic coordinator

Elsa Pastor

Academic calendar

General academic calendar for bachelor’s, master’s and doctoral degrees courses

Academic regulations

Academic regulations for master's degree courses at the UPC

CURRICULUM

Subjects	ECTS credits	Type
FIRST SEMESTER		
Biotech Processes and Polymer Industry	6	Compulsory
Chemical and Catalytic Reaction Engineering	6	Compulsory
Data Analysis & Pattern Recognition	6	Compulsory
Polymer Physics	6	Compulsory
Technology Innovation 1	6	Compulsory

Subjects		ECTS credits	Type
Specialisation in Specialisation in Green Chemical Process Engineering	Biotech Processes and Polymer Industry	6	Compulsory
	Chemical and Catalytic Reaction Engineering	6	Compulsory
	Data Analysis & Pattern Recognition	6	Compulsory
	Polymer Physics	6	Compulsory
	Technology Innovation 1	6	Compulsory
Specialisation in Specialisation in Smart Polymer Engineering	Biotech Processes and Polymer Industry	6	Compulsory
	Chemical and Catalytic Reaction Engineering	6	Compulsory
	Data Analysis & Pattern Recognition	6	Compulsory
	Polymer Physics	6	Compulsory
	Technology Innovation 1	6	Compulsory
SECOND SEMESTER			
Management and Organization		6	Compulsory
Process Control		6	Compulsory
Sustainability & Circular Economy		6	Compulsory
Specialisation in Specialisation in Green Chemical Process Engineering	Industrial Water Technologies	6	Compulsory
	Membrane Processes and Technologies	6	Compulsory
	Management and Organization	6	Compulsory
	Process Control	6	Compulsory
	Sustainability & Circular Economy	6	Compulsory
Specialisation in Specialisation in Smart Polymer Engineering	Experimentation and Instrumentation	6	Compulsory
	Polymer Transformation Processes	6	Compulsory
	Management and Organization	6	Compulsory
	Process Control	6	Compulsory
	Sustainability & Circular Economy	6	Compulsory
THIRD SEMESTER			
Nanotechnology		6	Compulsory
Risk and Safety at the Chemical Industry		6	Compulsory
Waste Resource Technologies		6	Compulsory
Specialisation in Specialisation in Green Chemical Process Engineering	Advanced Catalytic Reactors	6	Compulsory
	Process Integration	6	Compulsory
	Nanotechnology	6	Compulsory
	Risk and Safety at the Chemical Industry	6	Compulsory
	Waste Resource Technologies	6	Compulsory
Specialisation in Specialisation in Smart Polymer Engineering	Advanced Materials	6	Compulsory
	Chemistry of Polymerization	6	Compulsory
	Nanotechnology	6	Compulsory
	Risk and Safety at the Chemical Industry	6	Compulsory
	Waste Resource Technologies	6	Compulsory

Subjects		ECTS credits	Type
FOURTH SEMESTER			
Specialisation in Specialisation in Green Chemical Process Engineering	Circular Process Engineering	6	Compulsory
	Computational Fluid Dynamics	6	Compulsory
	Master's Thesis	18	Project
Specialisation in Specialisation in Smart Polymer Engineering	Biopolymers and Bioplastics	6	Compulsory
	Design of Equipment Coating Technologies	6	Compulsory
	Master's Thesis	18	Project
Master's Thesis		18	Project