



Master's degree on Chemical Engineering – Smart Chemical Factories

EEBE

Barcelona East School of Engineering

2019-2020 Course

GENERAL INFORMATION

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 valorization, 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 on Chemical Engineering: 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 centers, universities and public administrations.

Specializations:

- Smart Polymer Engineering (SPE)
- Green Chemical Process Engineering (GCPE)

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 degree certificate fee, €5,300 (€7,950 for non-EU residents).

Language of instruction: English

Location: Barcelona East School of Engineering (EEBE)

Official degree: Recorded in the Ministry of Education's degree register

ADMISSION

General requirements

1. An official Spanish university qualification or an official university qualification issued by a university in the European Higher Education Area (EHEA) that qualifies the holder for admission to a master's degree.
2. A qualification issued by a university in a country that is not in the EHEA. If the qualification has not been homologated, the UPC will verify that the course of study corresponds to a level of education equivalent to an official Spanish university degree and that the qualification obtained would provide admission to a master's degree in the country in which it was awarded

Specific requirements

- Candidates must be in possession of a bachelor's degree in Chemical Engineering, Chemistry (with bridging courses), Biotechnology (with bridging courses) or Environmental Sciences (with bridging courses).
- English level B2 and Spanish level B2 (foreign students) are required. Proof must be submitted on enrolment.

Admission criteria

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

Places: 60

Legalization of foreign documents

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

Master's Information

<https://eebe.upc.edu/ca/estudis>


<https://eebe.upc.edu/en/degrees>

CURRICULUM

First semester

• Biotech Processes and Polymer Industry	6	
• Chemical and Catalytic Reaction Engineering	6	
• Data Analysis & Pattern Recognition	6	
• Sustainability & Circular Economy	6	
• Technology Innovation	6	


Second semester



• Polymer Physics	6	
• Process Control	6	
• Management and Organization	6	
• Experimentation and Instrumentation (SPE)	6	
• Polymer Transformation Processes (SPE)	6	
• Industrial Water Technologies (GCPE)	6	
• Membrane Processes and Technologies (GCPE)	6	

Third semester

• Nanotechnology	6	
• Risk and Safety at the Chemical Industry	6	
• Waste Resource Technologies	6	
• Biopolymers and Bioplastics (SPE)	6	
• Chemistry of Polymerization (SPE)	6	
• Process Integration (GCPE)	6	
• Advanced Catalytic Reactors (GCPE)	6	

Fourth semester

• Advanced Materials (SPE)	6	
• Design of Equipment Coating Technologies (SPE)	6	
• Circular Process Engineering (GCPE)	6	
• Computational Fluid Dynamics (GCPE)	6	
• Master's Thesis	18	

Compulsory	ECTS	
Optional	ECTS	
Project	ECTS	