Science is about knowing, engineering is about doing

Further information:
eeeb.upc.edu/en
masters.eebe@upc.edu

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

### Aimed at
This master’s degree addresses graduates in Chemical Engineering and other scientific fields such as chemistry, biotechnology and environmental sciences, who wish to acquire deeper knowledge of chemical engineering and Industry 4.0 related applications. It has been specially conceived to provide students with the skills needed to provide solutions to sustainable development challenges, including water solutions, energy-efficient solutions, the environment and the circular economy, healthcare, 4.0 technologies, smart mobility and smart cities.

### Admission
Holders of a bachelor’s degree in chemistry, biotechnology and environmental sciences, who wish to acquire deeper knowledge of chemical engineering and other scientific fields such as chemistry, biotechnology and environmental sciences, who wish to acquire deeper knowledge of chemical engineering and Industry 4.0 related applications. It has been specially conceived to provide students with the skills needed to provide solutions to sustainable development challenges, including water solutions, energy-efficient solutions, the environment and the circular economy, healthcare, 4.0 technologies, smart mobility and smart cities.

### Professional opportunities
Graduates of the master’s degree often find employment in a wide and diverse range of industries, including the chemical and petrochemical, pharmaceutical, polymers and plastics, environmental, biotechnological and food industries.

### Mobility
The Barcelona East School of Engineering (EEBE) offers mobility programmes with national and international universities. An academic exchange will allow you to acquire new knowledge, live in a different culture and improve a foreign language.

### Work placement and work experience
The EEBE promotes the participation of its master’s students in work placement at companies, institutions and national or international, public or private bodies. In the case of this master’s degree, students can enrol for 12 ECTS credits, rather than 12 specialisation credits, to gain professional experience in a leading company in the sector.

### Language of instruction
All the courses are taught entirely in English.

### Location
You will study this master’s degree at the Barcelona East School of Engineering (EEBE) on the Diagonal-Besòs Campus, one of the most modern technological campuses in Europe. With an area of 53,000 m2, the Campus currently has three buildings for teaching and research, where 400 professors and researchers, 3,500 students and 31 official research groups in a range of engineering fields carry out their activity.

### Curriculum

#### 1st year
1st semester
- Biotech Processes and Polymer Industry 6
- Chemical and Catalytic Reaction Engineering 6
- Data Analysis and Pattern Recognition 6
- Sustainability and Circular Economy 6
- Technology Innovation 6

#### 2nd semester
- Polymer Physics 6
- Process Control 6
- Management and Organisation 6
- Specialisation subjects* 12

#### 2nd year
1st semester
- Nanotechnology 6
- Risk and Safety in the Chemical Industry 6
- Waste Resource Technologies 6
- Specialisation subjects* 12

#### 2nd semester
- Specialisation subjects* 12
- Master’s Thesis 18

* Specialisation subjects
- Smart Polymer Engineering
- Green Chemical Process Engineering

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

#### Compulsory
- 120 ECTS credits

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Chemical engineering is directly concerned with obtaining 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.
MASTER’S DEGREE IN CHEMICAL ENGINEERING

This master’s degree enables you to practise as a:
• Chemical engineer.

Two specialisations:
• Smart Polymer Engineering.
• Green Chemical Process Engineering.

The Barcelona East School of Engineering (EEBE) is located on the new Diagonal-Besòs Campus of the Universitat Politècnica de Catalunya (UPC) and has about 3,500 bachelor’s, master’s and doctoral degree students and 400 professors and researchers. The EEBE is a high-quality school in the field of engineering for industry in the twenty-first century that acts as an agent of transformation in collaboration with the socio-economic fabric of Catalonia and with a strong international focus.

The EEBE is a school of the UPC, a benchmark public institution of research and higher education in the fields of engineering, architecture, science and technology. With 50 years of history and more than 30,000 students, the UPC has the greatest concentration of research and innovation in IT in southern Europe. It is the second Spanish university and the best Catalan university in Engineering and Technology, according to the 2022 QS World University Rankings by Subject.

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