

Master's degree in Industrial Engineering

This master's degree, which **qualifies graduates to practise the regulated profession of industrial engineer**, aims to provide multidisciplinary scientific and technical training based on an overview of industrial engineering combined with specialisation in a particular branch of industry.

At the UPC, the **master's degree in Industrial Engineering** and the bachelor's degree in Industrial Technology Engineering form an integrated programme.

More information on [the web page of this master's degree](#).

Specialisations

- Mechanics
- Construction and Structures
- Electrical Engineering
- Thermal Energetics
- Industrial Scheduling
- Fibrous Biomaterials
- Technical Textiles and Multifunctional Structures
- Biomedical Engineering

GENERAL DETAILS

Duration and start date

2 academic years, 120 ECTS credits. Starting September and February

Timetable and delivery

Mornings and 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

Morning classes are taught in Catalan and afternoon classes are taught in Spanish.

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

Location

[Terrassa School of Industrial, Aerospace and Audiovisual Engineering \(ESEIAAT\)](#)

Official degree

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

ADMISSION

General requirements

[Academic requirements for admission to master's degrees](#)

Places

100 september + 80 february

Pre-enrolment

Pre-enrolment period open.

Expected deadline: 01/07/2025.

[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

Double-degree pathways at a single school

- Master's degree in Industrial Engineering (ESEIAAT) (any specialisation) / Master's degree in Industrial Scheduling Engineering (blended learning)
- Master's degree in Industrial Engineering (any specialisation) / Master's degree in Automatic Systems Engineering and Industrial Electronics

Further information on [this website](#)

With other Catalan universities

- Bachelor's degree in Industrial Technology Engineering + Master's degree in Industrial Engineering + Bachelor's degree in Business Administration and Management (UOC)
- Bachelor's degree in Industrial Technology Engineering + Master's degree in Industrial Engineering + Bachelor's degree in Economics (UOC)

PROFESSIONAL OPPORTUNITIES

Professional opportunities

Graduates of this master's degree will acquire a multidisciplinary overview of technology that will enable them to contribute to any kind of industrial endeavour. They will be qualified for employment in engineering firms and in technical, R&D, production and sales departments. Their broad skills will also allow them to work for companies offering consultancy services in the fields of technology, management, industrial plant design and project management. The master's degree enhances the employability of its graduates by making them versatile, flexible and able to develop and lead projects across all sectors of industry. The training they receive in organisation and management techniques prepares them to take on leadership roles in industrial and service company management, project management, public administration, institutions and multidisciplinary teams.

Competencies

Generic competencies

Generic competencies are the skills that graduates acquire regardless of the specific course or field of study. The generic competencies established by the UPC are capacity for innovation and entrepreneurship, sustainability and social commitment, knowledge of a foreign language (preferably English), teamwork and proper use of information resources.

Specific competencies

On completion of this course, students will be able to:

- Understand, analyse and design electrical energy generation, transport and distribution systems.
- Understand, draft, calculate and design integrated manufacturing systems.
- Design and test machines.
- Analyse and design chemical processes.

- Design and analyse thermal machines and heat engines, hydraulic machines and industrial heat and cold facilities.
- Understand, analyse, use and manage sources of energy.
- Design electronic systems and industrial instrumentation.
- Design and draft automated production systems and advanced control processes.
- Organise and run businesses.
- Work out strategies and plans for a range of organisational structures.
- Understand business and employment law.
- Understand financial and cost accounting.
- Understand information systems for management, industrial organisation, production, logistics and quality management.
- Organise production systems, logistics and quality management systems.
- Organise work and human resource management in keeping with the principles of occupational health and safety.
- Practise integrated project management.
- Manage research, development and technological innovation.
- Design, build and use industrial plants.
- Understand building construction, facilities, infrastructure and urban development for industrial engineering.
- Calculate and design structures.
- Draft and design electrical and fluid facilities, lighting, air conditioning and ventilation, energy saving and efficiency systems, acoustics, communications, home automation and smart buildings, and safety facilities.
- Understand transport and industrial maintenance methods and techniques.
- Check and control facilities, processes and products.
- Draw up certificates, audits, verifications, tests and reports.
- Write, present and defend to university examiners an original, individually authored piece of work consisting of a professional industrial engineering project that displays all of the competencies acquired during the master's degree course.

ORGANISATION: ACADEMIC CALENDAR AND REGULATIONS

UPC school

[Terrassa School of Industrial, Aerospace and Audiovisual Engineering \(ESEIAAT\)](#)

Academic coordinator

[Daniel Garcia Almiñana](#)

[Jasmina Casals Terre](#)

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