

Bachelor's degree in Industrial Technology Engineering

Barcelona School of Industrial Engineering (ETSEIB)

The **bachelor's degree in Industrial Technology Engineering** provides knowledge of the range of industrial technologies and offers a multidisciplinary, unifying view of the field of industrial engineering. You will be trained in basic scientific and technological disciplines that will equip you to learn about new methods and theories and gain in-depth knowledge of industrial fields, including technological and business aspects such as project planning, supervision and management, whilst observing social and environmental requirements. Upon completion of your studies, you will have developed the versatility to adapt to changing working environments and to future technological developments that will improve products and processes in the sector.

GENERAL DETAILS

Duration

4 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

Fees and grants

Approximate fees per academic year: €1,660 (€2,490 for non-EU residents). [Consult the public fees system based on income \(grants and payment options\)](#).

Location

[Barcelona School of Industrial Engineering \(ETSEIB\)](#)

Official degree

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

ADMISSION

Places

400

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

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)

With universities around the world

- Bachelor's degree in Industrial Technology Engineering + Master's degree in Industrial Engineering and Diplôme d'ingénieur from the Institut National des Sciences Appliquées (INSA) of Toulouse

- Bachelor's degree in Industrial Technology Engineering + Master's degree in Industrial Engineering or Master's degree in Management Engineering and Diplôme d'ingénieur from the Institut National des Sciences Appliquées (INSA) of Lyon
- Bachelor's degree in Industrial Technology Engineering + Master's degree in Industrial Engineering and Diplôme d'ingénieur from ENSTA ParisTech
- Bachelor's degree in Industrial Technology Engineering + Master's degree in Industrial Engineering and Master ingénieur civil from the Université Libre de Bruxelles (ULB).
- Bachelor's degree in Industrial Technology Engineering + Master's degree in Industrial Engineering/ in Automatic Control and Robotics/ in Management Engineering/ in Automotive Engineering/ in Nuclear Engineering and Diplôme d'ingénieur from one of the Ecoles Centrales (Lille, Lyon, Marseille, Nantes, CentraleSupélec).
- Bachelor's degree in Industrial Technology Engineering + Master's degree in Industrial Engineering / Master's degree in Management Engineering / Master's degree in Automatic Control and Robotics and *Diplôme d'ingénieur* from the ENSAM PARISTECH

Within the framework of the courses offered by the Interdisciplinary Higher Education Centre (CFIS)

You can also take an interdisciplinary double degree coordinated by the CFIS at two UPC schools.

Further information on the [CFIS website](#)

PROFESSIONAL OPPORTUNITIES

Professional opportunities

- Supervision and management of projects, facilities, plants, businesses and technology centres in a range of industrial sectors such as energy; iron and steel; metallurgy; chemicals; robotics; the automotive and rail industries; metal, mechanical and electrical construction; and smart materials, nanotechnology and bioengineering
- Design, calculation and design of products, processes, facilities and equipment.
- Strategic planning, quality management and environmental management.
- Research, development and innovation in products, processes and methods.

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](#)

Barcelona School of Industrial Engineering (ETSEIB)

This bachelor's degree is also taught at

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

CURRICULUM

Subjects	ECTS credits	Type
FIRST SEMESTER		
Basic Mechanics	6	Compulsory
Calculus I	6	Compulsory
Chemistry I	6	Compulsory
Fundamentals of Informatics	6	Compulsory
Linear Algebra	6	Compulsory

SECOND SEMESTER

Subjects	ECTS credits	Type
Basic Thermodynamics	6	Compulsory
Calculus II	6	Compulsory
Chemistry II	4.5	Compulsory
Engineering Drawing	7.5	Compulsory
Geometry	6	Compulsory
THIRD SEMESTER		
Differential Equations	6	Compulsory
Electromagnetism	6	Compulsory
Informatics	4.5	Compulsory
Materials	4.5	Compulsory
Mechanics	6	Compulsory
Numerical Methods	4.5	Compulsory
FOURTH SEMESTER		
Advanced Mechanics	3	Optional
Communicating Technical Information	3	Optional
Computer Games. Structure and Development	3	Optional
Computer-Aided Design	3	Optional
Debates on Technology and Society	3	Optional
Economics and Business	6	Compulsory
Electrical Workshop	3	Optional
Entrepreneurship	3	Optional
Further Chemistry	3	Optional
History of Invention and Technological Innovation	3	Optional
Human Preparation for Workplace	3	Optional
Machine and Mechanism Theory	6	Compulsory
Manufacturing Workshop	3	Optional
Project I	3	Compulsory
Statistics	6	Compulsory
System Dynamics	4.5	Compulsory
Technological and Scientific Development in Antiquity. Egypt and Middle East	3	Optional
Technology of Light	3	Optional
The Origins of Modern Engineering	3	Optional
FIFTH SEMESTER		
Continuum Mechanics	4.5	Compulsory
Electrotechnics	6	Compulsory
Environmental Technology and Sustainability	6	Compulsory
Statistical Techniques for Quality	3	Compulsory
Technology and Selection of Materials	4.5	Compulsory

Subjects	ECTS credits	Type
Thermodynamics	6	Compulsory
SIXTH SEMESTER		
Electrical Machines	6	Compulsory
Fluid Mechanics	6	Compulsory
Optimisation and Simulation	4.5	Compulsory
Organisation and Management	4.5	Compulsory
Project II	3	Compulsory
Strength of Materials	6	Compulsory
SEVENTH SEMESTER		
Automatic Control	6	Compulsory
Electronics	7.5	Compulsory
Heat Technology	6	Compulsory
Manufacturing Systems	4.5	Compulsory
Project Management	6	Compulsory
EIGHTH SEMESTER		
Aerodynamics	4.5	Optional
Albert Einstein and Science and the Technique of the 20th Century	3	Optional
An Introduction to Data Science	4.5	Optional
Analysis of Structural and Mechanical Components by the Finite Element Methodology	4.5	Optional
Artificial Intelligence Applied to Engineering	4.5	Optional
Automotive Project	4.5	Optional
Chemical Processes From the Industrial Reality	4.5	Optional
Computational Fluid Dynamics	4.5	Optional
Cyathlon 1	6	Optional
Cyathlon 2	6	Optional
Cyathlon 3	6	Optional
Distribution Piping Systems	4.5	Optional
Driverless 1	6	Optional
Driverless 2	6	Optional
Driverless 3	6	Optional
Electric Mobility	4.5	Optional
Electronic Workshop	4.5	Optional
Engineering of the Product	4.5	Optional
Extended Moto Student	12	Optional
Extension in Strength of Materials	4.5	Optional
Food Bioengineering	3	Optional
Formula Student 1	6	Optional
Formula Student 2	6	Optional

Subjects	ECTS credits	Type
Formula Student 3	6	Optional
Fundamentals of Nuclear Engineering	3	Optional
Generation of Wind Electricity	4.5	Optional
Graphic Simulations in 3D	4.5	Optional
Industrial Equipment and Facilities	6	Optional
Introduction to Biomedical Signals	4.5	Optional
Logistics, Fleet Control and Sig	4.5	Optional
Management Systems	4.5	Optional
New Moto Student	6	Optional
Nuclear Fusion. Iter	4.5	Optional
Oral Communication in Academic and Professional English	4.5	Optional
Plans and 3D Printing	4.5	Optional
Robotics in Engineering	4.5	Optional
The History of Applied Mathematics in Engineering	3	Optional
Train, Transport and Technology. From Steam to High Speed	3	Optional
Written Communication in English: the Bachelors'S/Master's Thesis	4.5	Optional
Bachelor's Thesis	12	Project