UNIVERSITAT POLITÈCNICA DE CATALUNYA
BARCELONATECH

Bachelor's degree in Industrial Technology Engineering + master's degree in Industrial Engineering. Sequential academic programme (PARS): Industrial Engineer
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

Language of instruction

Check the language of instruction for each subject (and timetable) in the course guide in the curriculum.

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

Fees and grants
Approximate fees per academic year: €1,107 (€2,553 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 Master ingénieur civil (Université Libre de Bruxelles) (ULB).
- Bachelor's degree in Industrial Technology Engineering + Master's degree in Industrial Engineering + *Master en Ingénierie Industriel* (Diplôme d'Ingénieur) (Groupe des Éscoles Centrales (GEC), Lille, Lyon, Marseille, Nantes, Paris-Saclay, France)
- Bachelor's degree in Industrial Technology Engineering + Master's degree in Automatic Control and Robotics + *Master en Automatique et Robotique* (Diplôme d'Ingénieur) (Groupe des Éscoles Centrales (GEC), Lille, Lyon, Marseille, Nantes, Paris-Saclay, France)
- Bachelor's degree in Industrial Technology Engineering + Master's degree in Management Engineering + *Master en Ingénierie de Gestion* (Diplôme d'Ingénieur) (Groupe des Éscoles Centrales (GEC), Lille, Lyon, Marseille, Nantes, Paris-Saclay, France)
- Bachelor's degree in Industrial Technology Engineering + Master's degree in Automotive Engineering + *Master en Ingénierie Automobile* (Diplôme d'Ingénieur) (Groupe des Éscoles Centrales (GEC), Lille, Lyon, Marseille, Nantes, Paris-Saclay, France)
- Bachelor's degree in Industrial Technology Engineering + Master's degree in Nuclear Engineering + *Master en Génie Nucléaire* (Diplôme d'Ingénieur) (Groupe des Éscoles Centrales (GEC), Lille, Lyon, Marseille, Nantes, Paris-Saclay, France)

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 Physics I	6	Compulsory
Calculus I	6	Compulsory
Chemistry I	6	Compulsory
Computer Science	6	Compulsory
Linear Algebra	6	Compulsory
Partial Differential Equations	6	Optional
SECOND SEMESTER		
Basic Physics II	6	Compulsory
Calculus II	6	Compulsory
Chemistry II	6	Compulsory
Engineering Drawing I	6	Compulsory
Geometry	6	Compulsory
THIRD SEMESTER		
Differential Equations	6	Compulsory
Electromagnetism	6	Compulsory
Engineering Drawing II	3	Compulsory
Extended Computer Science	4.5	Compulsory
Mechanics	6	Compulsory
Numerical Methods	4.5	Compulsory
FOURTH SEMESTER		
Economics and Business	6	Compulsory
Machine and Mechanism Theory	6	Compulsory
Materials	4.5	Compulsory
Project I	3	Compulsory
Statistics	6	Compulsory
System Dynamics	4.5	Compulsory
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
Thermodynamics	6	Compulsory
SIXTH SEMESTER		
Electrical Machines	6	Compulsory
Fluid Mechanics	6	Compulsory
Optimisation and Simulation	4.5	Compulsory

Subjects	ECTS credits	Type
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
Culture, Technology and History in China and Japan	3	Optional
Cybathlon 1	6	Optional
Cybathlon 2	6	Optional
Cybathlon 3	6	Optional
Debates on Technology and Society	3	Optional
Distribution Piping Systems	4.5	Optional
Driverless 1	6	Optional
Driverless 2	6	Optional
Driverless 3	6	Optional
Electric Mobility	4.5	Optional
Electrical Workshop	3	Optional
Electronic Workshop	4.5	Optional
Engineering Design Validation	4.5	Optional
Engineering of the Product	4.5	Optional
Extension in Strength of Materials	4.5	Optional
Food Bioengineering	3	Optional
Formula Student 1	6	Optional
Formula Student 2	6	Optional
Formula Student 3	6	Optional
Forum 1	6	Optional

Subjects	ECTS credits	Type
Forum 2	6	Optional
Fundamentals of Nuclear Engineering	3	Optional
Generation of Wind Electricity	4.5	Optional
Human Preparation for Workplace	3	Optional
Industrial Equipment and Facilities	6	Optional
Introduction to Biomedical Signals	4.5	Optional
Management Systems	4.5	Optional
Moto Student 1	6	Optional
Moto Student 2	6	Optional
Moto Student 3	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
Service-Learning Project in the Stem Field 1	6	Optional
Service-Learning Project in the Stem Field 2	6	Optional
Service-Learning Project in the Stem Field 3	6	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