

# Bachelor's degree in Industrial Technologies and Economic Analysis (interuniversity UPC-UPF degree) + master's degree in Industrial Engineering. Sequential academic programme (PARS): Industrial Engineer and Economic Analysis

The **bachelor's degree in Industrial Technologies and Economic Analysis** combines industrial engineering topics and the fundamentals of economics to provide high-level interdisciplinary training that will allow you to adapt to new situations and assimilate the future technological developments that will enable businesses to improve their products and processes.

The degree is taught entirely in English at the Universitat Politècnica de Catalunya (UPC) and Pompeu Fabra University (UPF). It responds to the need for new industrial leaders who have both a thorough understanding of innovation and technology and detailed knowledge of economics. It will give you the opportunity to work on innovation projects in placements at national and international companies, as well as excellent employment prospects.

## 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

### Timetables

Morning and afternoon

### Language of instruction

English

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 \(grants and payment options\)](#).

### Scholarships

The degree has an own scholarship program for Scholarships for the university system.

### Location

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

## ADMISSION

### Places

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### Registration and enrolment

## Legalisation of foreign documents

All documents issued in non-EU countries must be [legalised and bear the corresponding apostille](#).

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## PROFESSIONAL OPPORTUNITIES

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### 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.
- Calculation and design of products and processes that have an effect on the economic situation, the business sector, the market and business activities.
- Strategic planning, micro- and macroeconomics, quality management and environmental management.
- Research, development and innovation and the analysis of their implications in the management of products, processes and methods.
- Leadership and management of economic environments undergoing change.
- Economics and management of businesses in regulated sectors and network services.

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## ORGANISATION: ACADEMIC CALENDAR AND REGULATIONS

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### 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)

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## CURRICULUM

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Subjects	ECTS credits	Type
<b>FIRST SEMESTER</b>		
Algebra and Geometry	6	Compulsory
Calculus I	6	Compulsory
Chemistry	6	Compulsory
Physics I	6	Compulsory
Programming	6	Compulsory
<b>SECOND SEMESTER</b>		
Calculus II	6	Compulsory
Introduction to Economics	6	Compulsory
Introduction to Game Theory	6	Compulsory
Physics II	6	Compulsory
Probability and Statistics	6	Compulsory

Subjects	ECTS credits	Type
<b>THIRD SEMESTER</b>		
Econometrics	6	Compulsory
Industrial Design	6	Compulsory
Mechanics	6	Compulsory
Microeconomics I	6	Compulsory
Numerical Methods in Engineering	6	Compulsory
<b>FOURTH SEMESTER</b>		
Continuum Mechanics	4.5	Compulsory
Macroeconomics I	6	Compulsory
Mechanism and Machine Theory	6	Compulsory
Microeconomics II	6	Compulsory
Quality Management	3	Compulsory
System Dynamics	4.5	Compulsory
<b>FIFTH SEMESTER</b>		
Digital Control	4.5	Compulsory
Macroeconomics II	6	Compulsory
Manufacturing	3	Compulsory
Operations Research	4.5	Compulsory
Science and Technology of Materials	6	Compulsory
Thermodynamics	6	Compulsory
<b>SIXTH SEMESTER</b>		
Electrotechnics	6	Compulsory
Fluid Mechanics	6	Compulsory
Macroeconomics III	6	Compulsory
Microeconomics III	6	Compulsory
Strength of Materials	6	Compulsory
<b>SEVENTH SEMESTER</b>		
Business Economics	4.5	Compulsory
Electric Machinery	4.5	Compulsory
Environmental Engineering	4.5	Compulsory
International Financial Economics	6	Optional
Networks, Crowds and Markets	6	Optional
Production and Operations Management	6	Compulsory
Project Management	4.5	Compulsory
<b>EIGHTH SEMESTER</b>		
Applied Machine Learning and Optimisation	6	Optional
Computational Marketing	6	Optional
Electronics	6	Compulsory

<b>Subjects</b>	<b>ECTS credits</b>	<b>Type</b>
Experimental Economics	6	Optional
Heat Transfer	6	Compulsory
International Economics	6	Optional
Topics in Macroeconomics	6	Optional
Topics in Microeconomics	6	Optional
Bachelor's Thesis	12	Project