

# Bachelor's degree in Mechanical Engineering

## Vilanova i la Geltrú School of Engineering (EPSEVG)

The **bachelor's degree in Mechanical Engineering**, provides a solid grounding in the design, development and use of machinery; mechanical processes and systems; criteria for the selection of materials; and the structural design of production systems and processes. You will acquire the knowledge needed to analyse, calculate, design and test machines, industrial installations, hydraulic and thermal engines, industrial structures and constructions, and production systems. You will also receive multidisciplinary training in fluid mechanics, thermal technology, electricity, automation, the design and construction of industrial HVAC systems, and graphic engineering techniques.

This bachelor's degree is taught at [Polytechnic School of Engineering of Vilanova i la Geltrú. EPSEVG](#)

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### GENERAL DETAILS

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#### 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: €2,551 (€3,826 for non-EU residents). [Consult the public fees system based on income \(grants and payment options\)](#).

#### Official degree

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

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### ADMISSION

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#### Places

200

#### 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](#).

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### PROFESSIONAL OPPORTUNITIES

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#### Professional opportunities

- Planning, management, execution and assessment of engineering projects related to mechanical engineering.
- Management, design, assembly and maintenance of industrial and production systems and installations in the fields of mechanical, electromechanical and thermal engineering and fluid mechanics.
- Calculation and design of hydraulic and thermal engines.

- Projects in the industrial HVAC sector and the processing and transport of fluids.
- Design, management and maintenance of equipment and industrial installations, structures and constructions.
- Drafting of technical, advisory and feasibility reports.

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## ORGANISATION

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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](#)

Vilanova i la Geltrú School of Engineering (EPSEVG)

### This bachelor's degree is also taught at

- Barcelona · EEBE · [Show degree](#)
- Manresa · EPSEM · [Show degree](#)
- Terrassa · ESEIAAT · [Show degree](#)

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## CURRICULUM

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Subjects	ECTS credits	Type
<b>FIRST SEMESTER</b>		
Chemistry	6	Compulsory
Fundamentals of Mathematics	6	Compulsory
Informatics	6	Compulsory
Physics I	6	Compulsory
Sustainability and Accessibility	6	Compulsory
<b>SECOND SEMESTER</b>		
Advanced Calculus	6	Compulsory
Differential Equations	6	Compulsory
Graphic Expression	6	Compulsory
Materials Science	6	Compulsory
Physics II	6	Compulsory
<b>THIRD SEMESTER</b>		
Business	6	Compulsory
Electrical Systems	6	Compulsory
Fluid Mechanics	6	Compulsory
Fundamentals of Termical Engineering	6	Compulsory
Statistics	6	Compulsory
<b>FOURTH SEMESTER</b>		

<b>Subjects</b>	<b>ECTS credits</b>	<b>Type</b>
Electronic Systems	6	Compulsory
Fundamentals of Automatic Control	6	Compulsory
Manufacturing Processes	6	Compulsory
Mechanical Systems	6	Compulsory
Strength of Materials I	6	Compulsory
<b>FIFTH SEMESTER</b>		
Graphic Expression II	6	Compulsory
Machine Theory	6	Compulsory
Production Organisation	6	Compulsory
Strength of Materials II	6	Compulsory
Structural Materials	6	Compulsory
<b>SIXTH SEMESTER</b>		
Computer-Assisted Design and Simulation	6	Compulsory
Fluid Engineering	6	Compulsory
Industrial Structures and Constructions	6	Compulsory
Machine Design	6	Compulsory
Thermal Engineering	6	Compulsory
<b>SEVENTH SEMESTER</b>		
Academic and Professional Communication Techniques	6	Optional
Advanced Manufacturing Materials and Processes	6	Optional
Aesthetics	6	Optional
Analogue Electronics	6	Optional
Applications of Electric Motors	6	Optional
Automatic Regulation	6	Optional
Automatic Regulation	6	Optional
Computer-Aided Machines Design	6	Optional
Control Engineering	6	Optional
Design and Prototypes of Moulds and Matrices	6	Optional
Design Methodology	6	Optional
Design Workshop I	6	Optional
Design Workshop II	6	Optional
Digital Electronics	6	Optional
Digital Systems	6	Optional
Electric and Hybrid Vehicles	6	Optional
Electric Drives	6	Optional
Electrical Circuits	6	Optional
Electrical Installations and Industrial Automation	6	Optional
Electrical Machines I	6	Optional

<b>Subjects</b>	<b>ECTS credits</b>	<b>Type</b>
Electrical Machines II	6	Optional
Electrical Power Lines	6	Optional
Electrical Power Systems	6	Optional
Electronic Applications	6	Optional
Electronic Design	6	Optional
Electronic Instrumentation	6	Optional
Electrotechnics	6	Optional
Experimental and Simulation Techniques for Stress Analysis	6	Optional
Heat and Hydraulic Engines I	6	Optional
Industrial Automation	6	Optional
Industrial Informatics	6	Optional
Industrial Maintenance Techniques	6	Optional
Light Technology	6	Optional
Low, Medium and High Voltage Electrical Installations	6	Optional
Mathematics for Design	6	Optional
Power Electronics	6	Optional
Power Electronics	6	Optional
Power Plants and Renewable Energies	6	Optional
Project Management	6	Compulsory
Reliability and Integrity of Industrial Products	6	Optional
Robotic Systems	6	Optional
Solar and Wind Power Systems	6	Optional
Surface Treatments for Industrial Applications	6	Optional
Writing Techniques for Engineering	6	Optional
<b>EIGHTH SEMESTER</b>		
Academic Skills for Project Development	6	Optional
Accessibility Applied	6	Optional
Language Practice	3	Optional
Sustainability Applied	6	Optional
Bachelor's Thesis	24	Project