

# Bachelor's degree in Automotive Engineering

The **bachelor's degree in Automotive Engineering** responds to the automotive industry's demand for automotive engineers who have specific skills and a mastery of both the product, that is, automobiles and their components, and the process of manufacturing them and managing the manufacturing process. The aim is to produce specialised engineers who have a comprehensive view of the automotive industry and its entire value chain.

You will follow a course of study that will give you a solid scientific grounding that will be complemented with subjects as diverse as design; materials science; mechanical, electrical and electronic engineering; and the use of ICTs, all of which are applied to the automotive industry. A large proportion of the degree is devoted to innovative technologies such as electric and hybrid propulsion or autonomous vehicles. Training is enhanced by industrial organisation and business management topics.

The degree has strong ties to the business sector through the Automotive Industry Cluster of Catalonia. Students can go on to take a **fourth year** at the **EPSEM** or the **Barcelona School of Industrial Engineering (ETSEIB)**, where the **master's degree in Automotive Engineering** is taught.

This bachelor's degree is taught at [Manresa School of Engineering. EPSEM](#)

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

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## ADMISSION

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### Places

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### 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

- Leading and managing automotive engineering projects in assembly plants and the components industry, R&D and training centres, sales and post-sales and the world of racing.
- Conceiving, designing, developing, analysing and maintaining automobile systems and components.
- Improving products and reengineering.
- Organising and controlling production, quality assurance and logistics in manufacturing plants.

- Training production and post-sales teams.
- Applying and ensuring compliance with regulations in the automotive sector.
- Developing solutions to mobility problems.

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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](#)

Manresa School of Engineering (EPSEM)

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## CURRICULUM

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Subjects	ECTS credits	Type
<b>FIRST SEMESTER</b>		
Algebra	6	Compulsory
Automotive Sector	3	Compulsory
Calculus 1	6	Compulsory
Car's Chemistry	6	Compulsory
Graphic Expression 1	4.5	Compulsory
Physics 1	4.5	Compulsory
<b>SECOND SEMESTER</b>		
Automotive, Mobility and Sustainability	3	Compulsory
Calculus 2	6	Compulsory
Fundamentals of Computer Science	6	Compulsory
Graphic Expression 2	4.5	Compulsory
Materials	6	Compulsory
Physics 2	4.5	Compulsory
<b>THIRD SEMESTER</b>		
Computer-Aided Design (Cad)	3	Compulsory
Electrical Engineering	6	Compulsory
Material Resistance	6	Compulsory
Mathematics for Engineering	4.5	Compulsory
Mechanical Engineering 1	6	Compulsory
Mechanics of Fluids	4.5	Compulsory
<b>FOURTH SEMESTER</b>		

<b>Subjects</b>	<b>ECTS credits</b>	<b>Type</b>
Computer-Aided Manufacturing (Cam)	3	Compulsory
Electronic Systems	6	Compulsory
Finite Elements and Finite Volumes for Engineering	4.5	Compulsory
Fluid Dynamics	6	Compulsory
Mechanical Engineering 2	4.5	Compulsory
Process Technologies and Materials Transformation	6	Compulsory
<b>FIFTH SEMESTER</b>		
Analysis of Systems and Control	6	Compulsory
Computer-Aided Engineering (Cae)	3	Compulsory
Mechanical Auxiliary Systems	4.5	Compulsory
Quality Management	4.5	Compulsory
Structural Calculations of the Vehicle	6	Compulsory
Thermal Motors	6	Compulsory
<b>SIXTH SEMESTER</b>		
Automated Manufacturing	6	Compulsory
Electric Systems	6	Compulsory
Habitability and Security	3	Compulsory
Information and Communication Technologies in the Automotive Industry	6	Compulsory
Prototypes	3	Compulsory
Vehicle Dynamics	6	Compulsory
<b>SEVENTH SEMESTER</b>		
Legislation and Regulatory Framework	3	Optional
Production Systems and Logistics	6	Optional
Propulsion Systems	6	Optional
Thermal Design	3	Optional
<b>EIGHTH SEMESTER</b>		
Bachelor's Thesis	12	Project