# Bachelor's degree in Automotive Engineering

This bachelor's degree will train you as an engineering professional capable of contributing to the improvement of the competitiveness of businesses from the automotive sector both comprehensively and holistically. You will be prepared to work across the value chain, especially in the areas of design, development, manufacturing and distribution logistics.

You also will be able to collaborate both in a big automobile manufacturer, and in the associated auxiliary industry, so that you will contribute to successfully achieving the main future challenges of this industry: digitalization, also known as Industry 4.0, vehicles running on alternative energy sources, connected vehicles and self-driving cars.

### **TEACHING PROPOSAL**

After graduating, you will:

Apply engineering and industry basic principles to the mobility and automotive sector.

Apply advanced manufacturing principles, processes, structural design of the vehicle, mechanical resistance, dynamic response and vibration, aerodynamics, component and vehicle electrical and electronic engineering, machines and engines, and power electronics.

Draft, develop and manage vehicle projects and their subsystems, as well as their corresponding manufacturing facilities, according to the legislation in force, applying quality principles and methods, considering their environmental impact and sustainability.

## CAREER

Develop and direct design and system integration projects in manufacturers of the automotive and vehicles sector in general, ancillary components industry and vehicle competitions.

Develop and manage manufacturing, logistics, test, quality control and maintenance projects in manufacturers of the automotive and vehicles sector in general, and the ancillary components industry.

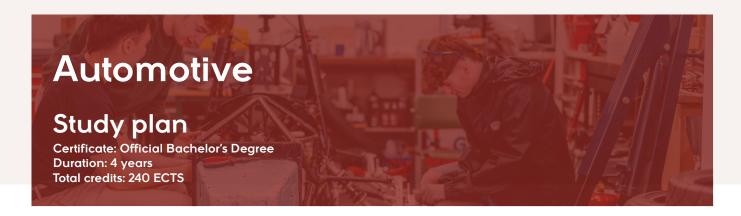
Direct the production, quality control and logistics of a production plant of vehicles and components.

Develop consultancy in automotive engineering projects.

Technical personnel in the public administration with expertise in automotive and mobility.







	1st. Year	2nd Year	3rd Year	4th Year	TOTAL (ECTS)
Basic Training (FB)	54	6	-	-	60
Compulsory (OB)	6	54	60	18	138
Optional (OT)	-	-	-	42	42

	FB	Calculus	6
อ	FB	Physics	6
semestre	FB	Introduction to business management	6
		Computer science	6
1st	ОВ	Anthropology	3
	ОВ	Environmental engineering	3
ω U	FB	Mathematical analysis	6
estr	FB	Engineering design graphics	6
semestre	FB	Electrical physics	6
2nd s		Chemistry	6
7	FB	Applied mathematics	6

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ОТ	Optimization of vehicle dynamic behaviour	6
ОТ	Race car aerodynamics	6
ОТ	Mobility science	6
ОТ	Autonomous driving and connected vehicles	6
ОТ	Occupant and automotive safety	6
ОТ	Race engineering and data analisys	6
ОТ	Data acquisition systems	6
ОТ	Didactics in automotive engineering	6
ОТ	Language - English	6
ОТ	Language - German	6

OB Bachelor's Degree Final Project

stre	ОВ	Business organization	3
	ОВ	Electronic systems	7
semestre	FB	Statistics	6
1st se	ОВ	Theory of machines and mechanisms	7
	ОВ	Automation and industrial control methods	7
ψ.	ОВ	Materials science and technology	6
estr	ОВ	Fundamentals of thermal and fluid engineering	6
em	ОВ	Circuit theory	6
2nd semestre	ОВ	Technical office an project management	6
	ОВ	Strenght of materials	6

ОВ	Elasticity	6
ОВ	Industrial manufacturing systems	3
ОВ	Automotive aerodynamics	3
ОВ	Automotive electronics	6
ОВ	Dynamics and vibrations	6
ОВ	Mechanical automotive subsystems	3
ОВ	Structural vehicle design	3
ОВ	Manufacturing processes	6
ОВ	Heat and hybrid engines	6
ОВ	Electric motors and power electronics	9
ОВ	Truth, kindness and beauty	3
ОВ	Automotive engineering projects	6
	OB	OB Industrial manufacturing systems OB Automotive aerodynamics OB Automotive electronics OB Dynamics and vibrations OB Mechanical automotive subsystems OB Structural vehicle design OB Manufacturing processes OB Heat and hybrid engines OB Electric motors and power electronics OB Truth, kindness and beauty

#### 4th YEAR SPECIALISATIONS:

#### Specialisation in Automotive Manufacturing

ОВ	Supply chain management	6
ОВ	Robotic systems	6
ОТ	Product and process engineering	6
ОТ	Quality control and management systems	6
ОТ	Industrial automation	6
ОТ	Sustainable vehicles	3
ОТ	Electrical energy storage	3
ОТ	Work placement	12

#### **Dual Specialisation**

ОТ	Internship I	18
ОТ	Internship II	18
ОТ	Optional subject 1st semester*	6
ОТ	Vehicle intelligent subsystems	6
ОВ	Bachelor's Degree Final Project	12

\*To be defined during the development of the formative project. \*\*A minimum of 20% of the degree's subjects are offered in English

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