

# Automotive

## Study plan

Certificate: Official Bachelor's Degree

Duration: 4 years

Total credits: 240 ECTS

	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

		ECTS
1st period	FB Physics	8
	FB Mathematics	7
	FB Computer Science	6
	FB Introduction to Business Management	6
2nd period	OB Anthropology	3
	FB Chemistry <sup>1</sup>	6
	FB Calculus	8
	FB Engineering Design Graphics	6
	FB Electrical Physics	7
OB Environmental Engineering <sup>1</sup>	3	

		ECTS
1st period	OB Business Organization	3
	OB Electronic Systems	7
	FB Statistics	6
	OB Theory of Machines and Mechanisms	7
	OB Automation and Industrial Control Methods <sup>1</sup>	7
2nd period	OB Materials Science and Technology <sup>1</sup>	6
	OB Fundamentals of Thermal and Fluid Engineering	6
	OB Circuit Theory	6
	OB Technical Office and Project Management	6
OB Strength of Materials <sup>1</sup>	6	

		ECTS
1st period	OB Elasticity <sup>2</sup>	6
	OB Industrial Manufacturing Systems	3
	OB Automotive Aerodynamics	6
	OB Automotive Electronics	6
	OB Dynamics and Vibrations	6
2nd period	OB Mechanical Automotive Subsystems	3
	OB Structural Vehicle Design	3
	OB Manufacturing Processes	6
	OB Heat and Hybrid Engines	6
	OB Electric Motors and Power Electronics	9
	OB Truth, Kindness and Beauty	3
Year	OB Automotive Engineering Projects	6

		ECTS
4	OB Smart Automotive Subsystems	6
	OB Bachelor's Degree Final Project	12
	OT Work Placement	12
	OT Foreign Language (English)	6
	OT Foreign Language (German)	6

### 4th YEAR SPECIALIZATIONS:

#### SPECIALIZATION: Automotive Design

		ECTS
OT	Science of Mobility	6
OT	Autonomous Driving and Connected Vehicles	6
OT	Occupant and Automotive Safety	6
OT	Sustainable Vehicles	3
OT	Electrical Energy Storage	3
OT	Motorsport Aerodynamics	6

#### SPECIALIZATION: Automotive Manufacturing

		ECTS
OT	Supply Chain Management	6
OT	Robotic Systems	6
OT	Product and Process Engineering	6
OT	Quality Control and Management Systems	6
OT	Industrial Automation	6

#### SPECIALIZATION: Motor Sport

		ECTS
OT	Lap-Time Simulation and Race Engineering	6
OT	Data Acquisition Systems and Telemetry	6
OT	Optimization of Vehicle Parameters	6
OT	Occupant and Automotive Safety	6
OT	Motorsport Aerodynamics	6

(1) Tuition in English available  
(2) Tuition only in English

## BACHELOR'S DEGREE IN AUTOMOTIVE ENGINEERING

### DESCRIPTION

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.

### Degree Indicators

Academic performance:	73,4%
Graduation rate:	No data
Dropout rate:	No data
Satisfaction rate:	No data
Occupancy rate:	No data

## TEACHING PROPOSAL

After graduating, you will:

- 1 Apply engineering and industry basic principles to the mobility and automotive sector.
- 2 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.
- 3 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 OPTIONS

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.