

Bachelor's degree in Mechanical

As a graduate in Mechanical Engineering you will specialise in the manufacturing of industrial-related products (machinery, structures, auto parts, etc.), taking into account the need for a design which surpasses existing problems, know and choose the ideal materials, plan the manufacturing, and control the quality of the finished product, while at the same time taking into account its environmental impact. You will conduct this process thanks to a series of advanced simulation tools for circuits, computer - assisted 3D designs, numerical

simulations, and simulations of computer-assisted manufacturing (CAM) processes. You will also be capable of organising and directing the production of a company and its commercial and technical sectors, as well as being officially recognised as having the professional attributes of a Technical Industrial Engineer.

This bachelor's degree has been officially recognised as having the professional attributes of a Technical Industrial Engineer. (AQU) (2500896-70106-17).

TEACHING PROPOSAL

After graduating, you will:

- 1 Be proficient in science and material technology, technologies related to design, development and production of mechanical systems and structures, machines and thermal motors...
- 2 Analyze, diagnose and solve mechanical engineering problems in real professional environments.
- 3 Collect and interpret relevant data on mechanical engineering, through measurements, calculations and simulations to provide judgments, studies or reports.
- 4 Write and direct projects in the field of mechanical engineering, in compliance with the mandatory specifications, regulations and rules.
- 5 Develop a degree of autonomy that will allow them to undertake high-level specialized studies, and subsequent further learning.

CAREER OPTIONS

Construction, assembly and maintenance of any industrial installation in the mechanical and thermal area.

Design and testing of new products or machine parts using CAD programs.

Study using finite elements and CAE programs, simulations and the manufacture of special and prototype pieces.

Programming of robots and obtaining numerical control programs using CAM systems.

Consultancy, logistics, management, organization of production, planning, quality, facilities, environmental consultancy services and sales in companies operating in this field.

Mechanical Engineering

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	12 (TFG)	132
Optional (OT)	-	-	-	48	48

1st semestre	FB	Calculus	6
	FB	Physics	6
FB	Introduction to Business Management	6	
FB	Computer Science	6	
OB	Anthropology	3	
OB	Environmental Engineering	3	
2nd semestre	FB	Mathematical analysis	6
	FB	Engineering Design Graphics	6
	FB	Electrical Physics	6
	FB	Chemistry	6
	FB	Applied Mathematics	6

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

1st semestre	OB	Elasticity	6
	OB	Industrial manufacturing systems	3
OB	Mechanical technology	6	
OB	Advanced engineering design graphics	6	
OB	Fluids and thermal engineering	6	
2nd semestre	OB	Truth, kindness and beauty	3
	OB	Design of mechines and mechanisms	6
	OB	Theory of structures and industrial constructions	6
	OB	Heat engines and motors	6
	OB	Manufacturing processes	6
Annual	OB	Mechanical engineering projects	6

OB	Bachelor's Degree Final Project	12
OT	Further materials resistance	6
OT	Automation of industrial processes	6
OT	Didactics in mechanical engineering	6
OT	CNC machining and simulation	6
OB	Design and manufacturing information systems	6
OT	Advanced production methods	6
OT	Language - English	6
OT	Language - German	6

4th YEAR SPECIALISATIONS:

Specialisation in Mechanical Design

OT	Mechanical design and virtual reality	6
OT	Computer aided engineering (CAE)	6
OT	Material selection for design	6
OT	Quality management system	6
OT	Product ecodesign and carbon footprint	6
OT	Design of hydraulic and HVAC installations	6
OT	Work placement	12

Dual Specialisation

OT	Internship I	18
OT	Internship II	18
OT	Optional subject 1st semester*	6
OT	Optional subject 2nd semester*	6
OB	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