

# Bachelor's degree in Automation and Industrial Electronic Engineering

You will become an engineer capable of applying electronics and automation advances to industrial processes: manufacturing, control, intelligent products...

In the past few years, automation has become one of the most important sectors of our economy and will be even more important in the future. Words such as industry 4.0, internet of things, smart grids, smart cities, domotics, robotics, energy efficiency, etc. are starting to form part of our everyday vocabulary. In an almost immediate future, everything will be automated and

connected. As an engineer, you will participate in the design of automated systems, in choosing electronic components and systems, in programming these systems, and in their maintenance. You also will be capable of organising and directing the production of a company and its commercial and technical sectors.

This bachelor's degree has been officially recognised as having the professional attributes of a Technical Industrial Engineer. (AQU) (2501133-70106-17

## TEACHING PROPOSAL

After graduating, you will:

- 1 Be proficient in technologies related to automation and industrial electronics, as well as in production, and company management and organization.
- 2 Analyze, diagnose and solve automation and industrial electronics problems with a high degree of professionalism.
- 3 Collect and interpret relevant data on industrial automation and electronics engineering by means of measurements, calculations and simulations.
- 4 Draft and manage projects in the field of automation and industrial electronics, according to specifications, regulations and standards, as well as to communicate information, ideas, problems and solutions to the audience effectively.
- 5 Develop a degree of autonomy that will allow them to undertake high-level specialized studies, and subsequent further learning.

## CAREER OPTIONS

- Design, analysis, projection and maintenance of electronic and microelectronic systems
- Commercial organization and management of electronic products and systems
- Control of electric machines and drives
- Conception, design, production and maintenance of instrumentation systems, automatic control and robots

# Automation and Industrial Electronic Study plan

Certificate: Official Bachelor's Degree

Duration: 4 years

Total credits: 240 ECTS

	1st. Year	2nd Year	3rd Year	4th Year	TOTAL (ECTS)
<b>Basic Training (FB)</b>	54	6	-	-	60
<b>Compulsory (OB)</b>	6	54	60	12 (TFG)	132
<b>Optional (OT)</b>	-	-	-	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	Electronic technology	3
	OB	Digital electronics and microprocessors	3
OB	Industrial manufacturing systems	3	
OB	Electrotechnics	6	
OB	Automatic control	6	
OB	Electronic engineering project I	9	
2nd semestre	OB	Truth, kindness and beauty	3
	OB	Industrial computing and communications	3
	OB	Industrial automation	6
	OB	Power electronics	9
	OB	Electronic instrumentation	3
OB	Electronic engineering project II	6	

OB	Bachelor's Degree Final Project	12
OT	Advanced control techniques	6
OT	Information and communication technologies	6
OT	Didactics in electronic engineering	6
OT	Language - English	6
OT	Language - German	6

## 4th YEAR SPECIALISATIONS:

### Specialisation in Robotics and Industry 4.0

OT	Robotic systems	6
OT	Industrial communications	6
OT	Advanced robotics	6
OT	Industrial electronics applications	6
OT	Industrial internet of things	6
OT	Signal processing and data analysis	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