

# Bachelor's degree in Industrial Electronics and Automatic Control Engineering Terrassa School of Industrial, Aerospace and Audiovisual Engineering (ESEIAAT)

On the **bachelor's degree in Industrial Electronics and Automatic Control Engineering**, you will acquire the knowledge needed to supervise and manage engineering projects in the fields of industrial electronics and automatic control: design and development of analogue, digital and power electronic systems and industrial control and automation systems. You will receive multidisciplinary training in the fields of analogue, digital and power electronics, systems modelling and simulation, automatic regulation and control techniques and their application in industrial automation, and the principles and applications of robotic systems, industrial informatics and communications.

#### **GENERAL DETAILS**

## **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

## Language of instruction

Check the language of instruction for each subject (and timetable) in the course guide in the curriculum.

Information on language use in the classroom and students' language rights.

#### Fees and grants

Approximate fees per academic year: €1,107 (€2,553 for non-EU residents). Consult the public fees system based on income (grants and payment options).

## Location

Terrassa School of Industrial, Aerospace and Audiovisual Engineering (ESEIAAT)

#### Official degree

Recorded in the Ministry of Education's degree register

#### **ADMISSION**

# **Places**

270

# 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.

#### **DOUBLE-DEGREE AGREEMENTS**

# Double-degree pathways at the UPC

You have the possibility of complementing this bachelor's degree with a specific pathway towards a double degree by taking an additional number of credits from one of the other degrees taught at the School. Generally, this involves an additional year of study. To gain admission to a double degree of this kind you must have taken a minimum number of credits on one of the bachelor's degrees. The number of places is limited.

- Bachelor's degree in Industrial Electronics and Automatic Control Engineering / Bachelor's degree in Mechanical Engineering
- Bachelor's degree in Industrial Electronics and Automatic Control Engineering / Bachelor's degree in Electrical Engineering

# With other universities or centers of higher education in Catalonia

 Bachelor's degree in Industrial Electronics and Automatic Control Engineering / Master's degree in Industrial Engineering / Degree in Business Administration and Management (UOC).

#### **PROFESSIONAL OPPORTUNITIES**

# **Professional opportunities**

- Drafting and supervision of projects involving automation and control installations and electronic drive regulation.
- Design, installation and maintenance of electronic control, power and instrumentation systems.
- Design and development of industrial informatics and process monitoring systems.
- Design, management and maintenance of industrial equipment and installations.
- Drafting of technical, advisory and feasibility reports.
- Management, organisation, planning and quality control.
- Teaching and research.

#### ORGANISATION: ACADEMIC CALENDAR AND REGULATIONS

## **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

Terrassa School of Industrial, Aerospace and Audiovisual Engineering (ESEIAAT)

## This bachelor's degree is also taught at

- Barcelona · EEBE · Show degree
- Manresa · EPSEM · Show degree
- Vilanova i la Geltrú · EPSEVG · Show degree

#### **CURRICULUM**

Subjects	ECTS credits	Туре
FIRST SEMESTER		
Chemistry	6	Compulsory
Environmental Technologies and Sustainability	6	Compulsory
Graphic Expression in Engineering	6	Compulsory
Mathematical Methods I	6	Compulsory

Physics I         6         Compulsory           SECOND SEMESTER         Compulsory           Economics and Business Administration         6         Compulsory           Foundations of Computing         6         Compulsory           Materials Science and Technology         6         Compulsory           Mathematical Methods II         6         Compulsory           Physics II         6         Compulsory           THRD SEMESTER         6         Compulsory           Electric Systems         6         Compulsory           Mathematical Methods III         6         Compulsory           Mechanical Systems         6         Compulsory           Production Organisation         6         Compulsory           Production Organisation         6         Compulsory           Production Organisation         6         Compulsory           Pourth SEMESTER         3         Optional           Electronic Organisation         6         Compulsory           Industrial Automation and Control         6         Compulsory           Industrial Informatics         6         Compulsory           Industrial Informatics         6         Compulsory           Use was Research & Development Project	Subjects	ECTS credits	Туре
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	Characterization Techniques for Metallic Alloys	3	Optional
Control System Programming in Real-Time 6 Optional	Control Engineering	6	Compulsory
	Control System Programming in Real-Time	6	Optional

Creative Lab         6         Optional           Creative Programming with Processing         3         Optional           Critical Thinking for 3D Printing         3         Optional           Decision Criteria - Engineer as Employee or Engineer as Entrepreneur         3         Optional           Electromobility and Electrical Aircraft Systems         3         Optional           Embedded Systems Programming         3         Optional           Energy Efficiency Systems         3         Optional           Energy Storage and Conversion Application         3         Optional           Experimental Design         3         Optional           Highly Automated Production Systems         3         Optional           Highly Automated Production Systems         3         Optional           Introduction of Communication Technology         3         Optional           Introduction to Cubesats         3         Optional           Introduction to Dynamical Systems and Ergodic Theory         3         Optional           Introduction to Outbeasts         3         Optional           Introduction to Severic Expert for Technique Dispute Resolution         3         Optional           Introduction to Reverse Engineering         3         Optional           Introductio	Subjects	ECTS credits	Туре
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Electromobility and Electrical Aircraft Systems         3         Optional           Embedded Systems Programming         3         Optional           Energy Efficiency Systems         3         Optional           Energy Storage and Conversion Application         3         Optional           Experimental Design         3         Optional           Highly Automated Production Systems         3         Optional           Hospital Engineering         6         Optional           Information and Communication Technology         3         Optional           Introduction to Big Data         3         Optional           Introduction to Obparamical Systems and Ergodic Theory         3         Optional           Introduction to Opparamical Systems and Ergodic Theory         3         Optional           Introduction to Forensic Expert for Technique Dispute Resolution         3         Optional           Introduction to Reverse Engineering         3         Optional           Int	Critical Thinking for 3D Printing	6	Optional
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