

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 Materials Science and Technology 6 Compulsory Physics II 6 Compulsory Physics II 6 Compulsory THRD SEMESTER 6 Compulsory Fluid Mechanics 6 Compulsory Methanical Systems 6 Compulsory Mechanical Systems 6 Compulsory Production Organisation 6 Compulsory Production Organisation 6 Compulsory Pount's EMESTER 3 Optional Electronic Organisation 6 Compulsory Industrial Informatics 6 Compulsory Industrial Informatics 6 Compulsory Industrial Informatics 6 Compulsory Industrial Informatics 6 Compul	Subjects	ECTS credits	Туре
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	Characterization Techniques for Metallic Alloys	3	Optional
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	Control System Programming in Real-Time	6	Optional

Creative Lab 6 Optional Creative Programming with Processing 3 Optional Critical Thinking for 3D Printing 6 Optional Decision Critical 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 Highly Automated Production Systems 3 Optional Hospital Engineering 3 Optional Horduction to Dispare and Conversion Expert on Engineering 3 Optional Introduction to Dynamical Systems and Ergodic Theory 3 Optional Introduction to Cubesats 3 Optional Introduction to Newerse Engineering 3 Optional	Subjects	ECTS credits	Туре
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Vibroacoustics 3 Optional	Uav Generative Design	6	Optional
	Validating and Communicating Innovative Ideas	6	Optional
Web Applications 3 Optional	Vibroacoustics	3	Optional
	Web Applications	3	Optional

Subjects	ECTS credits	Туре
Written Academic Skills for Engineering	3	Optional
SEVENTH SEMESTER		
Advanced Programming	6	Optional
Advanced Robotics & Highly Automation Production Systems	6	Optional
Applications and Control of Power Electronic Systems	6	Optional
Control and Guidance of Mobile Robots	6	Optional
Electronic Instrumentation	6	Compulsory
Initiation to Paper and Graphic Industrial Tecnologies	6	Optional
Internship	12	Optional
Introduction to Advanced Control Systems	6	Optional
Modelisation, Complexity and Sustainability	6	Optional
Operation and Control of Electric Vehicles	6	Optional
Programming of Mobiles Android	6	Optional
Project Oriented Methodology	6	Compulsory
EIGHTH SEMESTER		
Agrivoltaics: Photovoltaic Solar Energy for Sustainable Development	3	Optional
Application of Python/Matlab/C++ to Thermal Engineering Mechanical and Aeronautical Problems	3	Optional
Applied Research Methods in Engineering Science	3	Optional
Basic Robotics	6	Optional
Digitalization Applied to Energy Systems	3	Optional
Electrical Project Design with Eplan	3	Optional
Electronic System Design Applied to Renewable Energy and Energy Efficiency	6	Optional
Fundamentals of Rams Engineering in the Certification of Aerospace Products	3	Optional
Hydraulic Hybrid Machines	3	Optional
Hydrogen's Future: Technologies and Applications	3	Optional
Life Cycle Assessment	3	Optional
Numerical Methods for Engineers	6	Optional
Photonics. Optics Applied to Engineering	6	Optional
Planning, Simulation and Supervision of Industrial Processes	6	Optional
Professional Communication for Engineers Through Virtual Reality II	3	Optional
R&D in Engineering	3	Optional
Sports Engineering	3	Optional
Technological Projects I	6	Optional
Technological Projects II	6	Optional
Thermal Analysis Techniques Applied to Engineering Materials	3	Optional
UAV Introduction to Drone Flight (Uas)	3	Optional
Bachelor's Thesis	24	Project

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