Bachelor's degree in Audiovisual Systems Engineering

TERRASSA SCHOOL OF INDUSTRIAL, AEROSPACE AND AUDIOVISUAL ENGINEERING (ESEIAAT)

The **bachelor's degree in Audiovisual Systems Engineering** provides the necessary cross-disciplinary skills to conceive, design, implement and operate products, systems and services in the field of audiovisual systems engineering, particularly acoustics, image, audio, video and multimedia. You will tackle the fundamentals and applications of audio, video and multimedia systems and acquire techniques for the analysis and synthesis of electrical and electronic circuits and digital and analogue communications. You will specialise in acoustics and sound systems, digital signal processing, communication systems, electronic equipment and devices and multimedia techniques.

GENERAL DETAILS

Duration
4 academic 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

Admission mark 2026-2027 academic year
7,290

Language of instruction

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

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

Fees and grants
Approximate fees per academic year: €1,061 (€1,800 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 Science, Innovation and Universities

ADMISSION

New intake places
60

Pre-enrolment code
31010

New intake places via a change of degree
5

Admission mark 2026-2027 academic year
7,290. Admission mark

Weighting. University entrance examinations (PAU)
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Registration and enrolment

What are the requirements to enrol in a bachelor's degree course?

CFGS credit transfer

Consult the university studies search engine of the Universities Channel of the Generalitat de Catalunya

Legalisation of foreign documents

All documents issued in non-EU countries must be legalised and bear the corresponding apostille.

CURRICULUM

Subjects	ECTS credits	Type
FIRST SEMESTER		
Algebra	6	Compulsory
Calculus	6	Compulsory
Environmental Technologies and Sustainability	6	Compulsory
Foundations of Computing	6	Compulsory
Physics I	6	Compulsory
SECOND SEMESTER		
Data Structures and Object Orientation	6	Compulsory
Digital Electronics	6	Compulsory
Electronic Devices and Circuits	6	Compulsory
Fourier Analysis and Differencial Equations	6	Compulsory
Physics II	6	Compulsory
THIRD SEMESTER		
Analogue Electronics	6	Compulsory
Data Bases	6	Compulsory
Economics and Business Administration	6	Compulsory
Probability and Stochastic Processes	6	Compulsory
Signals and Systems	6	Compulsory
FOURTH SEMESTER		
Acoustics I	6	Compulsory
Analogue and Digital Communications	6	Compulsory
Digital Processors	6	Compulsory
Foundations of Telematic Networks	6	Compulsory
Implementation of Audiovisual Systems	6	Compulsory
Control and Guidance of Mobile Robots	6	Optional
UAV Research and Development	3	Optional
UAV Research and Development Project	3	Optional
FIFTH SEMESTER		
Audiovisual Signal Management and Distribution	6	Compulsory
Digital Audio Processing	6	Compulsory
Digital Image Processing	6	Compulsory

Subjects	ECTS credits	Type
Sound Equipment	6	Compulsory
Telematic Applications and Services	6	Compulsory
SIXTH SEMESTER		
Acoustics II	6	Compulsory
Algorithms and Audiovisual Programming	6	Compulsory
Multimedia Encoding	6	Compulsory
Transmitters and Receivers	6	Compulsory
Video Equipment	6	Compulsory
Academic Writing Skills for Engineering	3	Optional
Advanced Object-Oriented Programming	3	Optional
Autonomous Vehicle Programming	3	Optional
Big Data Tools and Applications	3	Optional
Creative Lab	6	Optional
Critical Thinking for 3D Printing	6	Optional
Decision Criteria: the Engineer as Employee or the Engineer as Entrepreneur	3	Optional
Energy Efficiency Systems	3	Optional
Experimental Design	3	Optional
Fundamentals of Robotics	3	Optional
Generative UAV Design	6	Optional
Highly Automated Production Systems	3	Optional
Hospital Engineering	6	Optional
Information and Communication Technologies	3	Optional
Introduction to Big Data	3	Optional
Introduction to Dynamical Systems and Ergodic Theory	3	Optional
Introduction to Forensic Practice for Technical Dispute Resolution	3	Optional
Introduction to Object-Oriented Programming	3	Optional
Introduction to Reverse Engineering	3	Optional
Leadership and Professional Development in Engineering	3	Optional
Mathematical Models in Engineering	3	Optional
Mathematics and Informatics Engineering	3	Optional
Mobile Programming	6	Optional
Motorbikes. Design and Secrets	3	Optional
Professional Communication for Engineers Through Virtual Reality	3	Optional
Real-Time Programming and Databases	3	Optional
Robotics and Automation	3	Optional
Surface Chemistry for Industrial Application Design	3	Optional
Validating and Communicating Innovative Ideas	6	Optional
Vibroacoustics	3	Optional

Subjects	ECTS credits	Type
Web Applications	3	Optional
SEVENTH SEMESTER		
Engineering Project Design	6	Compulsory
Multimedia Content	6	Compulsory
Android Mobile Programming	6	Optional
Audio and Video Production	6	Optional
Complementary Programming	6	Optional
Computer Vision	6	Optional
Introduction to Industrial Paper and Graphics Technologies	6	Optional
Modelling, Complexity and Sustainability	6	Optional
Quality Measurement of Audio-Visual Signals	6	Optional
Speech Technology	6	Optional
Work Placement	12	Optional
EIGHTH SEMESTER		
Agrivoltaics: Photovoltaic Solar Energy for Sustainable Development	3	Optional
Air Navigation, Cartography, and Cosmography	3	Optional
Application of Python/Matlab/C++ to Thermal, Mechanical and Aeronautical Engineering Problems	3	Optional
Applied Research Methods in Engineering Science	3	Optional
Artificial Intelligence for UAV Video Object Recognition	3	Optional
Artificial Intelligence for Video and Audio Generation	3	Optional
Basic Robotics	6	Optional
Complex Networks	6	Optional
Complex Systems in Engineering	3	Optional
Digitalisation for Energy Systems	3	Optional
Electrical Project Design with Eplan	3	Optional
Experimental Methods for New and Sustainable Materials	3	Optional
Finite Element Methods for Engineering	6	Optional
Fundamentals of R for Engineers	3	Optional
Fundamentals of Rams Engineering in Aerospace Product Certification	3	Optional
Hydraulic Hybrid Machines	3	Optional
Interactive Electronic Musical Systems	6	Optional
International Engineering Communication Through Immersive Technologies	3	Optional
Introduction to Robotics and Automation	3	Optional
Introduction to UAV Flight	3	Optional
Life Cycle Assessment	3	Optional
Modern Industrial Control	3	Optional
Multimedia Communications	6	Optional
Photography for Science and Technology	3	Optional

Subjects	ECTS credits	Type
Photonics. Optics Applied to Engineering	6	Optional
Professional Communication for Engineers Through Virtual Reality II	3	Optional
R&D in Engineering	3	Optional
Smart Energy Systems in High-Performance Building	3	Optional
Sports Engineering	3	Optional
Supervision and Predictive Maintenance	3	Optional
Technological Projects I	6	Optional
Technological Projects II	6	Optional
Technology, Society and Globalisation. the Sustainability Challenge in the 21st Century	6	Optional
The Future of Hydrogen: Technologies and Applications	3	Optional
Thermal Analysis Techniques for Engineering Materials	3	Optional
Bachelor's Thesis	24	Project

PROFESSIONAL OPPORTUNITIES

Professional opportunities

- Design and development of audio and video capture, processing, transmission and reception systems.
- Maintenance of television, audio and video systems, equipment, headers and installations.
- Maintenance of electronic and computer equipment for the audiovisual sector.
- Development of storage, management, transmission and dissemination systems for audiovisual content.
- Creation, programming, management and dissemination of multimedia applications and content following usability and accessibility criteria.
- Design and development of acoustic engineering projects: acoustic design, PA systems, measuring systems, noise and vibration analysis and control, and environmental and underwater acoustics.
- Freelance work: consultancy and advisory services.
- Teaching and research.

QUALITY ACCREDITATION

Check the degree’s main quality indicators in the University Studies in Catalonia portal of the Catalan University Quality Assurance Agency. Find information on topics such as degree evaluation results, student satisfaction and graduate employment data.
Further information

ACADEMIC ORGANISATION

Academic calendar

General academic calendar for bachelor’s, master’s and doctoral degrees

Academic regulations

Academic regulations for bachelor’s degree courses at the Universitat Politècnica de Catalunya (UPC).

Language certification and credit recognition

Queries about language courses and certification