UNIVERSITAT POLITÈCNICA DE CATALUNYA
UPC BARCELONATECH

Bachelor's degree in ICT Systems Engineering

MANRESA SCHOOL OF ENGINEERING (EPSEM)

The **bachelor's degree in ICT Systems Engineering** trains and qualifies you to deal with engineering problems in which electronics, informatics and communications play a part. You will have a general training profile and the specific knowledge required to work in the emerging, high-impact sector of embedded systems, which are present in automobiles, home automation, industrial machinery, medical equipment, consumer electronics and traffic control systems.

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 2025-2026 academic year
7,538

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
Manresa School of Engineering (EPSEM)

Official degree
Recorded in the Ministry of Education's degree register

ADMISSION

Places
44

Pre-enrolment code
31065

Places via a change of degree
4

Admission mark 2025-2026 academic year

7,538. 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		
Basic Mathematics for Engineering	6	Compulsory
Fundamentals of Mathematics for ICT	6	Compulsory
Informatics	6	Compulsory
Introduction to Digital Systems	6	Compulsory
Physics	6	Compulsory
SECOND SEMESTER		
Circuit Theory	6	Compulsory
Complementary Technologies I	6	Compulsory
Digital Systems	6	Compulsory
Programming Technology	6	Compulsory
Statistics	6	Compulsory
THIRD SEMESTER		
Advanced Mathematics for Engineering	6	Compulsory
Business	6	Compulsory
Complementary Technologies II	6	Compulsory
Linear Circuits and Systems	6	Compulsory
Programmable Devices	6	Compulsory
FOURTH SEMESTER		
Analogue Systems	6	Compulsory
Computer Architecture	6	Compulsory
Low-Level Programming	6	Compulsory
Radiofrequency Circuits and Systems	6	Compulsory
Signals and Systems	6	Compulsory
FIFTH SEMESTER		
Communication Networks	6	Compulsory
Concurrent and Real-Time Programming	6	Compulsory
Digital Signal Processing	6	Compulsory

Subjects	ECTS credits	Type
Operating Systems	6	Compulsory
Project Management and Orientation	6	Compulsory
SIXTH SEMESTER		
Electronic Control Systems	6	Compulsory
Embedded Systems	6	Compulsory
Internet Applications and Services	6	Compulsory
Systems Engineering	6	Compulsory
Bioengineering	6	Optional
Chemistry	6	Optional
Data Transmission	6	Optional
Databases	6	Optional
Decision Optimisation and Theory	6	Optional
Digital Audio and Video	6	Optional
Energy Resources	6	Optional
Graphic Expression	6	Optional
Innovation, People Management and Business Start-Up	6	Optional
Materials Science and Technology	6	Optional
Mechanical Systems	6	Optional
Strength of Materials	6	Optional
User Interfaces	6	Optional
Wind and Solar Power Generation	6	Optional
SEVENTH SEMESTER		
Automatic and Robotic Systems	6	Compulsory
Systems Integration	6	Compulsory
Business English	6	Optional
Communication Systems	6	Optional
Microelectronics	6	Optional
Quality Management and Integrated Quality, Safety and Environmental Systems Management	6	Optional
Security and Secrecy in Information Coding	6	Optional
EIGHTH SEMESTER		
Bachelor's Thesis	24	Project

PROFESSIONAL OPPORTUNITIES

Professional opportunities
- Design, specification and implementation of widgets and systems that require knowledge of electronics, informatics and communications.
- ICT companies or companies for which ICTs may provide added value.
- Businesses and institutions that develop products or provide services in which electronics, informatics and communications play a part, such as the automobile industry; companies that develop manufacturing machinery and testing and laboratory equipment; biomedical, electronics, home automation and environmental industries; and the control systems industry.

- Engineering firms that carry out interdisciplinary projects.
- Project management in ICT companies.
- R&D design engineering.
- R&D project management.
- Product management.
- Technical, sales and management positions.

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

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

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