UNIVERSITAT POLITÈCNICA DE CATALUNYA
BARCELONATECH

Bachelor's degree in Telematics Engineering

The **bachelor's degree in Telematics Engineering** provides the knowledge needed to conceive, design, implement and operate telematic networks, as well as knowledge of network security mechanisms, data transmission, protocols, services and applications. You will receive a solid grounding in telecommunications and informatics that will enable you to design, implement and operate communication networks (access, transport, sensor, wireless, etc.) and their services and applications (telephony, web, e-mail, file sharing, online gaming, e-commerce, etc.) with the necessary mechanisms to ensure security and quality.

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
Castelldefels School of Telecommunications and Aerospace Engineering (EETAC)

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

ADMISSION

Places
80 (20 February)

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 a single school

- Bachelor's degree in Network Engineering / Bachelor's degree in Telecommunications Systems Engineering

PROFESSIONAL OPPORTUNITIES

Professional opportunities

- Telematic project supervision and management in the communications, audiovisual, recreational, cultural, healthcare, tourist and industrial, automotive sectors and in the public administration.
- Design, management and development of networks.
- Design and development of broadband and multimedia communications services and applications.
- Project supervision and management in the fields of mobile, access and transport networks and the internet.
- Freelance work: consultancy and advisory services.
- Product research, design and innovation.
- Internet of things (smart home, smart cities, industry 4.0).

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

Castelldefels School of Telecommunications and Aerospace Engineering (EETAC)

CURRICULUM

Subjects	ECTS credits	Type
FIRST SEMESTER		
Business, Telecommunications and Sustainability	6	Compulsory
Calculus	6	Compulsory
Electronics for Telecommunications	6	Compulsory
Introduction to Computers	6	Compulsory
Physics	6	Compulsory
SECOND SEMESTER		
Fundamentals of Telematics	6	Compulsory
Linear Algebra and Applications	6	Compulsory
Linear Circuits and Systems	6	Compulsory
Mathematics for Telecommunications	6	Compulsory
Programming Project	6	Compulsory
THIRD SEMESTER		
Digital Circuits and Systems	6	Compulsory
Digital Signal Processing	6	Compulsory
Fundamentals of Communications	6	Compulsory
Network Interconnection	6	Compulsory
Probability and Statistics	6	Compulsory
FOURTH SEMESTER		
Electromagnetic Waves in Communication Systems	7.5	Compulsory

Subjects	ECTS credits	Type
Electronic Circuits and Power Supply Systems	6	Compulsory
Internet Architecture and Protocols	6	Compulsory
Operating Systems	6	Compulsory
Transmitters and Receivers	4.5	Compulsory
FIFTH SEMESTER		
Audiovisual Services on the Internet	4	Compulsory
Local, Access and Metropolitan Networks	6	Compulsory
Mobility, Networks and Services	6	Compulsory
Network Analysis and Dimensioning	4	Compulsory
Service and Application Design	10	Compulsory
SIXTH SEMESTER		
Applications Engineering	12	Compulsory
Network Planning	4	Compulsory
Network Security	4	Compulsory
Telecommunications Infrastructure and Operation	6	Compulsory
Transport Networks	4	Compulsory
SEVENTH SEMESTER		
Applied Engineering Projects	6	Optional
Drone Design Project	6	Optional
Electronic Instrumentation and Systems for Applications in Smart Cities	6	Optional
Engineering Projects	6	Optional
Fibre Optic Sensors: Technologies and Applications	3	Optional
Introduction to Technology Asset Management	3	Optional
Quantum Information Technology	6	Compulsory
Radiolocation	6	Optional
Smart Cities: Cybersecurity and Big Data	6	Optional
Smart Cities: Internet of Things and Augmented Reality	6	Optional
Social Impact	6	Optional
Space Systems	6	Optional
Systems and Technologies for Communications in Smart Cities	6	Optional
Technical and Corporate Communication	6	Optional
Telecommunications Regulation and Policy	6	Optional
Wireless Communications	6	Optional
Work Placement	12	Compulsory
EIGHTH SEMESTER		
Bachelor's Thesis	24	Project