

# 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.

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## GENERAL DETAILS

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### 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](#)

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## ADMISSION

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### 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](#).

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## DOUBLE-DEGREE AGREEMENTS

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### Double-degree pathways at a single school

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

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## PROFESSIONAL OPPORTUNITIES

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### 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).

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## ORGANISATION: ACADEMIC CALENDAR AND REGULATIONS

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### 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)

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## CURRICULUM

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Subjects	ECTS credits	Type
<b>FIRST SEMESTER</b>		
Business, Telecommunications and Sustainability	6	Compulsory
Calculus	6	Compulsory
Electronics for Telecommunications	6	Compulsory
Introduction to Computers	6	Compulsory
Physics	6	Compulsory
<b>SECOND SEMESTER</b>		
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
<b>THIRD SEMESTER</b>		
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
<b>FOURTH SEMESTER</b>		
Electromagnetic Waves in Communication Systems	7.5	Compulsory

<b>Subjects</b>	<b>ECTS credits</b>	<b>Type</b>
Electronic Circuits and Power Supply Systems	6	Compulsory
Internet Architecture and Protocols	6	Compulsory
Operating Systems	6	Compulsory
Transmitters and Receivers	4.5	Compulsory
<b>FIFTH SEMESTER</b>		
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
<b>SIXTH SEMESTER</b>		
Applications Engineering	12	Compulsory
Network Planning	4	Compulsory
Network Security	4	Compulsory
Telecommunications Infrastructure and Operation	6	Compulsory
Transport Networks	4	Compulsory
<b>SEVENTH SEMESTER</b>		
Applied Engineering Projects	6	Optional
Drone Design Project	6	Optional
Electroacoustic Devices for Communications and Sensors	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
<b>EIGHTH SEMESTER</b>		
Bachelor's Thesis	24	Project

