UPC studies

MASTER'S DEGREE IN TELECOMMUNICATIONS ENGINEERING

ETSETB
Barcelona School
of Telecommunications Engineering

UNIVERSITAT POLITÈCNICA
DE CATALUNYA
BARCELONATECH

MASTER'S DEGREE IN TELECOMMUNICATIONS ENGINEERING

36 laboratories for practicals

The master's degree in Telecommunications Engineering (MET) provides students with a broad profile that includes skills and expertise in communications systems, networks, electronics and audiovisual systems and with the professional competencies that qualify them to practise as telecommunications engineers. After the first compulsory subject area, students can choose from a wide variety of subjects in order to acquire a general profile, specialise in a given area or engage in research and pursue a doctoral degree.

It is intended that modern industry assimilate these engineers as benchmark professionals in a multidisciplinary work and production scenario. To promote the employability of our graduates, both the master's thesis and some of the ECTS credits for optional subjects can be taken at a company or a laboratory.

Curriculum

This information may be subject to change.
Up-to-date information is available at upc.edu

120 ECTS credits

Starting: in September and February.
Timetable and delivery:
Mornings and afternoons. Face-to-face.
Language of instruction: English.

Bridging courses	**Max. 30 ECTS credits**

Assigned by the academic committee of the master's degree. To be taken by students whose academic profile is not a bachelor's degree in Telecommunications Engineering. These subjects do not extend the master's degree and are recognised as optional credits.

Compulsory Subjects	**45 ECTS credits**
Master's Thesis	**30 ECTS credits**

MET offers three types of academic pathway:
with or without a specialisation and a double degree pathway

No specialisation

Students must choose a concentration and take three subjects (15 ECTS credits). Double-degree students must follow this path and have to take 15 ECTS credits from one concentration and 60 or 90 ECTS credits (including 30 ECTS credits for the thesis) at a foreign university.

Concentrations (15 ECTS credits)

- Communications
- Electronics
- Multimedia
- Networks

+ 30 Optional ECTS credits*

1st

Spanish university in Telecommunications, Electrical and Electronic Engineering

Source: QS World University Rankings by Subject 2024

The School has its own company scholarship programme

96%

UPC's master's degree graduate employment rate

Source: Graduate employment survey of master's degree graduates of Catalan universities by the Catalan University Quality Assurance Agency (AQU Catalunya) 2023

International double-degree agreements

The master's degree offers double-degree pathways with universities around the world:

- École des Hautes Études Commerciales (HEC) (París, France). Master in Management.
- KTH Royal Institute of Technology, School of Electrical Engineering (Stockholm, Sweden). Master's degrees in Electric Power Engineering; Electrophysics; Network Services and Systems; Systems, Control and Robotics; Wireless Systems.
- Institut Supérieur de l'Aéronautique et de l'Espace ISAE-SUPAERO (Toulouse, France). *Diplôme d'Ingénieur ISAE-SUPAERO*.
- Illinois Institute of Technology (Chicago, USA). Master's degrees in Electrical Engineering; Computer Engineering; Biomedical Imaging and Signals; Network Engineering; Telecommunications and Software Engineering; Information Technology and Management; Cyber Forensics and Security; Information Technology and Management.
- Technical University of Darmstadt (Darmstadt, Germany). Master of Science in Electrical Engineering and Information Technology and Master of Science in Information and Communication Engineering (iCE).
- Politecnico di Milano (Milan, Italy). *Laurea Magistrale in Ingegneria*.
- Pontificia Universidad Católica del Perú (Lima, Peru). *Maestría en Ingeniería de las Telecomunicaciones*.
- Universidad Católica Andrés Bello (Caracas, Venezuela). Maestría en Sistemas de Información.

Work placement

The MET gives you the option to gain 15 elective ECTS credits by doing a curricular traineeship in companies and institutions in Spain or abroad. The master's thesis can also be done as part of a traineeship.

Professional opportunities

Graduates of this master's degree may find employment as telecommunications engineers in any of the following areas:

- Telecommunications operators.
- Telecommunications equipment industry.
- Electronic equipment industry.
- Semiconductor industry.
- IT consulting firms (as network solution designers, network planners and designers, network project leaders, etc.).
- IT companies, from content producers and distributors to service providers.
- Regulatory bodies.
- Software editing firms.
- Other industries such as car manufacturers and consumer and industrial electronics companies, and in diverse areas such as health, energy, intelligent transport systems, etc.

They may also find employment as the following:

- Freelance professionals acting as telecommunications engineering advisors and consultants.
- Sales engineers.
- Civil servants or employees of any public administration body in the areas of telecommunications and ICT innovation.
- Research, development and innovation specialists in public and private companies.
- Researchers and academics at public or private universities.

With specialisation

Students take four compulsory subjects (20 ECTS credits) and two optional subjects (10 ECTS credits) in a specialisation.

Specialisations (30 ECTS credits)

- Antennas, Microwaves and Photonics for Communications and Earth Observation
- Electronics
- Fibre Optic Communications
- Networks and Internet Technologies
- Multimedia
- Wireless Communications

+ 15 Optional ECTS credits*

*Optional credits

These credits can be divided among the following: Optional subjects / Introduction to Research subjects (up to 15 ECTS credits) / Seminars / Work placement (15 ECTS credits) / Professional experience (a maximum of 10 ECTS credits)

MASTER'S DEGREE IN
TELECOMMUNICATIONS ENGINEERING

The Barcelona School of Telecommunications Engineering (ETSETB) has been an institution dedicated to teaching and research in the field of ICT since 1971. It has strong relations with the industry sector and develop an innovative activity though professors and researchers that reverse into the business and productive sector.

The ETSETB is a school of the Universitat Politècnica de Catalunya - BarcelonaTech (UPC), a benchmark public institution of research and higher education in the fields of engineering, architecture, science and technology. With 50 years of history and more than 30,000 students, the UPC has the greatest concentration of research and innovation in IT in southern Europe. It is the best Spanish university in Telecommunications, Electrical and Electronic Engineering, according to the 2024 QS World University Rankings by Subject.

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Telecommunications, engineering for the 21st century

Further information:
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