

MASTER'S DEGREE IN ELECTRONIC ENGINEERING

ETSETB

Barcelona School
of Telecommunications Engineering



UNIVERSITAT POLITÈCNICA
DE CATALUNYA
BARCELONATECH

MASTER’S DEGREE IN ELECTRONIC ENGINEERING

The master’s degree in Electronic Engineering (MEE) is a flexible training proposal built on many years of academic experience in the field. It is adaptable to the needs of both students who wish to focus on a professional career and those who want to go on to do doctoral-level research in electronics. It is intended that cutting-edge 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. Students are helped by academic supervisors to design the most appropriate pathway for the master’s degree. MEE has a strong international character. It is taught entirely in English and attracts a large number of students from other countries. The international mobility of local students is encouraged through the Erasmus programme.

Curriculum

Starting: in September and February.
One and a half Academic Years.
Timetable and delivery: Afternoons. Face-to-face and blended learning.
Language of instruction: English.

Bridging courses	Max. 25 ECTS credits
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Assigned by the academic committee of the master’s degree. To be taken by students whose academic background is not a bachelor’s degree in Electronic Engineering. These subjects do not extend the master’s degree and are recognised as optional credits.

Compulsory Subjects	35 ECTS credits
Master’s Thesis	20 ECTS credits
Optional credits	Max. 35 ECTS credits

Students may choose to take one of two academic pathways, with or without a concentration.

With a concentration

At least 15 ECTS credits must be chosen from one of the following concentrations:

Biomedical Engineering and Sensors
Energy Management
Integrated Circuits
Micro- and Nanotechnologies

Without a concentration

No restriction on optional subjects.

36 laboratories for practicals

Admission

This master’s degree is intended for students with the following academic backgrounds:

- Bachelor’s degree in Electronic Systems Engineering.
- Bachelor’s degree in Engineering Physics.
- Bachelor’s degree in Industrial Electronics and Automatic Control Engineering.
- Bachelor’s degree in Telecommunications Technologies and Services Engineering.
- Bachelor’s degree in Telecommunications Science and Technology.
- Bachelor’s degree in Audiovisual Systems Engineering.
- Bachelor’s degree in Telecommunications Systems Engineering.
- Bachelor’s degree in Network Engineering.
- Bachelor’s degree in Electrical Engineering.
- Five-year degree in Telecommunications Engineering: 30 ECTS credits may be recognised.
- Five-year degree in Electronic Engineering: 60 ECTS credits may be recognised.

93% 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) 2020

- Diploma in Telecommunications Engineering.
- Diploma in Electronic Engineering.

Competencies acquired

Graduates of this master’s degree will be able to:

- Model, design and control power electronic systems for various functions and applications.
- Conceive and design electronic circuits for analogue RF signal processing.
- Design, implement and integrate highperformance instrumentation systems.
- Analyse, design and manufacture micro- and nanoelectronic devices.
- Analyse and design digital circuits and systems-based (multi) processors and configurable devices.
- Analyse and design mixed-signal integrated circuits.
- Manage and generate innovative business projects in the field of electronic technology.

Professional opportunities

Given the cross-disciplinary characteristics of electronics, graduates of this master’s degree may pursue careers in a broad range of sectors, such as ICT systems, electron

+50% of students did internships in companies during the last course

devices, medical electronics, consumer electronics, control systems, robotics, automation, electromagnetic compatibility, microelectronic design, smart sensors and data acquisition systems. Companies operating in these sectors offer high added value in terms of technology and are therefore in need of professionals trained to master’s degree level. Many of these companies foster technology innovation and have a highly dynamic presence in a strongly competitive market that they achieve by counting research among their activities. Graduates may be also employed in the public sector as civil servants or contractual employees in any public administration body at the EU, national, regional and local levels in the areas of electronics and ICT innovation and as research, development and innovation specialists in public universities. In addition to this, the master’s degree offers highly specialised optional subjects intended for students who are looking to pursue a doctoral degree in Electronic Engineering. Electronic engineering ambit is in top ten according to the Job Quality Index by the Catalan University Quality Assurance Agency (AQU Catalunya).

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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 through 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 Computer Science, Engineering and Technology, according to the 2021 QS World University Rankings by Subject.



Telecommunications, engineering for the 21st century



Further information:

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