

University Master's Degree in ELECTRONIC SYSTEMS ENGINEERING AND TECHNOLOGY

The overall objective of this master's degree is to enable students to find effective solutions to problems in the field of electronic engineering and, specifically, to design electronic equipment and automated production systems, perform maintenance and control in production industries, provide technical advice, or join the sales departments of companies in the electronics sector. For graduates who wish to undertake doctoral studies, this programme will also prepare them to do effective research in collaboration with national and international research groups.

The master's degree has two specialisations of 15 ECTS credits each:

- The Industrial Electronics specialisation provides advanced training in the design, implementation and operation of power distribution architectures and in the control of power converters and electrical machines. Special attention is paid to energy management applications, especially those related to renewable energy and automobile electronics.
- The Micro and Nanosystems specialisation provides advanced training in nanomaterials and technologies of electronic and optoelectronic devices and in multivariate data processing in systems.

Aimed at

This master's degree is a continuation of first degrees in the fields of engineering and technology. The typical entry profile is that of a student who has completed a bachelor's degree clearly related to electronic technology or information and communication technology. Therefore, the programme is mainly aimed at students who have bachelor's degrees in Aeronautical Engineering, Telecommunications Engineering and Industrial Engineering (Industrial Electronics and Automatic Control or Electrical Engineering) but it is also suitable for students who have a bachelor's degree in Physics and Computer Engineering.

The personal and academic characteristics that are considered appropriate for students wishing to take this master's degree are the following:

- A technical education and a desire to develop their career in the ICT industry.
- Knowledge of basic materials and industrial technologies.
- Ability and interest in research. Interest in pursuing an academic career.
- Ability to analyse the need for technological innovation in companies and to assess its suitability and social impact.

Academic coordination: : Dr Eduard Llobet



Career opportunities

Graduates in University Master's Degree in Electronic Systems Engineering and Technology are capable to work in different types of industry:

- Engineering consultancy
- Engineering consultancy management
- Management of instrumentation/sensors in production plants
- Maintenance management
- Sales department management
- Research and development: companies in the chemical, industrial, energy sectors, automobile, etc.
- Research and development in technology-based companies
- Research and development in universities and research centres
- Entrepreneurship
- Teaching

Associated doctoral programme:
Technologies for Nanosystems, Bioengineering and Energy

WHERE

Escola Tècnica Superior d'Enginyeria Química
Av. dels Països Catalans, 26 43007 Tarragona

LANGUAGE

English

DURATION

60 ECTS
From September 2017 to June 2019

TIMETABLE

Face-to-face
Afternoons, from Monday to Friday

PROGRAMME

FIRST YEAR: compulsory subjects

CREDITS

First semester

· Digital Signal Processing	4
· Micro and Nanoelectronic Devices and Technologies	4
· Advanced Digital Systems	4
· Electronic Systems in Communications	5
· Digital Control	4
· Innovation and Engineering (*)	4
· Integrated Laboratory	5

Second semester

· Final Master's Project (*)	15
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(*) These subjects make up the competences required for the subject Career Counselling Citizenship.

OPTIONAL SUBJECTS

Students can choose to take the 15 elective credits without considering the different specialities, or take one of the speciality that will appear in the name of the degree.

Specialty Industrial Electronic (15 ECTS)

· Modelling and Control of Converters	3
· Digital Control of Converters	3
· Electrical Architecture of Energy Management Systems	3
· Radioidentification and Wireless Sensors	3
· Design of High Frequency Integrated Circuits with CAD Tools	3
· Automotive Electronics	3
· Automotive Embedded Software Development	3

Specialty Electronics Microsystems (15 ECTS)

· Advanced Semiconductor Devices	3
· Nanomaterials in Electronic Engineering	3
· Radiofrequency and Optical Electronic Technology	3
· Micro and Nano Sensor Systems	3
· Design of Experiments and Advanced Data Analysis	3

BRIDGING COURSES:***

· Circuit Theory	6
· Basic Electronics	6

(***) After checking the candidate's transcript, the body responsible for admission can decide that the student must attend and satisfactorily complete some of the subjects that are programmed as bridging courses.

