

# Master's degree in Automatic Systems and Industrial Electronics Engineering

The aim of the **master's degree in Automatic Systems and Industrial Electronics Engineering** is to produce top-level professionals in automation and industrial electronics. Automatic control and industrial electronics are crucial to the development of a society that is increasingly focused on information and knowledge as a basis for decision making, and essential for the functioning of any automatic or robotic control system. Graduates will be able to respond to the needs of sectors dealing with production processes and systems for generating, distributing and storing energy; the transport sector; and the logistics sector.

The aim of the specialisation in **Intelligent Systems** is to produce professionals who are capable of managing the entire life cycle of intelligent systems, from their design to their development, implementation and verification, in any sphere of application in which detection, actuation and control functions are required. Intelligent systems enable factories to be automated following the Industry 4.0 concept, which allows technical integration of cyber-physical systems (CPS) in production and logistics, as well as the use of the internet in industrial processes.

Intelligent systems allow machines, storage systems and equipment to work together in a network, leading to a “smart factory” in which intelligent machines exchange information and are constantly adapting to new production requirements. This reduces costs, increases productivity and saves a considerable amount of energy.

The “intelligence” of a system may be understood as its autonomous operation based on control with the aim of increasing energy efficiency, reducing costs and maximising performance. This specialisation emphasises the integration of different technologies, different component sizes and different materials in a single system. Graduates will have an interdisciplinary work focus that will enable them to come up with integrated technological solutions. More information on [the web site of this master's degree](#).

## Specialisations

- Intelligent systems

## GENERAL DETAILS

### Duration and start date

1,5 academic year, 90 ECTS credits. Starting September

### Timetable and delivery

Afternoons. Face-to-face

### Fees and grants

Approximate fees for the master's degree, excluding other costs, €2,490 (€3,735 for non-EU residents).

[More information about fees and payment options](#)

[More information about grants and loans](#)

### Language of instruction

Spanish

Information on [language use in the classroom and students' language rights](#).

### Location

[Vilanova i la Geltrú School of Engineering \(EPSEVG\)](#)

## Official degree

[Recorded in the Ministry of Education's degree register](#)

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## ADMISSION

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### General requirements

[Academic requirements for admission to master's degrees](#)

### Places

30

### Pre-enrolment

Pre-enrolment period open.

Expected deadline: 30/06/2022.

[How to pre-enrol](#)

### Enrolment

[How to enrol](#)

### Legalisation of foreign documents

All documents issued in non-EU countries must be [legalised and bear the corresponding apostille](#).

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## ORGANISATION: ACADEMIC CALENDAR AND REGULATIONS

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### UPC school

[Vilanova i la Geltrú School of Engineering \(EPSEVG\)](#)

### Academic coordinator

[Ramon Guzman Solà](#)

### Academic calendar

[General academic calendar for bachelor's, master's and doctoral degrees courses](#)

### Academic regulations

[Academic regulations for master's degree courses at the UPC](#)

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## CURRICULUM

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### Subjects

**ECTS  
credits**

**Type**

#### FIRST SEMESTER

Advanced Control Systems	5	Compulsory
Advanced Electronic Systems and Integration of Electrical Energy Sources	5	Compulsory
Fundamentals of Electronics and Instrumentation	5	Optional
Mechanical Fundamentals	5	Optional
Modelling and Control of Electrical Machines	5	Compulsory
Simulation and Optimization	5	Compulsory

Subjects		ECTS credits	Type
<b>Specialisation in Specialisation in Intelligent Systems</b>	Communication Networks	5	Compulsory
	Advanced Control Systems	5	Compulsory
	Advanced Electronic Systems and Integration of Electrical Energy Sources	5	Compulsory
	Fundamentals of Electronics and Instrumentation	5	Optional
	Mechanical Fundamentals	5	Optional
	Modelling and Control of Electrical Machines	5	Compulsory
	Simulation and Optimization	5	Compulsory
<b>SECOND SEMESTER</b>			
Applied Dynamics		5	Compulsory
<b>Specialisation in Specialisation in Intelligent Systems</b>	Digital Systems	5	Compulsory
	Embedded and Real Time Systems	5	Compulsory
	Energy Management	5	Compulsory
	Environmental Intelligence	5	Compulsory
	Sensors and Mems	5	Compulsory
	Applied Dynamics	5	Compulsory
<b>THIRD SEMESTER</b>			
Automation and Industrial Digitization		5	Optional
Internet Technologies		5	Optional
Microgrid Control		5	Optional
Mobile Devices Programming		5	Optional
Model Predictive Control for Industrial Applications		5	Optional
Robotics and Vision		5	Optional
Master's Thesis		15	Project
<b>Specialisation in Specialisation in Intelligent Systems</b>	Automation and Industrial Digitization	5	Optional
	Internet Technologies	5	Optional
	Microgrid Control	5	Optional
	Mobile Devices Programming	5	Optional
	Model Predictive Control for Industrial Applications	5	Optional
	Robotics and Vision	5	Optional
	Master's Thesis	15	Project