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

<table>
<thead>
<tr>
<th>Duration and start date</th>
<th>1,5 academic year, 90 ECTS credits. Starting September</th>
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<tbody>
<tr>
<td>Timetable and delivery</td>
<td>Afternoons. Face-to-face</td>
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<tr>
<td>Fees and grants</td>
<td>Approximate fees for the master’s degree, excluding degree certificate fee, €4,901 (€7,352 for non-EU residents).</td>
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<td>More information about fees and payment options</td>
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<td>More information about grants and loans</td>
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<td>Official degree</td>
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ADMISSION

General requirements
Academic requirements for admission to master's degrees

Places
30

Pre-enrolment
Pre-enrolment period open.
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.

ORGANISATION: ACADEMIC CALENDAR AND REGULATIONS

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

CURRICULUM

Subjects | ECTS credits | Type
--- | --- | ---
**FIRST SEMESTER**
Advanced Control Systems | 5 | Compulsory
Advanced Electronic Systems and Integration of Electrical Energy Sources | 5 | Compulsory
Applied Dynamics | 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
<table>
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<td><strong>SECOND SEMESTER</strong></td>
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<tr>
<td>Communication Networks</td>
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<td>Digital Systems</td>
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<tr>
<td>Embedded and Real Time Systems</td>
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<td>Energy Management</td>
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<td>Environmental Intelligence</td>
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<tr>
<td>Sensors and Mems</td>
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<td><strong>THIRD SEMESTER</strong></td>
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<tr>
<td>Automation and Industrial Digitization</td>
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<tr>
<td>Internet Technologies</td>
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