

The **Master's Degree in Automatic Control and Robotics** is an official master's degree that has been adapted to the European Higher Education Area (EHEA) and is taught at the Technical University of Catalonia (UPC). The Master's Degree is oriented towards research and gives direct access to the **Doctoral Degree in Automatic Control, Robotics and Computer Vision** taught at UPC. It has also been adapted to the EHEA. This doctoral programme received the Quality Mention of the Spanish Ministry of Education and Science and replaces previous doctoral programmes in Automatic Control, Computer Vision and Robotics and Advanced Automation and Robotics (both of which were also awarded the Quality Mention). The Master's Degree in Automatic Control and Robotics and the Doctoral Programme in Automatic Control, Robotics and Computer Vision are organised jointly by the Department of Automatic Control (ESAI) and the Institute of Industrial and Control Engineering (IOC).

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POSTGRADUATE PROGRAMMES



control robotics

- **MASTER'S DEGREE**
Automatic Control and Robotics
- **DOCTORAL PROGRAMME**
Automatic Control, Robotics
and Computer Vision



UNIVERSITAT POLITÈCNICA
DE CATALUNYA

Master and Doctorate Courses

Students of the Master's and Doctoral Degrees must choose a given number of subjects from the following list based on their academic background (each subject is worth 5 ECTS credits):

- Mathematical methods
- Signal analysis and processing
- Linear systems theory
- Systems modelling, identification and simulation
- Robotics introduction
- Perception systems and sensors
- Multivariable control
- Non-linear control
- Advanced digital control
- Real-time systems
- Computational geometry applied in robotics
- Integrated production systems
- Patter recognition
- Computer vision
- Optimal/predictive and adaptative control
- Robust control
- Artificial intelligence applied in control and systems identificacion
- Diagnosis and fault-tolerant control
- Hybrid systems
- Distributed control systems
- Planning in robotics
- Mobile robotics and navigation
- Robot control
- Artificial intelligence applied in robotics
- Tele-operation and man-machine interface
- Advanced computer vision

○ Tuition fees

The fees for master's and doctoral degrees are set by the Generalitat (government) of Catalonia every year, within the limits laid down in Spanish legislation.

○ Useful links

In addition to the websites for the Master's Degree in Automatic Control and Robotics and the Doctoral Degree in Automatic Control, Robotics and Computer Vision, general information on the master's and doctoral degree courses taught at UPC is available at:

- Official master's degrees website: <http://mastersoficials.upc.edu>
- Official doctoral degrees website: <http://doctorat.upc.edu>

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○ Structure

The duration of the Master's Degree is as follows.

- For students who have completed a three-year degree and earned 180 ECTS credits, the Master's Degree spans two academic years: three taught semesters (90 ECTS credits) and one semester devoted to the master's thesis (30 ECTS credits). The total study load is 120 ECTS credits.
- For students who have completed a four- or five-year degree and earned 240 or 300 ECTS credits, the Master's Degree spans one academic year: one taught semester (30 ECTS credits) and one semester devoted to the master's thesis (30 ECTS credits). The total study load is 60 ECTS credits.

○ Admission Criteria

Candidates who are eligible for admission to the Master's Degree may fall into one of the following categories:

1. Any person who holds a first or second cycle university qualification under the current course structure framework or a bachelor's degree under the new course structure framework of the EHEA.
2. Holders of degrees from foreign universities that do not belong to the EHEA whose qualifications have been officially approved. Nevertheless, official approval will not be necessary if proof is provided that the education received in the foreign country is to the same level as a bachelor's degree, in which case the foreign qualification will not be officially approved but the official master's degree will be fully recognised.

○ Admission

An online preregistration form is available at <http://mastersoficials.upc.edu/preregistration>. Details of the relevant academic qualifications that entitle the applicant to start the course must be included to support the application. Applicants will receive an e-mail of acceptance, if appropriate. The decision regarding admission is also published via the preregistration system. Check <http://mastersoficials.upc.edu> for the dates of the preregistration periods.

○ Master's Degree Office

Address:

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Facultat de Matemàtiques
i Estadística (FME) - Edifici U
C. Pau Gargallo, 5
08028 Barcelona

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Fax: +34 93 401 70 45
master.ar@upc.edu
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doctorate ARV

○ Structure

The doctoral degree is divided into the following:

- Taught subjects that are chosen by the student from a list of subjects drawn up on the basis of his or her academic background (up to 60 ECTS credits may generally be taken). Graduates of the Master's Degree in Automatic Control and Robotics may go on to the preparation of the doctoral thesis proposal directly.
- Preparation of the doctoral thesis proposal under the supervision of a professor on the doctoral programme, and the public defence of the proposal in front of a jury.
- Writing of the doctoral thesis under the supervision of a professor on the doctoral programme and its public defence in front of a jury once it has been peer-reviewed.

○ Admission Criteria

Candidates who are eligible for admission to the Doctoral Degree may fall into one of the following categories:

1. Any person who holds a second cycle university qualification under the current course structure, or a master's degree under the new course structure of the EHEA.
2. Holders of five-year or master's degrees from foreign universities that do not belong to the EHEA whose qualifications have been officially approved. Nevertheless, official approval will not be necessary if proof is provided that the education received in the foreign country is to the same level as a second cycle degree in the current course structure framework or a master's degree.

○ Admission

Admission to the doctorate may be applied for throughout the academic year. The applicant must send the relevant academic qualifications to the Doctoral Programme Office by e-mail or via the online application form on the UPC doctorate website at <http://doctorat.upc.edu>.

○ Doctoral Programme Office

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