Master’s degree in Automatic Control and Robotics (MUAR)

2024-2025

www.upc.edu/masters-sessions

Now, UPC masters degrees!

Register to the information sessions
Master’s degree in Automatic Control and Robotics

1. UPC/ETSEIB introduction
2. Master’s degree in Automatic Control and Robotics
3. Q & A
<table>
<thead>
<tr>
<th>Department/Program</th>
<th>Quantity</th>
</tr>
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<tbody>
<tr>
<td>Departments</td>
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<tr>
<td>Institutes</td>
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<tr>
<td>Bachelor degrees</td>
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<td>(GETI, GETIAE)</td>
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<tr>
<td>Master’s programs</td>
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<tr>
<td>Students</td>
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<tr>
<td>Teaching and</td>
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<tr>
<td>Research Staff</td>
<td></td>
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<tr>
<td>(PDI)</td>
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<td>Administrative</td>
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<tr>
<td>and Support Staff</td>
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<td>(PAS)</td>
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<table>
<thead>
<tr>
<th>Quantity</th>
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<td>2,074</td>
<td>PAS</td>
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<td>Programs de doctorat</td>
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<td>Programes de formació permanent</td>
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<td>19</td>
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<td>348 M</td>
<td>Pressupost 2023</td>
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<tr>
<td>72,7 M</td>
<td>Ingressos per R+D+I (2021)</td>
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<tr>
<td>70,151</td>
<td>Alumni</td>
</tr>
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</table>
ETSEIB School

ETSEIB: Escola Tècnica Superior d’Enginyeria Industrial de Barcelona

Over 170 years of educating professionals with a very strong scientific and technical foundation

https://etseib.upc.edu/
1. Master's degree in Neuroengineering and Rehabilitation (with UAB)
2. Master's degree in Biomedical Engineering (with UB)
3. Master's degree in Automatic Control and Robotics
4. Master's degree in Automotive Engineering
5. Master's degree in Management Engineering
6. Master in Nuclear Engineering / EMINE
7. Master in Electric Power Systems and Drives
8. Master in Thermal Engineering / DENSYS
ETSEIB Double Degree programmes

Master's degree in Industrial Engineering

+ 

Master's degree in Automatic Control and Robotics
Master's degree in Automotive Engineering
Master's degree in Management Engineering
Master in Energy Engineering
Master in Nuclear Engineering /EMINE
How to apply

(https://etseib.upc.edu/en/Academic%20programmes/academic-procedures/acces/application-msc-programmes)

- **Application**
  Deadline: 13th of May 2024
- **Acceptance (Academic Comission)**
  June 2024
- **Provisional listing of accepted students**
  Before the end of June 2024
- **Students' acceptance**
  Up to 7 days from the publication of the listing
- **Definitive listing of accepted students**
  Mid-July 2024
- **Enrolment**
  Check information at website etseib.upc.edu
How to apply

(https://etseib.upc.edu/en/Academic%20programmes/academic-procedures/acces/application-msc-programmes)

How to apply:

Apply UPC Admissions: Application

To validate the request, it is necessary to complete the information for every field:

- Personal data
- Academic details
- Required documentation Required documents

- Application (*) (choose 3 specialty options for the master required)
- Data protection
- Pre-enrolment fees (General information about UPC" on this page)
Admission and enrollment process

Pre-enrollment in the application:
1. Processing
2. Payment to be confirmed
3. Send

PAYMENT of 300€
(ADVANCED PAYMENT OF ENROLMENT FEES)

Welcome session

PAYMENT of 300€
(ADVANCED PAYMENT OF ENROLMENT FEES)

Welcome session

Please, check that all the required documentation has been submitted

Acceptance of the place

Submission of original documents and delivery of copies

Enrollment on line or in person

Start of the Master’s degree

Admission
(Publication of the provisional list of applicants admitted)

Admission
(Publication of the final list of applicants admitted)

objection/appeal period

1. Processing
2. Payment to be confirmed
3. Send

[Diagram showing the process flow]
... further information

FAQ's

Check the most frequently asked questions in this document 📄.

**International Relations and Admissions Office**

Face-to-face opening office hours:
from Monday to Friday 11 am to 1:30 pm
and Tuesday 3:00 pm to 17:30 pm

Information request: [https://demana.upc.edu/etseib/](https://demana.upc.edu/etseib/)

📞 +34 93 401 59 27
Màster Universitari en Automàtica i Robòtica

Academic Coordinator: Carlos Ocampo-Martinez
The Grandma’s Question

Robotics
Automatic control
Artificial intelligence
(Machine) learning
The master's degree in Automatic Control and Robotics (MUAR) focuses on engineering in the fields of automatic control and robotics. It combines knowledge of industrial engineering, such as electrical and mechanical engineering, industrial electronics, computer science and some aspects of artificial intelligence.

- Master's degree in Automatic Control and Robotics + Master's degree in Industrial Engineering (ETSEIB)
- Master’s degree in Automatic Control and Robotics (ETSEIB) + Master's degree in Automation and Control Engineering (Politecnico di Milano)
MUAR

- Two academic years, 120 ECTS credits
- Starting September
- About 40 students
- Afternoons
- **English**
**MUAR - Mandatory subjects**

<table>
<thead>
<tr>
<th>Quarter</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>Q1 (autumn)</td>
<td>Linear Multivariable Control Systems</td>
</tr>
<tr>
<td>Q1 (autumn)</td>
<td>Robotics, Kinematics, Dynamics &amp; Control</td>
</tr>
<tr>
<td>Q1 (autumn)</td>
<td>Modelling, Identification and Simulation of Dynamical Systems</td>
</tr>
<tr>
<td>Q1 (autumn)</td>
<td>Optimization in Control and Robotics</td>
</tr>
<tr>
<td>Q1 (autumn)</td>
<td>Computer Vision</td>
</tr>
<tr>
<td>Q1 (autumn)</td>
<td>Industrial Scheduling</td>
</tr>
<tr>
<td>Q2 (spring)</td>
<td>Nonlinear Control Systems</td>
</tr>
<tr>
<td>Q2 (spring)</td>
<td>Mobile Robots and Navigation</td>
</tr>
<tr>
<td>Q2 (spring)</td>
<td>Pattern Recognition and Machine Learning</td>
</tr>
<tr>
<td>Q2 (spring)</td>
<td>Business Administration</td>
</tr>
<tr>
<td>Q3 (autumn)</td>
<td>Embedded &amp; Real-time Systems</td>
</tr>
<tr>
<td>Q3 (autumn)</td>
<td>Planning and Implementation of Robotic Systems</td>
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<tr>
<td>Q3 (autumn)</td>
<td>Technological Innovation</td>
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<tr>
<td>Q3 (autumn)</td>
<td>Human Resources Management</td>
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<tr>
<td>Q4 (spring)</td>
<td>Master’s Thesis</td>
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<td>Q4 (spring)</td>
<td>Elective Block Q4</td>
</tr>
</tbody>
</table>
MUAR - Elective subjects

Spring (Q2 & Q4)
- Advanced Topics in Computer Vision
- Introduction to ROS
- Model-Based Predictive Control
- Scientific Python for Engineers
- Sensors, Instrumentation and Communications

Autumn (Q3)
- Fault Diagnosis & Supervisory Control
- Human Robot Interaction & Teleoperation
- Medical Robotics
- Hybrid Systems
- Robot Learning
- Robust Control
- Perception and Cognition in Robotic Exploration
MUAR - Elective block Q4

- **Elective subjects** (up to 18 ECTS)
- **External internships - either local or international** (up to 18 ECTS)
- **Mobility Program - either local or international** (up to 30 ECTS)
- **Professional activities recognition** (up to 18 ECTS)
- **Recognition of credits taken in non-official university courses** (up to 18 ECTS)
MUAR - Curricular internships
Master’s thesis examples

Robotic cloth manipulation

Implementation of a visual servo control in a bi-manual collaborative robot.
Master’s thesis examples

Replicator dynamics alignment sequence with LEGO Mindstorms

Principal Component Analysis of an image dataset, H/M for Female/Male
Master’s thesis examples

Energy systems modeling and control
MUAR’s Academic Coordinator

Prof. Carlos OCAMPO-MARTINEZ

coordinador.mar@upc.edu

ETSEIB H Building, office DSH2.26

+34 93 401 57 52
Thank you for your attention

admissions.etseib@upc.edu