

# Master Master in Electric Power Systems and Drives

2024-2025

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[www.upc.edu/masters-sessions](http://www.upc.edu/masters-sessions)



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# Now, UPC masters degrees!



# Master Master in Electric Power Systems and Drives



1. **UPC/ETSEIB introduction**
2. **Master Master in Electric Power Systems and Drives**
3. **Q & A**





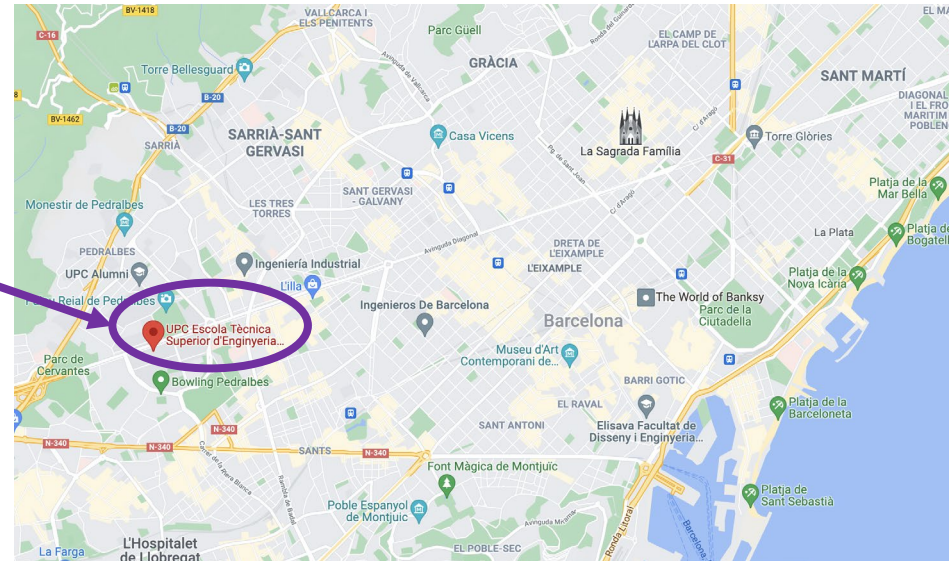
UNIVERSITAT POLITÈCNICA  
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29.812	3.523	2.074	65	84	45
estudiants	PDI	PAS	graus	màsters	programes de doctorat
18	275	19	348 M	72,7 M	70.151
centres docents	programes de formació permanent	patents el darrer any	pressupost 2023	ingressos per R+D+I (2021)	Alumni



16	Departments
2	Institutes
2	Bachelor degrees (GETI, GETIAE)
15	Master's programs
3379	Students
446	Teaching and Research Staff (PDI)
126	Administrative and Support Staff (PAS)





## 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/>



# Modern power systems challenges

- Wind and solar power plants
- Electrical mobility (electrical vehicle engineering and charging infrastructure)
- Industry electrification
- Renewables integration in power systems
- Systems dominated by power electronics
- Modern regulation and energy markets
- New toolboxes to be applied: data science, artificial intelligence

# Structure

- 60 ECTS – 1 year
- Mandatory courses (15 ECTS) Foundations of electrical power engineering: Energy markets, Electric power converters, Power systems
- Optative courses (30 ECTS) – Three tracks:
  1. Electrical machines, equipment and drives
  2. Electrical systems
  3. Energy economics, management and electrical markets
    - Possibility of not following any specific track and freely choose the courses.
- Master thesis (15 ECTS)

# Main characteristics

- Research and development oriented
- 100 % in English
- Possibility of participate in R&D in UPC groups:
  - Working in collaboration with industry (operators, developers, manufacturers, administrations)
  - Developing national and international research projects (Horizon 2020, Horizon Europe, others)
- Possibility to do additional internships and theses in relevant companies (manufacturers, developers, operators, consultants)
- In the environment of ETSEIB-UPC, with substantial participation of international students

# External opportunities

Board of companies and centers providing support. Board members provide support in some of the following items:

- Offer scholarships to students while working in the university in projects related to the company interests.
- Offer internships at the company to conduct the Master thesis or to work in a R&D project.
- Offer future employment in the company.
- Present the company to the Master students including examples of R&D activities in industry.
- Organize visits of the students to the company.
- Advise on Master contents
- Additional contributions

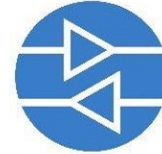


wallbox 

ALPIQ

SIEMENS  
ENERGY

 OPAL-RT  
TECHNOLOGIES



teknoCEA

 sener

redeia

eRoots



Life Is On

Schneider  
Electric

 GreenPowerMonitor  
a DNV company

CITCEA  

 nexus  
energía



RESEARCH GROUP IN  
ELECTROMECHANICAL DRIVES  
ENERGY CONVERSION AND  
POWER QUALITY  
(GAECEQS)

# Examples of Master theses

- Design of wind turbine converters for large type 4 wind turbines with multiple converter sections
- Design and testing on micro-grid controllers
- Optimization of the planning of the transmission systems of an island with plans to install renewables
- Design of HVDC transmission systems for offshore wind
- Design of the motor for an electrical bike
- Bidirectional chargers for vehicle-to-grid applications
- Supergrids for offshore wind integration
- Future energy markets for renewables integration
- Application of Artificial Intelligence techniques for failure detection in power systems
- Design of battery management system (BMS) algorithms for maximizing the useful life of batteries
- Minimizing the risk of discharges in high voltage systems

# How to apply

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

- **Application**  
Deadline: 13th of May 2024
- **Acceptance (Academic Commission)**  
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](http://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:**

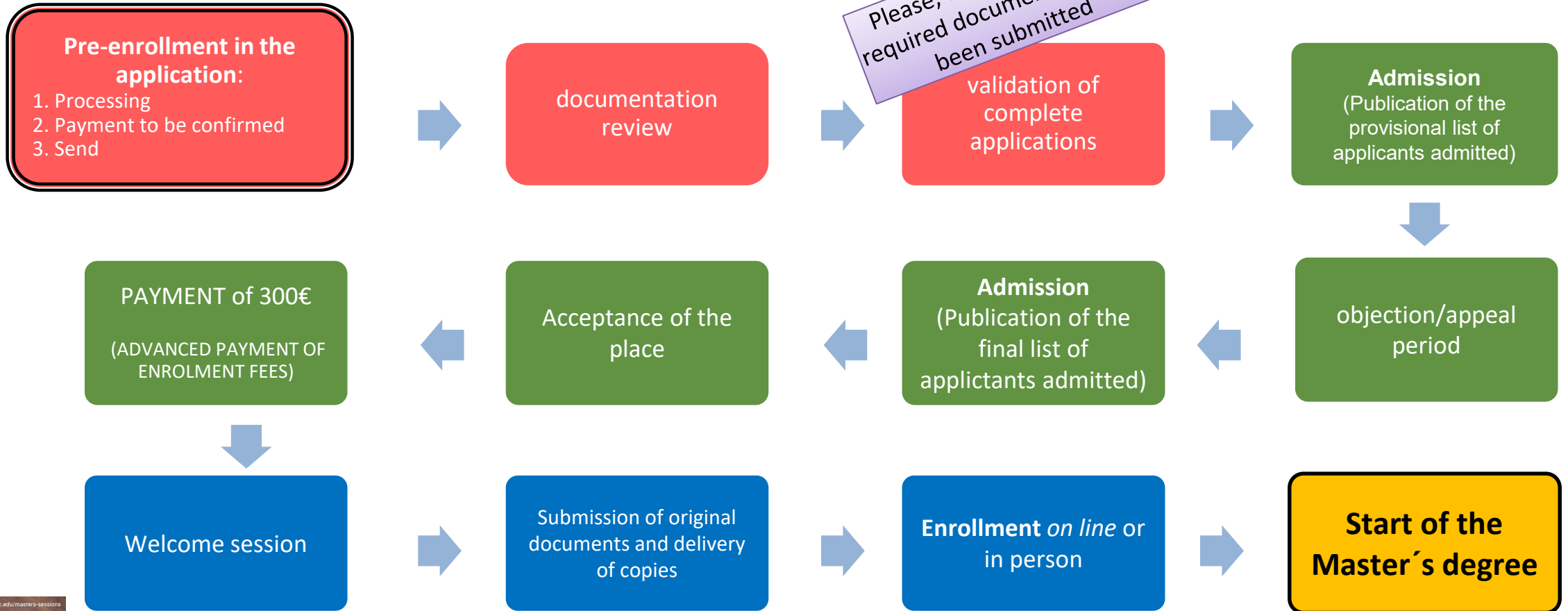
[Application](#)

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



# ... 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/>

 +34 93 401 59 27



# ETSEIB

Escola Tècnica Superior  
d'Enginyeria Industrial de Barcelona

**Escola de referència:  
Formació i recerca  
de màxim nivell  
científic i tecnològic.**



## Thank you for your attention

[admissions.etseib@upc.edu](mailto:admissions.etseib@upc.edu)

