

Master's degree in Mechanical Technologies

The **master's degree in Mechanical Technologies** aims to impart in-depth knowledge for the study, analysis, dimensioning, design and manufacture of mechanical systems and to present students with advanced concepts and technologies in the field so as to enhance their capacities and skills. All of the above is given a professional focus that is aligned with the training needs of industry in the 21st century.

GENERAL DETAILS

Duration and start date

1 academic year, 60 ECTS credits. Starting September

Timetable and delivery

Face-to-face

Fees and grants

Approximate fees for the master's degree, **excluding other costs** (does not include non-teaching academic fees and issuing of the degree certificate):

€1,107 (€6,331 for non-EU residents).

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

[More information about grants and loans](#)

Language of instruction

Check the language of instruction for each subject in the course guide in the curriculum.

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

ADMISSION

General requirements

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

Places

30

Pre-enrolment

Pre-enrolment period open.

Expected deadline: 24/06/2024.

[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](#).

PROFESSIONAL OPPORTUNITIES

Professional opportunities

- Industry 4.0/5.0.
- Advanced manufacturing and 3D printing.
- Renewable energies.
- Energy transition technologies.

- Design and calculation of industrial structures.
- Computer-assisted mechanical design (CAM/CAD).
- Planning, supervision, execution and evaluation of mechanical engineering projects.
- Design, manufacture, assembly and maintenance of industrial and production equipment, systems and installations in the fields of mechanical, electromechanical and thermal engineering and fluid mechanics.
- Design, management and maintenance of equipment and industrial installations, structures and constructions.
- Drafting of technical advisory and feasibility reports.
- Academic research in universities and research centres.
- Technological development and industrial research in R&D departments.
- Doctoral studies: research training.

Competencies

Generic competencies

Generic competencies are the skills that graduates acquire regardless of the specific course or field of study. The generic competencies established by the UPC are capacity for innovation and entrepreneurship, sustainability and social commitment, knowledge of a foreign language (preferably English), teamwork and proper use of information resources.

ORGANISATION: ACADEMIC CALENDAR AND REGULATIONS

UPC school

[Barcelona East School of Engineering \(EEBE\)](#)

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 Heat Transfer and Energy Technologies	6	Compulsory
Advanced Manufacturing	6	Optional
Advanced Technologies in Fluid Science and Engineering	6	Compulsory
Biomechanics Modelling	6	Optional
Data Science in Mechanical Engineering	6	Optional
Design and Calculation of Industrial Constructions	6	Compulsory
Low-Temperature Fuel Cell Systems Engineering	6	Optional
SECOND SEMESTER		
Computational Fluid Mechanics	6	Optional
Integrated Projects for Machine Design and Manufacture	6	Compulsory
Multiscale Transport Phenomena in Engineering	6	Optional
Simulation & Optimization	6	Optional
Structural Dynamics and Seismic Engineering	6	Optional

Subjects	ECTS credits	Type
Master's Thesis	12	Project

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