



# Postgraduate Courses: MASTER'S DEGREES & DOCTORAL PROGRAMMES

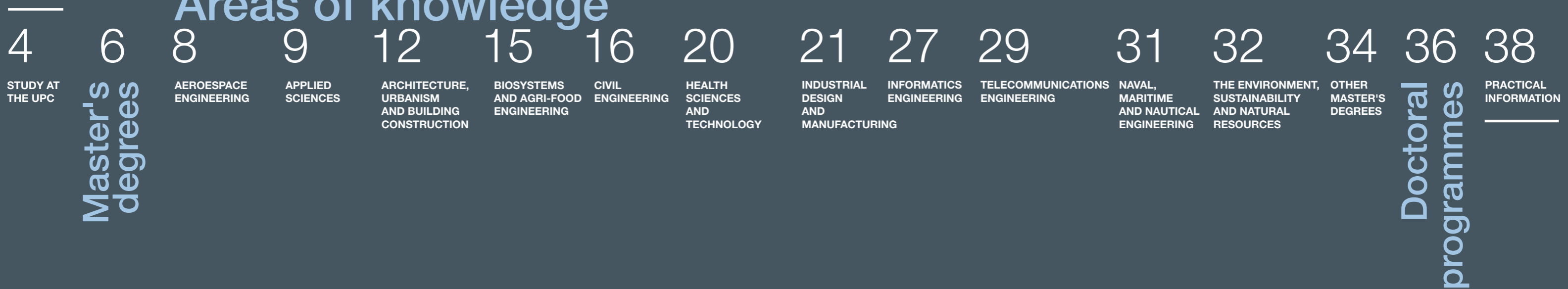


UNIVERSITAT POLITÈCNICA  
DE CATALUNYA  
BARCELONATECH

*International Campus of Excellence*

# Postgraduate courses

## Areas of knowledge



[www.upc.edu/learning/courses](http://www.upc.edu/learning/courses)

# Study at the UPC



## Innovation, talent and technology

Among the top 100 young universities in the world in the **THE 100 under 50** (2014).

Among the top 500 universities in the world, the top 150 in the field of Engineering, Technology and Computer Sciences and the top 200 in Mathematics in the **Shanghai Ranking** (2014).

The Top Spanish university and one of the top 100 worldwide in the **QS World University Rankings by Subject** in the fields of Architecture and Built Environment; Civil and Structural Engineering; Computer Science and Information Systems; Statistics and Operational Research, and Telecommunications, Electrical and Electronic Engineering (2015).

The Top Spanish university and one of the top 100 worldwide in Engineering and Technology in the **QS World University Rankings by Faculty** (2014).

The Top technical university in Spain for scientific output, international collaboration and innovative knowledge in the **SIR** (2014).

Among the 150 best universities in the world for bachelor's degrees and the best 160 for master's and doctoral degrees in **U-Multirank** (2014).

Among the top 50 universities in the world in the **QS Top 50 under 50 ranking** (2014/15).

The leading Spanish university for the Engineering and Mathematics field and for Architecture, Automatic Control and Robotics, Civil Engineering, Electrical and Electronic Engineering, and Telecommunications disciplines in the **I-UGR Ranking of Spanish Universities** (2014).

The Top Spanish university in the Engineering field in the **National Taiwan University Ranking** (2014).

Technological training and skill acquisition are key factors for people who wish to drive responses to the challenges of the future. The **Universitat Politècnica de Catalunya · BarcelonaTech (UPC)** is a quality public university founded on values of social responsibility and a commitment to serving both individuals and society as a whole. Its postgraduate studies provide first-rate technological training in the fields of architecture, engineering and technology.

The UPC's master's degrees and doctoral programmes offer multidisciplinary training with a strong international focus, and can be oriented towards professional skill building or specialisation in research.

Dr. Enric Fossas Colet  
Rector

## The leading university for architecture, engineering and technology

### MASTER'S DEGREES

Master's degrees are official postgraduate courses providing specialised or multidisciplinary training that can be oriented towards professional skill building or specialisation in research. Fees are set by government decree. Courses have a total study load of between 60 and 120 ECTS credits and a duration of one or two years. Official master's degrees grant access to doctoral programmes.

### DOCTORAL PROGRAMMES

Doctoral programmes are official postgraduate courses providing advanced training and research practice in specialised areas. Fees are set by government decree. Doctoral study is geared towards the writing, presentation and defence of a doctoral thesis, successful completion of which qualifies students for the award of the doctorate and for access to university teaching and research positions.

### ERASMUS MUNDUS MASTER'S AND DOCTORATES

Erasmus Mundus is an EU programme for the design and implementation of joint courses of study between participating universities, with the general aims of promoting student mobility and raising quality standards in higher education. Students enrolled in Erasmus Mundus courses are required to spend periods of study at two or more of the universities at which their course is offered. A large number of scholarships are offered to students from outside the EU.

### KIC INNOENERGY MASTER'S DEGREES

KIC InnoEnergy is a Knowledge and Innovation Community (KIC) promoted by the European Institute of Innovation and Technology (EIT) to foster innovation in the field of sustainable energy. KIC InnoEnergy includes an educational programme with a specific focus on international master's degrees that promote student mobility through a scholarship programme.

### INTERNATIONAL MOBILITY OPTIONS

**2,713** students on international mobility programmes  
**363** academic agreements with universities around the world  
**100** international double-degree agreements with universities around the world



A wide range of **international mobility programmes** with prestigious foreign universities.

### A RANGE OF LEARNING

**62** master's degrees, **21** taught entirely in English  
**7** Erasmus Mundus  
**48** doctoral programmes  
**5** Erasmus Mundus  
**2,547** researchers



**Multidisciplinary, international and first-rate training.**

### HIGH GRADUATE EMPLOYMENT RATE

**30,681** bachelor's degree and master's degree students  
**2,447** doctoral degree students  
**42,471** alumni UPC



Strong focus on professional training in fields with excellent graduate **employment prospects**. Services, training and professional contacts through the **UPC Alumni network**.  
[alumni.upc.edu](http://alumni.upc.edu)



# Master's degrees

[www.mastersdegrees.upc.edu](http://www.mastersdegrees.upc.edu)

Master's degrees are official postgraduate courses providing specialised or multidisciplinary training that can be oriented towards professional skill building or specialisation in research. Fees are set by government decree.

Courses have a total study load of between 60 and 120 ECTS credits and a duration of one or two years.

Official master's degrees grant access to doctoral programmes.

## ACCESS REQUIREMENTS

1. Holders of a Spanish official university qualification or an official university qualification issued by a university that belongs to the European Higher Education Area (EHEA) that qualifies the holder for admission to a master's degree.
2. Holders of a qualification issued by a university in a country that does not belong to the EHEA but that has, by a homologation procedure, been deemed to be equivalent to a Spanish qualification that qualifies the holder for admission to a university master's degree. If the qualification has not been homologated, the UPC will verify that the course of study corresponds to a level of education equivalent to an official Spanish university degree and that the qualification obtained would provide admission to a master's degree in the country in which it was awarded. This access route in no way implies the homologation of the qualification or its recognition for any purpose other than admission to the master's degree. The master's degree will, however, be fully and legally valid.

## ADMISSION REQUIREMENTS

In addition to the general requirements, specific admission requirements and criteria may be set for given master's degrees. These specific conditions may include specific access qualifications, requisites for academic records and language and bridging course requirements. The selection process may also include an examination and an appraisal of the candidate's CV. Further information is available on the master's degree websites.

## PRE-ENROLMENT AND CALENDAR

There are two pre-enrolment periods: January to July (for the autumn semester) and October to December (for the spring semester).

Find out more about admissions, pre-enrolment, enrolment and fees:

[www.mastersdegrees.upc.edu](http://www.mastersdegrees.upc.edu)

## FEES, GRANTS AND FINANCIAL AID

Enrolment fees for master's degrees range from €41.17 to €51.46 per credit, depending on the course (master's degrees may have a total study load of 60, 90 or 120 ECTS credits). These fees are valid for the 2014-2015 academic year. Fees for non-residents who are not EU nationals are 50% higher than the standard price per credit: €77.19 (academic year 2014-2015).

In the specific case of Erasmus Mundus master's, fees are set by the consortium of universities responsible for organising each programme. For further information, consult the master's degree website.

Successful candidates must pay a fee of €300 to confirm admission and reserve their place on the course. This amount will be deducted from the enrolment fee when you officially enrol, but if you do not enrol you will not be entitled to a refund unless the master's degree is cancelled.

Find out about grants and financial aid and other ways of funding master's degree study:

[www.upc.edu/learning/grants-and-financial-aid](http://www.upc.edu/learning/grants-and-financial-aid)

## LANGUAGES

Master's degrees are taught in Catalan, Spanish or English, depending on the students' language levels and the learning objectives of each course. For further information contact the person in charge of the master's degree by e-mail (e-mail addresses can be found in the course descriptions).

## AEROSPACE ENGINEERING

- 8 Aerospace Engineering  
Aerospace Science and Technology (MAST)\*

## APPLIED SCIENCES

- 9 Computational Modelling in Physics, Chemistry and Biochemistry  
Occupational Health and Safety
- 10 Statistics and Operations Research (MESIO)  
Advanced Mathematics and Mathematical Engineering (MAMME)\*  
Computer Vision\*
- 11 Photonics\*  
Pure and Applied Logic\*  
Erasmus Mundus Photonics Engineering, Nanophotonics and Biophotonics (Europhotonics)\*

## ARCHITECTURE, URBANISM AND BUILDING CONSTRUCTION

- 12 Architecture. Barcelona / Sant Cugat del Vallès
- 13 Architecture-BarcelonaArch (MBArch)  
Building Construction Engineering  
Building Construction Management
- 14 Landscape Architecture  
Sustainable Intervention in the Built Environment (MISMeC)

## BIOSYSTEMS AND AGRI-FOOD ENGINEERING

- 15 Aquaculture  
Enabling Technologies for the Food and Bioprocessing Industry (KET4FOOD+BIO)  
Plant Breeding

## CIVIL ENGINEERING

- 16 Civil Engineering  
Geological and Mining Engineering  
Geotechnical Engineering
- 17 Mining Engineering  
Oceanography and Marine Management  
Structural and Construction Engineering
- 18 Numerical Methods in Engineering\*  
Erasmus Mundus Coastal and Marine Engineering and Management (CoMEM)\*  
Erasmus Mundus Computational Mechanics\*
- 19 Erasmus Mundus Flood Risk Management\*  
Erasmus Mundus Structural Analysis of Monuments and Historical Constructions (SAHC)\*

## HEALTH SCIENCES AND TECHNOLOGY

- 20 Biomedical Engineering  
Optometry and Vision Sciences

## INDUSTRIAL DESIGN AND MANUFACTURING

- 21 Automatic Systems and Industrial Electronics Engineering (MUESAEI). Terrassa / Vilanova i la Geltrú
- 22 Automotive Engineering  
Biomedical Engineering  
Chemical Engineering
- 23 Energy Engineering KIC InnoEnergy  
Fibrous Material Technologies Engineering  
Industrial Engineering. Barcelona
- 24 Industrial Engineering. Terrassa  
Leather Engineering  
Management Engineering. Barcelona
- 25 Management Engineering. Terrassa  
Materials Science and Engineering  
Supply Chains, Transport and Mobility
- 26 Automatic Control and Robotics\*  
Nuclear Engineering KIC InnoEnergy\*  
Erasmus Mundus Advanced Materials Science and Engineering (AMASE)\*

## INFORMATICS ENGINEERING

- 27 Informatics Engineering  
Artificial Intelligence\*
- 28 Innovation and Research in Informatics (MIRI)\*  
Erasmus Mundus Information Technologies for Business Intelligence (IT4BI)\*

## NAVAL, MARITIME AND NAUTICAL ENGINEERING

- 29 Marine Engineering  
Nautical Engineering and Maritime Transport

## TELECOMMUNICATIONS ENGINEERING

- 30 Applied Telecommunications and Engineering Management (MASTEAM)\*  
Electronic Engineering (MEE)\*
- 31 Telecommunications Engineering (MET)\*  
Wireless Communications (WICOM)\*

## THE ENVIRONMENT, SUSTAINABILITY AND NATURAL RESOURCES

- 32 Environmental Engineering
- 33 Natural Resources Engineering  
Sustainable Science and Technology

## OTHER MASTER'S DEGREES

- 34 Business Administration and Management. Barcelona / Terrassa  
Marketing Management. Barcelona
- 35 Marketing Management. Terrassa  
Women's, Gender and Citizenship Studies  
Secondary and Upper Secondary Education, Vocational Training and Foreign Language Teaching

\* Master's degrees taught entirely in English.

→ **AEROSPACE  
ENGINEERING**

**Master's degree  
in Aerospace  
Engineering**

This master's degree provides multidisciplinary scientific and technical training applicable to all areas of aerospace engineering. The following specialisations are offered:

- **Aerospace vehicles**
- **Airports**
- **Propulsion**
- **Space**

**Duration and credit load:**  
4 semesters / 120 ECTS credits

**Delivery:**  
Face-to-face

**Languages of instruction:**  
Catalan, Spanish and English

**International double-degree agreements with:**

- Cranfield University (GB)
- The Henry Samueli School of Engineering – University of California, Irvine (US)

**Contact:**  
admissions.masters.etseiat@upc.edu

**Master's degree  
in Aerospace  
Science  
and Technology  
(MAST)**

This master's degree provides advanced cross-disciplinary training in applied aerospace science and technology. The curriculum covers the basic theoretical and practical aspects of the discipline and the main techniques, methods and processes for managing innovative aerospace research projects.

**Duration and credit load:**  
3 semesters / 90 ECTS credits

**Delivery:**  
Face-to-face

**Language of instruction:**  
English

**Coordination:**

- UPC. Universitat Politècnica de Catalunya

**Participating institutions:**

- CNES. Centre National d'Études Spatiales (FR)
- ESA. European Space Agency (FR)
- UAB. Universitat Autònoma de Barcelona (ES)

**International double-degree agreement with:**

- ENAC. École Nationale de l'Aviation Civile (FR)

**Contact:**  
master.aerospace@upc.edu

→ **APPLIED SCIENCES**

**NEW**  
**Master's degree  
in Computational  
Modelling in  
Physics, Chemistry  
and Biochemistry\***

This interuniversity master's degree provides advanced training in programming tools and the application of various techniques and models to the study of problems in physics, chemistry and biochemistry in which the atomic or molecular structure and properties of matter are relevant. It is oriented towards advanced, fundamental or applied research and employment in the R&D departments of institutions and companies in the technology, pharmaceutical, environmental and energy sectors that analyse complex systems and networks.

**Duration and credit load:**  
2 semesters / 60 ECTS credits

**Delivery:**  
Face-to-face

**Languages of instruction:**  
Catalan, Spanish and English

**Coordination:**

- UB. University of Barcelona (ES)

**Participating institution:**

- UPC. Universitat Politècnica de Catalunya

**Contact:**  
i.moreira@ub.edu

**Master's degree  
in Occupational  
Health and Safety**

This interuniversity master's degree provides students with comprehensive knowledge and skills in the field of occupational health and safety. Students are offered the chance to specialise in various non-medical areas of risk prevention: occupational safety, industrial hygiene, ergonomics and applied psychophysiology.

**Duration and credit load:**  
3 semesters / 90 ECTS credits

**Delivery:**  
Face-to-face

**Language of instruction:**  
Spanish

**Coordination:**

- UPC. Universitat Politècnica de Catalunya

**Participating institutions:**

- UB. University of Barcelona (ES)
- UPF. Universitat Pompeu Fabra (ES)

**Contact:**  
admissions.etseib@upc.edu

**APPLIED SCIENCES**  
→

\* Degree pending approval by the Spanish Universities Council

### Master's degree in Statistics and Operations Research (MESIO)

This interuniversity master's degree provides advanced knowledge of the theory and methods of statistics and operations research and their cross-disciplinary applications in biostatistics, data engineering, marketing and finance, industrial statistics, industrial optimisation and transport engineering.

**Duration and credit load:**  
3 semesters / 90 ECTS credits

**Delivery:**  
Face-to-face

**Languages of instruction:**  
Spanish and English

**Coordination:**  
• UPC. Universitat Politècnica de Catalunya

**Participating institutions:**  
• UB. University of Barcelona (ES)

**Contact:**  
direccio.meio.fme@upc.edu

### Master's degree in Advanced Mathematics and Mathematical Engineering (MAMME)

This master's degree offers a double academic and professional track. The academic content focuses on general research skills and specific competencies in mathematical research. The professional content focuses on advanced interdisciplinary training in relevant aspects of engineering, physics, biology and economics.

**Duration and credit load:**  
2 semesters / 60 ECTS credits

**Delivery:**  
Face-to-face

**Language of instruction:**  
English

**International double-degree agreement with:**  
• Illinois Institute of Technology (US)

**Contact:**  
cap.estudis.matematiques.fme@upc.edu

### Master's degree in Computer Vision

This master's degree provides advanced training in the mathematical techniques and models for computer simulation of the human vision system and their applications to research in informatics, mathematics, physics and engineering.

**Duration and credit load:**  
2 semesters / 60 ECTS credits

**Delivery:**  
Blended learning

**Language of instruction:**  
English

**Coordination:**  
• UAB. Universitat Autònoma de Barcelona (ES)

**Participating institutions:**  
• UPC. Universitat Politècnica de Catalunya  
• UOC. Universitat Oberta de Catalunya (ES)  
• UPF. Universitat Pompeu Fabra (ES)

**Contact:**  
masters@etsetb.upc.edu

### Master's degree in Photonics

This interuniversity master's degree offers an opportunity for further study of theoretical, experimental and applied photonics, particularly quantum and non-linear optics, biophotonics and image science, photonic materials, nanophotonics, telecommunications and photonic circuits and optical engineering. The aims of the master's degree are to train future researchers and to promote entrepreneurial activity.

**Duration and credit load:**  
2 semesters / 60 ECTS credits

**Delivery:**  
Face-to-face

**Language of instruction:**  
English

**Coordination:**  
• UPC. Universitat Politècnica de Catalunya

**Participating institutions:**  
• UAB. Universitat Autònoma de Barcelona (ES)  
• UB. University of Barcelona (ES)  
• ICFO. The Institute of Photonic Sciences (ES)

**Contact:**  
master.photonics@etsetb.upc.edu

### Master's degree in Pure and Applied Logic

This interuniversity master's degree provides advanced skills across a range of areas in advanced, pure and applied logic. The course includes detailed examination of interdisciplinary areas such as informatics, artificial intelligence and computational linguistics.

**Duration and credit load:**  
3 semesters / 90 ECTS credits

**Delivery:**  
Face-to-face

**Language of instruction:**  
English

**Coordination:**  
• UB. University of Barcelona (ES)

**Participating institution:**  
• UPC. Universitat Politècnica de Catalunya

**Contact:**  
rafel.farre@upc.edu

### Erasmus Mundus master's degree in Photonics Engineering, Nanophotonics and Biophotonics (Europhotonics)

This master's degree offers an opportunity for further study of theoretical, experimental and applied photonics, particularly photonics engineering, nanophotonics and biophotonics. It includes courses on photonic materials science, nanophotonics, quantum optics, optical engineering, biomedical microscopy and photonics, spectroscopy and renewable energy. Students can go on work placements and apply for Erasmus Mundus grants.

**Duration and credit load:**  
4 semesters / 120 ECTS credits

**Delivery:**  
Face-to-face

**Language of instruction:**  
English

**Coordination:**  
• Aix-Marseille Université (FR)

**Participating institutions:**  
• UPC. Universitat Politècnica de Catalunya  
• UAB. Universitat Autònoma de Barcelona (ES)  
• UB. University of Barcelona (ES)  
• ICFO. The Institute of Photonic Sciences (ES)  
• KIT. Karlsruhe Institute of Technology (DE)

**Contact:**  
master.photonics@etsetb.upc.edu

**NEW** **Master's degree in Architecture**  
Barcelona

This master's degree qualifies you to practise as an architect. Its aim is to provide a body of advanced knowledge that builds on the content of the degree in Architecture Studies and it involves the in-depth study of design, technology and urbanism as well as solid, multidisciplinary training in architecture.

**Duration and credit load:**  
2 semesters / 60 ECTS credits

**Delivery:**  
Face-to-face

**Languages of instruction:**  
Catalan and Spanish

**Contact:**  
grau.arq.bcn@upc.edu

**NEW** **Master's degree in Architecture**  
Sant Cugat del Vallès

This master's degree qualifies graduates for professional practice in architecture. It aims to provide advanced knowledge that furthers the learning acquired on the bachelor's degree in Architecture Studies or equivalent. It provides solid training that may be furthered in three areas: habitat, heritage and the city. Students work in multidisciplinary workshops on spatial projects that approach contemporary problems from the standpoint of sustainability.

**Duration and credit load:**  
2 semesters / 60 ECTS credits

**Delivery:**  
Face-to-face

**Languages of instruction:**  
Catalan and Spanish

**Contact:**  
marq@etsav.upc.edu

**NEW** **Master's degree in Architecture- BarcelonaArch (MBArch)\***

The aim of this master's degree is to train students in research, innovation and contemporary architectural design in a manner that is flexible and directed towards a specialisation. With an emphasis on expertise, erudition, tradition and professional practice, the Barcelona School of Architecture offers a comprehensive approach to a professional or teaching career in architecture.

The areas of specialisation of the master's degree are the following:

- **Urban and Architectural Management and Valuation**
- **Urbanism**
- **Process, Design and Programming**
- **Theory, History and Culture**
- **Architecture, Energy and Environment**
- **Architectural Structures**
- **Technological Innovation in Architecture**
- **Architectural Restoration and Rehabilitation**
- **Contemporary Project**

**Duration and credit load:**  
2 semesters / 60 ECTS credits

**Delivery:**  
Face-to-face

**Languages of instruction:**  
Catalan, Spanish and English. The Contemporary Project specialisation is taught entirely in English.

**International double-degree agreement with:**  
Tongji University (CN)

**Contact:**  
postgrau.arq.bcn@upc.edu

\* Degree pending approval by the Spanish Universities Council

**Master's degree in Building Construction Engineering**

This master's degree produces graduates for the building construction sector, which is increasingly automated. In the current context, which has seen a decrease in the number of new buildings being built in Spain, concepts such as sustainability and energy efficiency are increasingly important, as are the recovery, conservation and improvement of built heritage. The master's degree therefore provides an education that confronts the sector's new challenges and the skills students need to understand and deepen their knowledge of the construction process and pursue a research career.

**Duration and credit load:**  
3 semesters / 90 ECTS credits

**Delivery:**  
Face-to-face

**Language of instruction:**  
Spanish

**Contact:**  
master.univ.edificacio@upc.edu

**NEW** **Master's degree in Building Construction Management\***

The aim of this master's degree is to produce graduates who will be involved in processes for managing and leading building construction companies and who will seek to improve these processes. The education provided covers financial and quality management, project management, energy management of buildings and built heritage, and the safety of building works. Students may choose to deepen their knowledge of other topics such as project leadership, the use of integral management tools and real estate marketing.

**Duration and credit load:**  
3 semesters / 90 ECTS credits

**Delivery:**  
Face-to-face

**Language of instruction:**  
Spanish

**Contact:**  
master.univ.gestio.edificacio@upc.edu

\* Degree pending approval by the Spanish Universities Council



### Master's degree in Landscape Architecture

This master's degree provides students with the skills for landscape analysis, planning, design and management and the knowledge to address challenges arising from the implementation of new EU directives, laws and standards that have a bearing on landscape architecture practices.

**Duration and credit load:**  
4 semesters / 120 ECTS credits

**Delivery:**  
Face-to-face

**Languages of instruction:**  
Catalan and Spanish

- International double-degree agreements with:**
- Amsterdam Academy of Architecture (NL)
  - Edinburgh School of Architecture and Landscape Architecture - University of Edinburgh (GB)
  - Fakultät für Architektur und Landschaft - Leibniz Universität Hannover (DE)
  - École Nationale Supérieure de Paysage Versailles (FR)

**Contact:**  
postgrau.arq.bcn@upc.edu

### Master's degree in Sustainable Intervention in the Built Environment (MISMeC)

This master's degree provides advanced conceptual and technological knowledge for professional practice aimed at improving the sustainability of the urban environment. Students will develop the skills needed to direct projects in fields including architecture, building construction, urban design and infrastructure management.

**Duration and credit load:**  
2 semesters / 60 ECTS credits

**Delivery:**  
Face-to-face

**Languages of instruction:**  
Subjects will be taught in Spanish, although the design studio can be attended in English.

**Contact:**  
mismec@etsav.upc.edu

# BIOSYSTEMS → AND AGRI-FOOD ENGINEERING

### Master's degree in Aquaculture

This interuniversity master's degree provides professional training in the field of aquaculture, with a particular focus on environmental sustainability and animal welfare. Students develop advanced skills applicable to professional areas such as fish farm management, the feed industry and aquaculture equipment, disease diagnosis services and facility design, and to research areas including the physiology of aquatic species, fish pathology and facility engineering.

**Duration and credit load:**  
2 semesters / 60 ECTS credits

**Delivery:**  
Face-to-face

**Languages of instruction:**  
Spanish and English

**Coordination:**  
• UB. University of Barcelona (ES)

- Participating institutions:**
- UPC. Universitat Politècnica de Catalunya
  - UAB. Universitat Autònoma de Barcelona (ES)

**Contact:**  
esab.info@upc.edu  
lourdes.reig@upc.edu

### Master's degree in Enabling Technologies for the Food and Bioprocessing Industry (KET4FOOD+BIO)

This master's degree provides advanced knowledge and skills in the field of food technologies and bioprocesses. The curriculum is designed to match the major lines of inquiry in the European strategy on Key Enabling Technologies (KET), which targets intelligent, sustainable and integrated growth.

**Duration and credit load:**  
2 semesters / 60 ECTS credits

**Delivery:**  
Face-to-face

**Languages of instruction:**  
Spanish and English

**Contact:**  
esab.info@upc.edu  
merce.raventos@upc.edu

### Master's degree in Plant Breeding

This interuniversity master's degree provides students with the knowledge to generate new varieties of plants and to develop genetic improvement programmes, combining traditional selection methods with new biotechnologies.

**Duration and credit load:**  
4 semesters / 120 ECTS credits

**Delivery:**  
Face-to-face

**Language of instruction:**  
Spanish

**Coordination:**  
• UPV. Universitat Politècnica de València (ES)

- Participating institution:**
- UPC. Universitat Politècnica de Catalunya

**Contact:**  
esab.info@upc.edu  
francesc.casanas@upc.edu





### Master's degree in Civil Engineering

This master's degree provides advanced multidisciplinary and technological training for research, design and analysis in the field of infrastructure and civil engineering.

The following specialisations are offered:

- **Computational Engineering**
- **Environmental Engineering and Sustainability**
- **Geotechnical Engineering**
- **Structural Engineering and Construction**
- **Transport Engineering and Urbanism**
- **Water Engineering**

**Duration and credit load:**  
4 semesters / 120 ECTS credits

**Delivery:**  
Face-to-face

**Languages of instruction:**  
Catalan, Spanish and English

**International double-degree agreements with:**

- HEC Paris. École des Hautes Études Commerciales (FR)
- Illinois Institute of Technology (US)

**Contact:**  
area.academica.camins@upc.edu  
miquel.estrada@upc.edu

### Master's degree in Geological and Mining Engineering

This interuniversity master's degree provides advanced training in geological and geotechnical characterisation and in the prediction and analysis of ground behaviour during engineering works. Students learn to predict geological hazards and to locate and evaluate geological resources, including minerals, hydrogeological resources and construction materials.

The following specialisations are offered:

- **Environmental Engineering**
- **Geotechnical Engineering**
- **Mineral and Energy Resources**

**Duration and credit load:**  
4 semesters / 120 ECTS credits

**Delivery:**  
Face-to-face

**Languages of instruction:**  
Catalan, Spanish and English

**Coordination:**

- UPC. Universitat Politècnica de Catalunya

**Participating institution:**

- UB. University of Barcelona (ES)

**Contact:**  
area.academica.camins@upc.edu  
daniel.fernandez.g@upc.edu

### Master's degree in Geotechnical Engineering

This master's degree provides students with the training to pursue professional and academic careers in the fields of geotechnical engineering, hydrogeology, geophysics and earthquake engineering. Students develop specialist knowledge of geophysics and earthquake engineering and acquire the skills to predict, evaluate and reduce seismic hazards.

The following specialisations are offered:

- **Earthquake Engineering and Geo-Sciences**
- **Geotechnical Engineering**
- **Groundwater Hydrology**

**Duration and credit load:**  
4 semesters / 120 ECTS credits

**Delivery:**  
Face-to-face

**Languages of instruction:**  
Catalan, Spanish and English

**Contact:**  
master.ectg@upc.edu  
jean.vaunat@upc.edu

### Master's degree in Mining Engineering

The master's degree in Mining Engineering provides specialised training in sustainable approaches to locating, extracting and exploiting minerals and energy resources. Students also learn about designing, modelling, planning and supervising mining operations; exploring, researching, modelling and assessing geological deposits; the advanced use of explosives; underground spatial management; surveying; advanced mineral processing; etc.

**Duration and credit load:**  
3 semesters / 90 ECTS credits

**Delivery:**  
Face-to-face

**Languages of instruction:**  
Catalan, Spanish and English

**Contact:**  
infomasters.manresa@epsem.upc.edu

### Master's degree in Oceanography and Marine Management

This interuniversity master's degree offers advanced theoretical and practical training in oceanography and the management of the marine environment. The course's multidisciplinary approach is ideal for students wishing to specialise in the field of marine sciences.

**Duration and credit load:**  
2 semesters / 60 ECTS credits

**Delivery:**  
Face-to-face

**Languages of instruction:**  
Catalan and English

**Coordination:**

- UB. University of Barcelona (ES)

**Participating institution:**

- UPC. Universitat Politècnica de Catalunya

**Contact:**  
jose.jimenez@upc.edu  
agustin.arcilla@upc.edu  
genoveva.comas@upc.edu

### Master's degree in Structural and Construction Engineering

This master's degree provides comprehensive training in the field of structural and construction engineering. Students conduct detailed study of topics such as the resistance mechanisms of structures, construction materials and processes, materials-related durability and technology, construction processes and organisational methods, effective management of construction projects, the environmental and socioeconomic impact of construction work, safety, quality and sustainability.

**Duration and credit load:**  
3 semesters / 90 ECTS credits

**Delivery:**  
Face-to-face

**Languages of instruction:**  
Spanish and English

**Contact:**  
area.academica.camins@upc.edu  
eva.oller@upc.edu



### Master's degree in Numerical Methods in Engineering

This master's degree provides multidisciplinary training in computational mechanics in view of the growing demand for accurate and reliable numerical simulations. It aims to produce specialists in the theory and applications of calculation methods for product and process design, in the widest possible sense. Graduates will immediately be able to apply the knowledge acquired in industry. Their solid scientific training will also enable them to pursue a doctoral degree.

**Duration and credit load:**  
4 semesters / 120 ECTS credits

**Delivery:**  
Face-to-face and distance

**Language of instruction:**  
English

**Contact:**  
area.academica.camins@upc.edu  
antoldt@cimne.upc.edu

### Erasmus Mundus master's degree in Coastal and Marine Engineering and Management (CoMEM)

This master's degree provides advanced training in practical aspects of coastal, harbour and offshore projects and in the management and administration of marine engineering firms.

The programme offers five specialisations:

- **Artic Marine Coastal Engineering**
- **Coastal Engineering**
- **Engineering and Environment**
- **Environment and Management**
- **Marine Operations and Management**

**Duration and credit load:**  
4 semesters / 120 ECTS credits

**Delivery:**  
Face-to-face

**Language of instruction:**  
English

**Coordination:**  
• TUDelft. Technische Universiteit Delft (NL)

**Participating institutions:**  
• UPC. Universitat Politècnica de Catalunya  
• NTNU. Norwegian University of Science and Technology (NO)  
• City University of London (GB)  
• University of Southampton (GB)

**Contact:**  
area.academica.camins@upc.edu  
cesar.mosso@upc.edu  
agustin.arcilla@upc.edu

### Erasmus Mundus master's degree in Computational Mechanics

This master's degree provides specialised training in computational mechanics, with applications to solids and fluids and in a range of cross-disciplinary areas. It provides students with the skills to model, formulate, analyse and implement simulation tools for solving advanced engineering problems.

**Duration and credit load:**  
4 semesters / 120 ECTS credits

**Delivery:**  
Face-to-face

**Language of instruction:**  
English

**Coordination:**  
• UPC. Universitat Politècnica de Catalunya

**Participating institutions:**  
• ECN. École Central de Nantes (FR)  
• Swansea University (GB)  
• Tsinghua University (CN)  
• Universität Stuttgart (DE)

**Contact:**  
area.academica.camins@upc.edu  
science@cimne.upc.edu  
pedro.diez@upc.edu

### Erasmus Mundus master's degree in Flood Risk Management

This master's degree offers integrated scientific training in the field of flood risk management. Students learn to identify the main physical processes in river and coastal basins, to analyse the factors that have a bearing on floods and sustainable flood management, and to use advanced hydroinformatic and flood modelling tools.

**Duration and credit load:**  
4 semesters / 120 ECTS credits

**Delivery:**  
Face-to-face

**Language of instruction:**  
English

**Coordination:**  
• UNESCO-IHE Institute for Water Education (NL)

**Participating institutions:**  
• UPC. Universitat Politècnica de Catalunya  
• Technische Universität Dresden (DE)  
• University of Ljubljana (SI)

**Contact:**  
area.academica.camins@upc.edu  
allen.bateman@upc.edu

### Erasmus Mundus master's degree in Structural Analysis of Monuments and Historical Constructions (SAHC)

This master's degree provides advanced engineering training in the field of conservation and restoration of architectural structures with historical and cultural significance. Students learn to apply a range of experimental and numerical techniques for the field of conservation as they acquire interdisciplinary knowledge covering relevant aspects of architecture, materials science and other disciplines.

**Duration and credit load:**  
2 semesters / 60 ECTS credits

**Delivery:**  
Face-to-face

**Language of instruction:**  
English

**Coordination:**  
• Universidade do Minho (PT)

**Participating institutions:**  
• UPC. Universitat Politècnica de Catalunya  
• Czech Technical University in Prague (CZ)  
• Università degli Studi di Padova (IT)

**Contact:**  
area.academica.camins@upc.edu  
pere.roca.fabregat@upc.edu

### Master's degree in Biomedical Engineering

This interuniversity master's degree provides scientific, technical and practical training geared towards solving engineering problems in biology and medicine, focusing specifically on applications in the areas of healthcare, industry, research, development and innovation.

**Duration and credit load:**  
2 semesters / 60 ECTS credits

**Delivery:**  
Face-to-face

**Languages of instruction:**  
Spanish and English

**Coordination:**  
• UB. University of Barcelona (ES)

**Participating institution:**  
• UPC. Universitat Politècnica de Catalunya

**Contact:**  
montserrat.vallverdu@upc.edu

### Master's degree in Optometry and Vision Sciences

This master's degree provides specialised professional training in the following areas of optics and optometry: the cornea and contact lenses, paediatric optometry, geriatric optometry, visual therapies, low vision and optometric aspects of refractive surgery. It enables students to improve their applied clinical skills and prepares them for research in the field of vision sciences.

**Duration and credit load:**  
2 semesters / 60 ECTS credits

**Delivery:**  
Blended learning

**Languages of instruction:**  
Catalan and Spanish

**Contact:**  
info.muocv.foot@upc.edu

## → INDUSTRIAL DESIGN AND MANUFACTURING

### Master's degree in Automatic Systems and Industrial Electronics Engineering (MUESAEI) Terrassa

This master's degree gives students the knowledge and skills to devise, design and implement automatic electronic systems for process automation and robotisation.

The following specialisations are offered:

- **Advanced Production and Automation Technologies**
- **Optimal Management of Electrical Energy**

**Duration and credit load:**  
3 semesters / 90 ECTS credits

**Delivery:**  
Face-to-face

**Languages of instruction:**  
Catalan, Spanish and English

**Contact:**  
admissions.masters.etseiat@upc.edu

### Master's degree in Automatic Systems and Industrial Electronics Engineering (MUESAEI) Vilanova i la Geltrú

This master's degree is oriented towards professional and industrial practice and aims to extend the body of knowledge acquired professionally and academically in fields of industrial engineering such as electrical engineering, mechanical engineering, industrial electronics and product-oriented design.

It provides theoretical and practical knowledge applied to the production processes and advanced automation (automatic control, smart systems, computer vision, etc.) involved in process automation and taking into account the optimal management of energy. The master's degree allows students to complement their study with industrial work experience.

It offers a specialisation in:

- **Intelligent Systems**

**Duration and credit load:**  
3 semesters / 90 ECTS credits

**Delivery:**  
Face-to-face

**Languages of instruction:**  
Spanish, Catalan and English

**Contact:**  
info.epsevg@upc.edu

### Master's degree in Automotive Engineering

This master's degree provides advanced training in the fundamental theoretical and practical aspects of automotive engineering and manufacturing technologies. The course includes detailed examination of individual elements such as bodywork, chassis components, power train, mechanical systems and electronics and of the planning and management of vehicle development.

**Duration and credit load:**  
4 semesters / 120 ECTS credits

**Delivery:**  
Face-to-face

**Languages of instruction:**  
Catalan and Spanish

**Contact:**  
admissions.etseib@upc.edu

### Master's degree in Biomedical Engineering

This interuniversity master's degree provides scientific, technical and practical training geared towards solving engineering problems in biology and medicine, focusing specifically on applications in the areas of healthcare, industry, research, development and innovation.

**Duration and credit load:**  
2 semesters / 60 ECTS credits

**Delivery:**  
Face-to-face

**Languages of instruction:**  
Spanish and English

**Coordination:**  
• UB. University of Barcelona (ES)

**Participating institution:**  
• UPC. Universitat Politècnica de Catalunya

**Contact:**  
montserrat.vallverdu@upc.edu

### Master's degree in Chemical Engineering

This master's degree provides scientific and technical training in the field of chemical engineering, offering a broad overview of chemical process technologies and the associated safety considerations and protection measures.

The following specialisations are offered:

- **Biotechnology**
- **Chemical Process**
- **Polymers and Biopolymers**

**Duration and credit load:**  
4 semesters / 120 ECTS credits

**Delivery:**  
Face-to-face

**Language of instruction:**  
Spanish

**Contact:**  
admissions.etseib@upc.edu

### Master's degree in Energy Engineering KIC InnoEnergy

This master's degree addresses current issues in the following areas of energy engineering: resources, production technologies, transport and distribution, environmental impact, efficiency, energy conservation and the rational use of energy. The course is taught within the framework of the UPC's Energy Campus, an International Campus of Excellence.

The following specialisations are offered:

- **Electrical Energy**
- **Energy Management**
- **Renewable Energies**
- **Thermal Energy**

This master's degree is part of the KIC InnoEnergy educational project, as are the following international master's degrees:

- Environmental Pathways for Sustainable Energy Systems (SELECT)
- Renewable Energy (RENE)
- Smart Cities
- Smart Electrical Networks and Systems (SENSE)

**Duration and credit load:**  
4 semesters / 120 ECTS credits

**Delivery:**  
Blended learning

**Languages of instruction:**  
Spanish and English

**International double-degree agreement with:**  
• École Polytechnique (FR)

**Contact:**  
master.energia@upc.edu

### Master's degree in Fibrous Material Technology Engineering

This master's degree provides the expertise and advanced skills to work in textile, paper and graphic engineering.

The programme offers two specialisations:

- **Textile Engineering**
- **Paper and Graphics Engineering**

**Duration and credit load:**  
3 semesters / 90 ECTS credits

**Delivery:**  
Face-to-face

**Language of instruction:**  
Spanish

**Contact:**  
sots-academica@eet.upc.edu

### Master's degree in Industrial Engineering Barcelona

This master's degree provides multidisciplinary scientific and technical training applicable across all areas of industrial technologies.

The following specialisations are offered:

- **Automatic Control**
- **Biomedical Engineering**
- **Chemistry**
- **Construction and Structures**
- **Electrical Engineering**
- **Electronic Engineering**
- **Energy**
- **Industrial Scheduling**
- **Materials**
- **Mechanics**

**Duration and credit load:**  
4 semesters / 120 ECTS credits

**Delivery:**  
Face-to-face

**Languages of instruction:**  
Catalan, Spanish and English

**Contact:**  
admissions.etseib@upc.edu



### Master's degree in Industrial Engineering Terrassa

This master's degree provides multidisciplinary scientific and technical training applicable across all areas of industrial technologies. The following specialisations are offered:

- **Construction and Structures**
- **Electrical Engineering**
- **Fibrous Biomaterials**
- **Industrial Scheduling**
- **Mechanics**
- **Technical Textiles and Multifunctional Structures**
- **Thermal Energetics**

**Duration and credit load:**  
4 semesters / 120 ECTS credits

**Delivery:**  
Face-to-face

**Languages of instruction:**  
Catalan, Spanish and English

**International double-degree agreements with:**

- Cranfield University (GB)
- The Henry Samueli School of Engineering – University of California, Irvine (US)

**Contact:**  
admissions.masters.etsei@upc.edu

### Master's degree in Leather Engineering

This master's degree provides the scientific and technical knowledge to devise and design processes, machinery and installations for the leather engineering industry and to apply effective environmental protection and management systems.

**Duration and credit load:**  
3 semesters / 90 ECTS credits

**Delivery:**  
Blended learning

**Languages of instruction:**  
Catalan, Spanish and English

**International double-degree agreement with:**

- CIATEC, A.C. Centro de Innovación Aplicada en Tecnologías Competitivas (MX)

**Contact:**  
director@eei.upc.edu

### Master's degree in Management Engineering Barcelona

This master's degree provides students with the knowledge, technical abilities and skills to manage, organise and lead teams, projects and companies, particularly in the fields of production, logistics, human resources, marketing and financial management.

**Duration and credit load:**  
4 semesters / 120 ECTS credits

**Delivery:**  
Face-to-face

**Languages of instruction:**  
Catalan, Spanish and English

**Contact:**  
admissions.etseib@upc.edu

### Master's degree in Management Engineering Terrassa

This master's degree provides students with the knowledge, technical abilities and skills to manage, organise and lead teams, projects and companies, particularly in the fields of production, logistics, human resources, marketing and financial management.

**Duration and credit load:**  
4 semesters / 120 ECTS credits

**Delivery:**  
Blended learning

**Languages of instruction:**  
One group is taught in Spanish and the other in English.

**Contact:**  
admissions.masters.etsei@upc.edu

### Master's degree in Materials Science and Engineering

This master's degree provides advanced training in the field of materials science and engineering, addressing the structure, properties, processing and applications of metallic, ceramic, polymeric and biological materials. The course covers traditional structural materials, functional materials, nanomaterials and biomaterials.

**Duration and credit load:**  
4 semesters / 120 ECTS credits

**Delivery:**  
Face-to-face

**Languages of instruction:**  
Spanish and English

**Contact:**  
admissions.etseib@upc.edu

### Master's degree in Supply Chains, Transport and Mobility

This master's degree offers a professional track and a research track and is intended to train professionals with a high level of expertise in the analysis, management and optimisation of logistics and transport systems in civil engineering and industrial engineering.

The following specialisations are offered:

- **Supply Chains**
- **Transport and Mobility**

**Duration and credit load:**  
4 semesters / 120 ECTS credits

**Delivery:**  
Face-to-face

**Languages of instruction:**  
Catalan, Spanish and English

**Contact:**  
admissions.etseib@upc.edu

### Master's degree in Automatic Control and Robotics

This master's degree focuses on engineering in the fields of automatic control and robotics, combining aspects of industrial engineering, such as electrical and mechanical engineering, with elements of industrial electronics and artificial intelligence. Students acquire multidisciplinary training in the analysis and optimisation of process control, automatic control systems, robotics, computer vision, computer science and communication.

**Duration and credit load:**  
4 semesters / 120 ECTS credits

**Delivery:**  
Face-to-face

**Language of instruction:**  
English

**Contact:**  
admissions.etseib@upc.edu

### Master's degree in Nuclear Engineering KIC InnoEnergy

This master's degree provides advanced training in the fundamental theoretical and practical aspects of nuclear engineering, energy production technologies, and the life cycle and spent fuel management strategies of nuclear facilities. Students also acquire a strategic understanding of regulatory and safety considerations in the nuclear power sector. This master's degree is included in the KIC InnoEnergy educational project, as is the European Master in Nuclear Energy (EMINE).

**Duration and credit load:**  
3 semesters / 90 ECTS credits

**Delivery:**  
Face-to-face

**Language of instruction:**  
English

**Contact:**  
admissions.etseib@upc.edu

### Erasmus Mundus master's degree in Advanced Materials Science and Engineering (AMASE)

This master's degree provides cross-disciplinary training in the field of materials science and engineering, addressing the structure, properties, processing and applications of metallic, ceramic, polymeric and biological materials. The course covers traditional structural materials, functional materials, nanomaterials and biomaterials.

**Duration and credit load:**  
4 semesters / 120 ECTS credits

**Delivery:**  
Face-to-face

**Languages of instruction:**  
Spanish and English

**Coordination:**  
• Universität des Saarlandes (DE)

**Participating institutions:**  
• UPC. Universitat Politècnica de Catalunya  
• INPL. Institut Nationale Polytechnique de Lorraine (FR)  
• LTU. Luleå Tekniska Universitet (SE)

**Contact:**  
masters.etseib@upc.edu

# ↑ INFORMATICS ENGINEERING

### Master's degree in Informatics Engineering

This master's degree aims to provide general, interdisciplinary education in informatics, covering topics such as digital identity, accessibility, games, mobile devices, bioinformatics, the Internet, security, information systems, high-performance computing, data mining and intelligent systems. Its courses are designed to enable students to develop professional skills such as those involved in managing projects and quality, modelling excellence and leading work groups.

**Duration and credit load:**  
3 semesters / 90 ECTS credits

**Delivery:**  
Face-to-face

**Languages of instruction:**  
Catalan and Spanish

**International double-degree agreements with:**  
• ISIMA. Institut Supérieur d'Informatique, de Modélisation et de leurs Applications – Université Blaise Pascal (FR)  
• PUCP. Pontifical Catholic University of Peru (PE)

**Contact:**  
info.mei@fib.upc.edu

### Master's degree in Artificial Intelligence

This master's degree provides cross-disciplinary training in knowledge engineering, automatic learning and multi-agent systems, natural language processing, reasoning and problems solving, soft computing and artificial intelligence.

**Duration and credit load:**  
3 semesters / 90 ECTS credits

**Delivery:**  
Face-to-face

**Language of instruction:**  
English

**Coordination:**  
• UPC. Universitat Politècnica de Catalunya

**Participating institutions:**  
• UB. University of Barcelona (ES)  
• URV. Rovira i Virgili University (ES)

**International double-degree agreement with:**  
• PUCP. Pontifical Catholic University of Peru (PE)

**Contact:**  
info.mai@fib.upc.edu

## Master's degree in Innovation and Research in Informatics (MIRI)

This master's degree provides the training for professional practice in the fields of advanced computing, computer graphics and virtual reality, computer networks and distributed systems, data mining and business intelligence, high-performance computing and services engineering.

Six specialisations are offered:

- **Advanced Computing**
- **Computer Graphics and Virtual Reality**
- **Computer Networks and Distributed Systems**
- **Data Mining and Business Intelligence**
- **High-performance Computing**
- **Services Engineering**

**Duration and credit load:**  
4 semesters / 120 ECTS credits

**Delivery:**  
Face-to-face

**Language of instruction:**  
English

**Contact:**  
info.miri@fib.upc.edu

## Erasmus Mundus master's degree in Information Technologies for Business Intelligence (IT4BI)

This master's degree provides advanced training in business intelligence, enabling students to develop effective decision-making strategies for the business sector. The course covers many fields of science and technology, such as data warehousing and data mining, content analysis, and business process management, and encompasses aspects of information systems, the internet, decision-making, software engineering, innovation and entrepreneurship.

**Duration and credit load:**  
4 semesters / 120 ECTS credits

**Delivery:**  
Face-to-face

**Language of instruction:**  
English

**Coordination:**  
• ULB. Université Libre de Bruxelles (BE)

**Participating institutions:**  
• UPC. Universitat Politècnica de Catalunya  
• ECP. École Centrale Paris (FR)  
• TUB. Technische Universität Berlin (DE)  
• UFRT. Université François Rabelais de Tours (FR)

**Contact:**  
info.emit4bi@fib.upc.edu

# → NAVAL, MARITIME AND NAUTICAL ENGINEERING

## Master's degree in Marine Engineering

This interdisciplinary master's degree gives students the knowledge and skills to design, plan, operate, maintain and manage marine facilities, covering the main safety, environmental and economic considerations in marine engineering.

**Duration and credit load:**  
3 semesters / 90 ECTS credits

**Delivery:**  
Face-to-face

**Languages of instruction:**  
Catalan and Spanish

**Contact:**  
iechevarrieta@cen.upc.edu

## Master's degree in Nautical Engineering and Maritime Transport

This master's degree provides advanced skills across a range of knowledge areas related to nautical engineering and maritime transport, including the structure and behaviour of ships at sea, maritime transport logistics, and environmental management.

**Duration and credit load:**  
3 semesters / 90 ECTS credits

**Delivery:**  
Face-to-face

**Languages of instruction:**  
Catalan, Spanish and English

**Contact:**  
mcastells@cen.upc.edu

### Master's degree in Applied Telecommunications and Engineering Management (MASTEAM)

This master's degree has a dual orientation towards professional practice and research. It is designed to produce experts in cutting-edge fields in information and communication technologies (ICTs), a sector with high demand for professionals. It offers students a wide range of optional courses and covers topics such as smart cities, the Internet of Things, fifth-generation (5G) mobile communications, sensor networks, optical communications in the cloud, big data and signal processing, software-defined networks and radio, smart objects, network security, business models and ICT company management. Mobility agreements for the master's degree have been signed with several European universities, as well as work placement agreements with telecommunications companies.

**Duration and credit load:**  
2 semesters / 60 ECTS credits

**Delivery:**  
Face-to-face

**Language of instruction:**  
English

**Contact:**  
eetac.mastertelecom@upc.edu

### Master's degree in Electronic Engineering (MEE)

This master's degree offers academic and professional tracks that provide specialised scientific and technical training in the field of electronic engineering. The course covers specific areas including power, analogue and RF electronics, instrumentation and sensors, digital systems, micro- and nanotechnologies and microelectronics.

**Duration and credit load:**  
4 semesters / 120 ECTS credits

**Delivery:**  
Face-to-face and blended learning

**Language of instruction:**  
English

**Contact:**  
masters@etsetb.upc.edu

### Master's degree in Telecommunications Engineering (MET)

This master's degree has a dual orientation towards professional practice and research. It provides a body of knowledge on communications systems, networks, electronics and audiovisual systems so that students can acquire the professional competencies of telecommunications engineers. The master's degree comprises 120 ECTS credits that are divided between a first block of compulsory general training and a second specialisation block. Students can specialise in a given area, such as communications (mobile, optical and radar communications, etc.), electronics, networks or multimedia technology, or pursue an international double degree.

**Duration and credit load:**  
4 semesters / 120 ECTS credits

**Delivery:**  
Face-to-face

**Language of instruction:**  
English

**International double-degree agreement with:**  
• KTH. Royal Institute of Technology (SE)

**Contact:**  
masters@etsetb.upc.edu

**NEW**

### Master's degree in Wireless Communications (WICOM)\*

This interuniversity master's degree offers advanced training in mobile communications and has a clear research orientation. It provides advanced knowledge of mobile and wireless communication technologies for the design, deployment and maintenance of communication networks in businesses and institutions. As specialists in an emerging economic sector, graduates of the master's degree will be in high demand in the labour market. Those seeking to pursue a research career may become junior researchers.

**Duration and credit load:**  
2 semesters / 60 ECTS credits

**Delivery:**  
Face-to-face

**Language of instruction:**  
English

**Coordination:**  
• UPF. Universitat Pompeu Fabra (ES)

**Participating institutions:**  
• UPC. Universitat Politècnica de Catalunya

**Contact:**  
admissions@idec.upf.edu

\* Degree pending approval by the Spanish Universities Council



# → THE ENVIRONMENT, SUSTAINABILITY AND NATURAL RESOURCES

## Master's degree in Environmental Engineering

This master's degree looks closely at the fundamental concepts and criteria that help us to understand the relationship between human action and the environment. Students acquire advanced knowledge of technologies for identifying, preventing, managing and treating pollution vectors and fundamental quality assurance, environmental management and sustainable development tools.

**Duration and credit load:**  
4 semesters / 120 ECTS credits

**Delivery:**  
Face-to-face

**Languages of instruction:**  
Spanish and English

**Contact:**  
[area.academica.camins@upc.edu](mailto:area.academica.camins@upc.edu)  
[alejandro.josa@upc.edu](mailto:alejandro.josa@upc.edu)

## Master's degree in Natural Resources Engineering

This master's degree provides advanced scientific training in strategies and techniques for environmentally sound exploitation and management of natural resources. Its multidisciplinary approach is primarily intended to prepare students for applied research.

**Duration and credit load:**  
2 semesters / 60 ECTS credits

**Delivery:**  
Face-to-face and blended learning

**Languages of instruction:**  
Face-to-face: Catalan  
Blended learning: Spanish

**Contact:**  
[infomasters.manresa@epsem.upc.edu](mailto:infomasters.manresa@epsem.upc.edu)

## Master's degree in Sustainability Science and Technology

This master's degree provides students with the advanced interdisciplinary training to examine interactions between society, the economy and the environment and the scientific and technical strategies for tackling key challenges in the field of sustainable development. It includes a specific pathway on technology for human development and cooperation.

**Duration and credit load:**  
4 semesters / 120 ECTS credits

**Delivery:**  
Face-to-face

**Languages of instruction:**  
Spanish and English

**Contact:**  
[master.sostenibilitat@upc.edu](mailto:master.sostenibilitat@upc.edu)  
[rosas@mmt.upc.edu](mailto:rosas@mmt.upc.edu)

**NEW** **Master's degree in Business Administration and Management\***  
Barcelona

This master's degree aims to produce multifaceted managers who are able to work in different areas of a company by providing students with managerial skills for leadership, decision making, innovation, creativity and communication, in addition to the skills needed to start up a business.

The following specialisations are offered:

- **Strategic Management**
- **International Business**

**Duration and credit load:**  
2 semesters / 60 ECTS credits

**Delivery:**  
Face-to-face and blended learning

**Languages of instruction:**  
The specialisation in International Business is taught entirely in English. For the specialisation in Strategic Management, one group is taught in English and the other in Spanish.

**Contact:**  
comunicacion@eae.es

\* Degree pending approval by the Spanish Universities Council

**NEW** **Master's degree in Business Administration and Management\***  
Terrassa

This master's degree aims to produce multifaceted managers who are able to work in different areas of a company by providing students with managerial skills for leadership, decision making, innovation, creativity and communication, in addition to the skills needed to start up a business.

The following specialisations are offered:

- **Strategic Management**
- **International Business**

**Duration and credit load:**  
2 semesters / 60 ECTS credits

**Delivery:**  
Face-to-face and blended learning

**Languages of instruction:**  
Catalan, Spanish and English. The specialisation in International Business is taught entirely in English.

**Contact:**  
admissions@euncet.es

\* Degree pending approval by the Spanish Universities Council

**NEW** **Master's degree in Marketing Management\***  
Barcelona

This master's degree aims to train students to successfully lead marketing departments in companies and organisations by using the leadership skills that they have acquired to respond to the business environment and current market conditions and to turn technological advances into competitive advantages. It provides general training that gives precedence to management skills, financial marketing management skills and an analytical, strategic vision.

The following specialisations are offered:

- **Commercial Management**
- **Strategic Communication**

**Duration and credit load:**  
2 semesters / 60 ECTS credits

**Delivery:**  
Face-to-face and blended learning

**Languages of instruction:**  
One group is taught in Spanish and the other in English.

**Contact:**  
comunicacion@eae.es

\* Degree pending approval by the Spanish Universities Council

**NEW** **Master's degree in Marketing Management\***  
Terrassa

This master's degree aims to train students to successfully lead marketing departments in companies and organisations by using the leadership skills that they have acquired to respond to the business environment and current market conditions and to turn technological advances into competitive advantages. It provides general training that gives precedence to management skills, financial marketing management skills and an analytical, strategic vision.

The following specialisations are offered:

- **Commercial Management**
- **Strategic Communication**

**Duration and credit load:**  
2 semesters / 60 ECTS credits

**Delivery:**  
Face-to-face and blended learning

**Languages of instruction:**  
Catalan and Spanish

**Contact:**  
admissions@euncet.es

\* Degree pending approval by the Spanish Universities Council

**Master's degree in Women's, Gender and Citizenship Studies**

This interuniversity master's degree provides advanced, scientifically rigorous training in women's and gender studies, a field that is directly applicable to contemporary social issues. The following specialisations are offered:

- **Theory, Criticism and Culture**
- **Women, Work and Public Policy**

**Duration and credit load:**  
3 semesters / 90 ECTS credits

**Delivery:**  
Face-to-face y no Face-to-face

**Language of instruction:**  
Catalan

**Coordination:**  
• UB. University of Barcelona (ES)

**Participating institutions:**  
• UPC. Universitat Politècnica de Catalunya  
• UAB. Universitat Autònoma de Barcelona (ES)  
• UdG. University of Girona (ES)  
• UdL. University of Lleida (ES)  
• UPF. Universitat Pompeu Fabra (ES)  
• URV. Rovira i Virgili University (ES)  
• UVIC. University of Vic (ES)

**Contact:**  
masterestudisdones@gmail.com

**Master's degree in Secondary and Upper Secondary Education, Vocational Training and Foreign Language Teaching**

This master's degree provides teacher training for prospective secondary school teachers and teachers of specific vocational training courses. The course is specifically designed to prepare students for a teaching career and qualifies graduates to practise as teachers in public schools and private centres offering compulsory secondary education, upper secondary education and official vocational training.

- **Vocational Training (Industrial Technologies)**
- **Mathematics** (interuniversity)
- **Technology**

**Duration and credit load:**  
2 semesters / 60 ECTS credits

**Delivery:**  
Face-to-face

**Languages of instruction:**  
Catalan and Spanish

**Contact:**  
info.ice@upc.edu

# Doctoral programmes

[www.doctorat.upc.edu](http://www.doctorat.upc.edu)

Doctoral programmes are official university studies that provide advanced training aimed at the acquisition of scientific research skills. Doctoral candidates are supervised by a tutor and a thesis supervisor over a maximum of three years of full-time study or five years of part-time study. Both generic training and training specific to the programme are provided, in addition to research training that does not carry ECTS credits. Doctoral candidates must write a doctoral thesis that includes original research results and conclude the programme by presenting and defending it to examiners.

## ACCESS REQUIREMENTS

Access to doctoral programmes is open to candidates who meet the following condition:

- Holders of a Spanish official bachelor's degree (or equivalent) and master's degree.

The following candidates will also be considered:

- Holders of a qualification issued by a university in a country that does not belong to the European Higher Education Area (EHEA). If the qualification has not been homologated, the UPC will verify that the course of study corresponds to a level of education equivalent to an official Spanish master's degree and that the qualification obtained would provide admission to a doctoral programme in the country in which it was awarded. This access route in no way implies the homologation of the qualification or its recognition for any purpose other than admission to the doctoral programme.
- Holders of a Spanish official university qualification or an official university qualification issued by a university that belongs to the EHEA that qualifies the holder for admission to a master's degree, who have completed at least 300 ECTS credits in official university studies, including at least 60 credits of an official master's degree.
- Holders of a Spanish official bachelor's degree with a total study load of at least 300 ECTS credits. Candidates wishing to be admitted via this route will be required to complete bridging courses, unless the curriculum of the bachelor's degree in question included the same number of research training credits as required in a master's degree course.
- Holders of an official university qualification who, having passed the entrance examination for specialised medical training, have completed at least two years of a training course leading to an official degree in a health-sciences specialisation.
- Holders of a Spanish doctoral qualification issued under previous university regulations.

Specific conditions apply to holders of an official university qualification awarded under previous regulations: pre-EHEA degree (llicenciatura/licenciatura), engineering degree (enginyeria/ingeniería), architecture degree (arquitectura/arquitectura). In these cases, the academic committee of

the doctoral programme will be responsible for determining whether the candidate meets the access requirements and may set additional bridging courses.

Further information:

[www.doctorat.upc.edu/new-students/access-requeriments](http://www.doctorat.upc.edu/new-students/access-requeriments)

## ADMISSION

Candidates may request admission to a doctoral programme at any point in the academic year via the Doctoral School website. The selection process includes an appraisal of the candidate's previous studies, full CV listing research experience and publications, grants and financial aid received for previous studies, interest in the programme, and any other merits deemed relevant.

Further information:

[www.doctorat.upc.edu/new-students/admission](http://www.doctorat.upc.edu/new-students/admission)

## FEES, GRANTS AND FINANCIAL AID

The Government of Catalonia passes a decree establishing the fees for academic services at public universities each academic year. Fees for doctoral programmes are those applicable to public universities in Spain. For the 2014-2015 academic year, they did not exceed €550. In the specific case of Erasmus Mundus joint doctorates, fees are set by the consortium of universities responsible for organising each programme.

Find out about grants and financial aid and other ways of funding doctoral study:

[www.doctorat.upc.edu/grants](http://www.doctorat.upc.edu/grants)

## INDUSTRIAL DOCTORATES

The UPC participates in the Industrial Doctorates Plan promoted by the Government of Catalonia, by means of which doctoral candidates train as researchers within the framework of a strategic research project at a company.

More information:

[www.doctorat.upc.edu](http://www.doctorat.upc.edu)

## ARCHITECTURE, URBANISM AND BUILDING CONSTRUCTION

Architectural Design	<a href="mailto:xavier.montey@upc.edu">xavier.montey@upc.edu</a>
Architectural, Civil and Urban Heritage and Rehabilitation of Existing Buildings	<a href="mailto:doctorat.com.visual.arq@upc.edu">doctorat.com.visual.arq@upc.edu</a>
Architecture, Energy and the Environment	<a href="mailto:helena.coch@upc.edu">helena.coch@upc.edu</a>
Architecture Technology, Construction and Urbanism	<a href="mailto:joan.lluis.zamora@upc.edu">joan.lluis.zamora@upc.edu</a>
Theory and History of Architecture	<a href="mailto:fernando.alvarez@upc.edu">fernando.alvarez@upc.edu</a>
Urban and Architectonic Management and Valuations	<a href="mailto:josep.roca@upc.edu">josep.roca@upc.edu</a>
Urbanism	<a href="mailto:joaquin.sabate@upc.edu">joaquin.sabate@upc.edu</a>

## CIVIL ENGINEERING

Civil Engineering	<a href="mailto:capestudis.postgrau.camins@upc.edu">capestudis.postgrau.camins@upc.edu</a>
Construction Engineering	<a href="mailto:josep.ramon.casas@upc.edu">josep.ramon.casas@upc.edu</a>
Earthquake Engineering and Structural Dynamics	<a href="mailto:lluis.pujades@upc.edu">lluis.pujades@upc.edu</a>
Environmental Engineering	<a href="mailto:santiago.gasso@upc.edu">santiago.gasso@upc.edu</a>
Erasmus Mundus Doctor in Simulation in Engineering and Entrepreneurship Development (SEED)	<a href="mailto:antonio.huerta@upc.edu">antonio.huerta@upc.edu</a>
Geotechnical Engineering	<a href="mailto:eduardo.alonso@upc.edu">eduardo.alonso@upc.edu</a>
Nautical and Marine Engineering and Naval Radio Electronics	<a href="mailto:antonio.isalgue@upc.edu">antonio.isalgue@upc.edu</a>
Marine Sciences	<a href="mailto:agustin.arcilla@upc.edu">agustin.arcilla@upc.edu</a>
Structural Analysis	<a href="mailto:miguel.cervera@upc.edu">miguel.cervera@upc.edu</a>
Transport Engineering and Infrastructure	<a href="mailto:andres.lopez-pita@upc.edu">andres.lopez-pita@upc.edu</a>

## INDUSTRIAL DESIGN AND MANUFACTURING

Automatic Control, Robotics and Vision	<a href="mailto:raul.suarez@upc.edu">raul.suarez@upc.edu</a>
Biomedical Engineering	<a href="mailto:raimon.jane@upc.edu">raimon.jane@upc.edu</a>
Business Administration and Management	<a href="mailto:doctoratb.utgaeib@upc.edu">doctoratb.utgaeib@upc.edu</a>
Chemical Process Engineering	<a href="mailto:joaquim.casal@upc.edu">joaquim.casal@upc.edu</a>
Electric Energy Systems	<a href="mailto:prodriguez@ee.upc.edu">prodriguez@ee.upc.edu</a>
Electrical Engineering	<a href="mailto:montanya@ee.upc.edu">montanya@ee.upc.edu</a>
Erasmus Mundus Doctor in Advanced Materials Science and Engineering (DOCMASE)	<a href="mailto:marc.j.anglada@upc.edu">marc.j.anglada@upc.edu</a>
Erasmus Mundus Doctor in Environomical Pathways for Sustainable Energy Services (SELECT+)	<a href="mailto:ignasi.casanova@upc.edu">ignasi.casanova@upc.edu</a>
Materials Science and Engineering	<a href="mailto:maria.lluisa.masPOCH@upc.edu">maria.lluisa.masPOCH@upc.edu</a>
Mechanical Engineering, Fluids and Aeronautics	<a href="mailto:egusquiza@mf.upc.edu">egusquiza@mf.upc.edu</a>
Natural Resources and the Environment	<a href="mailto:msole@emrn.upc.edu">msole@emrn.upc.edu</a>
Nuclear and Ionising Radiation Engineering	<a href="mailto:josep.sempau@upc.edu">josep.sempau@upc.edu</a>
Polymers and Biopolymers	<a href="mailto:sebastian.munoz@upc.edu">sebastian.munoz@upc.edu</a>
Sustainability	<a href="mailto:antoni.roca-rosell@upc.edu">antoni.roca-rosell@upc.edu</a>
Textile and Paper Engineering	<a href="mailto:tvidal@etp.upc.edu">tvidal@etp.upc.edu</a>
Thermal Engineering	<a href="mailto:oliva@cttc.upc.edu">oliva@cttc.upc.edu</a>

## INFORMATION AND COMMUNICATION TECHNOLOGIES ENGINEERING

Artificial Intelligence	<a href="mailto:miquel@cs.upc.edu">miquel@cs.upc.edu</a>
Computer Architecture	<a href="mailto:xmasip@ac.upc.edu">xmasip@ac.upc.edu</a>
Computing	<a href="mailto:mjserna@lsi.upc.edu">mjserna@lsi.upc.edu</a>
Electronic Engineering	<a href="mailto:eel.coordoctorat@upc.edu">eel.coordoctorat@upc.edu</a>
Erasmus Mundus Doctor in Distributed Computing	<a href="mailto:emjd-dc@ac.upc.edu">emjd-dc@ac.upc.edu</a>
Erasmus Mundus Doctor in Information Technologies for Business Intelligence (IT4BI - DC)	<a href="mailto:aabello@essi.upc.edu">aabello@essi.upc.edu</a>
Signal Theory and Communications	<a href="mailto:cap.estudis@tsc.upc.edu">cap.estudis@tsc.upc.edu</a>
Telematics Engineering	<a href="mailto:responsable.doc-entel@entel.upc.edu">responsable.doc-entel@entel.upc.edu</a>

## SCIENCES

Aerospace Science and Technology	<a href="mailto:bertran@tsc.upc.edu">bertran@tsc.upc.edu</a>
Agri-Food Technology and Biotechnology	<a href="mailto:francesc.sepulcre@upc.edu">francesc.sepulcre@upc.edu</a>
Applied Mathematics	<a href="mailto:doctoma.fme@upc.edu">doctoma.fme@upc.edu</a>
Computational and Applied Physics	<a href="mailto:trinitat.pradell@upc.edu">trinitat.pradell@upc.edu</a>
Optical Engineering	<a href="mailto:arjona@oo.upc.edu">arjona@oo.upc.edu</a>
Photonics	<a href="mailto:david.artigas@icfo.es">david.artigas@icfo.es</a>
Statistics and Operations Research	<a href="mailto:jordi.castro@upc.edu">jordi.castro@upc.edu</a>



# Practical information

## SCHOOLS AND ACCOMMODATION

Most UPC schools are in Barcelona and nearby towns: Castelldefels, Igualada, Manresa, Sant Cugat del Vallès, Terrassa and Vilanova i la Geltrú. With regard to accommodation, universities in Barcelona have an agreement with Resa Housing, an organisation that specialises in student accommodation.

[www.resahousing.com](http://www.resahousing.com)  
[info@resahousing.com](mailto:info@resahousing.com)

## VISAS AND MEDICAL INSURANCE

Non-EU nationals whose visit exceeds three months must apply for a student visa—not a tourist visa—at the Spanish embassy or consulate in their home country. If the duration of the course of study in Spain is less than six months, the embassy may issue a student visa specifying ‘for a course of study lasting a total of 180 days’. With this type of visa you will not be eligible for a student card and you will not be allowed to extend your stay. If the duration of the course of study in Spain is more than six months, the embassy may issue a long-stay student visa.

You must also take into account that many embassies and consulates may take a minimum of three months to issue a visa.

Regarding medical insurance, EU nationals who are covered by the public health service must apply for the European Health Insurance Card in their home country before travelling. Students from other countries must enquire whether there is an agreement between the healthcare systems of the home country and Spain. If there is such an agreement, you must apply in your home country for a certificate that allows you to benefit from public healthcare in Spain if emergency care is needed. However, in most cases there is no such an agreement, which means that you must take out private health insurance, as the embassy or consulate will stipulate when you apply for a student visa.

[www.upc.edu/sri/students](http://www.upc.edu/sri/students)

## GRANTS AND FINANCIAL AID

Find out all the options for grants, student financial aid and funding opportunities offered by the UPC and other public and private bodies.

[www.upc.edu/learning/grants-and-financial-aid/](http://www.upc.edu/learning/grants-and-financial-aid/)

## LANGUAGES

The UPC offers you a range of services designed to help you to adapt to life in Barcelona, including language courses.

[www.upc.edu/sit/reception](http://www.upc.edu/sit/reception)

## FURTHER INFORMATION

### LIVING IN BARCELONA

[www.bcn.cat/barcelonavistaper](http://www.bcn.cat/barcelonavistaper)

Please check the International Students section of our website:

[www.upc.edu/sri/students](http://www.upc.edu/sri/students)

### MASTER'S DEGREES

[www.mastersdegrees.upc.edu](http://www.mastersdegrees.upc.edu)

+34 934 016 200

[info@upc.edu](mailto:info@upc.edu)

### DOCTORAL PROGRAMMES

[www.doctorat.upc.edu](http://www.doctorat.upc.edu)

+34 934 016 114

[escola.doctorat@upc.edu](mailto:escola.doctorat@upc.edu)

### INTERNATIONAL RELATIONS

[www.upc.edu/sri](http://www.upc.edu/sri)

+34 934 137 505

[international@upc.edu](mailto:international@upc.edu)



Casa Batlló, a Modernista building by Antoni Gaudí. Barcelona

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