UPC studies

MASTER'S DEGREE IN
URBAN MOBILITY

Barcelona School of Civil Engineering

UNIVERSITAT POLITÈCNICA
DE CATALUNYA
BARCELONATECH

MASTER'S DEGREE IN URBAN MOBILITY

The master's degree in Urban Mobility aims to improve urban mobility in our cities and around the world, which requires not just improving technical infrastructure but also holistic planning, execution and operation. It aims to train professionals from a wide range of engineering backgrounds and to provide them with specific skills and knowledge of transport operations, mobility services, data science, ICT and energy technologies for sustainable mobility. The programme also provides the students with the fundamental tools of entrepreneurship and innovation that will enable them to face the rapid transformation of global society.

The master's degree in Urban Mobility is offered as an EIT Urban Mobility Master School programme or as a local master's programme at the UPC. Note that their enrolment periods and admission requirements might be different. In both cases, the master's degree is managed at the UPC's Barcelona School of Civil Engineering. An international double degree may be awarded if the master's degree is taken within the framework of the Urban Mobility Master School, which is part of the European Institute of Technology (EIT).
Partner universities include Aalto University, Ghent University, KTH Royal Institute of Technology, Politecnico di Milano, TU Eindhoven University and the University of Tartu.

Curriculum

This information may be subject to change.
Up-to-date information is available at upc.edu

120 ECTS credits

1st year

1st semester

Mobility Modelling	5
Operation and Management of Transport Systems	5
Data Analysis in Transport Systems	5
Introduction to Supply Chains	5
Innovation & Entrepreneurship for World Challenges	5
Decision Making & Economy in Urban Mobility	5

2nd semester

Liveable Cities and Urban Mobility	5
Behaviour and Demand Modelling in Urban Mobility	5
Intensification Subjects (2)	10
Project Based on an Innovation Challenge	10

2nd year

1st semester

Innovation and Entrepreneurship Subjects (1)	10
Intensification Subjects (2)	20

2nd semester

Master's Thesis	30

Compulsory subjects Optional intensification subjects Entrepreneurship

1st

University in Spain in Civil and Structural Engineering, according to the 2022 QS World University Rankings by Subject

93%

UPC graduate employment rate

Source: 2020 graduate employment survey of Catalan universities by the Catalan University Quality Assurance Agency (AQU Catalunya)

Why this master's degree?

The master's degree is designed to meet the growing need for qualified professionals in transport and mobility by training students to plan, organise, finance and manage transport and logistics services and create new business models in this area.

Who is it for?

The master's degree offers 30 places and is aimed mainly at graduates in:

- Civil, transport, industrial, mechanical, construction, telecommunications and informatics engineering.
- Applied sciences (physics, mathematics, statistics or similar).
- Architecture, transport geography, urban planning, urbanism, economics and similar subjects, which may require bridging courses.

Intensifications

- **Sustainable Urban Mobility Transitions**

New technologies, business models and global sustainability goals are transforming our cities and how we move. This intensification prepares students to become the next urban innovators, leaders in urban mobility, so that they can face these challenges and help create urban environments that consume fewer resources, contribute less to climate change and support more liveable and healthy neighbourhoods.

- **Smart Mobility Data Science and Analytics**

This intensification is designed from an interdisciplinary perspective, and it emphasises new and emerging transport technologies and services for citizens, goods and logistics. Graduates will be scientists who are capable of exploring our ever-increasing urban data and extracting meaningful insights that are useful for supporting cities' strategic decisions and for pushing us towards a more sustainable future.

Timetables, languages and campus

Classes are taught in English and are typically held between 2 p.m. and 8 p.m. Lectures are held on the UPC's North Campus, at the School of Civil Engineering.

Mobility and work placement

The EIT Urban Mobility Master School programmes, which are supported by the EIT, an EU body, integrate leading technological knowledge and training and practice in innovation and entrepreneurship. Specifically, this version of the degree implies: Students study at two partner universities during the two-year programme and graduate with a double degree and an EIT Label certificate.

- Students take part in an intensive summer school across two European cities that addresses critical city-based challenges.
- A work placement is required as part of the curriculum, to provide students with valuable work experience in industry or experience of a European city.
- Students are eligible for a specific grants programme.

In the local version of the master's degree in Urban Mobility, students can complete semester-long stays at other universities through international mobility programmes such as Erasmus, in Europe, and exchanges with institutions in China, the United States and Canada, with a total of 126 universities participating. Students also have the opportunity to complete work placements, with over 300 companies to choose from.
Both, mobility and internships are voluntary in the local version of the master.

Professional opportunities

Graduates will have a versatile skill set and the ability to spur and manage innovation and to excel and collaborate across the many disciplines within urban mobility, as well as the technical capacity and entrepreneurial know-how to maximise future solutions. The master's degree enables them to pursue a wide range of careers in companies and research centres in technological areas or the public sector.

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(1) **Innovation and Entrepreneurship Optional Subjects:**
Eit Summer School (only EIT version), Product or Service Development Project, Technology Asset Management, Case Studies in Urban Mobility.

(2) **Sustainable Urban Mobility Transitions Optional Subjects:**
Optimization Models for Transportation Networks, Railway Transport, Public Transport, Traffic Simulation Models, Sustainable Mobility, Port Management & Maritime Transport, Freight Transport, Vehicle Routing Models, Smart Mobility, Airport Management, Traffic and Mobility & Development.

Smart Mobility Data Science & Analytics Optional Subjects:
Machine Learning, Data Management for Transportation, Algorithms, Data Structures and Databases, Information Retrieval and Recommended Systems, Data Analysis and Knowledge Discovery, Process-Oriented Data Science, Traffic Simulation Models.

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The Barcelona School of Civil Engineering is an international benchmark in civil and environmental engineering because of the quality of its teaching and high-level research. It is the only school in Catalonia that teaches civil engineering.

The Barcelona School of Civil Engineering belongs to the Universitat Politècnica de Catalunya - BarcelonaTech (UPC), a renowned public institution of research and higher education in the fields of engineering, architecture, sciences and technology. With 50 years of history and more than 30,000 students, the UPC has the greatest concentration of research and technological innovation in southern Europe. It is the best university in Spain in Civil and Structural Engineering, according to the 2022 QS World University Rankings by Subject.

Your talent, our commitment to the future

Further information:
camins.upc.edu

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Barcelona School of Civil Engineering

Other schools participating:
Barcelona School of Architecture
Barcelona School of Industrial Engineering
Barcelona School of Informatics
Barcelona School of Telecommunications Engineering

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