

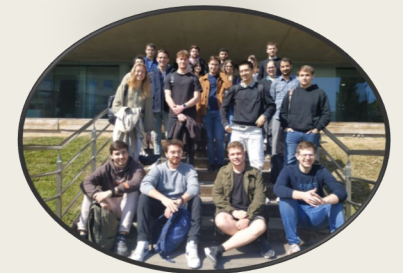


Master's degree in Urban Mobility



Presentation

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 - Current MUM students



Presentation overview

- **Why this master? Why in the UPC – BarcelonaTech?**
- **What is this master?**
 - EIT Urban Mobility
- **More practical information:**
 - Overview, modalities and intensifications
 - Curriculum
 - Mobility and internships
 - Expected results
 - Languages
 - Where & when
 - Admission
 - Useful links and e-mails

Why a master in Urban Mobility?

- **System wide** approach to urban mobility => Multiple stakeholders, technologies, managing strategies, funding options, etc.
- Analysis, planning, management, optimization, financing of...
 - Transport & Mobility
 - Supply chain & Urban logistics
- Innovation and Entrepreneurship.

Plan, design, implement mobility SERVICES

- This master deals with really **hot topics** in our societies, with a brilliant future in the academic and professional fields

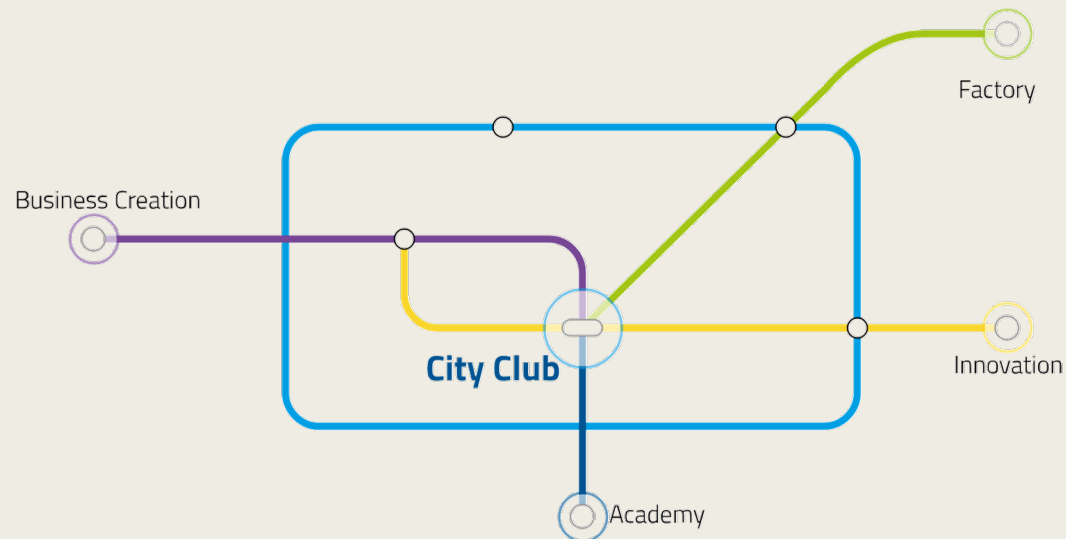
A revolution in urban mobility

- We are in the era of the (urban) **mobility revolution**
 - Efficient collective transportation systems
 - Green mobility => pedestrians, cyclists... return cities to people
 - Rethink the urban space => tactical urban planning, reduce the role of the car
 - Shared mobility initiatives => Uber, Car-to-Go, Bicing, eCooltra
 - Autonomous vehicles => impact to mobility management
 - Smart cities => ICT & Big Data applied to urban services



Innovation & entrepreneurship...

- From innovative ideas to real-life applications
- Mobility products
- Best practices and case studies
- Urban mobility living labs



With a brilliant future...



- There is a **lack of qualified professionals** and decision makers in these topics
- Many sectors of professional activity
 - Almost any company in any sector requires a professional to deal with Transportation & Logistics
 - Mobility and transportation attract the attention of Administrations and Private Companies
 - Multidisciplinary sector, with lack of engineering backgrounds.
 - 93% of professional insertion rate. Lots of professional opportunities.
- Transportation & Logistics amongst the technical studies with more potential
 - According to experts view and surveys.
 - EIT urban mobility

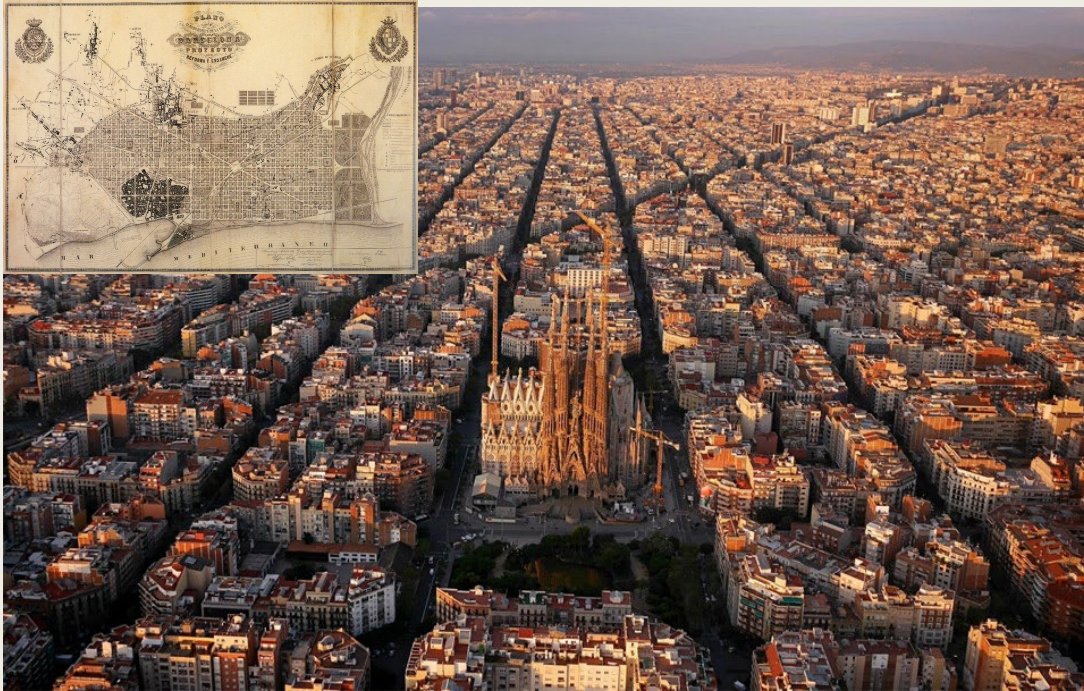
Why in the UPC – BarcelonaTech?



- 9 Campuses scattered in 6 cities in the Barcelona province
- 18 Schools (embracing multiple departments)
- ≈ 30.000 students, ≈ 3.000 teaching and research staff, ≈ 2.000 administrative and service staff



About Barcelona (1/2)



Non-curricular activities



About Barcelona (2/2)

<https://www.barcelona.cat/en/discoverbcn>



EIT Urban Mobility

- Knowledge and Innovation Community (KIC) within the European Institute of Innovation and Technology
- <https://www.eiturbanmobility.eu>
- A European initiative to create livable urban spaces
- Headquarters in Barcelona
- UPC is an academy member of the consortium
- **EIT Urban Mobility Master School – Master in Urban Mobility** <https://www.eiturbanmobility.eu/masterschool/>
- Internationalization of the MUM



MUM overview and modalities

- 2 year full time university master's degree promoted by the EIT Urban Mobility
 - 120 ECTS => Minimum of 2 years
- Shared between several European universities (EIT Urban Mobility consortium)
 - **SUMT:** UPC-BarcelonaTech, TU Eindhoven (only exit), KTH Stockholm, Aalto University, University of Tartu (only exit), Técnico IST Lisboa.
 - **SMSA:** UPC-BarcelonaTech, University of Tartu, Ugent, Técnico IST Lisboa.
- Different modalities: Local UPC, EIT, and Double Degree MECCP+MUM
 - EIT => Year 1 (entry university) – Year 2 (exit university)
 - **UPC local** => 2 years at UPC
 - Double degree MECCP+MUM => 200 ECTS, 3 years.

MUM Intensifications

- 2 Programs or intensifications:

- **Sustainable Urban Mobility Transitions (SUMT)** => Academic coordinator UPC: Prof. Francesc Soriguera (francesc.soriguera@upc.edu)
- **Smart Mobility Data Science & Analytics (SMDSA)** => Academic coordinator UPC: Prof. Lidia Montero (lidia.montero@upc.edu)

- Mandatory minor in Innovation and Entrepreneurship

- **Innovation & Entrepreneurship minor** => Academic coordinator UPC: Prof. Ramon Bragós (ramon.bragos@upc.edu)

UPC Local vs EIT modalities

- All the courses are shared => All students will share all the lectures

MUM (EIT)

- Two different universities: Year 1 (entry university) + Year 2 (exit university).
- <https://www.eiturbanmobility.eu/masterschool/>
- Application: EIT Master School Office
- Mandatory selection of SUMT or SMDSA upon admission
- I&E intensification is mandatory
- Pan-European EIT activities => Kick-off, Summer School, Graduation.
- Mandatory internship + thesis placement

MUM (Local UPC)

- 2 years at UPC
- https://camins.upc.edu/en/Studies/master/urban_mobility
- Application: Escola de Camins (UPC) (Later admission periods)
- Only I&E intensification is mandatory. Free optional course selection.
- Internship options (non-mandatory)
- Regular mobility options (non-mandatory)
- Double Degree with MECCP (only SUMT intensification)

MUM Curriculum (1/3)

120 ECTS, 2 years

Mandatory courses (30 ECTS)

- Mobility modeling (5 ECTS)
- Operation & management of transport systems (5 ECTS)
- Data analysis in transport systems (5 ECTS)
- Introduction to supply chain (5 ECTS)
- Liveable cities & urban mobility (5 ECTS)
- Travel demand & behavioral modeling (5 ECTS)

I&E Minor (30 ECTS)

- Innovation & entrepreneurship for world challenges (5 ECTS)
- Decision making & economy in urban mobility (5 ECTS)
- Project based on an innovation challenge (10 ECTS)
- I&E elective courses (min 10 ECTS)

Technical intensification (30 ECTS)

- SUMT – Smart Urban Mobility Transitions
- SMDSA – Smart Mobility Data Science & Analytics

Master Thesis (30 ECTS)

[Check details of curriculum & courses](#)



MUM Curriculum (2/3)

FIRST YEAR			
S1 - FALL		ECTS	
Innovation & entrepreneurship for world challenges	5		
Decision making & economy in urban mobility	5		
Mobility modeling	5		
Operation & management of transport systems	5		
Data analysis in transport systems	5		
Introduction to supply chain	5		
	Total	30	
S2 - SPRING		ECTS	
Project based on an innovation challenge	10		
Liveable cities & urban mobility	5		
Travel demand & behavioral modeling	5		
SUMT - 2 Electives from the following list (10 ECTS):			
Optimization models for transportation networks		5	
Railway transport		5	
Public transport		5	
Traffic simulation models		5	
Sustainable mobility		5	
Port management & maritime transport		5	
SMDSA – 2 intensification courses (10 ECTS):			
Machine Learning		6	
Data management for transportation		4	
	Total	30	

Core courses of SUMT Programme

Elective courses of SUMT Programme

Innovation and entrepreneurship courses

Elective courses of SMDSA Programme

MUM Curriculum (3/3)

SECOND YEAR			
S3 - FALL		ECTS	
Innovation & entrepreneurship elective courses		Min. 10	
Relevant elective courses from the selected intensification		20	
	Total	30	
			S4 - SPRING
			Master thesis
			30
			Total 30

Innov. & entrepreneurship electives (Min. 10 ECTS)	
EIT Summer School (only EIT students)	3
Product or service development project	4
Technology asset management	5
Case studies in urban mobility	5
Viability of business project (S4 Spring)	6
SUMT electives (4 courses)	
Freight transport	5
Vehicle routing models	5
Smart mobility (SMART)	5
Airport management	5
Traffic	5
Mobility & development	5

SMDSA electives (4 courses)	
Algorithms, Data Structures and Databases	6
Information Retrieval and Recommended Systems	6
Data Analysis and Knowledge Discovery	6
Process-Oriented Data Science	6
Traffic Simulation Models (S4 Spring)	5
Data management for transportation (S4 Spring)	4

Mobility & Internships

■ Mobility

- Mobility options for S3 or/and S4
- Apply early for mobility => <https://camins.upc.edu/ca/estudis/mobilitat>
- UPC agreements with most of EU universities, and some overseas (China, USA, Canada)

■ Internships

- 90% of students take an internship during the master.
 - Local version does NOT have mandatory internship
 - EIT version DOES have a mandatory 12 week internship
- Internships are not recommended during S1
- All internships are NON-CURRICULAR => They do not grant any master's ECTS
- Compensation by the company to the student with a min. wage of 9 €/hour.
- Internship opportunities published through the Camins School webpage
 - <https://camins.upc.edu/ca/universitat-empresa/practiques>

Expected results

- Group of 30 students admitted
- Students' origins:
 - UPC and other nationals (15%)
 - International (85%) => EU and overseas.
- >95% students pass the enrolled courses
- 4% of the students quit at the 1st year

Practical information (1/2)

- Language => 100% in English
 - MUM Local version
 - English Level – B2 => Most certificates are accepted.
 - MUM EIT version
 - English Level => IELTS>6.5; TOEFL>92

- When?
 - From September to May.
 - Fall semester (Q1): starts late September; ends late January.
 - Spring semester (Q2): starts mid February; ends late May / early June.
 - See Escola de Camins masters' academic calendar:
<https://camins.upc.edu/en/Studies/academic-calendars>

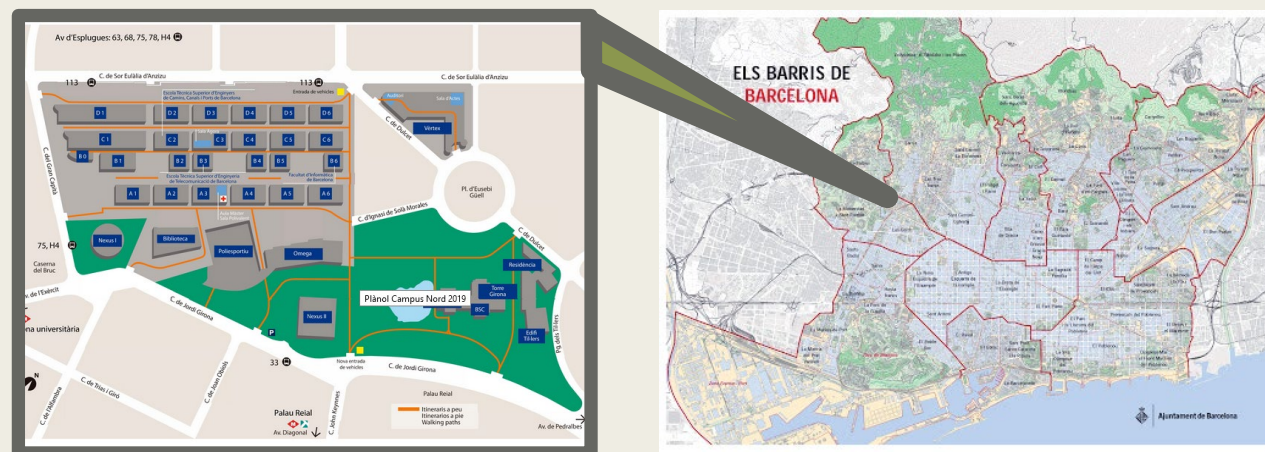
Practical information (2/2)

■ When?

- Lectures are mainly scheduled on afternoons and evenings (14-20h).
 - See MUM timetable: https://camins.upc.edu/ca/pdf/pdf-estudis/masters/master-in-urban-mobility/mum_timetable
- 18 hours/week of lecture (30 ECTS / Semester).

■ Where?

- UPC North Campus (Civil Engineering School) => Escola de Camins



Admission

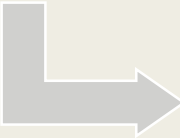
- Maximum of 30 students are admitted every year
- Bachelor studies with direct admission include
 - Bachelor's degrees in **engineering** (Industrial Engineering, Civil Engineering, Construction Engineering, Telecommunications Engineering, Informatics Engineering, Engineering Physics, other engineering fields).
 - Bachelor's degrees in **science** (Physics, Mathematics, Statistics) or other similar bachelor's degrees.
 - Bachelor degrees in geography, urban planning, architecture, or similar (=> Without a strong analytical and mathematical content; **may require additional effort**)
- Students without technical / technological bachelor studies will not be admitted or will require bridging courses.
 - Bachelor studies in law, business administration, economics, arts, etc.

Master in Urban Mobility. Local Program

Application dates

January 15th to July 1st 2024
Application Period

- 6 selection dates: March 28th, May 8th, May 22nd, June 6th, June 19th, July 1st. => **Non EU candidates are to apply early.**



Resolved maximum
15 days after the
selection date

- Notification by e-mail

Information

Master in Urban Mobility: https://camins.upc.edu/ca/estudis/master/urban_mobility

Application: <https://www.upc.edu/en/masters/access-admission-enrolment/pre-enrolment>

Contact: admissions.masters.camins@upc.edu

Questions about: Application, admission requirements, regulations, enrolment,...

Useful links and e-mails

- MUM website: https://camins.upc.edu/en/Studies/master/urban_mobility
- Escola de Camins website (studies):
https://camins.upc.edu/en/Studies?set_language=en
- EIT Master School:
<https://www.eiturbanmobility.eu/academy/masterschool/>
- Contact information:
 - Master in Urban Mobility administrative support: urban.mobility@upc.edu
 - Admissions and enrolment: admissions.masters.camins@upc.edu
 - Academic information and procedures: masters.camins@upc.edu
 - Internships: practiques.camins@upc.edu
 - EIT master school: masterschool@eiturbanmobility.eu
 - ICT services: serveistic.camins@upc.edu

Barcelona Life and Catalan Culture



Extra Curricular Activities





Master's degree in Urban Mobility

