



European Institute of Innovation and Technology
EIT Urban Mobility
Mobility for more liveable urban spaces



EIT Urban Mobility Master School

UPC Summary of programmes

March 2021

Summary

- **EIT and EIT Urban Mobility**
- **Main Features of EIT Urban Mobility Master School Programmes**
- **Main Features of each Programme at UPC. Double Degrees**
- **Scholarships offered by EIT Urban Mobility. Deadlines and other important requirements to apply**
- **Who is who**



What is EIT? And EIT Urban Mobility?



Co-funded by the
European Union



Creation: March 2008 by the European Parliament and Commission (Horizon 2020)

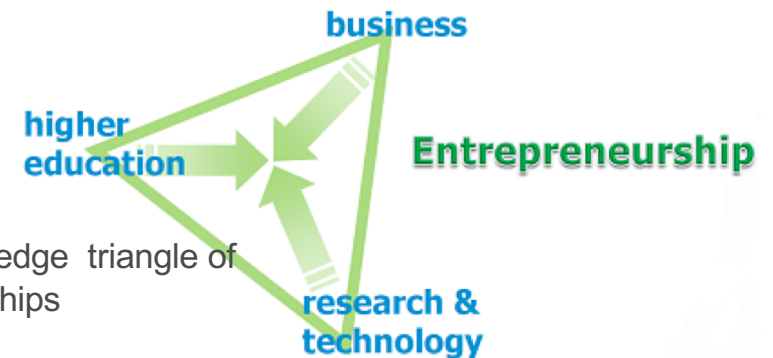
Mission:

- to boost Europe's **innovation capacity**
- to foster its sustainable **economic growth and job creation** merging the best innovative nodes in Europe
- to be the open innovation hub for a radical change in European innovative capacity
 - **from idea to product**
 - **from laboratory to market**
 - **from student to entrepreneur**
- to be a **start-up accelerator**

Tool:

The **Knowledge Innovation Communities (KICs)** bring together the knowledge triangle of business, education and research to form dynamic cross border partnerships

- each KIC is an independent legal entity
- each KIC consists of 5-6 "Innovation Hubs" with max. 50 partners in total (at the beginning)
- There is a managing Head Quarter for every KIC
- duration: min. 7 years with annual business plans



Mobilus: MOBility for Liveable Urban Spaces



Mobilus will strengthen the **European knowledge and business position** in safeguarding **access to mobility and logistics** in urban areas in a **greener, more inclusive, safer and smarter way**, whilst improving the **fundamental value** of urban areas as **places to live, meet, experience and work**.

The Consortium called “Mobilus” was the winner of the Call in December 2018. Now, we call it directly EIT Urban Mobility



Co-funded by the European Union



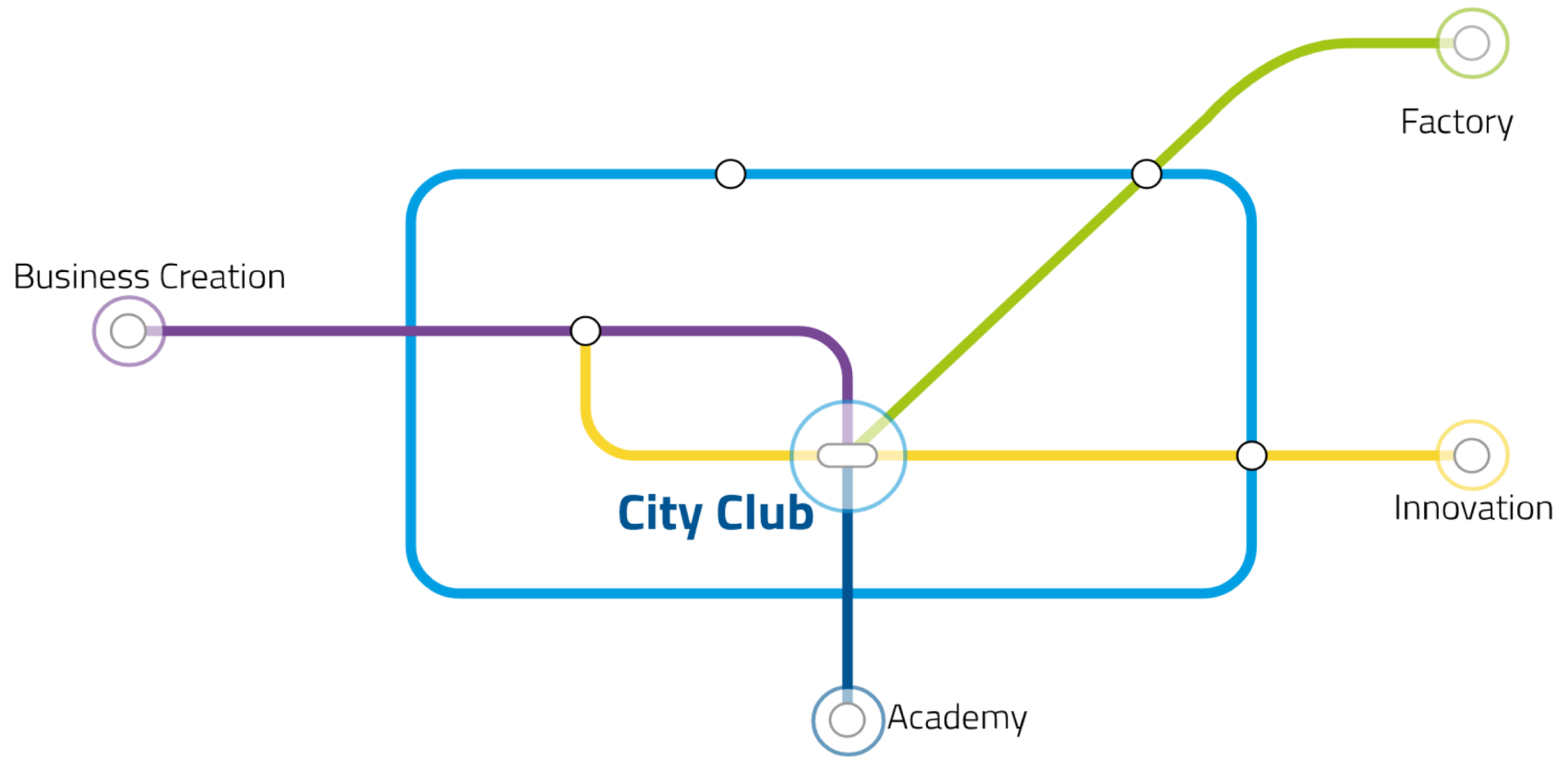
EIT Urban Mobility Partners



Figure C-3: EIT Urban Mobility partnership 2019



EIT Urban Mobility Lines



EIT Urban Mobility Academy

<https://www.eiturbanmobility.eu/academy>



Master School

Our Master School offers a wide-ranging master's degree in urban mobility and aims to train 500 graduates per year in partnership with ten universities. This EIT labelled challenge-based double degree programme (1st and 2nd year in a different university) includes extensive training in innovation and entrepreneurship. The Master School will open its doors in autumn 2020 starting with 4 universities and 2 tracks. The Master School also includes summer schools held in several European cities addressing critical urban mobility challenges.

[+READ MORE](#)

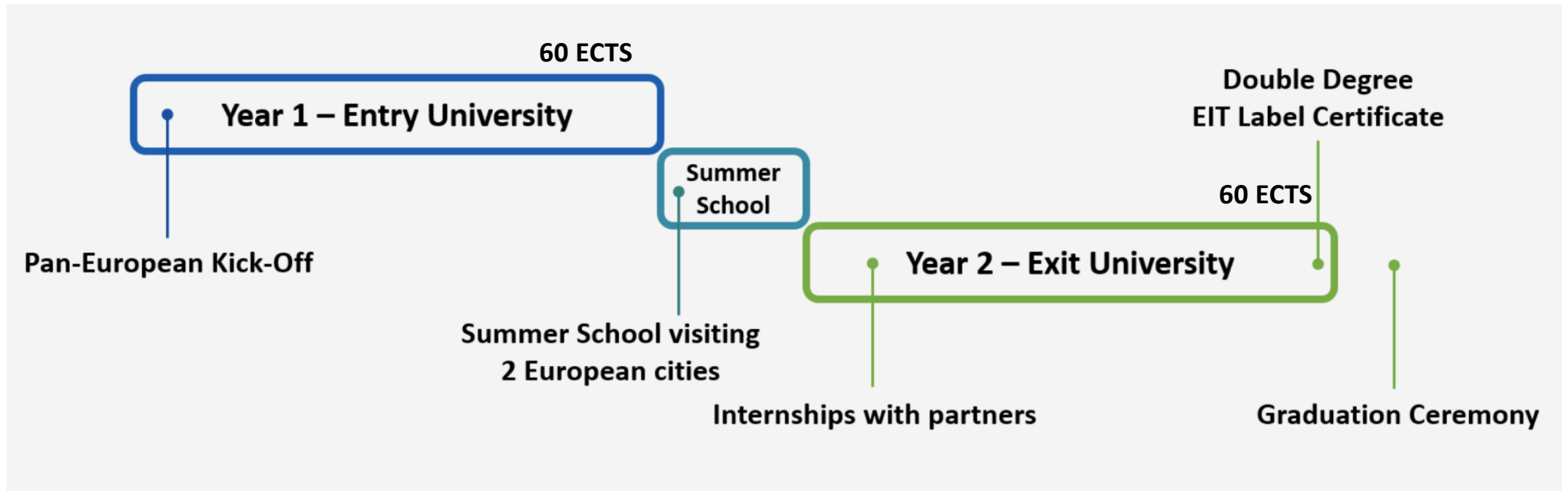


What are the Main Features of the EIT Urban Mobility Master School Programmes?



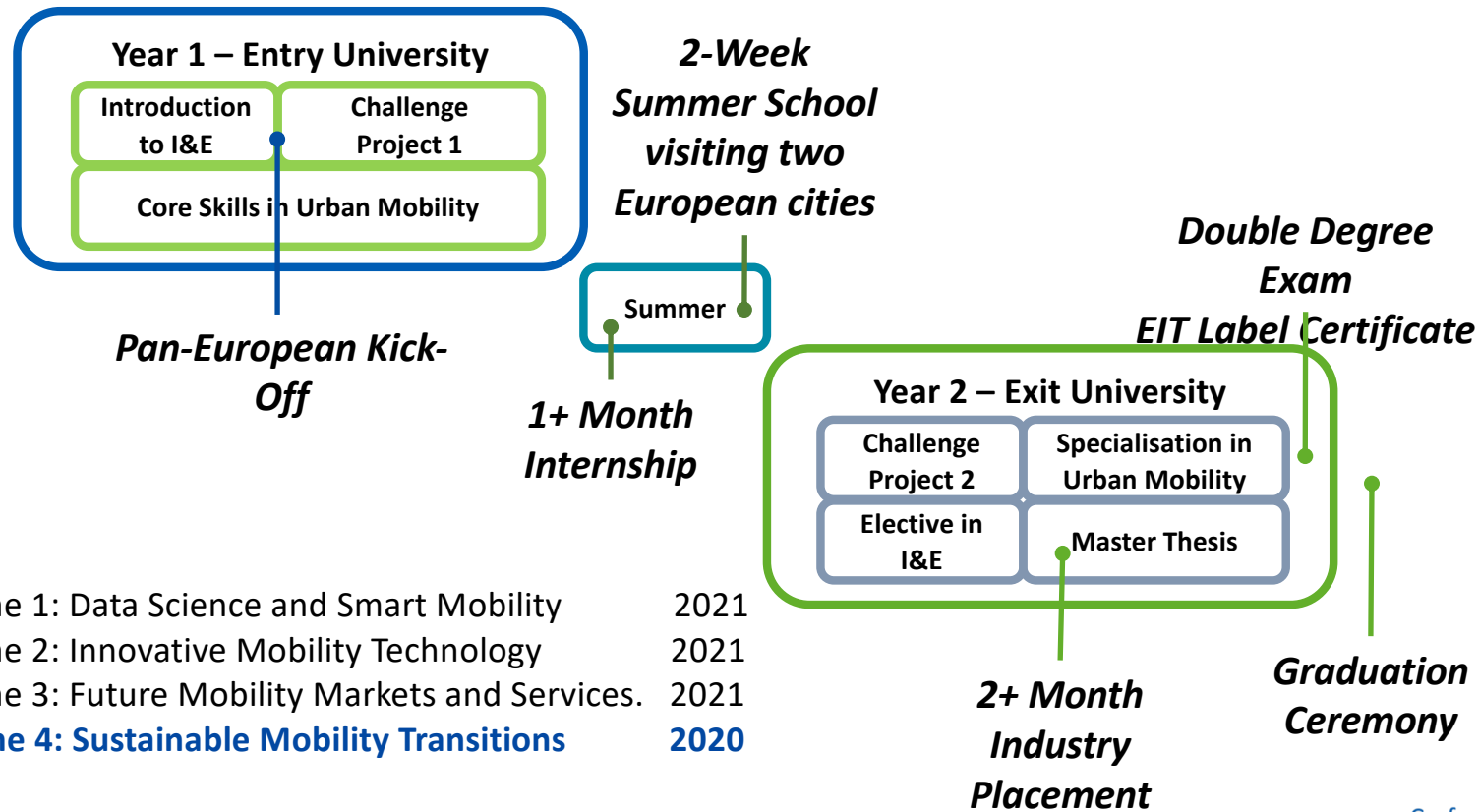
EIT Urban Mobility Master School

Master Programme Structure: 2 Years/ 120 ECTS



EIT Urban Mobility Master School

Master Programme Structure: 2 Years/ 120 ECTS

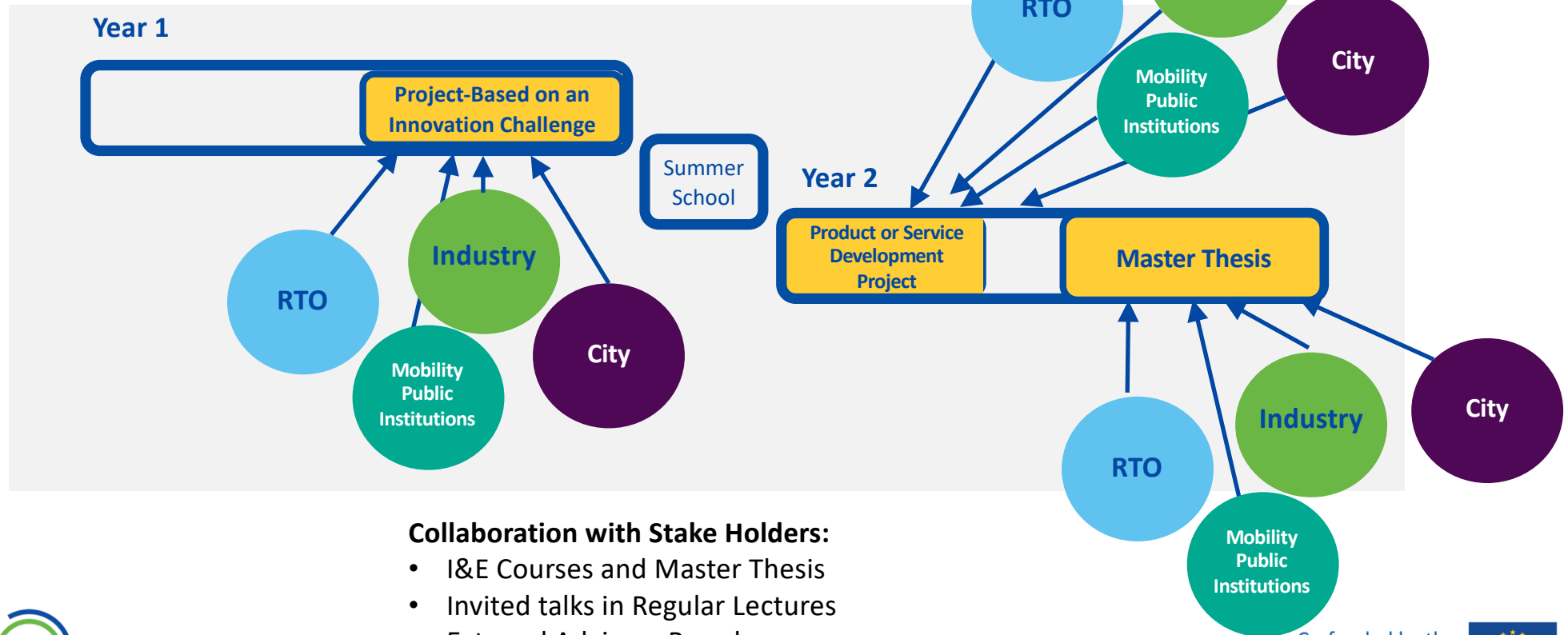


- Programme 1: Data Science and Smart Mobility 2021
- Programme 2: Innovative Mobility Technology 2021
- Programme 3: Future Mobility Markets and Services. 2021
- **Programme 4: Sustainable Mobility Transitions 2020**



EIT Urban Mobility Master School

UPC Example https://camins.upc.edu/en/Studies/master/urban_mobility/mum#



Collaboration with Stake Holders:

- I&E Courses and Master Thesis
- Invited talks in Regular Lectures
- External Advisory Board



Planned Programmes (so far)

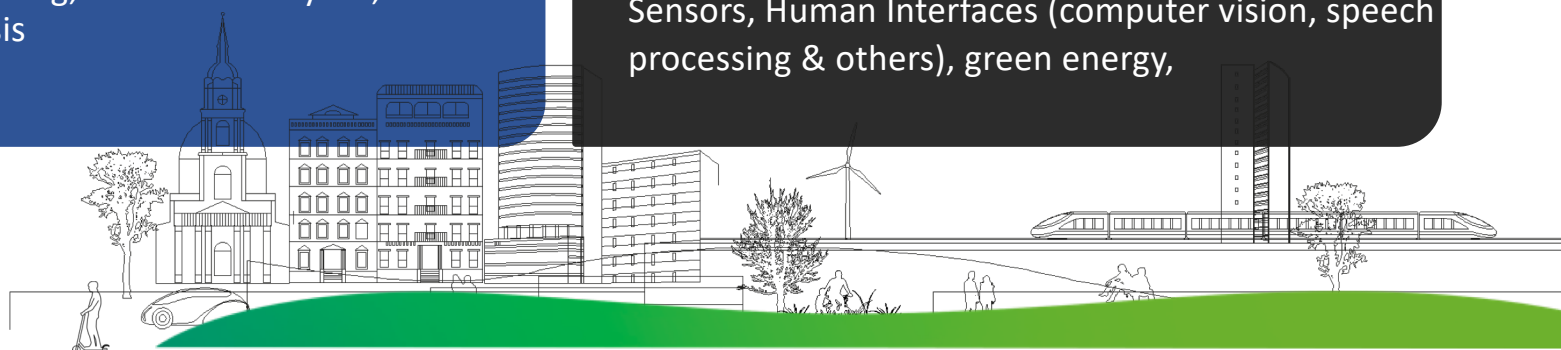
Sustainable Urban Mobility Transitions*
Integrated spatial and transport planning, sustainability science, policy and economics

Advanced Mobility Services
MaaS, new business models, goods and personal travel

Smart Mobility Data Science & Analytics
IoT, machine learning, real-time analytics, geospatial analysis

Innovative Mobility Technology
Vehicle technology, Connectivity & Communications, Sensors, Human Interfaces (computer vision, speech processing & others), green energy,

*Awarded EIT Label in 2020



What are the Main Features of each of these four Programmes at UPC?

What Double Degrees are Possible?



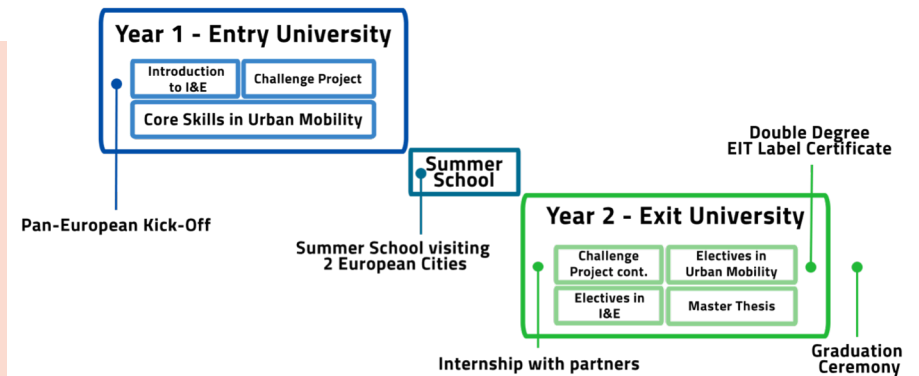
Master on Urban Mobility at UPC

Common structure for all programmes

120 ECTS, 2 years

The EIT Urban Mobility Master School programmes are a comprehensive combination of:

- 30 ECTS mandatory courses ('common base')
- 20 + 10 ECTS I&E Minor
- 10 + 20 ECTS Technical intensification (SUMT, AMS, SMDSA, IMT)
- 30 ECTS Master's thesis project.



Mandatory courses
Mobility modeling
Operation & management of transport systems
Data analysis in transport systems
Introduction to supply chain
Liveable cities & urban mobility
Travel demand & behavioral modeling

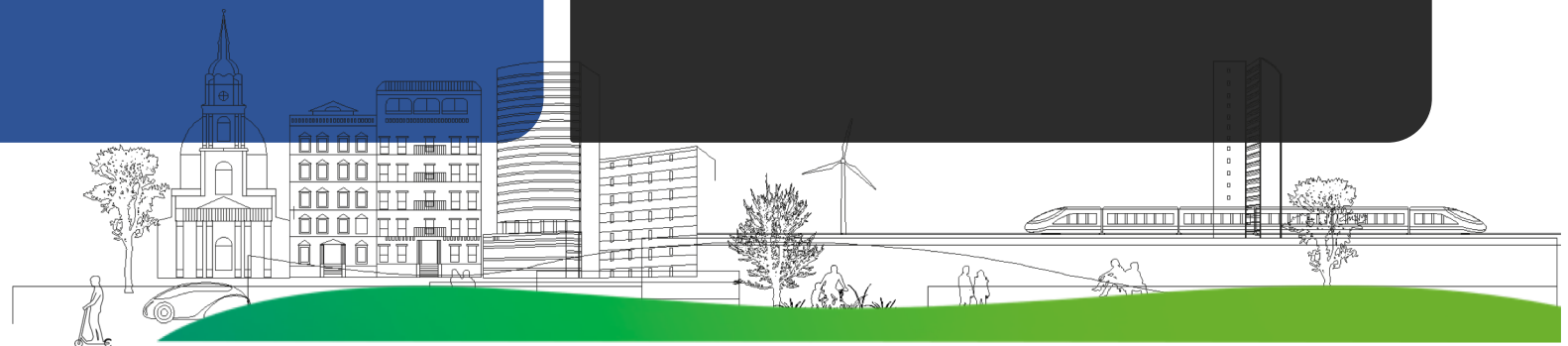
I&E Minor
Innovation & entrepreneurship for world challenges
Decision making & economy in urban mobility
Project based on an innovation challenge
Product or service development project
Innovation & entrepreneurship elective courses

Technical intensification
SUMT – Smart Urban Mobility Transitions
AMS – Advanced Mobility Services
SMDSA – Smart Mobility Data Science & Analytics
IMT – Innovative Mobility Technology

Planned Programmes

Sustainable Urban Mobility Transitions

Integrated spatial and transport planning, sustainability science, policy and economics



EIT Urban Mobility Master School

Sustainable Urban Mobility Transitions Programme (SUMT)

<https://www.eiturbanmobility.eu/sustainable-urban-mobility-transitions/>

- At UPC, the intensification requires to take 5 or 6 elective courses (25-30 ECTS), two in Year 1, the rest in Year 2, and the Master Thesis (30ECTS)



Optimization models for transportation networks
Railway transport
Public transport
Transportation system planning & management
Mobility & development
Traffic simulation models
Sustainable mobility

**Year 1
at UPC**

Freight transport
Vehicle routing models
Smart mobility (SMART)
Airport management
Port management & maritime transport
Traffic

**Year 2
at UPC**

- **We are in the era of the (urban) mobility revolution**

- Smart cities with efficient collective transportation systems
- Green mobility => pedestrians, cyclists... return cities to people
- Rethink the urban space => reduce the role of the car
- Shared mobility initiatives => Uber, Car-to-Go, Bicing, eCooltra
- Autonomous vehicles => impact to mobility management

- **These are hot topics in our society**



Sustainable Urban Mobility Transitions

Participating Universities	UPC	TU Eindhoven	KTH	Aalto University
Degree Awarded	Master of Science, Urban Mobility	Master of Science, Architecture, Building, and Planning	Master of Science: Transport, Mobility and Innovation	Master of Science in Technology and Engineering
Supporting Faculty	School of Civil Engineering School of Industrial Engineering	Department of the Built Environment	Department of Arch. & the Built Environment	Department of Built Environment
Example Career Paths	Cities, transport authorities, research institutes and industries			
Relevant Backgrounds	Engineering, Information Science, Computer Science, Statistics, Geoinformation Technology, Urban Planning, Geography, and/or Economics with a strong quantitative background			



Planned Programmes



Advanced Mobility Services
MaaS, new business models, goods and personal travel



Advanced Mobility Services (AMS)

EIT Urban Mobility Master School

<https://www.eiturbanmobility.eu/advanced-mobility-services/>

At UPC, the intensification requires to take 5 or 6 elective courses (25-30 ECTS), two in Year 1, the rest in Year 2, and the Master Thesis (30ECTS)

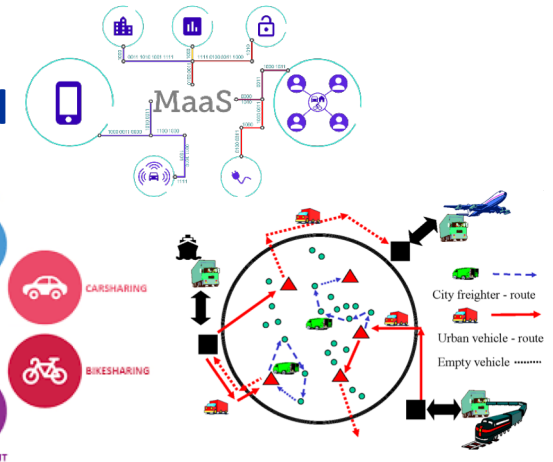
- Prepare you to face the mobility challenges generated by rapid urbanization and e-commerce activities
- Design or improve urban logistic solutions
- Design or improve mobility services for people
- Create sustainable business models for mobility services

Quality services
Economics and Legislations in Global logistics

Year 1
at UPC

Business models in mobility services
Vehicle Routing models
Freight Transport
Business Administration and Management
Operations Management

Year 2
at UPC



The programme takes a holistic approach to studying, designing, and implementing advanced mobility services by integrating technical expertise with innovative approaches and entrepreneurial skills.

First Year	Second Year
UPC, Barcelona, Spain	Politecnico di Milano, Italy
	TU Braunschweig, Germany*
Politecnico di Milano, Italy	UPC, Barcelona, Spain

Work opportunities in logistics, transport managers, mobility authorities and manufacturers and service providers in the mobility sector.

Advanced Mobility Services

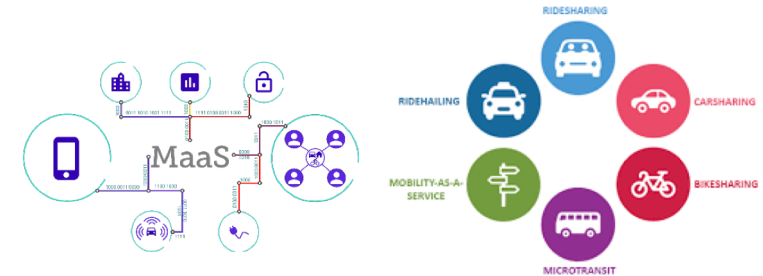
Participating Universities	UPC	Politecnico di Milano	TU Braunschweig (2nd Year Only)
Degree Awarded	Master of Science, Urban Mobility	Master of Science, Mobility Systems	Master of Science, Technology-Oriented Management
Supporting Faculty	School of Industrial Engineering School of Civil Engineering	School of Industrial & Information Engineering	Automotive Research Centre (NFF) and Carl- Friedrich-Gauß Faculty
Example Career Paths	Logistics, transport management, mobility authorities and the automotive manufacturers and service providers in the mobility sector		
Relevant Backgrounds	Industrial Engineering or Information engineering; other technical degrees with strong economics and business backgrounds		



EIT Urban Mobility Master School

Advanced Mobility Services

Studying at TU Braunschweig – what can you expect...?



Exceptional research & education

- interesting courses in a region with the highest density of scientists in Europe
- to study at a TU9-network universities (alliance of leading technological universities in Germany)
- about 20,000 students enrolled in 84 programs
- an open-minded international community (about 3,000 international students)



Practical experience through the Automotive Research Centre Niedersachsen (NFF)

- The NFF is one of the largest and most modern centres for mobility research with partners ranging from small start-ups to big cooperation
- Through the NFF you are provided with the chance to work with industry partners to apply your knowledge
- Leading companies within the mobility sector such as Alstom, Siemens Mobility, and the Volkswagen Group provide exciting opportunities for your future career

A charming & vibrant city

- With 250,000 inhabitants Braunschweig is a lively city with a history that dates back to the year 1031

A Master's degree from TU Braunschweig

- After successfully finishing the "Advanced Mobility Services" track you receive a Master's degree in "Technology-oriented management"



Planned Programmes



Smart Mobility Data Science & Analytics
IoT, machine learning, real-time analytics,
geospatial analysis



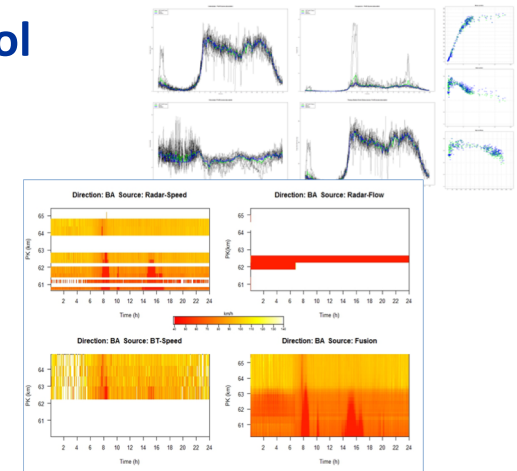
EIT Urban Mobility Master School

Smart Mobility Data Science and Analytics Programme (SMDSA)

<https://www.eiturbanmobility.eu/smart-mobility-data-science-and-analytics/>

The Smart Mobility Data Science and Analytics (SMDSA) Programme focuses on future transport system analysis and engineering in the era of big data.

- At UPC, the intensification requires to take 5 or 6 elective courses (25-30 ECTS), two in Year 1, the rest in Year 2 and the Master Thesis (30ECTS)



Multivariate Analysis
Data Management for Transportation

Year 1
at UPC

Semantic Data Management
Algorithmics for Data Mining
Information Retrieval
Machine Learning
Big Data Management
Data Management for Transport Apps

Year 2
at UPC

The scope is interdisciplinary and covers all modes of urban and regional transport for personal travel and goods and logistics.

The **Programme provides** tools for creative analysis of urban system dynamics and geospatial analysis, and **advanced analytics methods**, including **artificial intelligence** methods, data collection and **data management** processes.

Smart Mobility, Data Science and Analytics

Participating Universities	UPC	TU Eindhoven	University of Tartu
Degree Awarded	Master of Science, Urban Mobility	Master of Science, Architecture, Building, and Planning	Master of Science, Computer Science
Supporting Faculty	Faculty of Informatics School of Industrial Engineering School of Civil Engineering	Department of the Built Environment	Institute of Computer Science
Example Career Paths	Private companies in logistics and transport management, shared mobility startups, the automotive sector, public transport operators, and cities and public institutions		
Relevant Backgrounds	Engineering, Computer Science, or Information Technology and Systems degree		



Planned Programmes



Innovative Mobility Technology
Connectivity, Communications, Sensors, HMI,
machine learning, green energy, vehicle
technology,



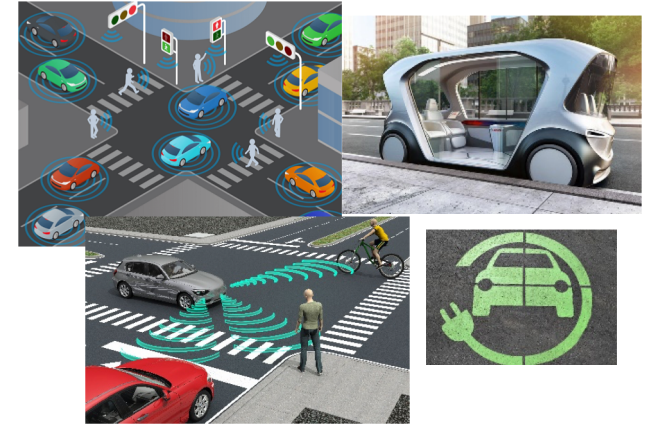
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Innovative Mobility Technology (IMT)

<https://www.eiturbanmobility.eu/innovative-mobility-technology>

- At the UPC, this intensification requires to take 5 or 6 elective courses (25-30 ECTS), two in Year 1, the rest in Year 2, and the Master Thesis (30 ECTS)
- Modelling, identification & simulation dynamics system engineering
- Optimization

Year 1
at UPC



Energy

- Fuel cells
- Electric energy storage systems
- Charge network design & management

Year 2 at
UPC

Sensors & communications

- Instrumentation & sensors
- Fundamentals of telecommunication systems
- 5G mobile communications

Human machine interaction

- Deep learning for artificial intelligence
- Computer vision
- Digital speech & audio processing
- Cognitive robotics

• We will prepare you to face challenges in cities

- How to move people and goods efficiently and sustainably.
- Design and develop user-centred future mobility tools and devices.
- Understand applications of technological developments in various vehicle typologies and urban infrastructure.



Innovative Mobility Technology

Participating Universities	UPC	Politecnico di Milano	Aalto University
Degree Awarded	Master of Science, Urban Mobility	Master of Science, Mobility Systems	Master of Science in Technology and Engineering
Supporting Faculty	School of Telecom Engineering School of Industrial Engineering School of Civil Engineering	School of Industrial & Information Engineering	School of Electrical Engineering
Example Career Paths	vehicle and mobility system designer and engineer, technology innovator, mobility infrastructure designer, HMI (Computer Vision, Speech Processing & others) mobility engineer, ITS system architect, X2X connectivity system engineer, system power engineer,		
Relevant Backgrounds	Engineering degree with strong mathematics, information science or programming		



What Scholarships does EIT Urban Mobility offer?

What are the deadlines and other important requirements to apply?





Tuition Fees and Available Scholarships

	Scholarship category	Annual Tuition Fee	Annual Fee Waiver	Monthly Allowances (max 24 months)	Annual Value for student
Non-EU	Full paying student	€ 16 000	0	0	0
	Urban Mobility Excellence Scholarship	€ 10 000	- € 6 000	€ 850/ month	€ 16 200
	Urban Mobility Merit Scholarship	€ 10 000	- € 6 000	€ 500/ month	€ 12 000
EU	Full paying student	€ 4 000	0	0	0
	Urban Mobility Excellence Scholarship	0	- € 4 000	€ 500/ month	€ 10 000
	Urban Mobility Merit Scholarship	€ 2 000	- € 2 000	€ 500/ month	€ 8 000

Important Facts to apply to the EIT Urban Mobility Master School



Deadline:

Recommended **31st of March**. Final **16 of April**

Important Requisite!! Proof of English:

IELTS Academic test (www.ielts.org)

- An overall band score of at least 6.5, with no section lower than 6, is required. No General training IELTS tests

TOEFL Internet-based test, iBT (www.toefl.org)

- A minimum total score of 92 (with writing section 22 and no section lower than 21) is required.

Detailed Information to apply:

<https://www.eiturbanmobility.eu/masterschool/>

Who is who?

- **Elisa Sayrol**, EIT Urban Mobility Main Contact at UPC
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- **Francesc Soriguera**, local Programme Coordinator (Vice Dean of ETSECCPB), SUMT Coordinator at UPC
francesc.soriguera@upc.edu
- **Imma Ribas**, AMS Coordinator at UPC, AMS Coordinator at EIT Urban Mobility
imma.ribas@upc.edu
- **Lidia Montero**, SMDSA Coordinator at UPC
lidia.montero@upc.edu
- **Mónica Aguilar**, IMT Coordinator at UPC
monica.aguilar@upc.edu

MUM Students here today: Víctor Ferran Carpintero; Hao Luo Wang





We are looking forward to see you at UPC !





Thank you!

For more information, please contact:
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www.eiturbanmobility.eu

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