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

Mobilus: MOBIIlity 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.
EIT Urban Mobility Partners

Figure C-3: EIT Urban Mobility partnership 2019
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.
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

- Year 1 – Entry University
  - Pan-European Kick-Off
- Summer School visiting 2 European cities
- Year 2 – Exit University
  - Internships with partners
  - Graduation Ceremony

60 ECTS

Double Degree EIT Label Certificate

60 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

Pan-European Kick-Off

- Introduction to I&E
- Challenge Project 1
- Core Skills in Urban Mobility

Summer School visiting two European cities

1+ Month Internship

Year 2 – Exit University

- Challenge Project 2
- Specialisation in Urban Mobility
- Elective in I&E
- Master Thesis

Double Degree Exam
EIT Label Certificate

2+ Month Industry Placement

Graduation Ceremony

Pan-European Kick-Off

2-Week Summer School visiting two European cities

Graduation Ceremony

Double Degree Exam
EIT Label Certificate
EIT Urban Mobility Master School


### Year 1
- **Project-Based on an Innovation Challenge**
- **Summer School**

### Year 2
- **Product or Service Development Project**
- **Master Thesis**

**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

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

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

**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
### 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 (30 ECTS)

<table>
<thead>
<tr>
<th>Year 1 at UPC</th>
<th>Year 2 at UPC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Optimization models for transportation networks</td>
<td>Optimization models for transportation networks</td>
</tr>
<tr>
<td>Railway transport</td>
<td>Railway transport</td>
</tr>
<tr>
<td>Public transport</td>
<td>Public transport</td>
</tr>
<tr>
<td>Transportation system planning &amp; management</td>
<td>Transportation system planning &amp; management</td>
</tr>
<tr>
<td>Mobility &amp; development</td>
<td>Mobility &amp; development</td>
</tr>
<tr>
<td>Traffic simulation models</td>
<td>Traffic simulation models</td>
</tr>
<tr>
<td>Sustainable mobility</td>
<td>Sustainable mobility</td>
</tr>
<tr>
<td>Freight transport</td>
<td>Freight transport</td>
</tr>
<tr>
<td>Vehicle routing models</td>
<td>Vehicle routing models</td>
</tr>
<tr>
<td>Smart mobility (SMART)</td>
<td>Smart mobility (SMART)</td>
</tr>
<tr>
<td>Airport management</td>
<td>Airport management</td>
</tr>
<tr>
<td>Port management &amp; maritime transport</td>
<td>Port management &amp; maritime transport</td>
</tr>
<tr>
<td>Traffic</td>
<td>Traffic</td>
</tr>
</tbody>
</table>

- 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

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

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

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

✔ Quality services
✔ Economics and Legislations in Global logistics
✔ Business models in mobility services
✔ Vehicle Routing models
✔ Freight Transport
✔ Business Administration and Management
✔ Operations Management

Year 1 at UPC

Year 2 at UPC

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

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

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

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

Innovative Mobility Technology

Connectivity, Communications, Sensors, HMI, machine learning, green energy, vehicle technology,
EIT Urban Mobility Master School

Innovative Mobility Technology (IMT)
https://www.eiturbanmobility.eu/innovative-mobility-technology

- 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.

- 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

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

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
# Innovative Mobility Technology

<table>
<thead>
<tr>
<th>Participating Universities</th>
<th>UPC</th>
<th>Politecnico di Milano</th>
<th>Aalto University</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Degree Awarded</strong></td>
<td>Master of Science, Urban Mobility</td>
<td>Master of Science, Mobility Systems</td>
<td>Master of Science in Technology and Engineering</td>
</tr>
<tr>
<td><strong>Supporting Faculty</strong></td>
<td>School of Telecom Engineering School of Industrial Engineering School of Civil Engineering</td>
<td>School of Industrial &amp; Information Engineering</td>
<td>School of Electrical Engineering</td>
</tr>
<tr>
<td><strong>Example Career Paths</strong></td>
<td>vehicle and mobility system designer and engineer, technology innovator, mobility infrastructure designer, HMI (Computer Vision, Speech Processing &amp; others) mobility engineer, ITS system architect, X2X connectivity system engineer, system power engineer,</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Relevant Backgrounds</strong></td>
<td>Engineering degree with strong mathematics, information science or programming</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
What Scholarships does EIT Urban Mobility offer?

What are the deadlines and other important requirements to apply?
## Tuition Fees and Available Scholarships

<table>
<thead>
<tr>
<th>Scholarship category</th>
<th>Annual Tuition Fee</th>
<th>Annual Fee Waiver</th>
<th>Monthly Allowances (max 24 months)</th>
<th>Annual Value for student</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Non-EU</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full paying student</td>
<td>€ 16 000</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Urban Mobility Excellence Scholarship</td>
<td>€ 10 000</td>
<td>- € 6 000</td>
<td>€ 850/ month</td>
<td>€ 16 200</td>
</tr>
<tr>
<td>Urban Mobility Merit Scholarship</td>
<td>€ 10 000</td>
<td>- € 6 000</td>
<td>€ 500/ month</td>
<td>€ 12 000</td>
</tr>
<tr>
<td><strong>EU</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full paying student</td>
<td>€ 4 000</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Urban Mobility Excellence Scholarship</td>
<td>0</td>
<td>- € 4 000</td>
<td>€ 500/ month</td>
<td>€ 10 000</td>
</tr>
<tr>
<td>Urban Mobility Merit Scholarship</td>
<td>€ 2 000</td>
<td>- € 2 000</td>
<td>€ 500/ month</td>
<td>€ 8 000</td>
</tr>
</tbody>
</table>
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 (EIT):**
https://www.eiturbanmobility.eu/masterschool/

Web of the Master Program at UPC:
https://camins.upc.edu/en/Studies/master/urban_mobility
Who is who?

- **Elisa Sayrol**, EIT Urban Mobility Main Contact at UPC
  [elisa.sayrol@upc.edu](mailto:elisa.sayrol@upc.edu)

- **Francesc Soriguera**, local Programme Coordinator (Vice Dean of ETSECCPB), SUMT Coordinator at UPC
  [francesc.soriguera@upc.edu](mailto:francesc.soriguera@upc.edu)

- **Imma Ribas**, AMS Coordinator at UPC, AMS Coordinator at EIT Urban Mobility
  [imma.ribas@upc.edu](mailto:imma.ribas@upc.edu)

- **Lídia Montero**, SMDSA Coordinator at UPC
  [lidia.montero@upc.edu](mailto:lidia.montero@upc.edu)

- **Mónica Aguilar**, IMT Coordinator at UPC
  [monica.aguilar@upc.edu](mailto:monica.aguilar@upc.edu)

- **MUM Students here today: Víctor Ferran Carpintero; Hao Luo Wang**
  [victor.ferran@estudiantat.upc.edu](mailto:victor.ferran@estudiantat.upc.edu) ; [hao.luo@estudiantat.upc.edu](mailto:hao.luo@estudiantat.upc.edu)
Thank You!