



# INTERNATIONAL MSc PROGRAMME MOBILITY MANAGEMENT

SHAPING THE FUTURE OF SUSTAINABLE MOBILITY



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	ENTPE	33
	Lyon, France	35



## WELCOME, *BIENVENUE*

Dear Students,

Welcome to ENTPE - Graduate School of Civil, Environmental and Urban Engineering, prestigious National School and Research Institute located in the Lyon Metropolitan area, France. ENTPE is a state-funded engineering school member of the University of Lyon.

Teaching and research at ENTPE are finely attuned to meet the demands of the transport sector. The MSc programme on Urban Mobility Management will train high-level professionals with managerial skills and know-how to address contemporary challenges and shape the cities of tomorrow.

*Cécile Delolme*

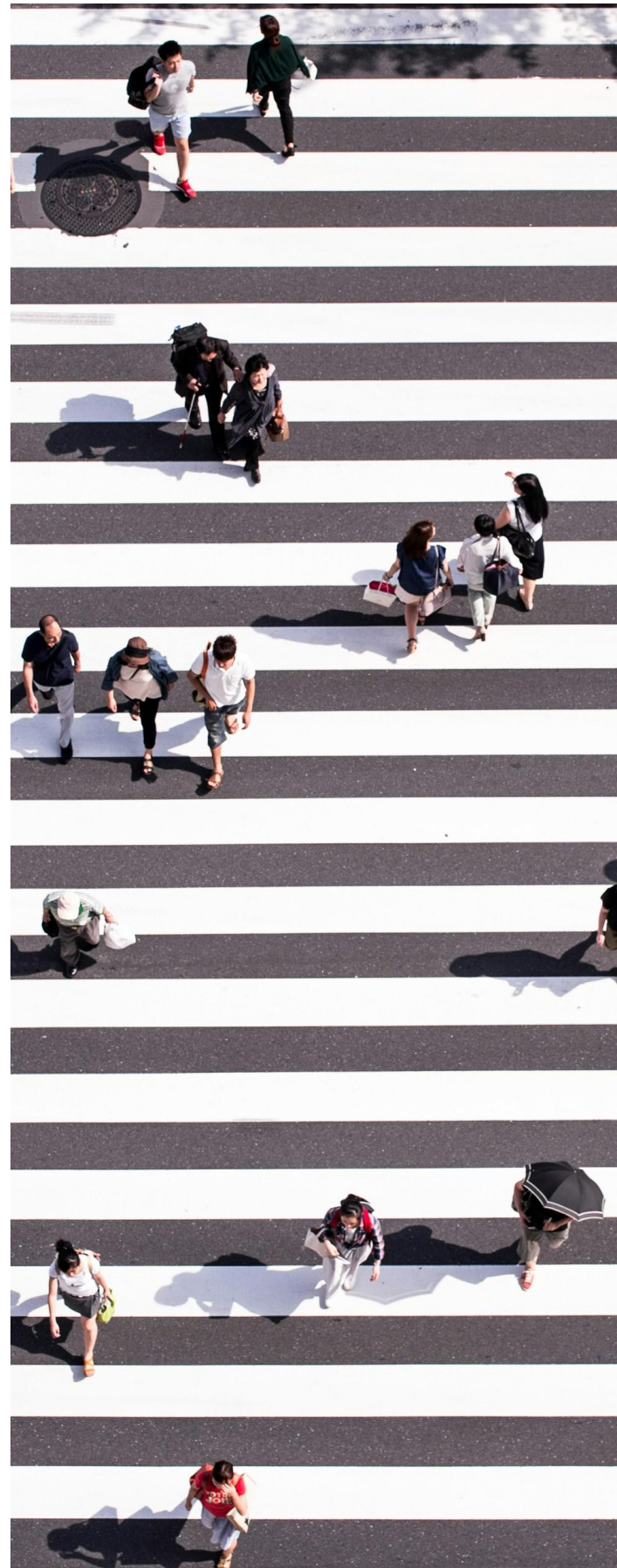
ENTPE Director

## ABOUT

The master's programme in Mobility Management combines the disciplines of transport economics, transport policy and planning, mobility engineering, spatial planning and urban environment into a single study programme.

The programme is aimed at international and national students searching to achieve a high-level professional-specialised education to develop an international career. The programme is accredited by the **Conférence des Grandes Écoles (CGE)**.

The first and second semesters are dedicated to the core modules and seminars. In the second semester, students will also have 6 months of work experience in a recognised company and develop a master's thesis.





## OBJECTIVES

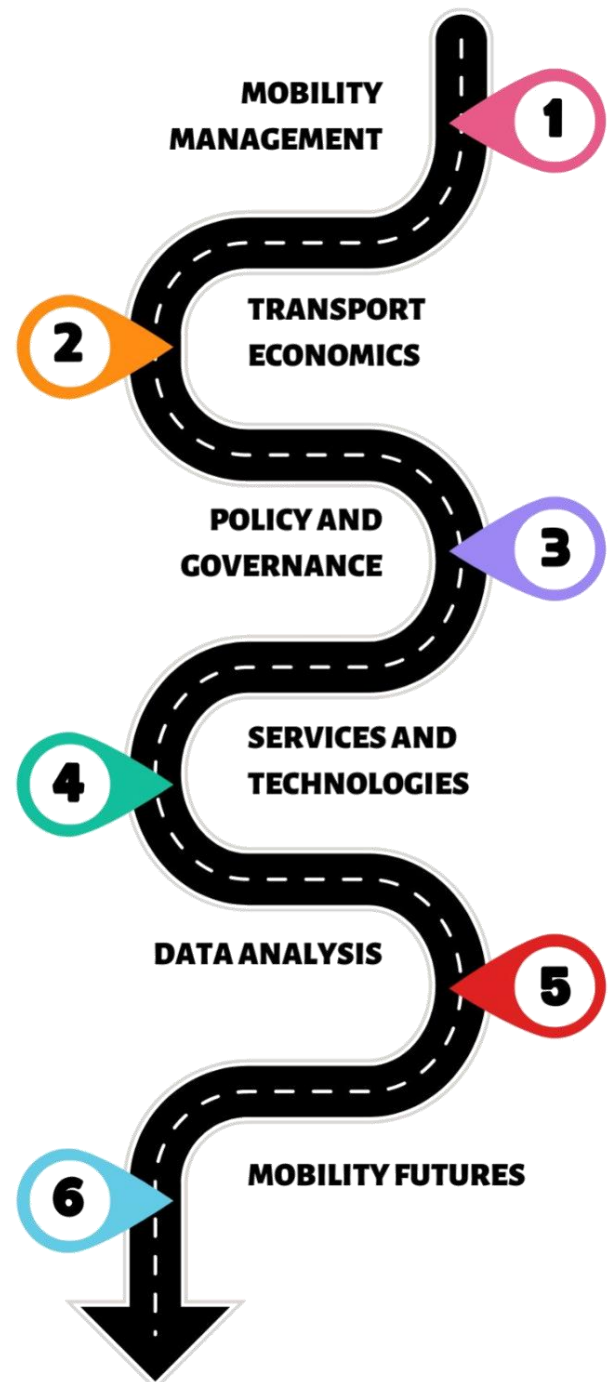
1. Strengthen academic and professional relations beyond borders, linking national and international students with public and private companies, industries, start-ups, and organisations.
2. Employ a multidisciplinary systematic approach with a particular focus on the European context, focusing on environmental challenges, society's needs, transport safety considerations, and novel technologies.
3. Students will develop advanced skills in transport planning, travel demand forecasting and the latest techniques and frameworks encompassing data analysis and mobility management.
4. Students will acquire managerial and technical skills to examine and develop policies, regulations and measures that impact transport systems.
5. Students will plan and design innovative interventions in terms of transport policies, management procedures, and operations of transport systems.

# PROGRAMME

The Master Programme encompasses a multidisciplinary systematic approach to address the various aspects of urban mobility, focusing on the European context and the contemporary challenges surrounding environmental, economic and social issues.

## KEY AREAS COVERED

- Multimodal management
- Sustainable mobility
- Urban Transitions
- Behavioural change
- Integrated planning
- Demand Analysis
- Road safety and security
- Transport economics
- Regulation Operationalisation
- Policy assessment
- Public consultation
- Policy communication
- Smart transport systems
- Urban logistics
- Transport Innovation
- Data-informed planning
- Modelling & Machine learning
- Decision-support tools



# CURRICULUM

The academic year is composed of 40 weeks (60 ECTS), divided into two semesters:

SEMESTER	ECTS
<b>FIRST PERIOD</b>	<b>25</b>
Mobility Management	4.0
Land-Use and Transport Planning	3.5
Design of dedicated AV-based services	2.5
Transport Data and Machine Learning	3.0
Urban Logistics	3.0
Mobility Modelling	2.5
Spatial Analysis	3.0
Research Seminar	3.5
<b>SECOND PERIOD</b>	<b>35</b>
Sustainable Urban Mobility Plans	4.0
Mobility Management II	2.5
Environmental Impacts of Transport Systems	2.5
Transitions towards Sustainable Mobility	2.5
Research Seminar	3.5
MSc Thesis	10
Work Placement	10



# SYLLABUS

## FIRST SEMESTER

Core Modules		
CODE	TITLE	ECTS
MScMMc0101	Mobility Management	4.0
MScMMc0102	Land Use and Transport Planning	3.5
MScMMc0103	Design of dedicated AV-based services	2.5
MScMMc0104	Transport Data and Machine Learning	3.0
MScMMc0106	Urban Logistics	3.0
MScMMc0105	Mobility Modelling	2.5
MScMMc0107	Spatial Analysis	3.0
MScMMc0108	Research Seminar	3.5

## MODULES DESCRIPTION

MScMMc0101	Mobility Management
<b>Course description</b>	This course equips students with the knowledge, theoretical foundations, and skills to design, implement, and manage sustainable mobility systems. It emphasises sustainable mobility practices, data-driven planning and decision-making.
<b>Course objectives</b>	<ul style="list-style-type: none"> <li>• Equipping students with cutting-edge knowledge, skills, and tools for effective mobility management projects</li> <li>• Advancing problem-solving skills in real case studies to develop sustainable and efficient mobility solutions that address urban and environmental challenges.</li> <li>• Understanding of the decision-making process and European policies that shape mobility systems.</li> </ul>
<b>Course contents</b>	<ol style="list-style-type: none"> <li>1. Foundations of Mobility Management</li> <li>2. Sustainable Transport Systems</li> <li>3. Multimodal System Design</li> <li>4. Accessibility components and tools</li> <li>5. Mobility as a Service and Active Travel</li> <li>6. Data-Driven Decision Making</li> <li>7. Mobility Behaviour Change practices</li> <li>8. Package of Measures for Mobility Management</li> <li>9. Push and Pull Measures</li> <li>10. Leadership and Innovation in Mobility Management</li> <li>11. Workshop Case study Design</li> <li>12. Workshop Case study Implementation</li> <li>13. Workshop Case study Monitoring</li> <li>14. MM Project Evaluation</li> </ol>
<b>Language</b>	English
<b>Expected prior knowledge</b>	<ul style="list-style-type: none"> <li>• Understanding infrastructure, transport systems, and urban planning principles.</li> <li>• Ability to interpret datasets and tools and analyse trends related to mobility patterns.</li> <li>• Awareness of decarbonization and sustainable mobility solutions.</li> </ul>



	<ul style="list-style-type: none"> <li>• Ability to present ideas and data clearly to both technical and non-technical audiences.</li> </ul>
<b>Education Methods</b>	<ul style="list-style-type: none"> <li>• Face-to-face lectures: expert-led sessions covering core concepts and theories</li> <li>• Case Study: Real-world examples of challenges and solutions in mobility management</li> <li>• Seminar with guest lectures: Interactive discussions on contemporary issues, cases and innovations</li> <li>• Workshops: Hands-on sessions for mobility management packages design, implementation and monitoring.</li> <li>• Visits: companies and city hall to assess the implementation of mobility management measures</li> </ul>
<b>Intended learning outcomes</b>	<p><i>Students will learn:</i></p> <ul style="list-style-type: none"> <li>• The key components of the public transport system, active modes, and shared mobility to assess the impact of MM strategies</li> <li>• To conceive a comprehensive package of measures to address mobility challenges.</li> <li>• To lead interdisciplinary teams to implement innovative mobility management policies.</li> </ul>
<b>Assessment</b>	Project Development (65%); Project Presentation (30%); Attendance and Participation (5%)
<b>Head</b>	Isabel Bezerra da Cunha
<b>Period</b>	First Semester
<b>ECTS</b>	4.0

<b>MScMMc0102 Land-Use and Transport Planning</b>	
<b>Course description</b>	This module examines how land use and transport systems influence each other and shape cities, preparing students for advanced roles in urban planning, equipping them with the knowledge and skills necessary to develop sustainable and efficient land use and transport strategies.
<b>Course objectives</b>	<ul style="list-style-type: none"> <li>• Equipping students with cutting-edge knowledge, skills, and tools for addressing Land-Use and Transport Planning</li> <li>• Advancing problem-solving skills in real case studies</li> <li>• Understanding transport demand and its influences</li> <li>• Exploration of methods like mixed-use land use development and transit-oriented development</li> </ul>
<b>Course contents</b>	<ol style="list-style-type: none"> <li>1. Introduction</li> <li>2. Transport Planning: Framework practices</li> <li>3. Serious Game Application</li> <li>4. Transport Demand Modelling</li> <li>5. Transport Demand Modelling - Application</li> <li>6. Land-Use &amp; Transport Systems Interactions</li> <li>7. Household Location Choices</li> <li>8. Firm Location Choices</li> <li>9. Project Preparation</li> <li>10. Project Presentation</li> </ol>
<b>Language</b>	English

<b>Expected prior knowledge</b>	<ul style="list-style-type: none"> <li>• Understanding infrastructure, transport systems, and urban planning principles.</li> <li>• Basic economic theories related to land use</li> </ul>
<b>Education Methods</b>	<ul style="list-style-type: none"> <li>• Face-to-face lectures: expert-led sessions covering core concepts and theories</li> <li>• Case Study: The use of gamification in planning process</li> <li>• Seminar with guest lectures: Real-world examples of challenges and solutions in land use and transport planning</li> <li>• Workshops: Hands-on sessions for transport network and land use design</li> </ul>
<b>Intended learning outcomes</b>	<p><i>Students will learn:</i></p> <ul style="list-style-type: none"> <li>• The key components of land use and transport systems</li> <li>• To apply integrated planning strategies to real-world urban planning challenges</li> <li>• To lead interdisciplinary teams to implement transport planning projects</li> </ul>
<b>Assessment</b>	Project Development (50%); Project Presentation (45%); Attendance and Participation (5%)
<b>Head</b>	Louafi Bouzouina
<b>Period</b>	First semester
<b>ECTS</b>	3.5

<b>MScMMc0103 Design of dedicated AV-based services</b>	
<b>Course description</b>	<p>International course involving groups of students from 3 countries (France, Mexico, Spain) working on the implementation of services based on Autonomous Vehicle (AV) adapted to the specific characteristics of a local area.</p> <p>The lectures aim to provide support materials or guidelines to the students when leading their study in small working groups (international working groups). Indeed, the attendance to lectures is supplemented by a practical exercise led in short international working groups and based on work period in autonomy punctuated by some (~4) tutoring sessions with supervisors.</p>
<b>Course objectives</b>	<ul style="list-style-type: none"> <li>• Learning to work in an international team thanks to digital tools;</li> <li>• Learning technical skills: territorial diagnosis, transport/mobility diagnosis, socio-economic and technical evaluation of the introduced solution;</li> <li>• Raise students' awareness of the economic and socio-cultural differences between international territories;</li> <li>• Raising awareness of the entrepreneurial opportunities associated with the local application of innovative services (service potential of the technological innovation of the autonomous vehicle) and the existing regional environment (for the Lyon context: CARA cluster, Transpolis SAS, meetings with players from the autonomous vehicle ecosystem, etc.).</li> </ul>
<b>Course contents</b>	<ol style="list-style-type: none"> <li>1. Introduction to Autonomous Vehicles</li> <li>2. Introduction to the Serious Game Robospectif</li> <li>3. Adequation and Design</li> <li>4. Context of Validation and Certification</li> <li>5. Socio-economic Evaluation</li> <li>6. Final presentation</li> </ol>
<b>Language</b>	English
<b>Expected prior knowledge</b>	<ul style="list-style-type: none"> <li>• Be familiar with either planning or transport issues</li> </ul>

	<ul style="list-style-type: none"> <li>• Ability to present ideas and data clearly to both technical and non-technical audiences</li> </ul>
<b>Education Methods</b>	<ul style="list-style-type: none"> <li>• Face-to-face lectures with the French pedagogical team and AV experts</li> <li>• Serious game: Robospectif to open imagination about AV possibilities</li> <li>• Visit: a session at Transpolis where AV tests are conducted before they can be marketed</li> <li>• Video Lectures: available on a digital platform for all the French, Mexican and Spanish students</li> <li>• Supervised international student team project: to learn to work in a group with collaborators from different countries</li> <li>• Case studies: 9 specific territories to imagine an AV service implementation (3 territories for each of the 3 countries, with a territorial diagnosis, an AV service proposal and its assessment)</li> </ul>
<b>Intended learning outcomes</b>	<p><i>Students will learn:</i></p> <ul style="list-style-type: none"> <li>• Being able to cooperate in an international context</li> <li>• Being able to work in an international team thanks to digital tools</li> <li>• Being able to adjust a territorial diagnosis, a transport service solution and its assessment</li> <li>• Being able to clearly synthesize their ideas using a digital medium</li> </ul>
<b>Assessment</b>	6-minute video presentation
<b>Head</b>	Pierre-Antoine LAHAROTTE & Jean-Pierre NICOLAS
<b>Period</b>	First Semester
<b>ECTS</b>	2.5

<b>MScMMc0104 Transport Data and Machine Learning</b>	
<b>Course description</b>	This course introduces students to techniques for analysing transportation data, urban mobility, and spatial patterns using tree-based machine learning algorithms. Additionally, it explores, from a conceptual perspective, how interpretable machine learning (explainable AI) can be leveraged to extract meaningful insights and policy-relevant knowledge from these algorithms.
<b>Course objectives</b>	<ul style="list-style-type: none"> <li>• Understanding the basics of algorithmic modelling use on urban datasets.</li> <li>• Understanding the basis of randomized and sequential data partitioning algorithms.</li> <li>• Using unsupervised machine learning to detect anomalies,</li> <li>• Understanding interpretation tools used on predictions from tree-based ensemble models.</li> </ul>
<b>Course contents</b>	<ol style="list-style-type: none"> <li>1. Review of basics of statistics (first session, guest lecturer)</li> <li>2. Review of basics of statistics (second session, guest lecturer)</li> <li>3. Classification and Regression Trees (CART). Split criteria and predictive performance.</li> <li>4. Cross-validation and pruning.</li> <li>5. Random Forests (supervised and unsupervised). Random Forest Proximity Plots, their uses and interpretations. Isolation Forests.</li> <li>6. Variable Importance, Partial Dependence Plots (PDP). Individual Conditional Expectation (ICE) Curves.</li> <li>7. Gradient Boosting Machine (GBM).</li> <li>8. SHapley Additive exPlanations (SHAP).</li> </ol>

	<p>9. Computation of SHAP values using the Tree SHAP method. SHAP interaction values. Spatial effects measured with SHAP. Visualization of SHAP values in plots and maps.</p> <p>10. Discussing research examples done in the lab.</p>
<b>Language</b>	English
<b>Expected prior knowledge</b>	<ul style="list-style-type: none"> <li>• Basic calculus</li> <li>• Basic statistics</li> <li>• Basic linear algebra</li> <li>• Prior knowledge in econometrics is a plus</li> </ul>
<b>Education Methods</b>	<ul style="list-style-type: none"> <li>• Lectures</li> <li>• Sample research models and findings</li> <li>• Interpretations of visual representations of ML results</li> </ul>
<b>Intended learning outcomes</b>	<ul style="list-style-type: none"> <li>• Analyse transport and urban data using tree-based ML.</li> <li>• Apply newly learned techniques to existing and new research questions</li> <li>• Have a good understanding of interpretation methods and their implications</li> <li>• Acquire fundamentals that can help learning other ML techniques in the future</li> </ul>
<b>Assessment</b>	Four multiple-choice quizzes. One final written exam.
<b>Head</b>	Mehmet Guney Celbis
<b>Period</b>	First semester
<b>ECTS</b>	3.0

<b>MScMMc0105</b>	<b>Urban Logistics</b>
<b>Course description</b>	<p>This course examines urban logistics for businesses and households, focusing on the interaction between territories and freight flows. It addresses economic, social, and environmental challenges, while grounding the discussion in economics and urban planning. Emphasis is placed on quantitative methods for observing and modeling freight mobility and exploring innovations in transport to enhance sustainability and efficiency.</p>
<b>Course objectives</b>	<ul style="list-style-type: none"> <li>• Understand the complexities of urban logistics: Explore how businesses and households interact with freight systems in urban environments and analyze the interplay between territories and goods flows.</li> <li>• Expand mobility analysis to freight: Integrate freight into a systemic vision of mobility, considering its interconnections with passenger mobility and its impacts on territorial dynamics.</li> <li>• Explore innovation in transport: Investigate emerging technologies and practices in the transport sector, fostering innovative solutions for urban logistics challenges.</li> <li>• Apply knowledge through a real-world case study: Analyze an urban freight scenario to assess the integration of freight and passenger mobility, evaluate existing solutions, or propose improvements using quantitative and qualitative methods.</li> </ul>
<b>Course contents</b>	<ol style="list-style-type: none"> <li>1. Introduction to urban freight mobility: key concepts and notions</li> <li>2. Understanding freight flows of economic activities</li> <li>3. Understanding freight flows of households</li> <li>4. Workshop on case study: subject and design</li> <li>5. Visit: innovative companies and urban planning solutions</li> </ol>

	<ol style="list-style-type: none"> <li>6. Urban logistics spaces</li> <li>7. Multimodality and innovative solutions</li> <li>8. Workshop on case study: data processing, analysis</li> <li>9. Waste management, service flows and construction</li> <li>10. Workshop on case study: assessment and main conclusions</li> <li>11. Case study project evaluation</li> </ol>
<b>Course language</b>	English
<b>Expected prior knowledge</b>	<ul style="list-style-type: none"> <li>• Understanding infrastructure, transport systems, and urban planning principles.</li> <li>• Ability to interpret datasets and tools and analyse trends related to mobility patterns.</li> <li>• Basic awareness to freight transport problems</li> <li>• Awareness of decarbonization and sustainable mobility solutions.</li> <li>• Ability to present ideas and data clearly to both technical and non-technical audiences.</li> </ul>
<b>Education Methods</b>	<ul style="list-style-type: none"> <li>• Face-to-face lectures: expert-led sessions covering core concepts and theories</li> <li>• Serious games: Introducing key mechanics and concepts through gamification for an intuitive understanding of the field</li> <li>• Case Study: Real-world examples of challenges and solutions in mobility management</li> <li>• Seminar with guest lectures: Interactive discussions on contemporary issues, cases and innovations</li> <li>• Workshops: Hands-on sessions for mobility management packages design, implementation and monitoring.</li> <li>• Visits: innovative companies &amp; urban planning projects</li> </ul>
<b>Intended learning outcomes</b>	<ul style="list-style-type: none"> <li>• Adopt a systemic view of freight transport: Understand the integration of freight within urban mobility systems and its interaction with other transport modes.</li> <li>• Integrate freight and passenger mobility: Develop the ability to analyse and design solutions that address both freight and passenger flows.</li> <li>• Acquire critical evaluation tools: Gain skills to critically assess urban freight solutions considering economic, social, and environmental factors.</li> <li>• Assess solution impacts: Evaluate the advantages and drawbacks of urban freight strategies using quantitative and qualitative methods.</li> </ul>
<b>Assessment</b>	Project Development (60%); Project Presentation (30%); Attendance and Participation (10%)
<b>Head</b>	Mathieu Gardrat
<b>Period</b>	First Semester
<b>ECTS</b>	3.0

<b>MScMMc0106</b>	<b>Mobility Modelling</b>
<b>Course description</b>	This course provides the key skills about dynamic mobility modelling: the description of the mobility demand dynamics, the effects of stochasticity, the need to use a tool suitable to each specific scale, and the role of control. Through the practical case of elevated buildings' elevators all concepts will be illustrated.

<b>Course objectives</b>	<ul style="list-style-type: none"> <li>• Equipping students with the basis of dynamic analytical mobility modelling, of discrete choice models and of how massive data can help defining the demand and the supply of the transportation system (sessions 1, 2, and 3).</li> <li>• Providing an in-depth understanding of available modelling tools, highlighting their specific deployment area (sessions 3 to 6).</li> <li>• Advancing problem-solving skills with the case of elevators in elevated buildings. This practical case permits to illustrate the key concepts of transportation system: peak hours, stochasticity, control.</li> </ul>
<b>Course contents</b>	<ol style="list-style-type: none"> <li>1. Introduction - overview of the various modelling approaches and how to address the dynamicity of the transportation system demand and supply.</li> <li>2. Discrete Choice Modelling</li> <li>3. Massive data for dynamic demand and supply quantification.</li> <li>4. Data integration into modelling efforts</li> <li>5. Macro and microscale modelling</li> <li>6. Multi agents modelling tools</li> <li>7. Application: elevated buildings elevators problem: i/ Design</li> <li>8. Application: elevated buildings elevators problem: ii/ modelling and results analysis</li> <li>9. Application: elevated buildings elevators problem: iii/ modelling to assess various control designs</li> <li>10. Final presentation (by students)</li> </ol>
<b>Language</b>	English
<b>Expected prior knowledge</b>	<ul style="list-style-type: none"> <li>• Understanding transport systems and the role of the dynamicity of the system.</li> <li>• Ability to interpret data and results.</li> <li>• Ability to present ideas and data clearly to both technical and non-technical audiences.</li> </ul>
<b>Education Methods</b>	<ul style="list-style-type: none"> <li>• Face-to-face lectures: expert-led sessions covering core concepts and theories</li> <li>• Presentations of available tools, capacities, and limits in real-case applications.</li> <li>• Case Study: Real-world example.</li> </ul>
<b>S</b>	<p><i>Students will learn:</i></p> <ul style="list-style-type: none"> <li>• The theories and tools to model multimodal transportation system at all scales, from road links to network-wide areas.</li> <li>• The way to understand the limits of each modelling tools and their specific deployment domains.</li> <li>• The need for data to fuel modelling tools.</li> <li>• The use of modelling to assess a transportation system, particularly in comparing various controlling schemes.</li> </ul>
<b>Assessment</b>	Project Development (65%); Project Presentation (30%); Attendance and Participation (5%)
<b>Head</b>	Christine Buisson
<b>Period</b>	First semester
<b>ECTS</b>	2.5

MScMMc0107	Spatial Analysis
<b>Course description</b>	This module provides a comprehensive understanding of spatial data handling, analysis and visualisation using GIS technology. This module equips students with the essential skills and knowledge to apply GIS and spatial analysis in academic research and professional practice.
<b>Course objectives</b>	<ul style="list-style-type: none"> <li>• Understanding of the theoretical foundations and practical applications of spatial analysis within GIS.</li> <li>• Students will learn to collect, manage, visualize, analyse, and interpret spatial data across various disciplines.</li> <li>• Advanced insights into spatial patterns and relationships.</li> <li>• Key topics include spatial data structures, geocoding, map algebra, spatial statistics, and the integration of remote sensing data.</li> </ul>
<b>Course contents</b>	<ol style="list-style-type: none"> <li>1. Introduction</li> <li>2. Spatial Data Models and Sources</li> <li>3. Data Management and Integration</li> <li>4. Network Analysis for Transport Systems</li> <li>5. Workshop: Working with APIs for transport data</li> <li>6. Spatial Accessibility Analysis: Measurements</li> <li>7. Spatial Accessibility Analysis: Case Studies on Equity</li> <li>8. Urban Mobility Patterns and Hotspot Analysis</li> <li>9. Geovisualisation and Cartographic Techniques</li> <li>10. Workshop on Case study I</li> <li>11. Workshop on case study II</li> <li>12. Project evaluation</li> </ol>
<b>Course language</b>	English
<b>Expected prior knowledge</b>	<ul style="list-style-type: none"> <li>• Students are expected to have basic computer literacy and an understanding of fundamental statistical concepts.</li> <li>• Familiarity with cartographic principles and spatial data</li> </ul>
<b>Education Methods</b>	<ul style="list-style-type: none"> <li>• Face-to-face lectures: expert-led sessions covering core concepts and theories</li> <li>• Hands-on computer lab sessions</li> <li>• Project-based assignments</li> <li>• Real-world spatial data analysis fostering critical thinking and problem-solving skills.</li> </ul>
<b>Intended learning outcomes</b>	<ul style="list-style-type: none"> <li>• Understand the fundamental concepts and principles of GIS and spatial analysis.</li> <li>• Collect, manage, and analyse spatial data using appropriate GIS tools and techniques.</li> <li>• Apply spatial analysis methods to identify patterns and relationships in various contexts.</li> <li>• Effectively visualize and communicate spatial information through maps and reports.</li> </ul>
<b>Assessment</b>	Project Development (45%); Project Presentation (45%); Attendance and Participation (10%)
<b>Head</b>	Isabel Bezerra da Cunha
<b>Period</b>	First Semester
<b>ECTS</b>	3.0

<b>MScMMc0108</b>	<b>Research Seminar I</b>
<b>Course description</b>	The “Research Seminar” module is designed to engage students in critical discussions on pressing issues in transport planning and urban development through interactions with guest lecturers who are experts in the field. The course emphasizes critical thinking and active participation, encouraging students to analyse and debate complex urban issues.
<b>Course objectives</b>	The course is structured around weekly seminars featuring guest lectures, followed by interactive discussions. Students are expected to engage with preparatory readings, participate in discussions, and reflect on the implications of the presented topics. The course may also include group projects or presentations where students delve deeper into specific issues discussed during the seminars.
<b>Course contents</b>	<ol style="list-style-type: none"> <li>1. Introduction</li> <li>2. The 15-Minute City</li> <li>3. Street Experiments</li> <li>4. Cyclable Cities</li> <li>5. Urban Logistics and Drones</li> <li>6. Transport Policy in the Global South</li> <li>7. Final Evaluation</li> </ol>
<b>Course language</b>	English
<b>Expected prior knowledge</b>	<ul style="list-style-type: none"> <li>• Students should have a foundational understanding of urban planning and transport systems.</li> <li>• Familiarity with current urban challenges and basic research methodologies will enhance participation and comprehension.</li> </ul>
<b>Education Methods</b>	<ul style="list-style-type: none"> <li>• Face-to-face lectures: expert-led sessions covering core concepts and theories</li> <li>• Contemporary issues, cases and innovations</li> <li>• Workshops: Hands-on sessions with professionals</li> <li>• Visits: innovative companies &amp; urban planning projects</li> </ul>
<b>Intended learning outcomes</b>	<ul style="list-style-type: none"> <li>• Critically analyse contemporary challenges in transport planning and urban development.</li> <li>• Engage in informed discussions with professionals and peers on complex urban issues.</li> <li>• Demonstrate enhanced communication skills through presentations and debates.</li> <li>• Reflect on the practical implications of theoretical concepts in real-world urban settings.</li> </ul>
<b>Assessment</b>	Final report (50%); Participation (50%)
<b>Head</b>	Louafi Bouzouina & Isabel Cunha
<b>Period</b>	First Semester
<b>ECTS</b>	3.5



**SECOND SEMESTER**

Core Modules		
CODE	TITLE	ECTS
MScMMc0201	Sustainable Urban Mobility Plans	4.0
MScMMc0202	Environmental Impacts of Transport Systems	2.5
MScMMc0203	Mobility Management II	2.5
MScMMc0204	Transitions towards Sustainable Mobility: Practical Approaches	2.5
MScMMc0205	Research Seminar II	3.5
MScMMc0206	Work Placement	10
MScMMc0207	MSc Dissertation	10

**Modules Description**

MScMMc0201 Sustainable Urban Mobility Plans	
<b>Course description</b>	This course aims to foster knowledge of the theoretical foundations of SUMP, encompassing technical, economic, environmental, and social sustainability aspects. Students will acquire skills to develop comprehensive SUMP considering both European and International challenges.
<b>Course objectives</b>	<ul style="list-style-type: none"> <li>• Equipping students with cutting-edge knowledge, skills, and tools for effective SUMP development and implementation</li> <li>• Advancing problem-solving skills in real case studies to develop SUMP, policy guidelines and recommendations scalable to different contexts.</li> <li>• Understanding of the decision-making process and European policies that shape sustainable mobility systems.</li> </ul>
<b>Course contents</b>	<ol style="list-style-type: none"> <li>1. SUMP concept and purpose</li> <li>2. Sustainable Mobility in cities</li> <li>3. The benefits of Active Travel</li> <li>4. Data-driven approach to SUMP</li> <li>5. Equity indicators for SUMP</li> <li>6. European Green Deal and SUMP development</li> <li>7. SUMP Capacity Building</li> <li>8. Overcoming implementation challenges</li> <li>9. Successful SUMP in Europe</li> <li>10. Upscaling and Transferability Measures</li> <li>11. Workshop SUMP Design</li> <li>12. Workshop SUMP Policy Simulation</li> <li>13. SUMP Project Evaluation</li> </ol>
<b>Language</b>	English
<b>Expected prior knowledge</b>	<ul style="list-style-type: none"> <li>• Understanding infrastructure, transport systems, and urban planning principles.</li> <li>• Ability to interpret datasets and tools and analyse trends related to mobility patterns.</li> <li>• Awareness of decarbonization and sustainable mobility solutions.</li> <li>• Ability to present ideas and data clearly to both technical and non-technical audiences.</li> </ul>
<b>Education Methods</b>	<ul style="list-style-type: none"> <li>• Face-to-face lectures: expert-led sessions covering core concepts and theories</li> <li>• Case Study: Real-world examples of challenges and solutions in mobility management</li> </ul>

	<ul style="list-style-type: none"> <li>• Seminar with guest lectures: Interactive discussions on contemporary issues, cases and innovations</li> <li>• Workshops: Hands-on sessions for mobility management packages design, implementation and monitoring.</li> <li>• Visits: companies and city hall to assess the implementation of mobility management measures</li> </ul>
<b>Intended learning outcomes</b>	<p><i>Students will learn:</i></p> <ul style="list-style-type: none"> <li>• The key components and principles of SUMP</li> <li>• To conceive a comprehensive sustainable urban mobility plan to be implemented in local, metropolitan, regional or national scales</li> <li>• To lead interdisciplinary teams to implement innovative mobility management policies.</li> </ul>
<b>Assessment</b>	Project Development (65%); Project Presentation (30%); Attendance and Participation (5%)
<b>Head</b>	Isabel Bezerra da Cunha
<b>Period</b>	Second semester
<b>ECTS</b>	4.0

<b>MScMMc0202 Environmental impacts of transport systems</b>	
<b>Course description</b>	The aim of this course is to introduce and develop students' skills on environmental externalities, assessment methods and regulation related to transport systems. It will address the climate change issue, but also other environmental concerns linked to present and future transport technologies.
<b>Course objectives</b>	<ul style="list-style-type: none"> <li>• Learning and handling environmental models to assess externalities related to various transports objects from energy to services</li> <li>• Applying prospective approach on transport services in case studies to highlight and discuss environmental challenges in relation to regulations</li> <li>• Carrying out a critical analysis of environmental results of a transport system based on multicriteria assessments and methodological basis</li> </ul>
<b>Course contents</b>	<ol style="list-style-type: none"> <li>1. Environmental issues and mechanisms</li> <li>2. Energy systems in transportation</li> <li>3. Climate change regulation and carbon cycles</li> <li>4. Life Cycle Assessment of transport systems</li> <li>5. Air quality and noise modelling of traffic</li> <li>6. Prospective of transport services</li> <li>7. Practical exercises on assessment tools</li> <li>8. Project environmental assessment</li> </ol>
<b>Language</b>	English
<b>Expected prior knowledge</b>	<ul style="list-style-type: none"> <li>• Understanding environmental challenges faced by transport systems, their natures, mechanisms and related regulations.</li> <li>• Ability to use environmental datasets and tools to enlighten various externalities.</li> <li>• Critical thinking on decarbonization and sustainable mobility solutions in the light of multicriteria and life cycle approaches.</li> <li>• Capability to present clearly environmental results and methods in case of prospective studies.</li> </ul>
<b>Education Methods</b>	<ul style="list-style-type: none"> <li>• Face-to-face lectures: Expert-led sessions covering main externalities and methods</li> </ul>

	<ul style="list-style-type: none"> <li>• Seminar with guest lectures: Interactive discussions on current and future challenges, technologies and systems</li> <li>• Practical exercises: Hands-on sessions with environmental datasets and tools used in transportation sector</li> <li>• Case Study: Undertake an environmental and prospective assessment based on real-world transports systems</li> </ul>
<b>Intended learning outcomes</b>	<p><i>Students will learn:</i></p> <ul style="list-style-type: none"> <li>• The diversity of environmental concerns that faced transport and mobility systems.</li> <li>• To mobilize the appropriate datasets and tools to address these externalities</li> <li>• To interpret and criticize environmental results based on systemic vision</li> <li>• To conduct prospective study based on multidisciplinary skills and knowledge</li> </ul>
<b>Assessment</b>	Practical exercises (30%); Project presentation & report (65%); Attendance and Participation (5%)
<b>Head</b>	Cyrille FRANÇOIS
<b>Period</b>	Second Semester
<b>ECTS</b>	2.5

<b>MScMMc0203 Mobility Management – Part II</b>	
<b>Course description</b>	This course focuses on advanced technological solutions and operational aspects of mobility management. It provides hands-on experience with cutting-edge and simulation software for implementing and evaluating mobility solutions. The course shows practical applications in connected environments and emerging mobility services.
<b>Course objectives</b>	<ul style="list-style-type: none"> <li>• Developing technical expertise in traffic management systems and connected and automated vehicle environments</li> <li>• Building practical skills in mobility simulation and modelling using state-of-the-art tools</li> <li>• Understanding the integration of emerging technologies and services in mobility management</li> </ul>
<b>Course contents</b>	<ol style="list-style-type: none"> <li>1. Introduction to Resilience and Sustainable Mobility Management</li> <li>2. Microscopic Traffic Control and Signal Management</li> <li>3. Freeway Control Strategies in Connected Vehicle Settings</li> <li>4. Advanced Public Transport Systems Management</li> <li>5. Electromobility and Energy Infrastructure Management</li> <li>6. Shared Mobility Services - Part 1 (Ride-sharing)</li> <li>7. Shared Mobility Services - Part 2 (Bike-sharing)</li> <li>8. Multi-Modal Traffic Simulation - Introduction</li> <li>9. Multi-Modal Traffic Simulation - Advanced Applications</li> <li>10. Final Project Presentations</li> </ol>
<b>Language</b>	English
<b>Expected prior knowledge</b>	<ul style="list-style-type: none"> <li>• Basic understanding of transportation systems</li> <li>• Fundamental knowledge of data analysis and statistical methods</li> <li>• Basic programming skills (for simulation exercises)</li> <li>• Successful completion of Mobility Management Part I</li> </ul>
<b>Education Methods</b>	<ul style="list-style-type: none"> <li>• Technical lectures with industry experts</li> <li>• Hands-on workshops with simulation software (MnMs)</li> <li>• Interactive laboratory sessions</li> </ul>

	<ul style="list-style-type: none"> <li>• Technical demonstrations of mobility management systems</li> <li>• Guest lectures from industry professionals</li> <li>• Practical case studies using real-world data</li> </ul>
<b>Intended learning outcomes</b>	<p><i>Students will be able to:</i></p> <ul style="list-style-type: none"> <li>• Design and implement advanced traffic management strategies in connected environments</li> <li>• Use simulation tools to evaluate and optimize mobility solutions</li> <li>• Integrate emerging mobility services into existing transportation systems</li> <li>• Develop and assess technical solutions for sustainable mobility challenges</li> </ul>
<b>Assessment</b>	Technical Project (50%); Simulation Assignments (30%); Final Presentation (20%)
<b>Head</b>	Nour-Eddin El Faouzi
<b>Period</b>	Second semester
<b>ECTS</b>	2.5 ECTS

<b>MScMMc0204 Transitions towards Sustainable Mobility: Practical Approaches</b>	
<b>Course description</b>	This course offers students practical insights and strategies to understand, assess, and model the behavioural changes necessary to drive the transition towards more sustainable mobility.
<b>Course objectives</b>	<ul style="list-style-type: none"> <li>• Identifying human behaviour change challenges as the central point to focus on to enable sustainable mobility transitions.</li> <li>• Familiarizing with dedicated methodologies to understand, evaluate and model mobility practices.</li> <li>• Identifying the systemic implications of territorial and mobility planning for sustainability.</li> <li>• Exploring the challenges faced by societies and transport systems in achieving resilience and examining how policies, technological innovations and other strategies can offer practical solutions.</li> </ul>
<b>Course contents</b>	<ol style="list-style-type: none"> <li>1. Behaviour change challenges and strategies for supporting sustainable mobility transitions</li> <li>2. Sustainable mobility policies: Evaluation of scenarios and stakeholders' ecosystems</li> <li>3. Technological innovation enabling new paradigms</li> <li>4. Transport ecosystems' resilience</li> <li>5. Planning for sustainable mobility in urban and rural environments</li> <li>6. Project presentation and co-evaluation</li> </ol>
<b>Language</b>	English
<b>Expected prior knowledge</b>	<ul style="list-style-type: none"> <li>• Knowledge of the pillars and challenges of sustainable mobility</li> <li>• Understanding of transport system components</li> <li>• Notions of territorial planning strategies and theories</li> <li>• Basic qualitative/quantitative survey methods knowledge</li> <li>• Oral and written expression skills</li> </ul>
<b>Education Methods</b>	<ul style="list-style-type: none"> <li>• Face-to-face and hybrid lectures with mobility experts</li> <li>• Practical exercises: identifying challenges by conducting diagnostic, proposing methodologies to address the problems, structuring surveys for specific cases, mapping actors' ecosystems.</li> </ul>

<b>Intended learning outcomes</b>	<p><i>Students will learn:</i></p> <ul style="list-style-type: none"> <li>• Identify challenges in transport systems by conducting diagnostic analyses.</li> <li>• Develop and propose appropriate methodologies to address specific sustainable mobility-related issues.</li> <li>• Design surveys to gather relevant data for specific case studies.</li> <li>• Map and analyse actors’ ecosystems to understand their roles and interactions within mobility systems.</li> </ul>
<b>Assessment</b>	Project Development (30%); Project proposal (30%); Presentation (30%); Attendance (5%) and Participation (5%)
<b>Head</b>	Laura Mariana Reyes Madrigal – VEDECOM Research Institute
<b>Period</b>	Second Semester
<b>ECTS</b>	2.5

<b>MScMMc0205</b>	<b>Research Seminar II</b>
<b>Course description</b>	<p>The “Research Seminar” module is designed to engage students in critical discussions on pressing issues in transport planning and urban development through interactions with guest lecturers who are experts in the field. This seminar series invites distinguished professionals and academics to present contemporary challenges and innovative solutions in transport planning and urban development. Topics may include sustainable mobility, the 15-Minute City, and the impact of emerging technologies on urban environments. The course emphasizes critical thinking and active participation, encouraging students to analyse and debate complex urban issues.</p>
<b>Course objectives</b>	<p>The course is structured around weekly seminars featuring guest lectures, followed by interactive discussions. Students are expected to engage with preparatory readings, participate in discussions, and reflect on the implications of the presented topics. The course may also include group projects or presentations where students delve deeper into specific issues discussed during the seminars.</p>
<b>Course contents</b>	<ol style="list-style-type: none"> <li>1. European Regulation and Policy</li> <li>2. Civic Participation in the Decision-Making process</li> <li>3. Small-scale Transport Systems</li> <li>4. Informal Transport in the Global South</li> <li>5. Urban Mobility and Road Safety</li> <li>6. Transport Systems &amp; Climate Change</li> <li>7. Mobility Hubs</li> <li>8. Final Seminar</li> </ol>
<b>Language</b>	English
<b>Expected prior knowledge</b>	Students should have a foundational understanding of urban planning and transport systems. Familiarity with current urban challenges and basic research methodologies will enhance participation and comprehension.
<b>Education Methods</b>	<ul style="list-style-type: none"> <li>• Face-to-face lectures: expert-led sessions covering core concepts and theories</li> <li>• Contemporary issues, cases and innovations</li> <li>• Workshops: Hands-on sessions with professionals</li> </ul>

	<ul style="list-style-type: none"> <li>• Visits: innovative companies &amp; urban planning projects</li> </ul>
<b>Intended learning outcomes</b>	<ul style="list-style-type: none"> <li>• Critically analyse contemporary challenges in transport planning and urban development.</li> <li>• Engage in informed discussions with professionals and peers on complex urban issues.</li> <li>• Demonstrate enhanced communication skills through presentations and debates.</li> <li>• Reflect on the practical implications of theoretical concepts in real-world urban settings.</li> </ul>
<b>Assessment</b>	Final report and Presentation (60%); Participation (40%)
<b>Head</b>	Isabel Bezerra da Cunha
<b>Period</b>	Second Semester
<b>ECTS</b>	3.5

<b>MScMMc0206</b>	<b>Work Placement</b>
<b>Course description</b>	This module provides students with practical, hands-on experience in the field of mobility management, to bridge theoretical knowledge and real-world application by placing students in relevant organisations, such as transportation agencies, consulting firms, or urban planning offices. Through supervised professional work, students will gain insight into industry practices, develop their professional skills, and contribute to ongoing projects in mobility management
<b>Course objectives</b>	<ul style="list-style-type: none"> <li>• Duration: at least 4 months</li> <li>• Hours: 20 hours/week</li> <li>• Location: Host organisation (in-person or remote placements)</li> <li>• Supervision: Each student will have an academic advisor and a professional mentor at the host organisation</li> <li>• Reporting: Students are required to submit periodic updates and a final report.</li> </ul>
<b>Course contents</b>	<ol style="list-style-type: none"> <li>1. Understanding organizational structure and project workflows</li> <li>2. Applying mobility management theories and practices in real-world scenarios</li> <li>3. Participating in mobility-related projects, such as transportation planning, behavioral studies, or policy development</li> <li>4. Developing key skills in communication, project management, and data analysis</li> <li>5. Reflecting on professional growth and industry trends</li> </ol>
<b>Language</b>	English and French
<b>Expected prior knowledge</b>	<ul style="list-style-type: none"> <li>• Completion of core modules of the MSc programme</li> <li>• Fundamental understanding of mobility systems, policies, and behavioural change strategies</li> <li>• Basic skills in data analysis and project development</li> </ul>
<b>Education Methods</b>	<ul style="list-style-type: none"> <li>• On-the-job learning through assigned tasks</li> <li>• Regular meetings with supervisors for guidance and feedback</li> <li>• Reflective learning through a personal journal or portfolio</li> <li>• Peer discussions and debriefing sessions with fellow interns</li> </ul>

<b>Intended learning outcomes</b>	<p><i>Upon completing the Internship, students will be able to:</i></p> <ul style="list-style-type: none"> <li>• Apply theoretical knowledge of mobility management in professional contexts.</li> <li>• Demonstrate effective communication and teamwork in a professional setting.</li> <li>• Critically assess the challenges and opportunities in the field of mobility management.</li> <li>• Develop practical solutions to mobility-related problems.</li> <li>• Reflect on personal and professional growth during the internship.</li> </ul>
<b>Assessment</b>	Internship report (50%) and Presentation (20%); Supervisor Evaluation (30%)
<b>Head</b>	Isabel Bezerra da Cunha & Louafi Bouzouina
<b>Period</b>	Second Semester
<b>ECTS</b>	10

<b>MScMMc0207</b>	<b>Master Dissertation</b>
<b>Course description</b>	<p>The Master Dissertation module is the capstone of the MSc program in Mobility Management. This module emphasises both academic rigor and professional relevance, encouraging students to address real-world challenges in mobility management. By integrating theoretical frameworks, research methodologies, and practical insights, the dissertation equips students with the skills to make meaningful contributions to both academia and the industry.</p>
<b>Course objectives</b>	<ul style="list-style-type: none"> <li>• Duration: 6 months</li> <li>• Submission Deadline: end of semester</li> <li>• Supervision: Each student will be assigned a faculty advisor with expertise in their research area. Industry mentors may also be involved for projects with professional applications</li> <li>• Format: Written thesis and oral defence</li> </ul>
<b>Course contents</b>	<ol style="list-style-type: none"> <li>1. Defining a research problem in mobility management with academic and/or industry relevance</li> <li>2. Conducting a comprehensive literature review</li> <li>3. Developing research objectives and questions aligned with theoretical and practical goals</li> <li>4. Selecting and implementing appropriate methodologies (quantitative, qualitative, or mixed-methods)</li> <li>5. Data collection, analysis, and interpretation</li> <li>6. Drawing actionable insights for policy, practice, or further research</li> <li>7. Communicating findings in a structured and coherent manner</li> </ol>
<b>Language</b>	English and French
<b>Expected prior knowledge</b>	<ul style="list-style-type: none"> <li>• Completion of core modules of the MSc programme</li> <li>• Proficiency in research methodologies and data analysis (as covered in earlier modules)</li> <li>• Strong understanding of mobility management concepts</li> <li>• Academic writing and critical thinking skills</li> </ul>

	<ul style="list-style-type: none"> <li>• Awareness of industry challenges and trends in mobility management</li> </ul>
<b>Education Methods</b>	<ul style="list-style-type: none"> <li>• Individual supervision sessions for guidance and feedback</li> <li>• Regular progress reviews to ensure alignment with objectives</li> <li>• Workshops on academic writing, research ethics, and industry engagement</li> <li>• Optional collaboration with industry partners or stakeholders</li> <li>• Independent research and self-directed study</li> </ul>
<b>Intended learning outcomes</b>	<p><i>Upon completing the Internship, students will be able to:</i></p> <ul style="list-style-type: none"> <li>• Formulate a clear and focused research problem that is academically rigorous and professionally relevant.</li> <li>• Design and implement a research methodology that addresses complex mobility management challenges.</li> <li>• Critically analyse and synthesize data to derive meaningful academic and industry insights.</li> <li>• Communicate research findings effectively through a written dissertation and oral defence.</li> <li>• Demonstrate autonomy, time management, and problem-solving skills in conducting research.</li> <li>• Bridge the gap between academic knowledge and professional practice in mobility management.</li> </ul>
<b>Assessment</b>	Written Dissertation (50%) and Oral defence (50%)
<b>Head</b>	Isabel Bezerra da Cunha & Louafi Bouzouina
<b>Period</b>	Second Semester
<b>ECTS</b>	10



## TEACHING

Experts from academia, research institutes and industry will share their expertise and knowledge through lectures and seminars. The list below presents those responsible for each module in alphabetical order.

**Dr. Christine Buisson**, Top-grade Researcher (HDR) at ENTPE and at Gustave Eiffel University - LICIT ECO-7 Lab - Transport and Traffic Engineering Laboratory. [Topics: Traffic Engineering, Traffic Safety, Intelligent Transportation Systems, Transportation Traffic Control.](#)

**Dr. Cyrille François**, Associate Professor at ENTPE and Researcher at LAET - Transport Urban Planning Economics Laboratory, ENTPE, CNRS, University of Lyon. [Topics: Daily mobility, Environmental assessment, Transport and mobility model, Life Cycle Analysis, Eco-design of mobility.](#)

**Dr. Güney Celbiş Mehmet**, Associate professor at ENTPE and Research Associate at LAET - Transport Urban Planning Economics Laboratory, ENTPE, CNRS, University of Lyon. [Topics: Tree-based machine learning models, Socioeconomic analysis, Urban Mobility, Machine learning tools.](#)

**Dr. Isabel Cunha**, Head of the MSc in Mobility Management and Assistant Professor at ENTPE and Research Associate at LAET - Transport Urban Planning Economics Laboratory, ENTPE, CNRS, University of Lyon. [Topics: Mobility Management, Behaviour Change, Active Travel, Planning Support System Tools, Accessibility, Mobility Justice and the 15-Minute City.](#)

**Dr. Jean-Pierre Nicolas**, CNRS Top-Grade Researcher (HDR) at ENTPE and LAET - Transport Urban Planning Economics Laboratory, ENTPE, CNRS, University of Lyon. [Topics: Urban & Transport Studies, Assessment of public policies, Sustainable development.](#)

**Dr. Louafi Bouzouina**, Full professor (HDR) at ENTPE and Research Director at LAET - Transport Urban Planning Economics Laboratory, ENTPE, CNRS, University of Lyon. [Topics: Urban Growth, Daily Mobility, Accessibility, Urban Segregation, Deprived Neighbourhoods, Spatial Analysis, Transport Policy, Sustainable city.](#)

**Dr. Mariana Reys**, R&D Researcher in Transport Economics and Territorial Planning at VEDECOM Research Institute. [Topics: Sustainable mobility, Active mobility, Urban planning, Governance, Mobility ecosystems, Mobility management.](#)

**Dr. Mathieu Gardrat**, CNRS Senior Researcher at ENTPE and LAET - Transport Urban Planning Economics Laboratory, ENTPE, CNRS, University of Lyon. [Topics: Urban logistics, Serious Games, urban mobility modelling.](#)

**Dr. Nour-Eddin El Faouzi**, Full professor (HDR) at Gustave Eiffel University - LICIT ECO-7 Lab - Transport and Traffic Engineering Laboratory, and ENTPE. [Topics: Civil Engineering, Transport Engineering, Statistics, Algorithms, Data Machine learning.](#)

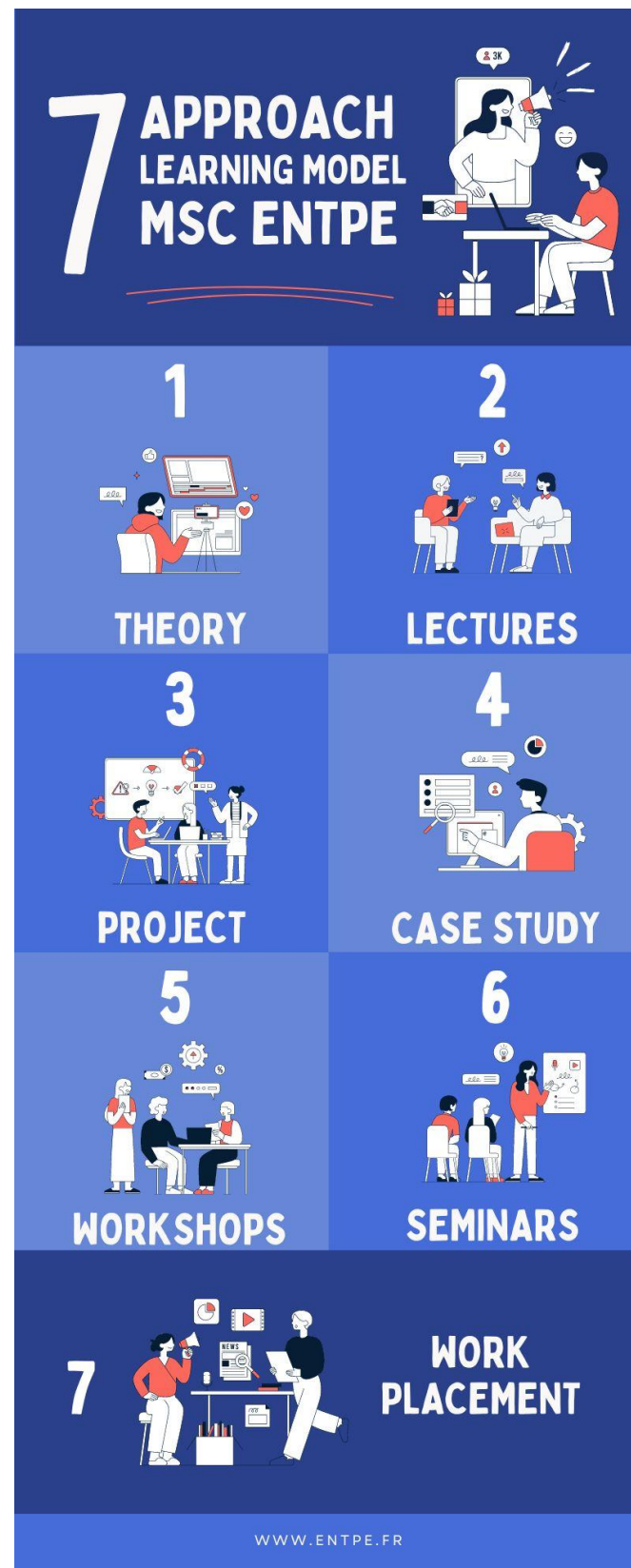
**Dr. Pierre-Antoine Laharotte**, Researcher at Gustave Eiffel University - LICIT ECO-7 Lab - Transport and Traffic Engineering Laboratory, and ENTPE. [Topics: Statistical Learning, Intelligent Transportation Systems, Machine Learning.](#)

# LEARNING MODEL

Our master programme proposes a 7-approach model to enrich the academic experience and enhance personal development, career readiness, and the ability to contribute to solving complex urban mobility challenges:

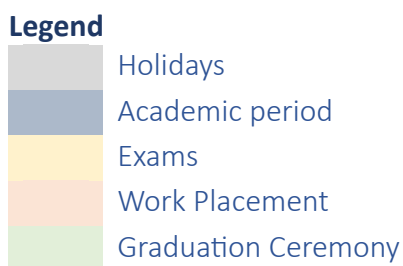
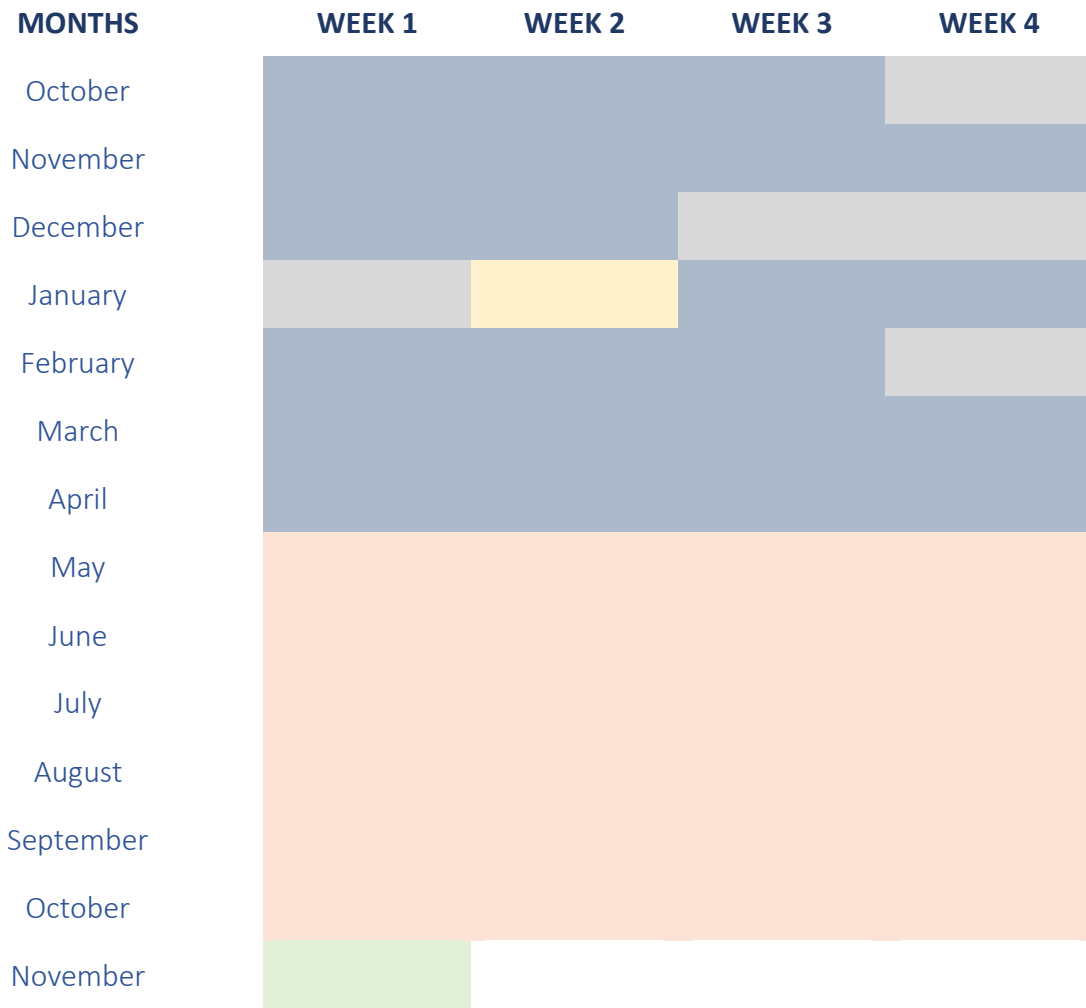
1. Students will gain the theoretical basis learning from multiple disciplines.
2. Lectures and interconnected knowledge encourage critical thinking and the ability to see problems from different angles
3. Working groups will help students to combine ideas and approaches, adapt methods and tools to solve problems. The cross-pollination of ideas can lead to innovative solutions and breakthroughs.
4. Case-studies based on real-world problems often require solutions that draw on knowledge from different fields.
5. Collaboration with peers through workshops enhances teamwork and communication skills.
6. Students will enlarge their network and learn to efficiently communicate complex ideas.
7. Graduates with multidisciplinary training are more versatile, able to apply for a broader range of jobs and open up niche roles or explore emerging fields.

Overall, the use of different learning methods will keep students engaged and motivated, as they are exposed to different ways of thinking and problem-solving. Such an approach is well-aligned with student’s interests and career goals, making the pathway relevant and fulfilling.



# CALENDAR

Our master programme is organised into academic and professional periods. This approach aims to encourage the students to dive deep into the specific topics whilst they develop autonomous learning and work skills. Moreover, this approach facilitates the insertion of our students in the labour market after graduation.



## CAREER PROSPECTS

Graduates with the ENTPE MSc in **Mobility Management** are equipped with a unique blend of technical, analytical, and managerial skills, making them highly sought after in various sectors. Below are some of the promising career pathways:

**Urban Transport Planner:** Graduates can work with local authorities, urban planning agencies, and consultancies to design and implement efficient, sustainable, and user-friendly transport systems. This includes developing strategies for public transport, cycling infrastructure, pedestrian areas, and traffic management.

**Mobility Consultant:** Working with public or private organisations, mobility consultants provide expert advice on how to improve urban transport systems, integrate new technologies and optimise mobility solutions.

**Sustainable Transport Policy Adviser:** With the growing emphasis on reducing carbon emissions, graduates can work with governments, NGOs, or international organisations to develop policies and strategies that promote sustainable mobility, including electric vehicles, shared mobility, and public transport innovations.

**Project Manager for Urban Mobility Solutions:** As urban transport systems undergo transformation, there is a growing need for project managers who can oversee the implementation of new mobility systems, such as autonomous vehicles, electric transport infrastructure, and high-speed rail networks.

**Transport Project Developer:** In the private sector, graduates can work with construction and infrastructure companies on large-scale urban projects, such as the development of transport hubs, transit-oriented development (TOD) projects, and smart city initiatives.

**Researcher and Academic:** Those with a passion for academia can pursue careers in research institutions or universities, contributing to the development of innovative transport solutions.

### Key Employment Sectors



Government agencies & local authorities



Tech companies in smart mobility



Urban Planning and transport consultancy firms



Private transport and infrastructure companies



International organisations focused on sustainable development



NGOs and environmental organisations



Research Institutes & Tertiary Education sector



Entrepreneurship and transport management

# PROFESSIONAL NETWORK



**SYSTRA** is a multinational engineering and consulting group in the mobility sector whose fields of activity include rail and public transport. SYSTRA employs about 10,300 people worldwide.

**Keolis** operates public transport systems all over the world. It manages bus, rapid transit, tram, coach networks, rental bikes, car parks, cable cars, trolley buses, and funicular services.



**Rupprecht Consult** is a fully independent private research and consultancy company based in Germany focused on innovative solutions for sustainable development.

**EUROCITIES** is one of the major city networks in the EU. It is an example of how city diplomacy is seeking influence and prominence in the established world of international relations



**Vedecom** is an Institute for Energy Transition (ITE) dedicated to sustainable, innovative, environmentally-friendly autonomous and shared mobilities.

**CityUX** is a European consulting group that aims to bridge the gap between resident mobility needs and planning practice by partnering with educational institutions.



**Plan4Better** is a start-up based in Germany dedicated to developing cutting-edge GIS and data-driven planning solutions focused on transport and environment planning and research.

**Humankind** is a consulting group based in the Netherlands that has a multidisciplinary team of urban planners, transition theorists, communication specialists, and social entrepreneurs.



**PBconsult GmbH** is a firm based in Germany with an interdisciplinary interaction of competencies from engineering, economics, urban planning, geography and marketing.



**LuxMobility** is based in Luxembourg and operates as a recognised international consultancy in the field of mobility, sustainable transport and innovation in Europe and beyond.

**Movesion** is an Italian company leader in mobility management through the provision of services and technological solutions to revolutionize the transport habits and improve mobility in cities.



**Codatu** is an international NGO aimed at promoting sustainable urban mobilities in the cities of the global south, mobilising local authorities, transport operators, research centres and companies.

**FUB** is a French NGO aimed at promoting the use of the bicycle as a feasible and competitive mode of transport, collaborating with public authorities and local associations.



**Aimsun** is an international leader in digital solutions for transport authorities, highway agencies, public transport operators and consultancies.

**ECOV** supports local authorities to develop car-sharing schemes through the deployment of physical and digital lines.



**ESPELIA** brings together 150 consultants, experts in the design and operational deployment of public policies in France and abroad.



# ADMISSION

## ENTRY REQUIREMENTS

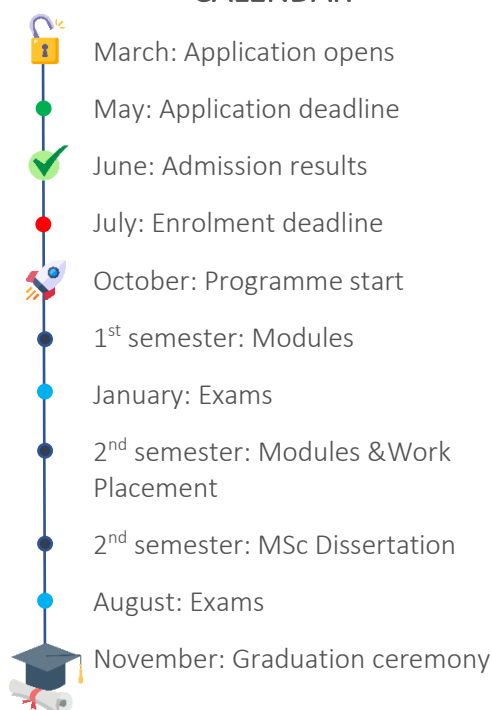
All applicants must hold a Bachelor’s Degree (180 ECTS or 4 years of Higher Education) from an internationally recognised university in a relevant academic field, such as civil and transport engineering, spatial and urban planning, environmental science and geography.

English language proficiency equivalent to C1\* advanced, achieving the minimum required scores in the following internationally recognised English tests:

- IELTS Academic (Overall score of 7.0)
- TOEFL IBT (Overall score of 95)
- TOEIC (Overall score of 945)
- Cambridge CAE (Overall score of 180)

\*Students with a B2 level are eligible and enrol in the elective language course to meet the requirements for the program.

## CALENDAR



## TUITION FEES\* 2025-2026

EU and Non-EU Citizen

Normal fee: **14000 euros**

\*Tuition fee reduction based on academic excellence, financial need and social inclusion criteria.

# APPLICATION

## DOCUMENTS\*

- Curriculum Vitae (max. 2 pages A4)
- Cover letter (max. 1 Page A4)
- Bachelor degree certificate
- Transcript of records
- Proof of English proficiency
- Letter of Recommendation (optional)
- Proof of relevant work experience

\* all documents should be written or translated into English

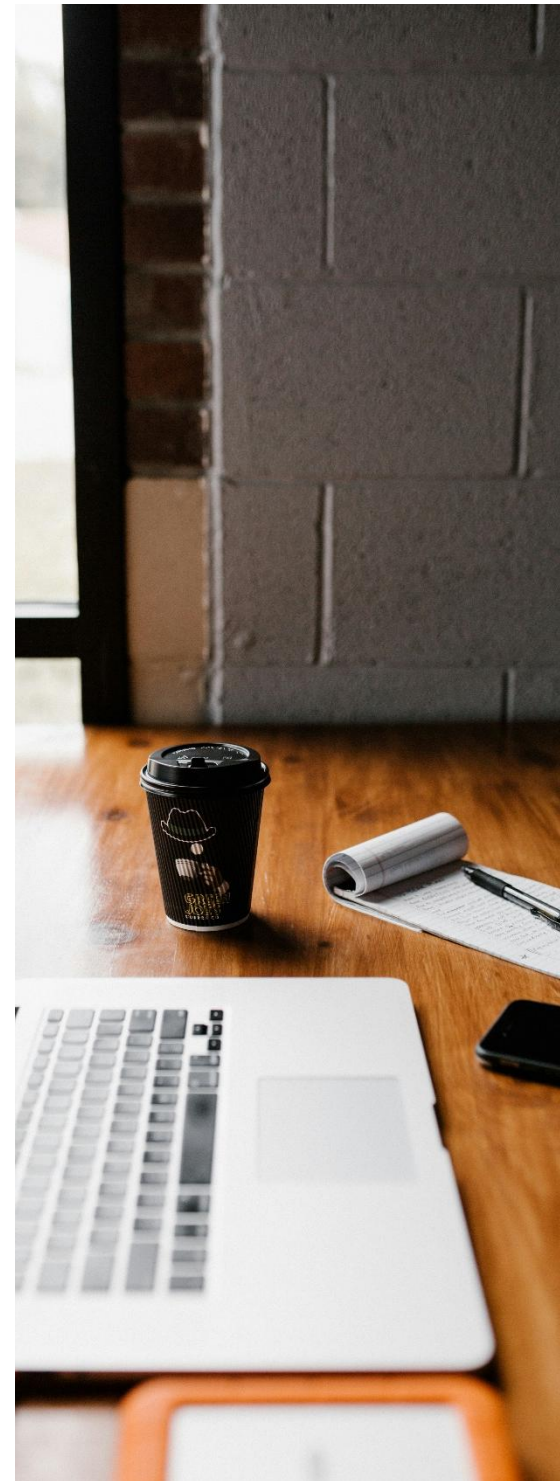
## EVALUATION

- Documents analysis
- Interview with the pre-selected candidates

## FURTHER INFORMATION

Dr. Isabel Cunha  
MSc Programme coordinator  
[isabel.cunha@entpe.fr](mailto:isabel.cunha@entpe.fr)

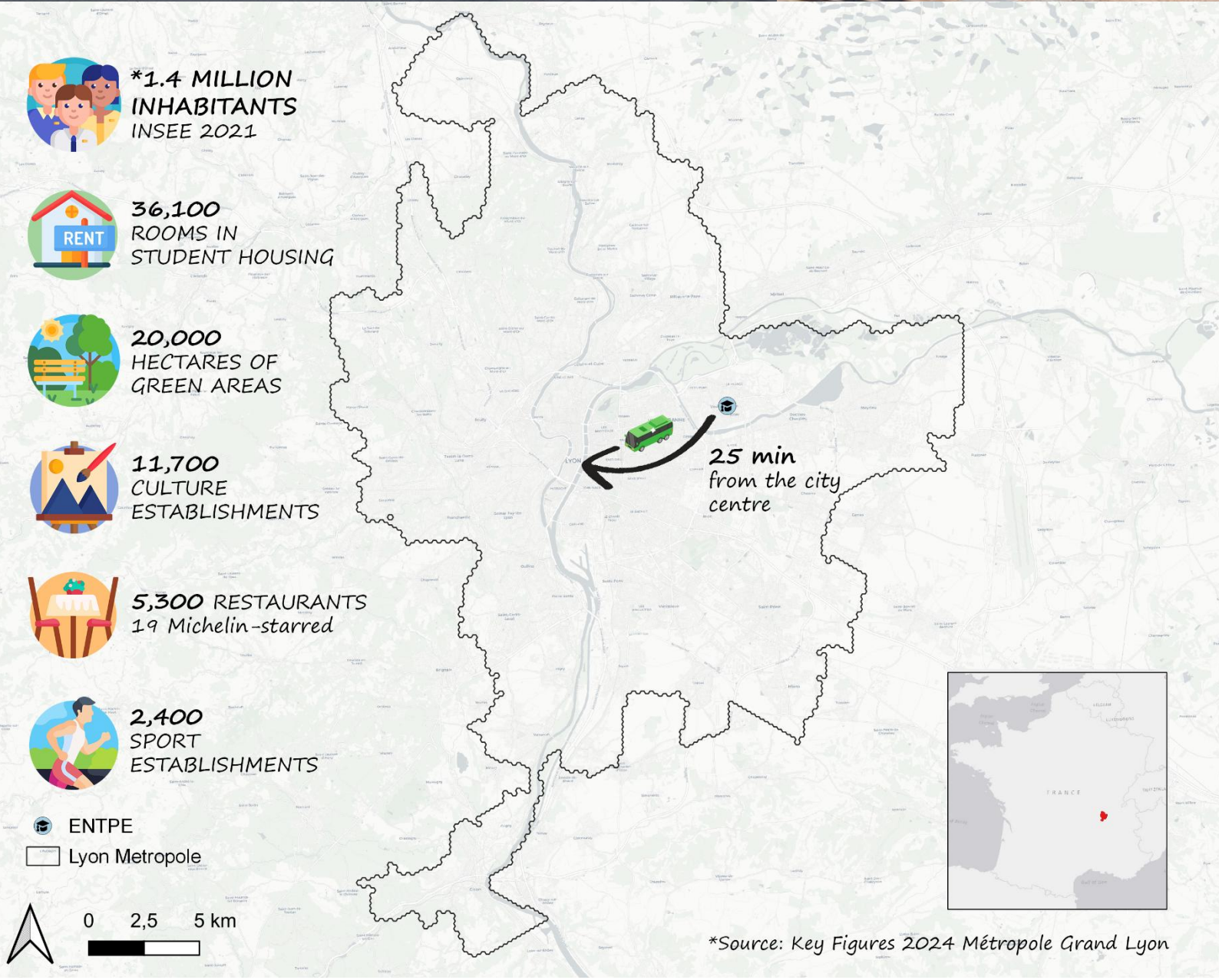
ENTPE, Educational Programmes  
[www.entpe.fr/masters](http://www.entpe.fr/masters)







# Welcome to ENTPE



# STUDENT LIFE



**More than 50 CLUBS** (professional, dance, cooking...)

**More than 35 SPORTS** (rugby, football, swimming, ...)

**PROFESSIONAL fairs & NETWORKING opportunities**

**CULTURAL EVENTS & STUDY TRIPS**



# Bonjour Lyon!

## Strategic location

Located at the crossroads of Europe, Lyon is only two hours by train from Paris and close to the Alps and Mediterranean, making it an ideal base for exploring France and Europe.



...and much more!

# UNESCO World Heritage

Lyon has not only a rich cultural life with annual well-known events, like the festival of lights, but is also often called the gastronomic capital of France!



## Innovative city

Lyon is a hub of innovation, particularly in biotech, digital technologies, and sustainable urbanism, with projects like the Confluence district showcasing its modernity.



**ENTPE**

L'école de l'aménagement durable des territoires



**MSc** MASTER OF SCIENCE

## MSc Mobility Management

Financed by:



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