Venice Water Lab

Venice is the oldest city of the future. In the post-sustainability era, it becomes the space where strategic visions, advanced planning, and institutional components converge to bring forth the Venice Water Lab — a centre of excellence conceived to build a better future for our planet. Water today stands as our most precious and vital resource, and it is the element that will most profoundly shape the near future of our world. For this reason, the sea represents the ideal environment for constructing a new post-sustainable perspective — especially one as stratified and rich in environmental, logistical, socio-cultural, and historical-identity implications as that of Venice. The Università Iuav di Venezia has established the Water Lab to make it an authoritative and distinguished international centre for higher education and research on water and marine issues. The Venice Water Lab embodies, first and foremost, the lagoon environment — a confluence of freshwater and saltwater — and stands as a vibrant, contemporary fragment of a millennial history intimately linked to the resources of water and the sea. The central theme of the Venice Water Lab is the sea and the water cycle within post-sustainable equilibrium systems. Its objective is to reimagine the Blue Planet, positioning Italy at the forefront of Blue Growth and the Blue Economy. Venice Water Lab represents the most innovative collaborative experiment among State Administrations, working together on a common project in a systemic and synergistic manner — conceptualizing and implementing concrete forms of planning while developing effective solutions to global challenges.
The Università Iuav di Venezia is collaborating, among others, with the Venice Maritime Military Studies Institute (ISMM) of the Italian Navy and the National Research Council (CNR), with further partnerships with other universities and advanced research centres. The academic programme encompasses courses that explore the theme of water in all its dimensions: from infrastructures beneath and above the surface — both current and future — to physical communications; from the renewable energies of today and tomorrow to the spatial planning of the sea, a hallmark of Venetian studies. In Venice, students and researchers could also benefit from the city's extraordinary quality, its rich cultural offerings, and its comprehensive services, within an international environment and an artistic and natural context unlike any other in the world. The educational programme of the Water Lab is designed to cultivate professional profiles capable of meeting the demands of the public sector while anticipating the challenges of a rapidly evolving private labour market. All courses affiliated with the Water Lab are taught in English.

Venice Water Lab - Master's

- Master's Degree in Renewable Energy Engineering in Coastal Environments
- Master's Degree in Sustainable transportation and smart maritime mobility
- MSc in Urban and Spatial Planning for Transition

Contacts

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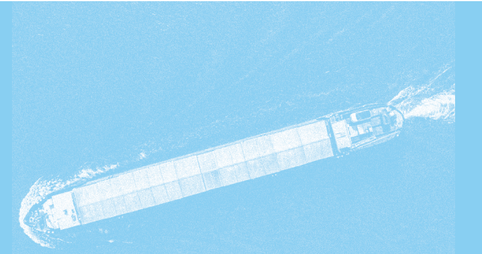
Università Iuav di Venezia



SUSTAINABLE TRANSPORTATION AND SMART MARITIME MOBILITY

MASTER DEGREE PROGRAMME

Master's degree programme in
Sustainable Transportation and Smart Maritime Mobility

Why Università Iuav di Venezia
Venice, an incomparable architectural and urban model, is also the ideal context to study mobility issues: the main modes of transport, from water to land and air, operate and interact in a single integrated system.
Università Iuav di Venezia, with its renowned tradition in urban studies and spatial planning, offers valuable learning opportunities. In particular, the master's degree in "Sustainable Transportation and Smart Maritime Mobility" provides a competitive educational offer in the national context on mobility and transport-related topics: students can benefit from internships in major companies and organisations operating in this sector, study experiences abroad and integrated workshops, which are an element that distinguishes Iuav educational offer. Within these workshops (four in total, one per semester), it is possible to experiment with the design of aspects related to mobility by integrating it with other disciplines, each different and complementary to the other.
This approach makes it possible to tackle complex problems, reinterpret existing theoretical models and develop in students a critical capacity for their optimal use.

Studying Sustainable Transportation
The master's degree aims to anticipate the consequences of an ongoing global trend in the field of transport and mobility: the digitalisation and automation of the sector. They require interaction with increasingly complex tools and more extensive skills that need adequate technical training.

In response to these challenges, the master's degree aims to train the future infrastructure and mobility manager.
Key features: the aspects of transport and mobility covered by the study programme are diverse and provide a holistic view of the challenges to be faced; other programmes deal with transport-related aspects mainly in terms of sector-specific aspects (e.g. safety and logistics, vehicle design).
Teaching is conducted entirely in English, thus ensuring that students can experience a global context. From a thematic point of view, the focus on coastal areas (with their complexity and multiple interactions) characterises the course and provides an original interpretative approach. The presence of humanistic subjects, specifically included in the curriculum, allows students to complement the technical skills traditionally associated with the professional profile of the engineer.
The integrated workshops provide an opportunity to experiment with the relationships between mobility and other areas of expertise with an interdisciplinary perspective, which is typical of this sector.The mobility aspect is the central element of the study programme, with a focus on both passenger and freight transport.
The master's degree is a synthesis of elements related to transport planning and policies, plus the aspects of the design and management of (physical and digital)networks as well as of individual artefacts.

CAREERS
Professional profile: infrastructure and mobility manager.
This role is intended as a professional capable of facing and solving complex challenges in transport planning, design, implementation, management, maintenance, and preservation of (large) transport works and infrastructures.

Entry requirements
Admission to the master's degree in "Sustainable Transportation and Smart Maritime Mobility" is open to candidates with a bachelor's degree in the field covered by the L-07 ministerial degree code (civil and environmental engineering).
Admission is also open to those who hold a bachelor's degree from other fields or a three-year university diploma or equivalent qualification, provided that they are able to ascertain the possession of 30 credits (at least 12 CFU for core activities) in one or more sectors belonging to the topics of the L-07 ministerial degree code.
Furthermore, candidates are required to possess adequate personal preparation and knowledge of the English language (certified level B2 or higher of the CEFR), including subject-related lexicons.

COURSES

First year
Large infrastructures in the coastal landscape (project and maintenance) studio
- *Module 1 - Structural safety and reliability of near-shore maritime infrastructures*
- *Module 2 - Infrastructural networks in the coastal landscape*

Maritime transportation and land use planning studio
- *Module 1 - Design and construction of transportation infrastructures*
- *Module 2 - Territorial planning in coastal areas*

Structural design and principles of risk assessment of infrastructures in coastal areas
Smart Maritime logistic and freight movement
Traffic engineering and control
Artificial intelligence and data science for transportation
One among the following courses:
- System analysis in coastal areas
- Modelling and data analysis for coastal engineering
- Marine fluid dynamic and coastal engineering
- Geopolitics and energy analysis through the Mediterranean Sea
- Introduction to marine environment - Ocean and climate

Second year
Advances in passenger mobility studio
- *Module 1 - Intelligent transportation system and shared mobility*
- *Module 2 - Transport policy and governance*
- *Module 3 - Applied energy*

Design and operation of freight maritime transport studio
- *Module 1 - Design and construction of ports and onshore landscapes*
- *Module 2 - Warehouse engineering and logistic modelling*
- *Module 3 - Supply chain management*

Transport planning and management
Interdisciplinary energy analysis and environmental economics

Learning activities, chosen by students

Final Exam
Internship

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Università Iuav di Venezia

VENICE WATER LAB

MASTER'S DEGREE PROGRAMME