UNIVERSITY OF
MESSINA
| founded in 1548

Master's Degree in

CIVIL ENGINEERING

(curriculum in **Sustainable Engineering for Water-related Risks**)

Scientific coordinator
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Department
Engineering

Duration
2 years

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Programme overview

The Master's Degree in Civil Engineering – curriculum in Sustainable Engineering for Water-related Risks prepares professionals with advanced expertise in land protection, sustainable development, and hydrometeorological risk management. It provides a multidisciplinary approach integrating urban and coastal planning, river and floodplain engineering, transportation and earthquake engineering, and climate change adaptation.The curriculum blends a strong foundation in physics and mathematics with applied engineering solutions, ensuring students develop both theoretical knowledge and practical skills through hands-on learning.

Key competencies include:

***1)** Design, construction, and management of civil works, urban infrastructures, and transportation systems, with a focus on sustainability and resilience.*

***2)** Planning and implementation of projects focused on water resource management, coastal defence, erosion control, urban and regional regeneration.*

***3)** Disaster risk assessment and adaptation strategies, enhancing infrastructure resilience against hydrogeological and seismic hazards and climate change impacts.*

The program offers international perspectives, research opportunities, and industry collaborations, preparing graduates for careers in engineering firms, environmental agencies, public administration, and academia.With a global approach to sustainable engineering, the program equips graduates for leadership roles in tackling waterrelated challenges worldwide. Additionally, students can pursue further specialization through PhD programs and advanced master's courses.

Minimal entry requirements

A Bachelor's degree or a three-year university diploma obtained in Italy, or an equivalent qualification obtained abroad and recognised as suitable, in the following fundamental scientific disciplinary fields: Civil Engineering, Architecture and Building Engineering.

Language requirements

International English language certificate issued by an Institution recognized by the Italian Ministry of University and Research (MUR), B2 level of the Common European Framework of Reference.

Study programme

The Master's Degree in Civil Engineering (Curriculum in Sustainable Engineering for Water-related Risks) belongs to the Degree Class LM-23 Civil Engineering.

YEAR 1

1. Integrated urban and coastal zone planning and management
2. Design of earthquake-resistant structures
3. Geotechnical earthquake engineering
4. Sustainable water systems
5. Integrated building design
6. Computational mechanics
7. Hydrometeorological risk and climate change
8. Elective course

YEAR 2

1. Road design and construction management
2. River and drainage engineering
3. Sustainable water resources management
4. Slope stability and stabilization methods
5. Further linguistic skill
6. Final project

Further entry requirements

Minimum number of 42 ECTS credits in the following fundamental scientific disciplinary fields: Geometry, Mathematical Analysis, Mathematical Physics, Experimental Physics, Chemical Foundations of Technology. Additionally, a minimum of 54 ECTS credits must be obtained in the following core scientific-disciplinary fields: Hydraulics, Roads, Railways, and Airports, Surveying and Cartography, Geotechnics, Structural Mechanics, Structural Engineering, Applied Physics, Architectural Engineering, Urban and Regional Planning. If the number of credits obtained in fundamental fields is lower than 42 but at least 36, admission is subject to evaluation by the competent Master's Degree Committee. Similarly, if the number of credits obtained in core fields is lower than 54 but at least 48, including credits from other core fields within class 08 or class L-7, admission is also subject to evaluation by the Master's Degree Committee. The assessment of the student's academic preparation is conducted before enrolment, following the procedures outlined in the programme's academic regulations.

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International opportunities

*Participation in the **Erasmus + Mobility** programme both for study and training (calls published twice per year) and in the programme "Students Around the World" (SAW), call for scholarships for study at the extra-European universities in the context of international cooperation agreements.*

Tuition fees

UniME tuition fees for international students are calculated by country group. For further information:

After my Bachelor's Degree in Civil Engineering, I would like to continue my studies in the Master's Degree programme in Civil Engineering (Curriculum in Sustainable Engineering for Waterrelated Risks), in order to have the right preparation to become a professional with advanced expertise in land protection, sustainable development, and hydrometeorological risk management.

Julia Muse

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