

Master in Applied Ecohydrology

Erasmus Mundus Joint Master | MAEH

2024-2025

Learn how to implement solutions
for the sustainability of water
and aquatic ecosystems

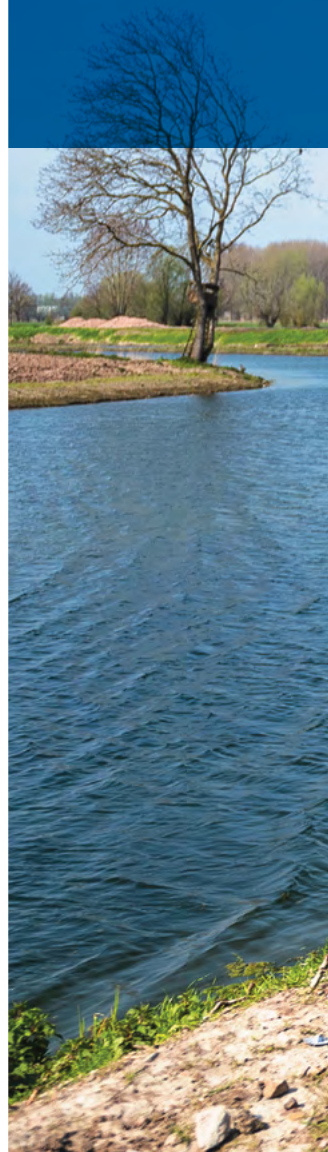


University
of Antwerp

| Let's shape the future

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Water problems are very complex. Addressing them requires understanding of natural sciences, for instance the ecological functioning of the water system. It also requires incorporating engineering skills and taking into account their effect on economy and society.

Prof. Patrick Meire



In brief

Water challenges and ecosystem restoration are highly relevant topics on the global agenda. The Erasmus Mundus Joint Master in Applied Ecohydrology (MAEH) is an interdisciplinary Joint Master that merges ecohydrology with water engineering and integrated water management.

The strengths of this **two-year study programme** are:

Gain **in-depth knowledge**, skills and competences to restore, engineer and manage aquatic ecosystems and their services to society.

Innovate by putting ecohydrology principles central when exploring solutions for societal challenges, such as water security and global change.

Apply **nature-based solutions** to water problems (regarding both quality and quantity) that are adaptable to local situations in all geographic contexts.

Develop **transdisciplinary skills** in water sciences and form a global network by working together with international academic and professional experts.

Contribute to a better future by managing water resources and ecosystem services in an integrated, transborder and sustainable way.



Teaching methods are diverse, ranging from lectures and computer classes to field excursions and case studies in group.

In detail

MAEH is offered by four European Universities: the University of Antwerp (Belgium), the University of Algarve (Portugal), the University of Lodz (Poland) and the Technische Hochschule Lübeck (Germany). Erasmus+ provides full financial support for 22 scholars each year, including all expenses with travel, insurance, installation, university fees and 1,000 euros monthly subsistence. MAEH is scientifically supported by the UNESCO Ecohydrology Programme of the Intergovernmental Hydrological Programme, that has been developing the concept of ecohydrology for more than 20 years.



The programme integrates **three different fields in water science**:

— **Ecohydrology** focuses on a scientific understanding and on nature-based solutions providing the knowledge, skills and competences to restore aquatic ecosystems carrying capacity and ecosystem services.

— **Water engineering** provides advanced engineering techniques and skills to plan, devise and implement technical structures and systems that can be used to restore and use ecosystem services in a sustainable manner and to reduce water-related risks to society.

— **Integrated water management** focuses on the coordinated and integrated development, management and restoration of the water system today and in the future.

After successful completion of the programme, you will obtain a Joint Master's degree in Applied Ecohydrology. MAEH graduates will possess the holistic perspective and technical knowledge needed for solving the complex and multifactorial problems of water security and aquatic ecosystems sustainability. Now and in the future.



Water engineering is a relevant discipline for the development of societies and urban systems as they depend on a safe and regular supply of clean water and rely on protection from extremes such as floods and droughts.

Why choose UAntwerp

Our university is located in the **city of Antwerp**, in the heart of Belgium and Europe. The port of Antwerp is one of the biggest in the world. Antwerp is not just an ancient medieval and baroque city, full of history. It is also a bustling metropolis with a vibrant social scene, impressive architecture and cultural contrasts. Over 170 nationalities live here, more than in New York! This cosmopolitan vibe is also reflected at the University of Antwerp.

First-rate research and education make the University of Antwerp a wonderful place to study and to work. We foster the nexus between research and education. Internationalisation is key to our mission. It is no coincidence that the University of Antwerp is a partner in a highly promising European University Network, the Young Universities for the Future of Europe www.YUFE.eu.

As home away from home to over **20,000 students**, the University of Antwerp prides itself on operating on a human scale. Our faculty and staff will welcome you into top-notch infrastructure on one of our four campuses. While you're here you are also invited to enjoy our vibrant cultural programme, sports facilities and many student services.

The University of Antwerp scores extremely well in Young University Rankings



Programme structure

The full learning path of MAEH consists of two academic years during which you accumulate 120 ECTS credits. Each semester focuses on a different discipline in water science. During the first semester you study Ecohydrology at the University of Algarve and the University of Lodz. During the second semester you will learn about Water Engineering at the Technische Hochschule Lübeck. For the third semester you will move to the University of Antwerp to become familiar with Integrated Water Management. Finally, the fourth semester is dedicated to the Master's thesis which can be completed at any of the four partner universities.



Curriculum

1st semester

At University of Algarve (PT) and University of Lodz (PL)

Compulsory courses	ECTS credits 27
Ecohydrology and Dynamics of Aquatic Ecosystems	6
Integrated project in Portugal - World of work 1 (including 5 days field visit)	3
MAEH webinar in Ecohydrology	3
Fundamentals of Hydrology and Hydrogeology	3
Applied Practical Field and Laboratory Training in Ecohydrology	12

Optional courses ECTS credits 3

At least one to be chosen from a list of 9 electives

(Please consult the course catalogue on maeh-mundus.eu)

2nd semester

At Technische Hochschule Lübeck (DE)

Compulsory courses	ECTS credits 21
Sustainable Urban Systems	6
Hydrological Engineering	6
(Hydraulic) Simulation and Modeling	6
Integrated project in Germany - World of work 2	3

Optional courses ECTS credits 9

9 ECTS credits to be chosen from a list of 7 electives

(Please consult the course catalogue on maeh-mundus.eu)



Students will be exposed to the reality of the world of work, by the close collaboration with private and institutional stakeholders.

3rd semester

At University of Antwerp (BE)

Compulsory courses **ECTS credits 24**

Global Water Problems and Integrated Water Management	3
Integrated Assessment of Water and Sediment Quality	3
Advanced Water Treatment Technology	6
Nature-based Solutions	3
Groundwater Management and Remediation	3
Integrated Modelling and Design of Basin Management Plans	3
Integrated project in Belgium - World of work 3 (including 7 days field visit)	3

Optional courses **ECTS credits 6**

6 ECTS credits to be chosen from a list of 4 electives

(Please consult the course catalogue on maeh-mundus.eu)**4th semester**At Consortium or Associated partner university
or Institution**Master's thesis** **ECTS credits 30****Total** **ECTS credits 120**

Job opportunities

High employability through applied water science

In order to maintain the high employability of the MAEH graduates in a fast-changing market world, a close collaboration with the 'world of work' and associated partners is of major importance.

The consortium has a strategy to reach employability and excellent connectivity to the world of work by cooperating with regional stakeholders, water associations, and companies during the study programme. In Belgium, Portugal, Germany and Poland, regional stakeholders from the water sectors are involved in seminars and provide topics for projects, internships, and theses.

The MAEH programme focuses on **Applied Ecohydrology**. It combines science and technology for better management of water systems. MAEH features a true and integrated combination of scientific understanding, engineering techniques to develop measures and reach excellence in management of water systems. This makes our Master students versatile.



Admission criteria

Diploma requirements

Candidates must have a Bachelor's degree (180 ECTS credits) in the field of natural sciences or engineering.

Language requirements

Applicants must prove their proficiency in English by

submitting the **proof** that they have studied at least one academic year (or 60 ECTS credits) in an English-language study programme;

submitting **one of the following language certificates** with a test validity of maximum 2 years:

TOEFL (Test of English as a Foreign Language): paper-based TOEFL level of minimum 550 or an internet-based TOEFL level of minimum 80

IELTS (International English Language Testing System): a minimum score of at least 6.5, and on each part minimum 6.0.



Students will gain global knowledge and international experience from various case studies in cooperation with UNESCO Ecohydrology and Long Term Ecological Research demonstration sites.

Application procedure

Candidates should consult the programme's website for information on the application procedure:

maeh-mundus.eu

Application deadlines

Candidates should consult the programme's website for information on the application deadlines:

maeh-mundus.eu

ECTS credits

The University of Antwerp applies the '**European Credit Transfer and Accumulation System**' (ECTS) in all its degree programmes.

A full-time one-year study programme amounts to **60 ECTS credits** (30 ECTS credits per semester), which implies a student workload of about 1500 to 1800 hours. One ECTS credit stands for 25 to 30 hours of work including contact hours, preparatory work, study and assessment.

* **EEA** = European Economic Area

Member states:

Austria, Belgium,
Bulgaria, Croatia,
Cyprus, Czech Republic,
Denmark, Estonia,
Finland, France,
Germany, Greece,
Hungary, Iceland,
Ireland, Italy, Latvia,
Liechtenstein,
Lithuania, Luxemburg,
Malta, the Netherlands,
Norway, Poland,
Portugal, Romania,
Slovenia, Slovakia,
Spain and Sweden

Quick facts

Level

Master

Language

English

Credits

120 ECTS credits

Number of years

2

Tuition fee per year *

EUR 4500 for EEA students

EUR 6000 for non-EEA students

Campus

Interuniversity programme

Faculty

Science

Institute of Environment &
Sustainable Development (IMDO)

More information

maeh-mundus.eu



* subject to yearly revision

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This brochure was published in September 2023.
As all information is subject to change,
please check our website for the latest updates.