## UNIVERSITÉ GRADUATE SCHOOL FORMAL, PHYSICAL AND ENGINEERING SCIENCES

# Master's degree ENVIRONMENTAL MANAGEMENT

# **HYDROPROTECH:** Management of

hydrotechnological and environmental projects

#### A WORD FROM THE HEAD OF THE PROGRAM



**Morgan Abily** Professor and researcher at Polytech Nice-Sophia

The HYDROPROTECH pathway trains students to become engineering professionals in leadership roles, specialized in the management of water resources and prepared to meet the technical and scientific challenges of this field.

With the possibility of alternating work and study from the first year onwards, this program gives students the opportunity to acquire the essential theoretical foundation in hydrology, hydraulics, project management, digital modeling, Geographic Information Systems, and network sizing and monitoring. Their knowledge is then put into practice during apprenticeships or internships.



1 to 2 years alternating work and study



well-established program 24 years of experience

In the second year, industry professionalshelp students develop their skillsand implement the methods and tools of the trade. The curriculum is constantly adapted to meet the changing needs of the job market and address current and future social and economic issues.

As a former graduate of this program with a PhD in hydroinformatics, I **am proud to see that after more than 20 years, many of the lecturers and apprenticeship or internship supervisors are former students of the HY-DROPROTECH master's program.** They have become leading experts in the field, which confirms the unquestionable and lasting success of this program.



partner companies

a variety of sectors of activity



#### SPECIFIC STUDY PROGRAM IN WATER ENGINEERING

The Hydrotechnology and Environmental Project Management (HYDROPROTECH) program of Université Côte d'Azur prepares students for leadership positions in water engineering with skills that meet the requirements of engineering firms and local public agencies.

Our future graduates aim to become experts in key fields such as hydrology, hydraulics, project management and contracting, and the supervision of hydraulic works. Engineers who have completed the program are familiar with the different modeling software and methods used in a variety of sectors that include urban water management, design of hydraulic equipment and structures, operation of networks, management of water resources and sediment transport, forecasting of extreme hydro-climatic phenomena, identification of flood zones, etc.

#### THE MAIN FOCUSES OF THE PROGRAM

#### **Fundamentals**

• Hydrology, hydraulics, hydrogeology, geosciences.

#### Mapping (GIS) and process modeling

- Hydrological, hydraulic and network modeling, etc.
- Artificial Intelligence (AI).
- Operational methodologies and computer-aided design (CAD) tools.

#### Project management

- Problem-based learning (PBL).
- Regulations (water laws, European directives) and economics (micro-economics, public finance, etc.).
- Decision-making and communication tools and techniques.

#### Worksite visits

- Observation of hydraulic structures: stormwater retention basins and river structures (weirs, etc.).
- Visits to pumping stations and wastewater treatment plants to study their organization and processes.
- Exploration of the remains of the Malpasset dam (Fréjus) to understand the importance of coordinating several disciplines when implementing a project.





### EXCELLENCE AWARD FROM IAHR AND UNESCO

The HYDROPROTECH program is recognized by IAHR and UNESCO for **the excellence of its teaching, the expertise of its lecturers** and for its focus on training highly qualified engineers in the water sector.

# 80% EMPLOYABILITY RATE

Six months after graduation, 80%\* of HYDRO-PROTECH students who graduated in 2021 had found a job.

Observatory of Student Life and Professional Integration - Université



Water Training and Education

#### **EXAMPLES OF CAREER OPPORTUNITIES**

#### Engineer in an engineering firm or a public agency

Manage design studies and associated detailed engineering studies in various fields: wastewater treatment, drinking water supply, river and urban hydraulics, protection against hydro-climatic risks (flooding and drought), etc.

#### Study engineer

Carry out design studies (sizing of hydraulic works, delimitation of flood-prone areas, construction site supervision, etc.).

#### **Project manager**

Conduct design studies, oversee contractors, estimate the cost of works, lead meetings, etc.



For an engineer specializing in hydrology-hydraulics in France: Median monthly salary: €2,400 after tax Monthly starting salary: €2,000 after tax Monthly senior salary: €3,100 after tax

#### FÉLIX BILLAUD, HYDRAULICS ENGINEER & HEAD OF THE MOD-ELING DEPARTMENT AT EAU D'AZUR SHARES HIS EXPERIENCE



As managers of drinking water plants, we must guarantee the continuity of production and the quality of water while adapting to the challenges of global warming. This means that we need experts who can meet the major challenges of the water cycle, today and tomorrow. The HYDROPROTECH degree program answers this need by providing the solid foundation in hydraulics that is needed to operate, maintain and optimize our plants. It also provides knowledge in hydrology and hydrogeology, which are essential for the production of water and the preservation of the natural environment. Students acquire further skills in numerical calculation and analysis, which are crucial for anticipating, analyzing and supporting decision-making. HYDROPROTECH prepares students to become experts who are equipped to meet the major challenges of water management.







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#### CONTACT

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