



MASTER

ENVIRONMENTAL MANAGEMENT

Course
Sustainable Management
of Hydrogeosystems



ENTRY REQUIREMENTS

Open to students with a BSc degree in Environmental Sciences, Chemistry, Physics or Physical Geography. Students holding qualification in an engineering degree or an equivalent foreign diploma are also eligible.

Application forms will be reviewed by an admission panel.

The year 2 of MSc is open to the continuous education and the validation of priori learning programs. Students who have validated their 1st year of Master in another university are also eligible.

Purpose: to train engineers or PhDs in Environmental Sciences

PROGRAMME COURSE

- This programme will train environmental specialists to analyse the response of catchments, aquifers and coastal zones to increasing anthropogenic pressure and to climate variability and change.
- It will address such crucial issues as vulnerability, resilience and protection of natural and anthropised environmental systems.
- MSc programme will provide knowledge, tools & methods in Global Change, (paleo) hydrology, sedimentology, geochemistry, geophysics, environmental microbiology, statistical analysis and numerical modelling.



PROGRAMME

	<i>1st Semester</i>
Fundamentals	<ul style="list-style-type: none"> • Sedimentology in estuarine and costal areas(30h) • Transfers in the Critical Zone (60h) • Biogeochemical cycles and microbial ecology (30h)
Technical tools	<ul style="list-style-type: none"> • GIS, remote sensing (49h) • Data mining & statistical analysis (41h) • Geophysical signals (19h) • Field work (1 week)
Personal development	
Optional courses (24h)	<ul style="list-style-type: none"> • Analytical chemistry ((40h) • Organic Matter in environment (35h)
Internship	



The SMH course is supported by a teaching team mixing labs from the Rouen-Normandy University, companies and governmental agencies

This training is based on an experience of 20 years facilitating the development of a network of alumni.

Internships in companies or labs are a fundamental element to build your professional project.

2 nd Semester	3 rd Semester	4 th Semester
<ul style="list-style-type: none"> • Applied hydrology (30h) • Quantitative hydrogeology (40h) • Urban hydraulic and hydrology (38h) 	<ul style="list-style-type: none"> • Natural hazards and Global Change (54h) • Contamination and Georesources vulnerability (68h) 	<ul style="list-style-type: none"> • Geotechnical risks, territory development and impacts (48h)
<ul style="list-style-type: none"> • Environmental law (22h) • Environmental economy (18h) 	<ul style="list-style-type: none"> • GIS (43h) • Bibliography (8h) • Field work (1 week) 	<ul style="list-style-type: none"> • Modeling and numerical methods (48h)
<ul style="list-style-type: none"> • English (20h) • Professional career plan (10h) • Technics for training search (20h) 	<ul style="list-style-type: none"> • English (20h) • Professional career plan (15h) 	
• 2 to 5 months		• 5 to 6 months

The supervised projects (GIS, professional, bibliographic, integrated field-lab-studies) help you to acquire skills and autonomy for further projects management.

The programme offers the possibility to complete a semester or a full year in one of the partner universities (Malaga, Barcelona, Utrecht...).



JOB OPPORTUNITIES

- Research officers (reserves / natural parks, technical studies offices, water and sanitation unions, unions of rivers, ports, state agencies, water agency etc.)
- Environmental management engineer, Project manager (environment, environmental quality, sanitation, rural contracts, water planning and management scheme...)
- Head of service center or eco-industrial facilities (waste treatment centers, etc.), director of technical studies office
- Senior executive manager of environmental association, parks or nature reserves
- Engineer (consultancy firms or department), urban hydrology (sizing of sanitation and water supply networks), management of polluted sites and soils
- Manager of technical services in community of cities (water, sanitation, etc.)
- Maintenance service manager, environment, safety (industrial sites, business) services
- Doctoral contact in Earth & Environmental sciences
- After a PhD degree: researcher or lecturer (private or public lab), research consultants (e.g. environmental consultants from engineering departments).

TRAINING BY RESEARCH

The MSc programme in SMH is supported by the scientific and technical expertise of the CNRS-M2C Research Unit.

MSc students do their internship either in Research lab or in the companies / governmental agencies (year 1 and 2).

After the MSc degree, students can apply to PhD proposals.



Employment rate: 90%
(temporary / permanent positions or PhD *)

*OVE investigation :
Employment rate after 2 years, period 2007-2010



ADVISORY BOARD

Programme advisor

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M2C Laboratory

<http://www.unicaen.fr/m2c/>

Department of

Environmental Geosciences

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