UNIVERSITAT POLITÈCNICA DE CATALUNYA
BARCELONATECH

ERASMUS MUNDUS MASTER IN HYDROINFORMATICS AND WATER MANAGEMENT (EUROAQUAE)

2013-2014 ACADEMIC YEAR

ACADEMIC INFORMATION

This Erasmus Mundus master's degree trains the scientists and executive engineers of the future, who will be responsible for modelling and management projects in the areas of water resources and the environment, and prepares consultants for public administration bodies, companies and industries at the local, regional, national and international levels.

There are 12 scholarships for non-European students and 12 partial scholarships for European students.

Starting	September
Duration	Two academic years
ECTS credits	120
Delivery	Face-to-face
European programme	Erasmus Mundus
Languages of instruction	English
Organised by	Barcelona School of Civil Engineering (ETSECCPB) International Centre for Numerical Methods in Engineering (CIMNE)
Participating institutions	Universitat Politècnica de Catalunya (UPC) Brandenburgische Technische Universität Cottbus (Germany) Budapest University of Technology and Economics (Hungary) Newcastle University (United Kingdom) Université de Nice Sophia Antipolis (France)
Coordinating university	Université de Nice Sophia Antipolis (France)
Prospective students	This master's degree course is aimed at anyone interested in obtaining advanced interdisciplinary training in the areas of hydrology and the environment who meets the general and specific access requirements.
Fees	The Erasmus Mundus Masters fees are determined by the University Consortium that organizes the studies. These fees are the same for all the participant universities. For more information, please do not hesitate to contact the master web site.
Website	http://www.euroaquae.org
E-mails	area.academica.camins@(upc.edu) manuel.gomez@(upc.edu)

COMPETENCES

Basic course-specific skills

Water and the town

- Have a good command of the different technologies used for producing drinking water and treating sewage.
- Manage water supply and sewage networks.

- Propose new solutions for urban flooding risks.
- Ensure the provision of water.
- Play an active part in the management of towns and their surroundings in their professional capacity.

Continental waters

- Have a detailed knowledge of the effects of population density and human activity on the way the water cycle functions.
- Apply corrective measures and evaluate their effectiveness.
- Have a good knowledge of the water management criteria for keeping continental waters in good ecological condition and for remediation of polluted waters.

Integrated management of water resources.

- Integrate potential water resources technically, socially and economically, taking into account both the quantity and quality of the water, sustainability, and environmental issues.
- Manage demand and know the quantity and quality standards established for urban, industrial and agricultural water supplies.
- Evaluate technical, economic and social efficiency in water management:
- Take into account territorial and natural resource issues.
- Have a good knowledge of protection and remediation techniques

Basic professional skills

- Identify formulate and solve problems associated with water resources in a specific geographical area.
- Use computing techniques and modern engineering tools to achieve good practice in the area of water resources.
- Design processes that meet water resource needs formulated from different points of view (economic, social, political, ethical, health-related, environmental, and related to sustainability).
- Draw up projects and direct construction work and have a good understanding of engineering as an economic and business activity.
- Manage and organise companies and public administration entities in the field of water resources at a high level of expertise.

Transverse skills

- Make a critical analysis and evaluation of different alternatives.
- Find optimum solutions for the complex problems and projects related to water resources.
- Search for new solutions and find alternatives to the more traditional solutions in the field of water resources.
- Adapt to rapid changes in technology and social and economic situations derived from economic and social development.
- Draw up projects and technical documents.
- Give clear and fluent oral presentations of results, products or services to both specialised and non-specialised audiences. This is especially important when communicating procedures to society in a way that everyone can understand.
- Use computer software and IT tools for creating and presenting documents.
- Express themselves in different languages.
- Work in multidisciplinary teams made up of experts with different from different fields of knowledge, such as transportation engineers, biologists, chemists.
- Lead groups
- Continue studying autonomously throughout their life.
- Apply professional ethics.
- Analyse the social, human and economic implications of their professional activity.

PROFESSIONAL OPPORTUNITIES

Graduates of this master's degree will go on to become international experts, scientists and executive engineers who will manage water resources and environmental projects and provide consultancy services to government agencies, engineering or water utilities companies and industries.

The training that students receive is oriented towards:

- Knowledge of the main processes involving water.
- Operational and technical know-how in hydroinformatics and ICT environments.
- An understanding of decision support systems, risk analysis and strategy building.

ADMISSION

General requirements	Academic regulations
Specific requirements	Students currently attending courses in the areas of Civil Engineering (Transportation and Public Works and Geological Engineering), and also future undergraduate students of Civil Engineering and Geological Engineering. Access is also possible for graduates of degrees in Environmental Sciences, Physics, Geology, Geography or Biology, and other Engineering disciplines such as Mining Engineering, Industrial Engineering, Agricultural Engineering and Forestry Engineering. Applications will also be considered from overseas students holding the same undergraduate degrees or equivalent qualifications. Depending on the level of studies held, it maybe possible to accept some qualifications as equivalent to subjects in the first semester.
Entry places	50
Pre-enrolment	To enrol for an interuniversity Master's degree coordinated by a university other than the UPC, you must enrol through the coordinating university: Université de Nice Sophia Antipolis (France)

May 2013. UPC . Universitat Politècnica de Catalunya. BarcelonaTech.