



EUROAQUAE

Euro Hydro-Informatics and Water Management

www.euroaquaee.org

EuroAquaee: university/industry collaboration in design,
delivery and evaluation of the joint Master programme

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Polytech'Nice Sophia

Nice – Sophia Antipolis University



As an introduction ...

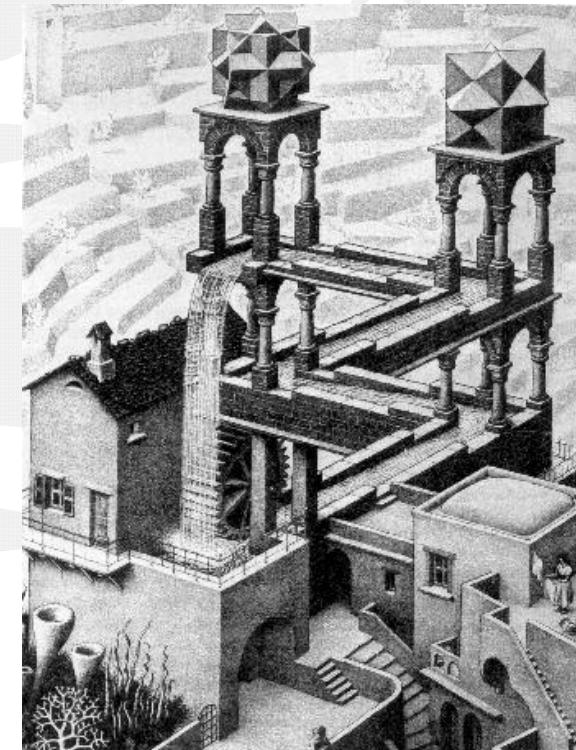


What is “HydroInformatics”?

What is “Water management”?

What are the needs for education?

Is there an industrial domain?



A consortium of 5 universities:

- University of Nice – Sophia Antipolis (France)
- Brandenburg University of Technology Cottbus (Germany)
- University of Technology and Economics Budapest (Hungary)
- Polytechnic University of Catalonia (Spain)
- University of Newcastle (UK)

with the willingness to create something new according to the Lisbon declaration (Knowledge Economy):

- innovation in pedagogy and research
- added value of each partner
- partnership with industrial world
- open collaboration



Background:

- Hydroinformatics & water management are new concepts
- Born in Europe (defined and implemented by industry)
- Capacity to cope and to deal with complexity (from law to application)
- Increasing number of potential applications (EU and worldwide)
- Demands and needs from Society and companies
- no real education or training defined at international level ...
- no coherent research activity in the domain ...

Professional market:

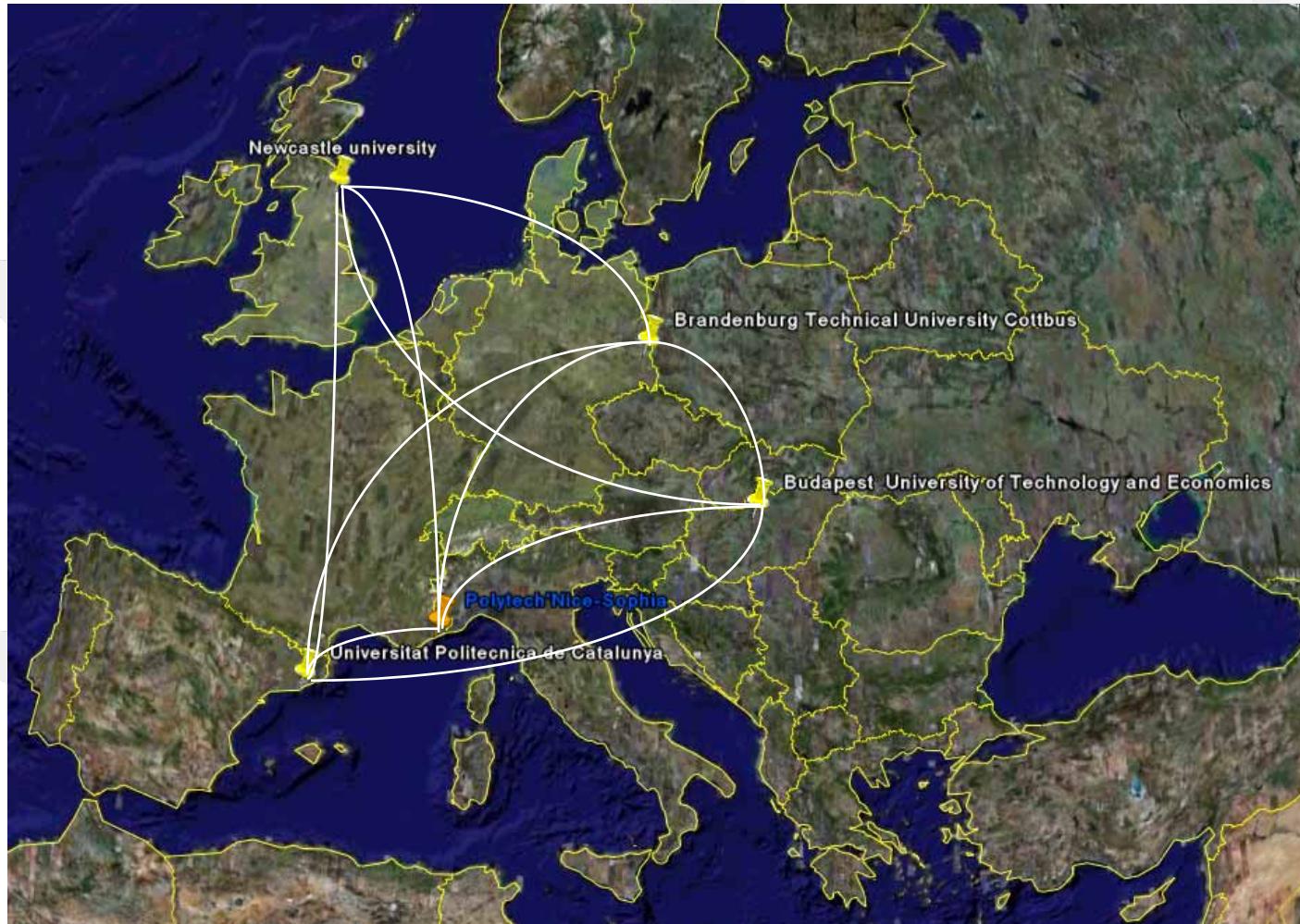
- Engineering for Methods and tools development (DHI, Wallingford ...)
- Engineering / Consulting (Halcrow, Jacobs, Capita Simons ...)
- Industry for application and development (Suez Environment)

Fast growing interest in Europe and worldwide during the last 5 years ...

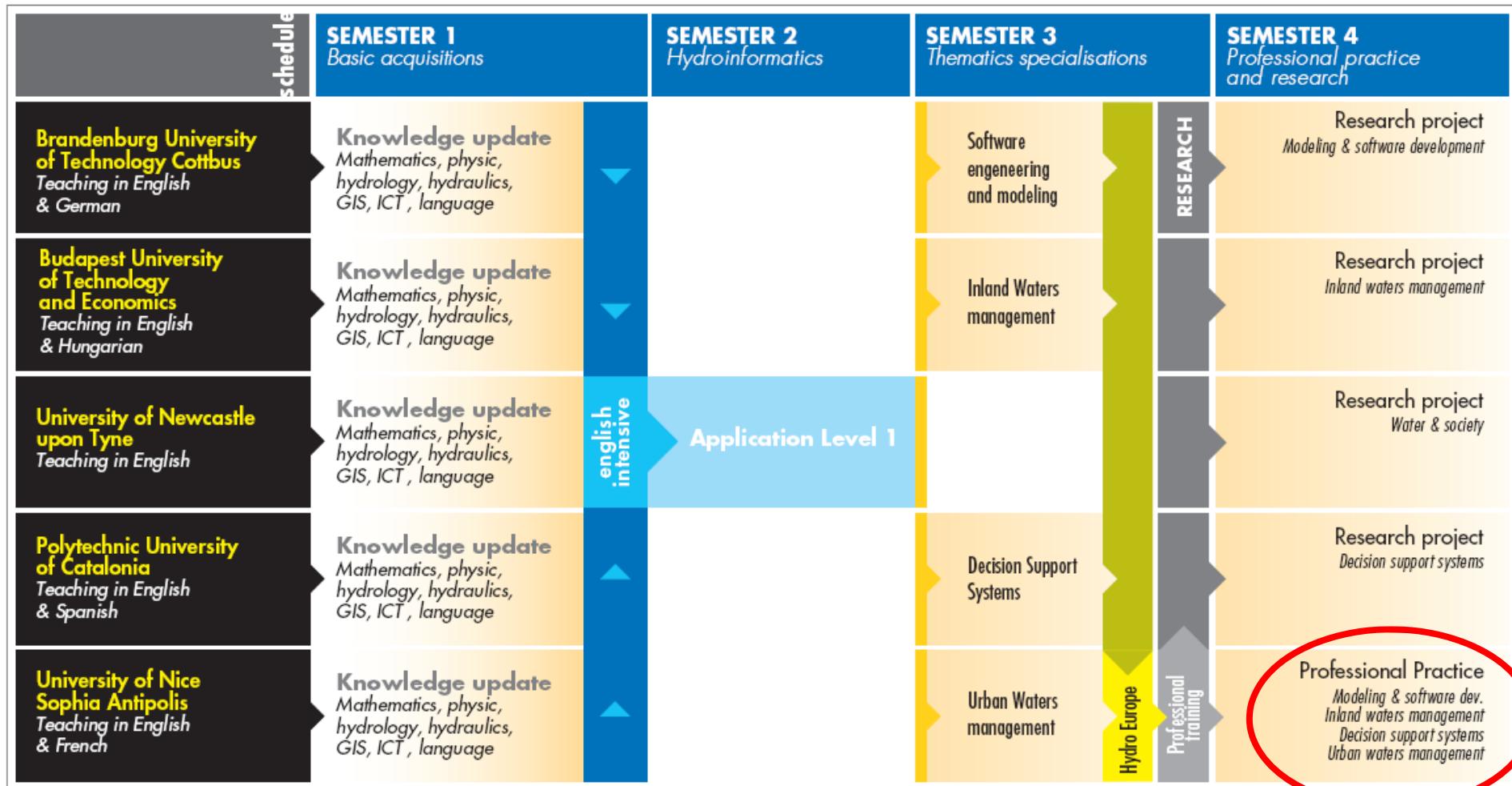
Incredible diversity of subjects (water supply, scada systems, security and health, asset management, sanitation management, floods management ...) strongly linked to technological innovation ...



EuroAquaee vision: a shared strategy between partners



4 semesters – Mobility within 3 universities + internship with a company





UNL.edu.ar



ETH
Eidgenössische Technische Hochschule Zürich
Swiss Federal Institute of Technology Zurich



NUS
National University of Singapore



EUROAQUAE vision: a worldwide strategy with an extended family



EuroAquaue story ...

- 2004: Creation of EuroAquaue Master Course (Msc) within the Erasmus Mundus framework (conclusion of more than 20 years collaboration and partnership under several European frameworks)
- June 2006: Signature of the joint degree (Msc) – Brussels, June 2006
- Sept. 2006: First Graduation ceremony for EuroAquaue students





2nd Award Ceremony
Newcastle Sept. 2007

100% of students
with a job ...





Some of our industrial partners ...





EuroAquaee Strategy for industrial partnership

Main elements/tools for the partnership :

- definition of curriculum (innovation in pedagogy)
- lectures and special seminars (innovation in pedagogy)
- internship of 6 months (1 semester)
- QA scheme & joint management
- EuroAquaee Club of Friends
- Collaborative engineering & real case analysis
- Joint Research Activities



EuroAqua: definition of the curriculum

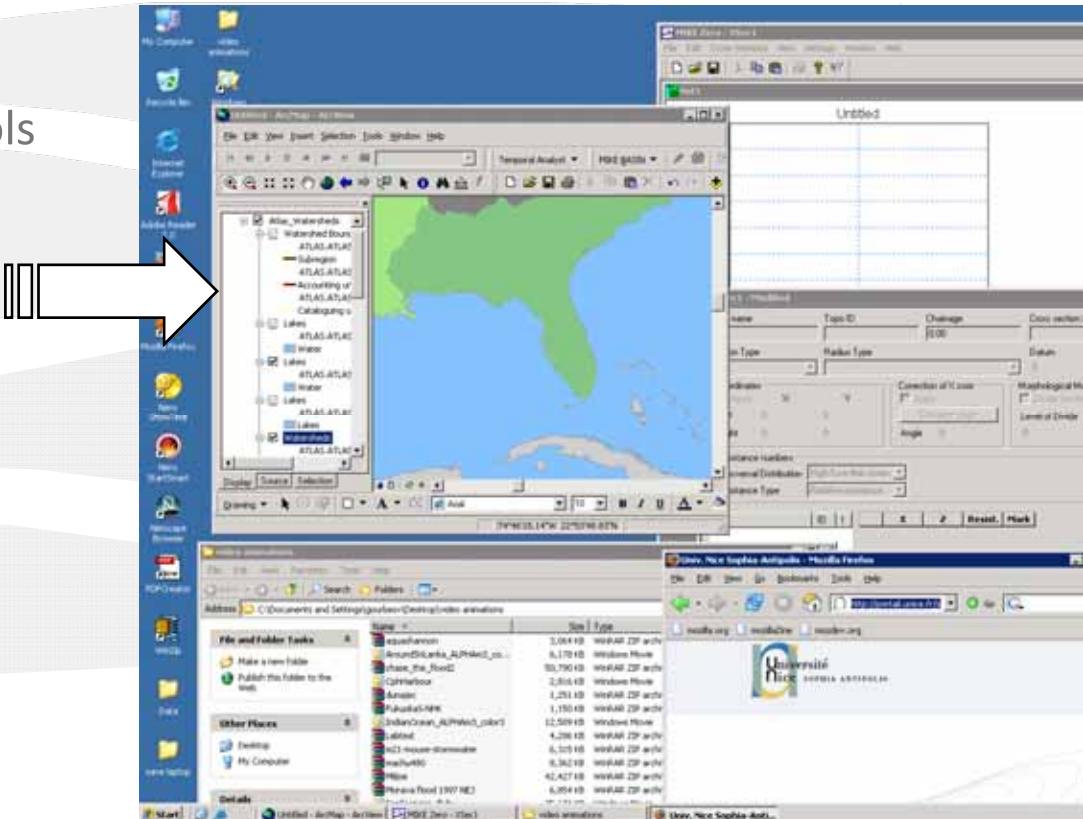
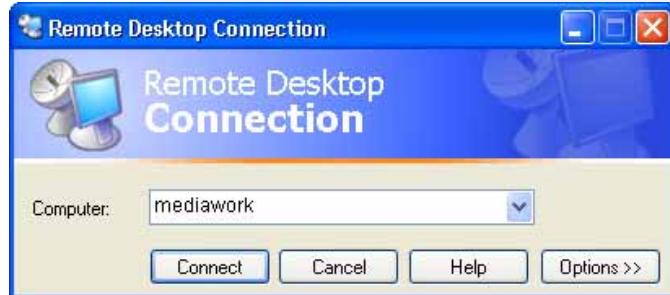
- Identification of a need / request from society and companies
- Willingness to develop innovative pedagogic approach
- Preparatory meetings (several months/years) at the European level
- Technical & scientific conferences (IWA, IAHR, IAHS ...)
- Joint definition of the contents and the pedagogy
- Regular meetings with professionals when implemented (improvements, new contents, update of the profile)



EuroAquaee vision:

- intensive use of ICT
- promoting virtual university concept

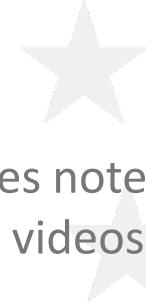
- Remote access to modelling tools



- Communication & engineering

EuroAquaue vision:

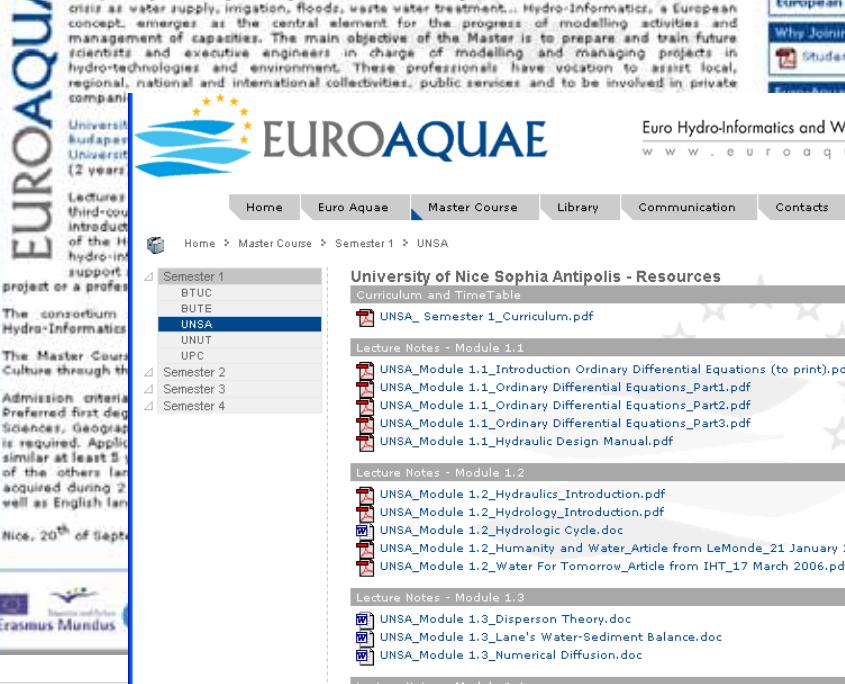
- intensive use of ICT
- promoting virtual university concept



- Resources, lectures notes, documents, library, videos ...



The evolution of human activities, in the foreground of climate changes and growing earth population, induces situations more and more complex to manage. The sustainable development of water resources in the aquatic environment and its management represents today a major challenge. The global aim of the management is to avoid or minimize risk of crisis as water supply, irrigation, floods, waste water treatment... Hydro-Informatics, a European concept, emerges as the central element for the progress of modelling activities and management of capacities. The main objective of the Master is to prepare and train future scientists and executive engineers in charge of modelling and managing projects in hydro-technologies and environment. These professionals have vocation to assist local, regional, national and international collectivities, public services and to be involved in private companies.



University of Nice Sophia Antipolis - Resources

Curriculum and TimeTable

UNSA_Semester 1_Curriculum.pdf 83 Kb / 26 juil. 2006 / euroaquaueAdmin

Lecture Notes - Module 1.1

- UNSA_Module 1.1_Introduction Ordinary Differential Equations (to print).pdf** 579 Kb / 26 juil. 2006 / euroaquaueAdmin
- UNSA_Module 1.1_Ordinary Differential Equations_Part1.pdf** 584 Kb / 26 juil. 2006 / euroaquaueAdmin
- UNSA_Module 1.1_Ordinary Differential Equations_Part2.pdf** 681 Kb / 26 juil. 2006 / euroaquaueAdmin
- UNSA_Module 1.1_Ordinary Differential Equations_Part3.pdf** 320 Kb / 26 juil. 2006 / euroaquaueAdmin
- UNSA_Module 1.1_Hydraulic Design Manual.pdf** 7292 Kb / 26 juil. 2006 / euroaquaueAdmin

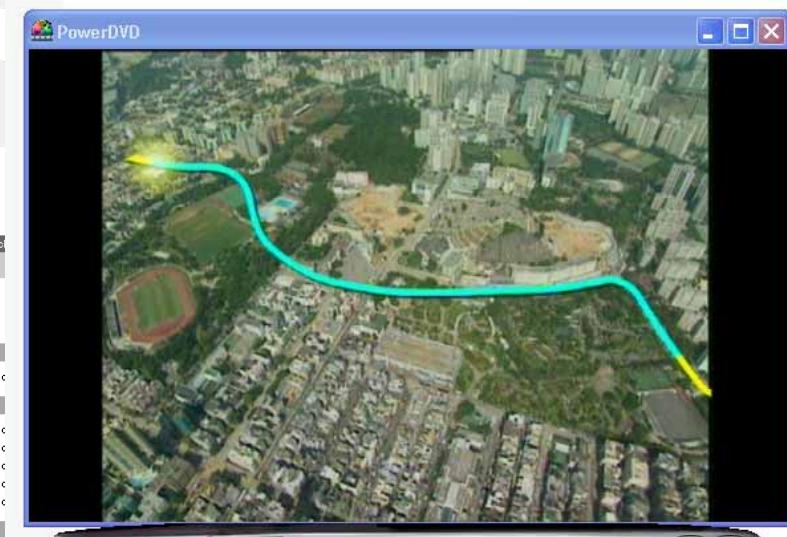
Lecture Notes - Module 1.2

- UNSA_Module 1.2_Hydraulics_Introduction.pdf** 2210 Kb / 26 juil. 2006 / euroaquaueAdmin
- UNSA_Module 1.2_Hydrology_Introduction.pdf** 1749 Kb / 26 juil. 2006 / euroaquaueAdmin
- UNSA_Module 1.2_Hydrologic Cycle.doc** 138 Kb / 26 juil. 2006 / euroaquaueAdmin
- UNSA_Module 1.2_Humanity and Water_Article from LeMonde_21 January 2006.pdf** 119 Kb / 26 juil. 2006 / euroaquaueAdmin
- UNSA_Module 1.2_Water For Tomorrow_Article from IHT_17 March 2006.pdf** 226 Kb / 26 juil. 2006 / euroaquaueAdmin

Lecture Notes - Module 1.3

- UNSA_Module 1.3_Disperser Theory.doc** 78 Kb / 26 juil. 2006 / euroaquaueAdmin
- UNSA_Module 1.3_Lane's Water-Sediment Balance.doc** 274 Kb / 26 juil. 2006 / euroaquaueAdmin
- UNSA_Module 1.3_Numerical Diffusion.doc** 64 Kb / 26 juil. 2006 / euroaquaueAdmin

Lecture Notes - Module 1.4





EuroAquaee: lectures and special seminars

- 30% of lectures given by industrials
- Technical presentations directly related to real situations
- Presentation of management aspects (teamwork, leadership ...)
- Technical visits (water treatment plants, sewage systems ...)
- “Company Day”: participation of several professionals for informal chats
- Presentation of subjects for internship

EuroAqua: Internship – 6 months

- 4th semester with a company in Europe or abroad
- Real project equivalent to a first professional experience
- Project defined jointly with industrial and academic tutor
- Joint supervision and monitoring
- Joint evaluation with participation of the industrial tutor to the jury
- Contract offer from the company at the end of the internship





EuroAqua: Quality Assessment scheme & management

- Complete QA scheme defined in order to follow activities (students, teachers, tutors, contractors)
- Specific QA procedure established every 6 months with review by 2 independent external experts (1 academic & 1 industry) – Report
- Evaluation of tutorship activity (QA)
- Participation to the management & selection boards

EuroAQUAE: Club of Friends

- Created in 2004 – 35 members in 2009
- Different profiles: water utilities, engineering companies, software development comp., public bodies & agencies
- Objectives: supporting EuroAQUAE activities and developing opportunities for graduates
- A newsletter every semester: new profiles, opportunities, research projects, joint initiatives, conferences/seminars ...
- An annual meeting (job fair) with students & teachers on the graduation ceremony



Some of our industrial partners ...





EuroAqua: Alumni Association

- Created in 2004 by first generation of participants
- Legal entity (“association loi 1901” – France)
- Tutorship scheme + job & internship opportunities
- Regular meetings with “juniors” and companies
- Website integrated into the EuroAqua website + forum
- Strong support to students





EuroAqua: Collaborative Engineering

An innovative concept / paradigm ...

- Work as a company
- Work on a project
- Work on a real case to solve
- Work in a distributed international team
- Use Internet and ICT tools during 3 months
- Have a face-to-face activity to conclude the project

Pedagogy focused on methodology

The screenshot shows the HYDROEUROPE website under the 'Intensive Programmes Erasmus' section. It highlights the programme as an intensive programme within the Erasmus framework, initiated by Université de Nice - Sophia Antipolis (France) and associated with six partners: Brandenburg University of Technology at Cottbus (Germany), Budapest University of Technology and Economics (Hungary), Polytechnic University of Catalonia (Spain), University of Bressuire against Tonne (DK), University of Applied Sciences - EPFL (Switzerland), and Ghent University Institute for Water Research (IWG) (Belgium). The page also mentions the programme is dedicated to students involved in several master degrees specialised on water management and hydro-technology. The objective of HYDRO-EUROPE is to promote, in a global European vision, the key concepts, the methodologies, the tools and the good practices which are today essential for a sustainable water management. The HYDRO-EUROPE programme is designed to help students to work together in a global way and with the right tools. The sophistication of the situations imposes to reconsider the way of working: new practices, new tools, new technologies, new ways of collaboration. (See 'Concept' for more details.)

www.hydroeurope.org
www.hydroasia.org
www.hydrolatinamerica.org



HYDROEUROPE

[HydroEurope](#) [Concept](#) [Project](#) [Communication](#) [WorkSpace](#)
[français](#)
[Login](#)

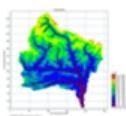

HydroEurope

Intensive Programme Erasmus

Hydro-Europe is an Intensive Programme within the [Socrates/Erasmus](#) framework, initiated by the

- Université de Nice - Sophia Antipolis (France) and associated with six partners:
- Brandenburg University of Technology at Cottbus (Germany),
- Budapest University of Technology and Economics (Hungary),
- Polytechnic University of Catalonia (Spain),
- University of Newcastle upon Tyne (UK),
- Ecole Polytechnique Federale de Lausanne - EPFL (Switzerland)
- Vrije Universiteit Brussel - VUB (Belgium)

Hydro-Europe is dedicated to the students involved in several master degrees specialized on the water management and the hydro-technologies. The objectives of Hydro-Europe is to promote, in a global European vision, the key concepts, the methodologies, the tools and the good practices which are today essential for a sustainable water management. Today, the problems related to water are more and more complex and must be analyzed in a global way and with the right tools. The sophistication of the situations imposes to reconsider the way of working: new practices, new tools, new technologies, new ways of collaboration. [see [Concept](#) for more details]



How to be successful?

- Recommendations to participants
- How to use the platform?

Press & News

- FRANCE 3.jpg
- IMG group 1.JPG
- IMG group 2.JPG

Previous Editions

- 2002/2003
- 2003/2004
- 2004/2005
- 2005/2006

HydroEurope is supported by



HYDROEUROPE


 UNIVERSITAT POLITÈCNICA
 DE CATALUNYA

 ÉCOLE POLYTECHNIQUE
 FÉDÉRALE DE LAUSANNE

www.hydroeurope.org


HYDROEUROPE

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 HydroEurope > WorkSpace 200... > Team 6

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- [Team 3](#)
- [Team 4](#)
- [Team 5](#)
- Team 6**
 - [Members' Contacts](#)
 - [Coordination](#)
 - [Documentation](#)
 - Progress Reports**
- [Team 7](#)
- [Team 8](#)
- [Team 9](#)
- [Team 10](#)



Euro Hydro-Informatics and Water Management

www.euroaquaee.org



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 HydroEurope > WorkSpace 200... > Team 6 > Documentation

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 - Documentation**
 - [Progress Reports](#)
- [Team 7](#)
- [Team 8](#)
- [Team 9](#)
- [Team 10](#)

Documentation

GIS Analysis

 GIS DATA.rar	1660 Kb / Feb 21, 2009 / ler_liangyuay
 GIS analysis data results	1221 Kb / Feb 21, 2009 / ler_liangyuay
 DEM Map.pdf	129 Kb / Feb 21, 2009 / ler_liangyuay
 Landuse Map.pdf	129 Kb / Feb 21, 2009 / ler_liangyuay
 Sub-Catchment Map.pdf	56 Kb / Feb 21, 2009 / ler_liangyuay
 Sub-Catchment Map of the Var Catchment	56 Kb / Feb 21, 2009 / ler_liangyuay
 River Path Map.pdf	41 Kb / Feb 21, 2009 / ler_liangyuay
 Longest River Path Map of the Var Catchment	224 Kb / Feb 21, 2009 / ler_liangyuay
 Tables compiled into Excel from GIS analysis	1650 Kb / Feb 23, 2009 / ler_liangyuay
 ARCGIS_Team6.pdf	
 ArcGIS Analysis Report	

Hydrological Analysis

 Hydro_Report - Team 6.pdf	559 Kb / Mar 4, 2009 / ler_liangyuay
 Hydro_Report	490 Kb / Mar 4, 2009 / ler_liangyuay
 SCS_Nash_calculation.rar	
 Excel Files for the calculations using SCS & NASH methods	

Mike_11 Analysis

 Mike_11_Report - Team 6.pdf	1007 Kb / Mar 9, 2009 / thiange_christophe
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MIKE-SHE Analysis

 MIKE-SHE_Report - Team 6.pdf	1102 Kb / Mar 4, 2009 / ler_liangyuay
 MIKE-SHE_Report	189 Kb / Mar 4, 2009 / ler_liangyuay
 MIKE-SHE_grid200.rar	

Presentations

 Presentation_Week5.pdf	1372 Kb / Mar 2, 2009 / ramirezgomez_sandramilena
 Team 6 - Intro.pdf	827 Kb / Mar 2, 2009 / ramirezgomez_sandramilena
 Team Introduction Presentation	



Erasmus
Universiteit
Rotterdam



BTU
BUNDES
TECHNISCHE
UNIVERSITÄT
BRANDENBURG
AN DER
HARDE



ÉCOLE
POLYTECHNIQUE
FÉDÉRALE
DE LAUSANNE



UNIVERSITAT
POLITÈCNICA
DE CATALUNYA



EuroAqua: Collaborative Engineering

The concept is developed through several projects:

- HydroEurope: An enlarged European network

(since 2001)

- + Belgium (VUB)
- + Switzerland (EPFL)

- and a consortium of regional networks

- + HydroEurope (2001)
- + HydroAsia (2007)
- + HydroLatinAmerica (2009)
- + HydroIndia

www.hydroeurope.org
www.hydroasia.org
www.hydrolatinamerica.org
(under construction)

... towards a global network of partnerships

HYDROASIA

HydroAsia Concept Project Communication WorkSpace

Logout

Login



HydroAsia

Hydro-Asia is an Intensive Research Program within an academic framework, initiated by

- Tropical Marine Science Institute, National University of Singapore (Singapore)
- Incheon Regional Environmental Technology Development Center, University of Incheon (South Korea)
- Disaster Prevention Research Institute, Kyoto University (Japan)

The objective of Hydro-Asia is to promote, in a global Asian vision, the key concepts, methodologies, tools and good practices which are essential for a sustainable water management. Today, problems related to water have become more and more complex and the analysis requires global and holistic approaches.

The collaboration of the three universities, based on the use of the Internet as a common working platform, aims to establish and share high quality teaching courses, and furthermore to strengthen links between students from the partner institutions in order to build up and spread the know-how of a sustainable water management in Asia. [see [Concept](#) for further details]



京都
大學

The face to face activities are now running in Incheon, Korea!

Please visit the workspace to see more on the activities of the teams!



Tropical Marine Science Institute

UNIVERSITY OF INCHEON



Hydro-Asia is supported by the French Embassy in Singapore through the MERLION framework

Contacts



www.hydroasia.org





EuroAquaee Vision: *global network of regional networks*



EuroAquaee: from Consortium to Cluster

Where are we today?

- 5 generations of participants (about 200 from 62 nationalities)
- growing interest (more than 400 candidatures each year...) from students and professionals
- real jobs provided and no “brain drain”
- real impact at the international level (Hydroinformatics professionals community has a limited size at the international level ...)
- strong visibility based on excellence and partnership with industry (trademark of the joint master ...)
- EAAA: Alumni association (strong and efficient)

Necessity to continue to develop the vision with:

- a joint research group
- a new kind of partnership with industry
- a growing network of networks with a variety of activities



EuroAqua: Joint Research Activities

- Developing joint research activities (joint projects)
- Creating a Joint Research Group (academic side)
- Creating an Industrial Core Group for
- Creating joint consortium for European Calls (FP7)
- Developing additional research partnerships (South Korea)



EuroAquaee Research Group 2007

- 60 researchers and scientists from the 5 European Universities
- multidisciplinary approach in order to cover all aspects of hydroinformatics and promote innovative joint activities (Ph.D) with industrial partners (subjects and supervisors)

Covered themes:

- urban waters management
- sustainable watershed management
- coastal zone & marine environment management
- climate change & consequences on water uses
- risk assessment for extreme events
- water quality management in rivers, lakes & networks
- methods & theoretical aspects
- data acquisition and analysis
- software engineering and computing

EuroAqua Industrial Core Group 2008

- active partnership with EU industrials in order to support European concepts and methods ("knowledge economy")
- willingness to use the EuroAquaee structure (name, network ...)
- interest for the European and international dimension
- supporting international developments
- production of guidelines and dissemination of good practices
- development of innovation: virtual reality, new sensors, real time manag., large scale simulation (grid computing) ...
- development of Ph.D with associated financial support
- development of joint LLL activities (many emerging countries are looking for staff training with combination of scientific knowledge and practical skills)
- ...

**ICUH**International Center for Urban Water Hydroinformatics
Research & Innovation

PASSWORD

LOGIN

JOIN

KOREAN

About ICUH

Main Activities

News

Community



News

Hydroinformatics News

**ICUH Home page was...**

ICUH Home page was opened. ICUH Home page - 09/04/2012

Main Activity 01

Seminar & Symposium 02

International Edu... 03

**01 Main Activity**

- Urban Water Management
- Hydroinformatics
- Inland Water Management

[VIEW](#)

International Cooperation



Research to Solve Water Related Problem for Asian developing countries

[HOME](#)

News



Total 799

Today 1

**ICUH**

7-46, Songdo-dong Yeonsu-gu, Incheon, Korea (R&D Center University of Incheon)

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PROGRAM

Aug. 18(Tue)

AM	Workshops
	Lunch
PM	Committee Meeting / Workshops
	Welcoming Reception

Aug. 19(Wed)

AM	Opening Ceremony / Keynote Speech
	Lunch
PM	Technical Conference / Special Symposium
	Sponsored Dinner

Aug. 20(Thu)

AM	Technical Conference / Special Symposium
	Lunch
PM	Technical Conference / Special Symposium

Aug. 21(Fri)

AM	Technical Conference / Special Symposium
	Lunch
PM	Technical Conference / Technical Tour
	Closing Ceremony & Farewell Dinner

www.wcwf2009.org



VENUE



Business Utopia, IFEZ

IFEZ will transform the manufacturing-based korean economy into an advanced One where high value-added industries such as IT, BT, logistics and tourism will flourish. (www.ifez.go.kr)



International Business Hub, Songdo

Songdo Area is the center for international business and knowledge-based industries including IT and bio-technology.



The high-advanced facilities for your business, Songdo Convensia is built as a world class convention center that can proudly represent the international city of Songdo. (www.songdoconvensia.com)

CONTACT

Secretariat

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(Senior Researcher, World City Water Forum 2009 Organizing Committee)
E-mail : cdd799@empal.com

Call for Papers

World City Water Forum 2009

August 18 ~ 21, 2009

Songdo Convensia, Incheon, Korea

Hosted by

Incheon Metropolitan City
Committee on Fund for Management of Han-River
Global Fair & Festival Incheon 2009, Korea

Organized By

Korea Water Forum
Organizing Committee of World City Water Forum
Incheon Regional Environmental Technology Development Center





As a conclusion ...

What is the added value of the industrial partnership?

- Offering to students a joint degree (MSc) with strong professional recognition
- Developing job opportunities for participants
- Ensure quality of contents
- Developing joint research activities with significant financial support
- Create joint consortium for European calls / projects
- Create a global community at the world
- Promoting solutions to answer society needs ...

Our mission to prepare future generations to enter the new world ...



Thank you!

For more information, please visit: www.euroaquaee.org

www.hydroeurope.org & www.hydroasia.org

Contacts: euroaquaee@unice.fr & gourbesv@unice.fr

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