

NOVEDAR_Consolider



Catalan Institute for Water Research (ICRA)
- H₂O Building- Scientific and Technologic Park of the
University of Girona
Emili Grahit 101, Girona (Spain)
4-8th July 2011

4th Summer School

**Environmental Decision Support Systems (EDSS): A Tool for
the Wastewater Management in the XXI Century**

Short, intensive and highly specialised
course focused on innovative tools and
methods for the decision support of the
wastewater management

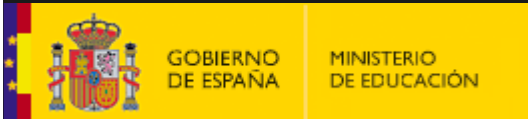
ICRA H₂O Building



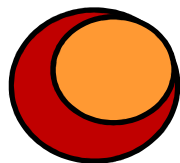
ICRA Lecture Rooms



Costa Brava



NOVEDAR_Consolider (CSD2007-00055)



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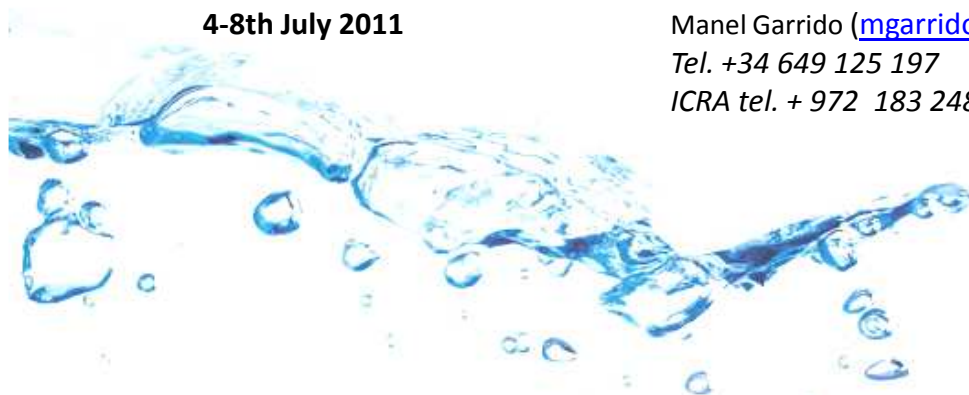
4th Summer School

Environmental Decision Support Systems (EDSS): A tool for the Wastewater Management in the XXI Century

Catalan Institut for Water Research (ICRA)
-H₂O Building-
Parc Científic i Tecnològic de la UdG
Emili Grahit 101

Girona (Spain)

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COURSE SUMMARY

- Course language: English
- Number of participants: 24
- Total hours: 40 (theoretical and practicum)
- Practicum groups: 8

ORGANISATION

Scientific Coordinator:

Prof. Manel Poch

Technical Coordination:

Manel Garrido, Ignasi Rodríguez-Roda and Quim Comas (University of Girona)

CONTACT

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DESCRIPTION

This short, intensive and highly specialized course is focused on Decision Support Systems (DSSs). Innovative tools developed to address the decision-making in the complex issue of the wastewater management. The range of applications of DSSs in water treatment is overwhelming. The chance to learn about tools able to provide consistency, time efficiency, integration and optimum solution for a wide range of wastewater problems is presented.

The course is mainly oriented to PhD students who wants achieve a higher degree of specialization in this field, but also to other students or professionals specifically interested in these topics and with a limited amount of time.

The course is organized by The Laboratory of Chemical and Environmental Engineering (LEQUIA) of the University of Girona (UdG, Spain), and will be held at the Catalan Institute of Water Research (ICRA).

Didactical methods used in this course:

- Lectures given by senior researchers over European universities
- Individual and group exercises in the classroom
- Discussion sessions
- Practical sessions using applied DSSs
- A technical visit

Furthermore, a social programme has been designed to enhance the interaction between all participants in the course.



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PROGRAMME OF THE COURSE

	MONDAY, 4 th JULY	TUESDAY, 5 th JULY	WEDNESDAY, 6 th JULY	THURSDAY, 7 th JULY	FRIDAY, 8 th JULY
	THEME: Introduction to EDSS and Basic Tools	THEME: Data and Cognitive Analysis for EDSS	THEME: Evaluation Tools	THEME: EDSS in practice	
9:00-10:00	Decision Support in Environmental Systems <i>Dr. Andrea Rizzoli</i> <i>Dalle Molle Institute of Artificial Intelligence Studies - Switzerland</i>				Technical Visit to pilot plant using an Operation EDSS <i>Castell d'Aro (Costa Brava)</i>
10:00-11:00	Mathematical Models and Control Algorithms <i>Dr. Eduardo Ayesa</i> <i>CEIT Guipuzkoa</i>	Data Mining <i>Dr. Natasa Atanasova</i> <i>University of Ljbljana</i>	Multicriteria and Multiobjective Tools <i>Dr. Xavier Flores</i> <i>Lund University - Sweden</i>	Decisions on Wastewater Treatment projects and applied EDSS <i>Dr. Manel Poch</i> <i>ICRA-LEQUIA; Girona University</i>	
	<i>Coffee break</i>	<i>Coffee break</i>	<i>Coffee break</i>	<i>Coffee break</i>	
11:30-12:30	Artificial Intelligence tools applied to Wastewater Treatment <i>Dr. Miquel Sánchez-Marrè</i> <i>Knowledge Engineering and Machine Learning Group and Technical University of Catalonia (KEMLG-UPC)</i>	Neural Networks and Soft Computing <i>Dr. Kris Villez</i> <i>BIOMATH; Ghent University</i>	Life Cycle Analysis: A Tool for Wastewater Management <i>Dr. Maite Moreira</i> <i>University of Santiago de Compostela</i>	Design and Selection of Alternatives & Operation of WWTP using EDSS <i>Dr. Ignasi Rodríguez-Roda & Dr. Quim Comas</i> <i>ICRA-LEQUIA; Girona University</i>	
12:30- 13:30	A. I. tools applied to Wastewater Treatment <i>Dr. Ulises Cortés</i> <i>(KEMLG-UPC)</i>				
	<i>Lunch Time</i>	<i>Lunch Time</i>	<i>Lunch Time</i>	<i>Lunch Time</i>	Closure of the course
15:30-18:00	Practical session: <i>Hands-on in Mathematical Modeling and Control</i>	Practical session: <i>Data Mining (Dr. Natasa Atanasova) and Soft Computing (Dr. Kris Villez)</i>	Practical session: <i>Analyses Multicriteria and other Decision-making Tools</i> <i>Dr. Xavier Flores</i>	Practical session: <i>Hands-on in Applied EDSS: NOVEDAR_EDSS</i> <i>(Manel Garrido)</i>	