DTU

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DTU Environment
Department of Environmental Engineering

Deadline for registration

Monday 4th August 2014

Please register by sending a mail to

luve@env.dtu.dk

2.5 ECTS points

4 full days of lectures and exercises

Exercises based on the WEST® software

E-learning based teaching

DTU Environment

Department of Environmental Engineering
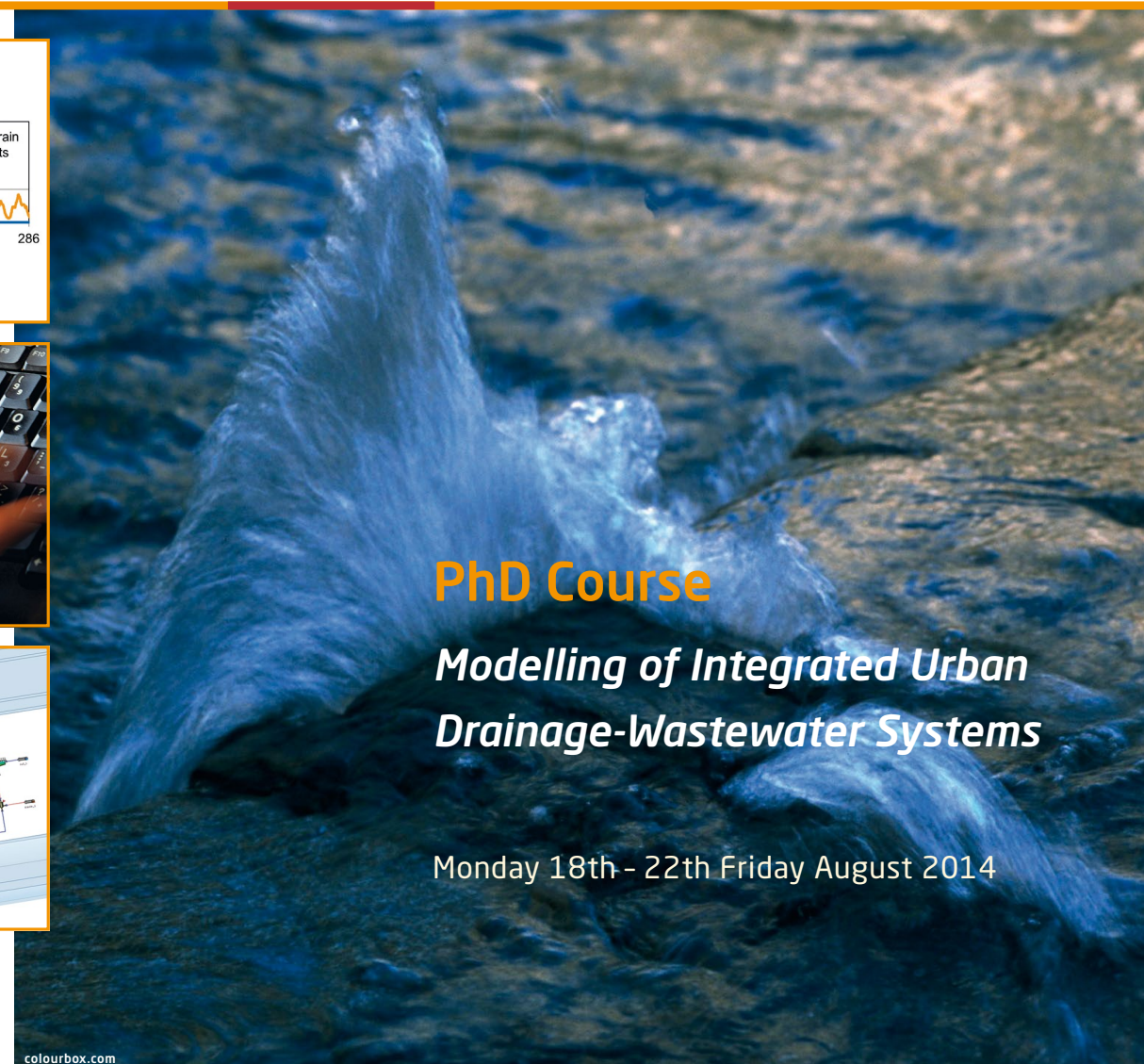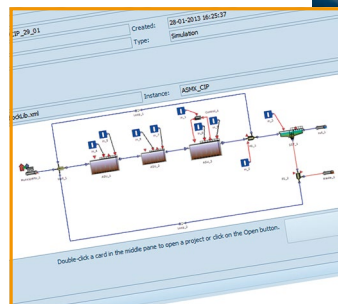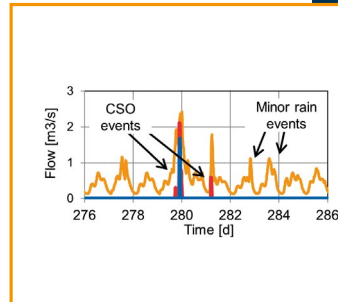
Technical University of Denmark

Miljøvej, Building 113
DK-2800 Kgs. Lyngby
Denmark

www.env.dtu.dk

www.urbanwatertech.dk

PhD Course

Modelling of Integrated Urban Drainage-Wastewater Systems

Monday 18th – 22th Friday August 2014

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UrbanWaterTech

UNIVERSITÉ LAVAL

Modelling of Integrated Urban Drainage-Wastewater Systems

Monday 18th – Friday 22th August 2014

The course is targeted at PhD students and researchers modelling the elements of integrated Urban Drainage-Wastewater systems - drainage network, wastewater treatment plants, receiving water bodies.

The course consists of an overview of state-of-the-art tools for integrated modelling of urban drainage and wastewater systems, simulation exercises based on the WEST® software, and examples of application of integrated approaches for improving the environmental status of natural water bodies, e.g. eutrophication and oxygen depletion.

At the end of the course participants will be able to:

- Describe the operational interactions between the three components in the integrated urban (waste) water system: The urban drainage system, the wastewater treatment plant and the receiving waters.

- Understand the main assumptions and simplifications made in lumped conceptual modelling of integrated urban drainage-wastewater treatment systems.

- Use and run a professional integrated model programmed in WEST® for simulation of pollution loads, receiving water effects and mitigation option's efficiency.

- Apply the integrated model to understand and identify the main environmental problems in a defined model area.

- Assess the impacts of changing components in the integrated system and use this to develop and test possible mitigation strategies using the integrated model.

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Main Topics of The Course

- Introduction to integrated modelling concepts.

- Conceptual hydraulic modelling.

- Conceptual modelling of transport and fate of macropollutants (TSS, nutrients) and micropollutants.

- Utilization of the WEST® Integrated Urban Wastewater System model library.

- Application of integrated models for fulfilling the EU Water Framework Directive.

- How to find the compromise between data requirements and actual data availability.

- Use of integrated models for decision support and scenario evaluation.

- Evaluation of the effects of climate change.

- Brief overview of approaches for evaluating uncertainty in model results.

- Brief overview of water-quality based approaches to real time control of urban drainage and wastewater systems.

Lecturers

Prof. *Peter Steen Mikkelsen*, DTU Environment

Prof. *Peter. A. Vanrolleghem*, modelEAU, Université Laval

Assoc. Prof. *Benedek G. Plosz*, DTU Environment

Dr. *Luca Vezzaro*, DTU Environment

Frédéric Cloutier, model*EAU*, Université Laval

Dr. *Thibaud Maruéjouls*, model*EAU*, Université Laval

Technical Information

The course is based on exercises running the WEST® software. The students will have access to a server running the software - so a computer needing access to Windows Remote Desktop is required. Students who already have a WEST® license may run the exercises on their machines.