Modelling Of Integrated Urban Drainage-Wastewater Systems

Wednesday 6th - Saturday 9th September 2017

UNIVERSITÉ LAVAL · DTU

FACULTY OF CIVIL ENGINEERING CTU IN PRAGUE

DTU Environment
Department of Environmental Engineering

UNIVERSITÉ LAVAL · DTU

FACULTY OF CIVIL ENGINEERING CTU IN PRAGUE

Deadline for registration
Sunday 16th July 2017
Please register by sending an e-mail to Dr. Vezzaro
luve@env.dtu.dk

2.5 ECTS
3.5 full days of lectures and exercises
(from Wednesday afternoon to Saturday afternoon)
Exercises based on WEST® software
E-learning based teaching

Fees (lunch, refreshment, course material)
PhD students from EU/EEA – 60 EUR
PhD students from outside EU/EEA – 120 EUR

Professionals from industry and university staff – 600 EUR

Accommodation options are available through the ICUD website

Location
CTU Campus
Building Faculty of Civil Engineering (room B880)
Thakurova 7
166 29 Prague 6
Czech Republic

DTU Environment
Department of Environmental Engineering
Technical University of Denmark
Miljøvej, Building 113
DK-2800 Kgs. Lyngby
Denmark
www.env.dtu.dk

modelEAU
Canada Research Chair on Water Quality Modelling
Université Laval
Department of civil engineering and water engineering
Pavillon Adrien-Pouliot - 1065, Médecine avenue
Québec (Québec) - G1V 0A6
Canada
http://modeleau.fsg.ulaval.ca/

CTU Faculty of Civil Engineering
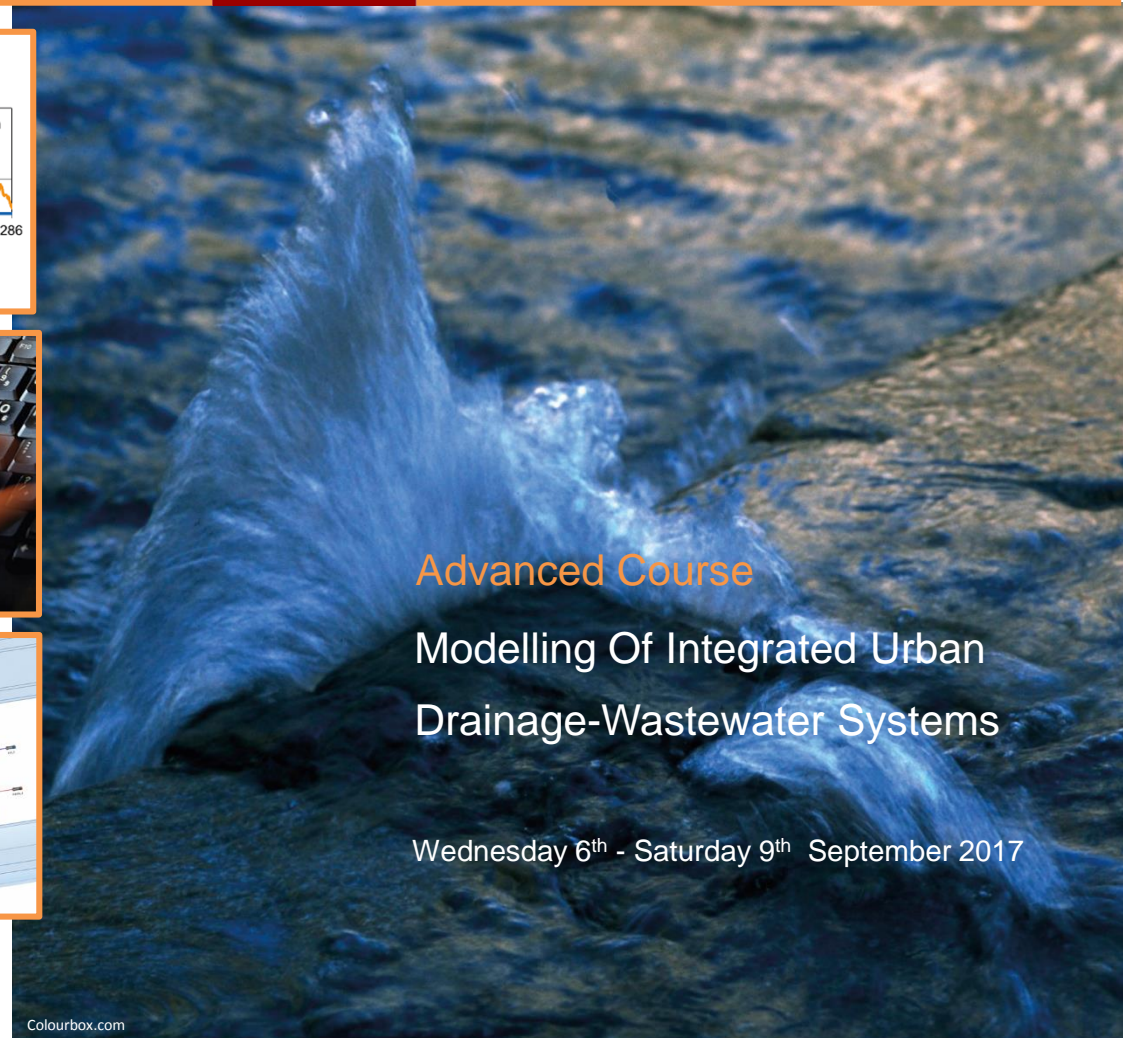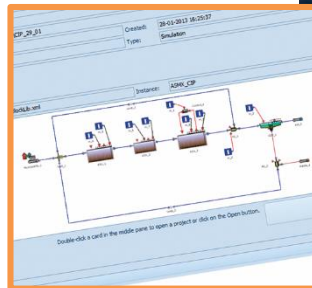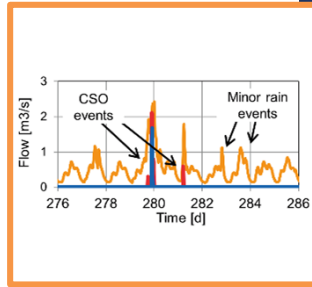Department of Hydraulics and Hydrology
Department of Sanitary and Ecological Engineering
Czech Technical University in Prague
Thakurova 7 - 166 29 Prague 6
Czech Republic
www.fsv.cvut.cz

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Advanced Course

Modelling Of Integrated Urban Drainage-Wastewater Systems

Wednesday 6th - Saturday 9th September 2017

DTU Environment
Department of Environmental Engineering

Supported by

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The IWA MIUWS
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ICUD 2017

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Main Topics of The Course

The course is targeted at practitioners, 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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- 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.

- 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.

Course team

Prof. Peter Steen Mikkelsen, DTU Environment

Prof. Peter A. Vanrolleghem, modelEAU, Université Laval

Assist. Prof Luca Vezzaro, DTU Environment

Sovanna Tik modelEAU, Université Laval,

Julia Ledergerber modelEAU, Université Laval,

Dr. Lorenzo Benedetti, Waterways d.o.o.

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. The suggested size of laptop screens is at least 14". Students who already have a WEST® license may run the exercises on their machines.

Interested in more?
DTU offers other 2.5 ECTS courses at PhD level within urban drainage and wastewater systems. For more information about the other course "*Advanced Topics in Urban Water Modelling*", please visit our homepage (www.env.dtu.dk) or write to Nadia Lund (nalu@env.dtu.dk)