Practical hydraulics: Applications in free surface and pressurized flows

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Overview

This course will examine practical and innovative topics in open channel flow and closed pressure conduits. Topics such as unsteady flows in channels and pipes will be discussed and illustrated. The development of numerical methods for the solutions of these problems will be outlined and hands on examples of how boundary conditions are implemented will be taught. The course will also give experience with freely available tools for practical unstedy flow computations. These will be followed by the development of innovative applications of the fundamental techniques to leak detection in pipelines, blockage detection and pipeline condition assessment. The lectures will be used to introduce topics and the students will be expected to gain a greater understanding of the material through the design and tutorials and through their own self-study. The lectures will be delivered by a well-known international faculty having vast expertise in the field of water pipeline engineering. Therefore, Both students and practitioners can thus get acquainted with several aspects of the subject from the world renowned expert of the subject.

Modules	**Duration of the Course : February 04–16, 2019** **Number of participants for the course will be limited to fifty only**
You Should Attend If…	▪ This course is designed for BTech (final year) / MTech / MSc / PhD students of the Department of Civil Engineering, Department of Mechanical Engineering, School of Water Resources, CORAL, Department of Geology and Geophysics, Agricultural & Food Engineering and Department of Ocean Engineering and Naval Architecture who will benefit from learning the theoretical and experimental aspects of unsteady flows from an international faculty. This is an excellent opportunity for the students to get acquainted with the details of numerical modelling of unsteady flows to pursue their further studies and/or research in the subjects related to hydraulic engineering. The particular feature will certainly be the way of presentation, not only employing the theoretical background but also hands on experience with tutorials. Those who participate are further invited to actively design the lectures by questioning the presenter and to foster discussions on topics relating to the main issues of the lectures. ▪ Faculty members and Research Associates from reputed academic institutions and Practitioners from industries/organisations can also participate.
Fees	The participation fees for taking the course is as follows: **Participants from abroad : US $500** **Industry/ Research Organizations : Rs 20000** **Academic Institutions : Rs 5000** The fee includes all instructional materials, computer use for tutorials and assignments, laboratory equipment usage charges, and 24 hours free internet facility. The participants will be provided accommodation on payment basis.

The Faculty

Prof Martin F. Lambert is currently Head of School and Professor of Water Engineering and Hydraulics in the School of Civil, Environmental and Mining Engineering at the University of Adelaide. His research has focused on several aspects of water engineering related to stochastic hydrology and the use of fluid transients for the effective and efficient condition assessment of the aging engineered pipe infrastructure. He has taught a range of subjects in the School and has been awarded several prizes for teaching including the University Prize for Excellence in Higher Degree by Research Supervision in 2008 and an Australian Learning & Teaching Council citation in 2009. He is an Associate Editor of the Journal of Hydraulic Engineering (ASCE) and Editorial board member of Journal Water Management. Professor Lambert widely publishes papers in reputed international journals and conferences.

Prof. Subhasish Dey is a Professor in the Department of Civil Engineering, Indian Institute of Technology Kharagpur. He is an Associate Editor of the Journal of Hydraulic Engineering (ASCE), Journal of Hydraulic Research (IAHR), Sedimentology, Acta Geophysica, International Journal of Sediment Research and Journal of Hydro-Environment Research. His research interests include analytical hydrodynamics, turbulence, sediment transport and scour. He is the author of a book titled “Fluvial Hydrodynamics” published by Springer-Verlag.

Dr. Prashanth Reddy Hanmaiahgari is an Assistant Professor in the department of Civil Engineering, Indian Institute of Technology, Kharagpur. His research interests include experimental and numerical modeling of free surface flow in open channels and pressurized flow in closed conduits. He has also published journal papers on turbulence, and sediment transport. He has taught open channel flow hydraulics, turbulence and sediment transport.

Course Coordinators

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