# Advances in Hydraulic Modelling

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## Overview

Hydraulic modelling provides an in-depth understanding of the hydraulic features of a physical system. It essentially involves the fundamental principles of hydraulic engineering involving analytical hydrodynamics, river hydraulics, turbulence and mechanics of sediment transport. Thus, the course will provide a comprehensive understanding on various issues of hydraulics elucidating the insight of the flow physics and the applicability of the models to field situations. The purpose of this course is to describe the analytical derivations, empirical/semi-empirical formulations and mathematical modelling of the key problems related to hydraulic engineering. This course will primarily focus on the fundamental theories as well as the modern developments and methodologies of the subject. In addition, recent experimental techniques will be highlighted by which a number of challenging aspects are evidenced. The lectures will be delivered by a known international faculty having vast expertise in the field of hydraulic engineering. Both students and practitioners can thus get acquainted with several aspects of the subject from the world renowned experts of the subject.

| **odules** | **Duration of the Course : December 5–16, 2016**<br>**Number of participants for the course will be limited to fifty only** |
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| **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 learn the theoretical and experimental aspects of hydraulic modelling from an international faculty. This is an excellent opportunity for the students to get acquainted with the details of hydraulic modelling 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 illustration of topics with selected photographs and videos. 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.<br>▪ 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:<br>**Participants from abroad : US $500**<br>**Industry/ Research Organizations: Rs 20000**<br>**Academic Institutions: Rs 5000**<br>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. Willi H. Hager** is currently a Professorof the ETH Zurich, Switzerland.During his past 35 years of academic and professional activities, he was interested in hydraulic structures, wastewater hydraulics, high-speed flows, impulse waves, scour and erosion. He has published more than 500 papers both in peer-review journals as also in national journal and scientific congresses. He also authored books on these topics, among which are Dam hydraulics (1998), Constructions hydrauliques (2009), Wastewater hydraulics (2010) and three volumes on Hydraulicians. He was the Editor of the Journal of Hydraulic Research IAHR (2006–2011) and Associate Editor of the Journal of Hydraulic Engineering, ASCE (1998–2006).

**Prof. SubhasishDey**is a Professor and Head of 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, ActaGeophysica, 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.

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# Course Coordinator

**Prof. SubhasishDey**
Phone: 03222-283418 (O); 03222-283419 (R)
E-mail: sdey@civil.iitkgp.ernet.in;
sdey@iitkgp.ac.in

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http://www.mymail.iitkgp.ernet.in/iswt/courses.php