

**Technical Education Quality Improvement Programme
(TEQIP-II)**

on

**Advances in Numerical Simulation Techniques for
Hydraulics, Hydrology and Water Resources
Management – I (ANST-HHWM-I)**

(February 23-28, 2015)

International Faculty:

Professor (Dr.) Walter H. Graf

*Emeritus Professor
Laboratoire de Recherches Hydrauliques
Ecole Polytechnique Federale de Lausanne
Lausanne, Switzerland*

National Faculties:

Professor (Dr.) Dhruvajyoti Sen

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Organized by

**School of Water Resources
Indian Institute of Technology Kharagpur
Kharagpur-721 302**

BACKGROUND

To manage effectively the scarce global fresh water resources, efforts have been put forward by various researchers world-wide to accurately assess the river basin flow processes. Modelling the quantity dynamics of water transport at river basin-scale is very much essential for flood modelling and its management, basin-scale rainfall-runoff modelling, water resources assessment, reservoir operation, river basin planning and management etc. With the evolution of computational power, a number of complex numerical models have been developed in the last few decades by several researchers which range from the simple to conceptual and physically-based modelling approaches to deal with the complex hydrological process components. Some of these models have the capability to be integrated with the global climate change models operable at coarser spatio-temporal scales.

Keeping the above background in mind, this course has been designed to enhance the technical skill of the faculties, practicing engineers and field hydrologists to make aware of the recent developments in the numerical techniques in hydraulics, hydrology and water resources management to solve global water resource problems through basic technical knowledge and ‘hands on training’.

DATES AND VENUE

The training course will be held at **School of Water Resources, IIT Kharagpur** during February 23-28, 2015.

COURSE CONTENT

The course has been segmented into three sections: “Basics”, “Tutorials”, and “Hands on exercise with computer simulation models”. The course material will be very much useful for the water professionals to deal with projects, field problems and as an aid for teaching material.

Date	09:00-11:15	Feb-28	Fluvial sediment transport modelling	Basics of SWMM software	Hands on exercise of SWMM
	11:30-12:30	Feb-27	Solution of KW and DW flow equations	Basics of MIKE-BASIN software	Hands on exercise of MIKE-BASIN
		Feb-26	Non-uniform Flow	Basics of HEC-HMS software	Hands on exercise of HEC-HMS
		Feb-25	Uniform Flow	Basics of optimization software	Hands on exercise of Optimization software
		Feb-24	Hydrodynamic Equations	Basics of MIKE11-HD package	Hands on exercise of MIKE11-HD
		Feb-23	Introduction to Fluvial Hydraulics	Basics of HEC-RAS package	Hands on exercise of HEC-RAS
			Rating curve development using finite difference based simplified hydrodynamic models		
12:30-14:30: Lunch Break					
			Finite element methods (FEM) in open channels		

PARTICIPATION

The following members can attend the course:

- Faculty members of State / Central Govt. / Private engineering colleges affiliated with TEQIP-II OR approved by AICTE
- Engineers, scientists and officers working in State / Central Govt. departments / industries dealing with irrigation and water resources
- Postgraduate students and Research Scholars from TEQIP-II affiliated colleges

REGISTRATION FEE FOR ALL PARTICIPANTS

All the participants have to submit the duly filled in Registration Form along with a Bank Draft of Rs.1000/- as non-refundable Registration Fee in favour of **CEP-STC, IIT Kharagpur**; payable at: **Syndicate Bank, Kharagpur Branch** (Code: 9556) or **SBI, Kharagpur Branch** (Code: 0202). The registration Form has to be posted to the address of the Course Coordinator.

Faculties / students from TEQIP-II affiliated colleges need to be forwarded their Registration Form from their respective Head of the Department and Supervisor (only for students).

COURSE FEE

- Participants from the **TEQIP-II** affiliated colleges: NIL
- Participants from non-**TEQIP-II** affiliated colleges/ engineers/ scientists/ officers: Rs.9,000/- (to be paid on arrival). They have to bear their own expenses towards accommodation, fooding, and local travels. Guest House (charge: Rs.600/day, AC double occupancy) and Hostel Guest Room (charge: Rs.100/day, Non-AC double occupancy) may be provided on request.

The demand draft has to be made in favour of **CEP-STC, IIT Kharagpur** as mentioned above for paying the Registration Fee.

For electronic payment:

Name of Bank Account: CEP-STC; Bank Name: Syndicate Bank; Branch Name: SRIC, IIT Kharagpur; SB Account No.: 95562200002955; IFSC Code: SYNB0009556; MICR: 721025103.

TA/DA will be borne by the participants. The number of seats is limited. Shortlisting of participants will be done based on a strict scrutiny by the core technical committee.

IMPORTANT DATES

Last date for receipt of Registration Form: **11th Feb 2015**.

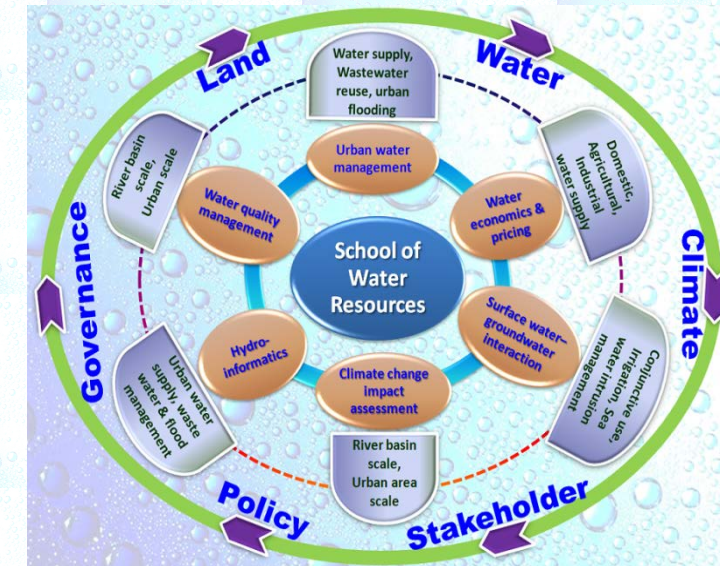
Intimation to selected participants: **12th Feb 2015**.

ABOUT THE SCHOOL OF WATER RESOURCES

The School of Water Resources aims at providing integrated and interdisciplinary approaches involving hydrological, biophysical, environmental, chemical, economic, institutional, and policy-planning aspects, to solve the ever-growing water-related challenges in domestic, agriculture and industry sectors. The Programme is intended for professionals and researchers from a wide range of backgrounds of Civil Engineering, Agricultural Engineering, Environmental Engineering, Chemical Engineering, and Mining Engineering. It aims to develop knowledge, insight and engineering skills required to design, implement and evaluate water management policies and strategies for effective water governance.

The academic programme of the School offers M.Tech. (in *Water Engineering and Management*) and Ph.D. for both fresh graduates from colleges seeking an advanced learning in the field of water management and engineering and also for in-service professionals and researchers from a wide range of backgrounds, who wish to enhance and supplement their already existing knowledge domain with

the state-of-the art skills and expertise. The programme consists of three phases. The foundation phase provides latest insights, context, and concepts in integrated water and environment management issues. In the specialization phase, the students choose to make in-depth study either in Rural and Urban Water Management or Biosystems Engineering. In the integration phase, the students are challenged to bring together and apply their cumulative learning process to solve the field problems in the form of an M. Tech. thesis.



COURSE COORDINATOR

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