

Hydroinformatics for Integrated Water Resources Management

Overview

World's water resources are under severe stress due to demands arising from increasing human population and the resulting pollution due to deforestation, urbanization and intensification of agriculture. The impact to the water resources is further compounded due to climate change. Hence, hydrologic models are increasingly used to understand the impact of human activities on hydrology and water resources with an aim to help planners and administrators to strategically design developmental activities with minimal impact on hydrology and water resources. There are several feedback mechanisms in the hydrologic system (For e.g., if the soil nutrient is not sufficient, then the crop will not grow/develop at the optimal rate; hence, the crop evapotranspiration will less; thus, lack of soil nutrient can affect the water balance). Hence, an integrated modelling framework is essential to understand the effect of different management activities on water quantity and quality. This course will present the concepts of using Hydroinformatics tools such as GIS, Remote Sensing and integrated hydrologic models such as Soil and Water Assessment Tool (SWAT).

Course participants will learn these topics through lectures and hands-on exercises. Also case studies and assignments will be given to stimulate research motivation of participants.

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| Dates for the Course | 28th November, 2016 to 9th December, 2016 |
| Host Institute | IIT Madras |
| No. of Credits | 2 |
| Maximum No. of Participants | 40 |
| You Should Attend If... | <ul style="list-style-type: none"> ▪ You work in the areas of agricultural water management, hydrology, and water resources. ▪ you are a student or faculty from academic institution interested in learning the concepts of using Hydroinformatics tools such as GIS, Remote Sensing and integrated hydrologic models such as Soil and Water Assessment Tool (SWAT) |
| Course Registration Fees | <p>The participation fees for taking the course is as follows:</p> <p>Student Participants: Rs.2,000 Faculty Participants: Rs.5,000 Government Research Organization Participants: Rs.5,000 Industry Participants: Rs.10,000</p> <p>The above fee is towards participation in the course, the course material, computer use for tutorials and assignments, and laboratory equipment usage charges.</p> <p>Mode of payment: Demand draft in favour of "Registrar, IIT Madras" payable at Chennai</p> |
| Accommodation | <p>The participants may be provided with hostel accommodation, depending on the availability, on payment basis. <u>Accommodation is not a part of registration fee.</u> Request for hostel accommodation may be submitted through the link: http://hosteldine.iitm.ac.in/iitmhostel</p> |

Course Faculty



Prof. Raghavan Srinivasan (Srini), is the Regents Fellow Professor from Texas A&M University. He is also the Director of Spatial Sciences Laboratory, in the Department of Ecosystem Science and Management.

Dr. Srinivasan is one of the developers of Soil and Water Assessment Tool (SWAT) and travels around the world teaching SWAT workshops. His research and its applications have contributed to long-lasting changes in natural resource assessments and development of management system options, currently being used in more than 90 countries.



Dr. Balaji Narasimhan, is an Associate Professor in the Department of Civil Engineering, IIT Madras. He has over 12 years of experience in the use of GIS and remote sensing tools for hydrologic model development. He was also a Member of "Think Tank" for development of Water Resources Information System (WRIS), Ministry of Water Resources, Govt. of India. His research interests are Irrigation water management, Hydrologic Modelling and Hydroinformatics.



Dr. K. P. Sudheer, is a Professor in the Department of Civil Engineering, IIT Madras. He has over 20 years of experience in using evolutionary computational algorithm for Hydrologic Modelling. Prof. Sudheer currently leads a group focusing on research applications of modern computing tools to water resources analysis and hydrologic modeling. He is currently Associate Editor of three leading international journals in Hydrology: Journal of Hydrology (Elsevier), Journal of Hydrologic Engineering (ASCE), and Journal of Hydrology and Hydromechanics (SAH).

Course Coordinators

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