## Five Days Online Short-Term Course (e-STC)

## on

## RECENT ADVANCES IN WATER RESOURCES ENGINEERING AND MANAGEMENT

## (RAWREM-2023)

## 27th February - 03rd March 2023

### COORDINATORS

**Dr. Vijay Kr. Bansal**

**Dr. Ray Singh Meena**

### Organized by

**Department of Civil Engineering**

**National Institute of Technology Hamirpur**

**Himachal Pradesh, INDIA-177005**

## ABOUT THE INSTITUTE

National Institute of Technology Hamirpur is one of the thirty-one NITs of the country, which came into existence on 7th August 1986 as Regional Engineering College, a joint and cooperative enterprise of the Govt. of India and Govt. of Himachal Pradesh. On 26th June 2002, REC Hamirpur was awarded the status of Deemed University and upgraded to National Institute of Technology. The Institute offers Bachelor, Master and Doctoral programs in Engineering, Sciences, Architecture, Management and Humanities. Various programs serve the purpose of building a comprehensive foundation of knowledge and of enhancing confidence, creativity and innovation in its students.

## ABOUT THE CIVIL ENGINEERING DEPARTMENT

National Institute of Technology, Hamirpur was established in the year 1986 and the Civil Engineering Department is part of the institute since its inception. Civil Engineering is the branch with a lot of diversity right from structural to transportation engineering, environmental to hydrology to hydraulics engineering, geology to geo-technology to earthquake engineering. Being one of the primary Engineering Departments of the Institute, the Department of Civil Engineering offers B. Tech., M. Tech. and Ph.D. degree programs. The Department has been imparting quality education at undergraduate and post-graduate level. The faculty members have been active in teaching, research as well as academic activities.

## CONTACT DETAILS


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## PATRON

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## ABOUT THE e-STC:

Water has recently become a focal point in the management of natural resources on Earth. This resource, while potentially renewable, is often not available in the quantities and quality needed due to the global climatic and environmental changes. The global climate change crisis is inextricably linked to water. Climate change is increasing variability in the water cycle, thus inducing extreme weather events, reducing the predictability of water availability, decreasing water quality, and threatening sustainable development, biodiversity, and enjoyment of the human rights to safe drinking water and sanitation worldwide. Safe drinking water and sanitation are human rights. Water including sanitation is critical for socio-economic development, food security, and healthy ecosystems, and is vital for reducing the global burden of disease and improving the health, welfare, and productivity of populations. Effective planning and management of water resources are required to meet the increased demand for water in the domestic, irrigation, and industrial sectors as well as measures to minimize climate change impact on water. Water management also includes treatment of drinking water, industrial water, sewage and wastewater, flood protection and more. For efficient planning and management of water resources, prediction of the various hydrological event such as rainfall-runoff correlation, forecasting of inflow into a reservoir, forecasting of rainfall, forecasting of evaporation, forecasting of maximum flood and optimum reservoir operation policy, etc. are required. Computational techniques are very effective to solve various issues and problems related to water resources engineering and management. The major issues in water resources engineering can easily be dealt with by understanding the concepts in the courses like hydrology, hydraulics, fluid mechanics, computational techniques, and the application of various mathematical models and software. The primary aim of this e-STC is to enhance technical and professional competency as well as organizing skills of the faculty members in the field of water resources engineering.

The course will promote interaction with professionals working in specific areas of research in Academic Institutions, Research Labs, and Industries. Also, exposure will be provided to the audience from renowned speakers on the latest developments in Academia, Research, and Industry. This program will bring a positive transformation among the faculty members, research scholars, and participants from industries towards research work, and enable the participants to develop competence in understanding recent advances in the proposed topic of the course.

## THE TOPICS TO BE COVERED:

Remote sensing/geospatial techniques in water resources; Groundwater flow and contaminant transport modeling; Soft computing techniques in water resources; Sediment Transport and Reservoir Operation; Basin scale hydro power development; Hydrological and Hydraulic modeling; Numerical Methods; Finite Difference Methods; Probabilistic and Statistical Methods; Computational Fluid Dynamics; Climate change impacts on hydrology; Uncertainty analysis in hydrology; Data Analysis for Water Resources; Innovative methods and designs in water resource engineering etc.

## RESOURCE PERSONS:

- Prof. D. Nagesh Kumar, IISc Banglore
- Prof. Subashisa Dutta, IIT Guwahati
- Prof. A.K. Keshari, IIT Delhi
- Prof. K.C. Patra, NIT Rourkela
- Prof. Mahesh Kumar Jat, MNIT Jaipur
- Prof. Manish Kumar Goyal, IIT Indore
- Prof. K. Srinivasa Raju, BITS Pilani, Hyderabad
- Dr. Deepak Swami, IIT Mandi
- Dr. Praveen K. Thakur, IIRS Dehradun
- Dr. Manish Kumar, IWMI
- Dr. Brijesh Kumar, Bule Hora University Ethopia
- Er. Mrityunjay Sahu, Bariflolabs Pvt. Ltd.
- Dr. Vijay Shankar, NIT Hamirpur
- Dr. Vijay Kr. Bansal, NIT Hamirpur
- Dr. Ray Singh Meena, NIT Hamirpur

## IMPORTANT DATES:

Last date (Online Registration): 25-02-2023
Confirmation by E-mail: 26-02-2023
e-STC Duration: 27-02-2023 to 03-03-2023

## ELIGIBILITY:

This program is open to faculty members, scientists, research scholars, PG & UG Students and industrial personnel.

## REGISTRATION:

**Registration Fee: Through SBI Collect**

(a) Rs. 200 for students
(b) Rs. 500 for participants from Academia/R&D Labs
(c) Rs. 1000 for participants from Industry

## HOW TO APPLY:

The interested candidates must deposit the non-refundable registration fee through SBI collect with the following procedure:

a. Go to SBI collect and choose Himachal Pradesh as the state of Institution and type of Institution as an educational institute.
b. Choose NIT Hamirpur from Name of the Institutions and Select payment category as WORKSHOP FDP STC CONFERENCE. https://www.onlinesbi.com/sbicollect/icollecthome.htm
c. Generate the payment slip and attach it with the registration form available at the following link. https://forms.gle/k5qmUTMyEtnp936W9

## NOTES:

*Applications will be accepted on first-cum-first serve basis.

*Ensure the link is open before you pay the fee.

***Venue:** Through Google Meet. The link for the online course will be shared through email later.

## CERTIFICATION:

E-certificates will be provided to the participants, with at least 80% attendance, upon successful completion of the program.