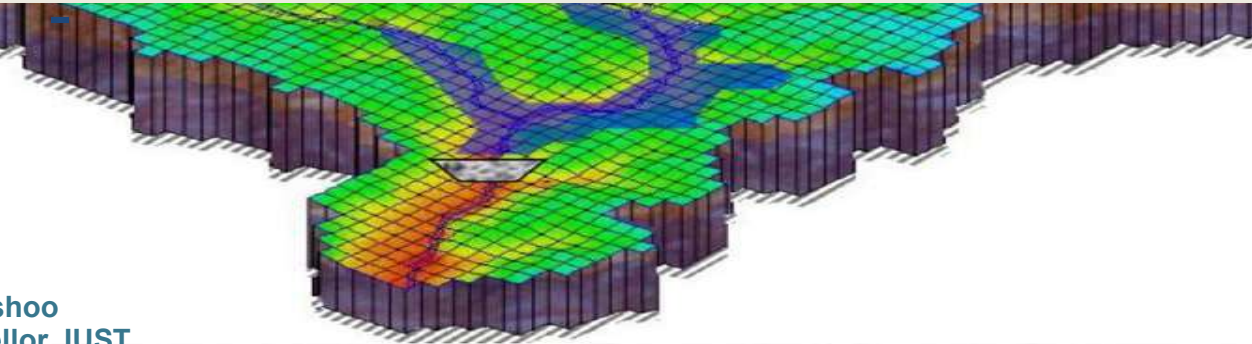


Two day hands-on Training Program Fundamentals and Applications of MIKE SHE in Hydrological Modelling

Chief Patron



Prof. Shakil A. Romshoo
Hon'ble Vice Chancellor, IUST



MIKE SHE Overview

MIKE SHE is a fully integrated, physics-based hydrological modelling system designed to simulate the complete land phase of the hydrological cycle. It provides a comprehensive framework for representing interactions between surface water and groundwater systems by combining overland flow, unsaturated-zone processes, groundwater flow, and fully dynamic channel flow within a single modelling environment. Recognized globally by research Institutions, Universities, Consulting Organizations, and Government Agencies, MIKE SHE incorporates key hydrological components such as vegetation-based evapotranspiration, irrigation practices, snowmelt processes, and water quality dynamics, allowing for a holistic understanding of water movement and storage within a catchment. Its applications span a wide range of domains, including water resource management, agricultural water planning, flood risk assessment, climate change impact studies, and ecosystem restoration. The system enables users to develop integrated hydrological, hydraulic, and water quality models for water supply planning and vulnerability assessment. It supports evaluation of surface water and groundwater availability for irrigation management, drought analysis, and sustainable utilization of resources. Its advanced computational capabilities, combined with seamless integration with other MIKE platforms, make it a powerful tool for tackling complex water resource challenges in both academic research and real-world applications.



DHI Trainer: Dr Kuldeep Pareta

Dr Pareta is Hydrodynamic Modeller and Remote Sensing/GIS expert with over 24 years of professional experience in water resources, natural resource management, and MIKE and RS/GIS-based modelling. He holds a Ph.D. in hydro-geomorphology with specialization in groundwater modelling from Dr Hari Singh Gour University, Sagar, India.

Dr Pareta has developed and implemented numerical models such as MIKE Hydro River, MIKE FLOOD, MIKE 21 FM, and MIKE SHE for hydrodynamic, urban flood modelling, and integrated hydrological modelling. He is part of the team that provides training to professionals and students across India and is a DHI certified trainer.

Faculty Trainer: Dr Yasir Altaf

Dr Yasir Altaf is an Assistant Professor at the Department of Environment, Sustainability & Climate Change, IUST Kashmir. He holds a Ph.D. in Water Resources Engineering from NIT Srinagar, with specialization in MIKE SHE-based hydrological modeling.



He has authored four international publications using MIKE SHE and brings over six years of prior consulting experience in water resources and environmental management. His expertise spans integrated hydrological modeling, climate change, and watershed management.

Key Date

Date: 18-19 May 2026

Venue

Department of Environment, Sustainability and Climate Change
Islamic University of Science and Technology (IUST), Kashmir (Awantipora) J&K

Registration

Course Fee

External Participants: ₹1000

Internal Participants (IUST): ₹500

Click link for registration and payment link.

[🔗 Google Registration Form](#)

For more details, please contact

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Agenda

- ❖ Introduction to MIKE SHE and integrated catchment modelling concepts
- ❖ MIKE SHE - flexible process descriptions
- ❖ Data requirement and pre-processing of input datasets
- ❖ Model setup using catchment-scale datasets
- ❖ Simulation of surface-subsurface processes (overland flow, river, unsaturated flow zone and saturated zone in groundwater)
- ❖ Q&A and discussion on research applications and future workflows
- ❖ Hands-on training sessions (*course schedule below*)

Is this course right for you?



This course is designed for consultants, engineers, hydrologists, environmental scientists, and researchers with a basic understanding of hydrology and water resources concepts. If you are interested in integrated surface-subsurface modelling and want to get started with MIKE SHE, this course is well-suited for you.

What are the expected outcomes?



Upon completion of the course, you will be able to develop your first integrated hydrological model using MIKE SHE. You will gain an understanding of how to translate a conceptual hydrological model into a numerical framework, set up model components including overland flow, unsaturated zone, and groundwater flow, and define key inputs such as climate, land use, and boundary conditions. You will also learn how to run simulations, visualize results, and interpret outputs such as streamflow, groundwater levels, soil moisture dynamics, and water balance components.

Prerequisite



Prior experience in hydrological modelling will be beneficial, but it is not mandatory. Participants are encouraged to explore introductory materials and self-paced resources available through DHI platforms to familiarize themselves with modelling workflows before the training. ([MIKE SHE-Getting started with Integrated Hydrological Modelling](#))

To ensure a smooth learning experience, please:



- Download and install the latest version of **MIKE SHE** before the workshop.
- Ensure your laptop meets the minimum system requirements for running MIKE SHE efficiently.
- Use a mouse for better navigation during hands-on modelling sessions (optional but recommended).

Course content

S. No.	Time	Contents
Day-01	Date: 18th May 2026	
	10:00 - 10:30	Introduction, Software License Installation
1	10:30 - 11:00	MIKE SHE Modelling - An Overview
2	11:00 - 11:30	MIKE Zero and Its Tools
3	11:30 - 01:00	Model Specification-Display, Simulation Specification, Model Domain and Grid, Topography
	01:00 - 02:00	Lunch
4	02:00 - 02:30	Pre-processing of Input Datasets
5	02:30 - 03:30	Climate and Landuse Inputs
6	03:30 - 05:00	Surface Water and Overland Flow - Rivers and Lakes, Overland Flow
	05:00 - 05:30	Discussion
Day-02	Date: 19th May 2026	
7	10:00 - 11:00	Setting up Unsaturated Zone (UZ) - Unsaturated Flow
8	11:00 - 12:30	Setting up Saturated Zone (SZ) - Saturated Flow, Geological Layers, Computational Layers
9	12:30 - 01:00	Output specification
	01:00 - 02:00	Lunch
10	02:00 - 03:30	Model Setup Validation and Result Viewing - Run the Ppre-processing (PP) & Water Movement (MV)
11	03:30 - 04:30	Generate Water Balance
	04:30 - 05:00	Discussion
	05:00 - 05:30	Certificate Distribution