



## IMPORTANT DATES

Last Date of Registration	20 <sup>th</sup> March, 2026
Confirmation of Participation by Email	24 <sup>th</sup> March, 2026
Commencement of Course	27 <sup>th</sup> March, 2026

## REGISTRATION FEES

For all P.G./Ph.D. Scholars, Faculty Members, and Industry Professionals

Online Participants	Rs. 1000/- (incl. GST)
Offline Participants	Rs. 3500/- (incl. GST)

## CONTACT INFO

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## REGISTRATION PROCESS

*For registration, the participants need to fill the Google form with necessary details. After successful payment of registration fees, the participants need to provide the transaction details in Google form by scanning the QR code*

<https://forms.gle/PMBgo2W3w7m9sJW26>



*Bank Account Details for Registration*

Account Name CONTINUING EDUCATION  
NIT ROURKELA

Account No. 10138951784

Branch Name NIT Campus Rourkela

IFSC Code SBIN0002109

# NATIONAL INSTITUTE OF TECHNOLOGY, ROURKELA



**FIVE-DAY SHORT-TERM COURSE  
RIVER FLOW, SEDIMENT TRANSPORT,  
AND WAVE DYNAMICS: CONCEPTS,  
TOOLS, AND APPLICATIONS  
[HYBRID MODE]**

27<sup>th</sup> March – 31<sup>st</sup> March, 2026

**Patron**

Prof. K. Umamaheshwar Rao

**Chairman**

Prof. N. K. Vissa

**Course Coordinators**

**Dr. Vikas Kumar Das**

**Dr. Anurag Sharma**

**Organized by**

Department of Earth and Atmospheric  
Sciences

National Institute of Technology Rourkela  
Odisha, India (769008)

## PREAMBLE

Rivers and coastal systems are inherently dynamic, governed by complex interactions between flow turbulence, sediment transport, and wave-induced processes. Understanding these interactions is central to addressing contemporary challenges such as riverbank erosion, channel instability, delta degradation, coastal retreat, and infrastructure-induced morphodynamic changes.

While significant advances have been made in experimental hydraulics, flow measurement technologies, numerical modelling, and geospatial analysis, many students and early-career researchers struggle to integrate these tools into a coherent process-based framework. This online short-term course is designed to bridge that gap by combining hydraulic theory, experimental insights, instrumentation principles, wave-current dynamics, and GIS-based analysis, all within an accessible online format.

The course emphasizes how processes operate, how data are generated, and how interpretations should be framed scientifically, rather than focusing only on end results.

## TARGET AUDIENCE

- B.Tech, M.Tech and PhD Scholars (Sedimentologist, Geomorphologist, Water Resources, Hydraulics, Environmental Engineering)
- Faculty members and researchers
- Industry professionals and consultants
- Engineers from government & private sectors involved in river basin planning and design

## TRAINING HIGHLIGHTS

- Conceptual Foundations

Clear understanding of river flow hydraulics and sediment transport processes

- Experimental Insight

Virtual demonstrations of flume experiments, scaling principles, and practical limitations

- Instrumentation Training

Exposure to commonly used flow and sediment measurement instruments

- Wave Dynamics

Understanding wave processes and wave-current interaction in rivers, estuaries, and coastal zones

- GIS Hands-on

Practical training in ArcGIS for river morphology and sedimentary feature analysis

- Multi-Scale Integration

Linking laboratory-scale processes with field observations and satellite-based data

- Research & Publication Guidance

Support in experimental design, data interpretation, and preparing analyses suitable for high-quality publications

## RESOURCE PERSONS

1. Trainer from Academic professionals for FLOW-3D, Matlab, Ansys
2. Trainer from Academic professionals for HEC-RAS (1D and 2D) and Arc-GIS
3. Expert talk from industry and academic

## NATIONAL INSTITUTE OF TECHNOLOGY ROURKELA



National Institute of Rourkela is one of the premier national level institution for technical education in the country and is funded by the Government of India. NIT Rourkela has a rich legacy of more than sixty dedicated years of service to the nation and is the pride of Odisha. The main objective of the Institute is to produce quality Engineers and Scientists in Graduate and Post-Graduate levels in various branches of Engineering and Science. Excellence in teaching and high-quality research are the pillars on which the Institute is built.

### DEPT. OF EARTH AND ATMOSPHERIC SCIENCES

The Department of Earth and Atmospheric Sciences has been functioning as a full-fledged center of academic and research excellence since 2013. It offers advanced postgraduate programs, M.Tech. (Research), and Ph.D. studies, while actively contributing to cutting-edge research and high-impact consultancy projects in Earth System and Atmospheric Sciences.