SPACE-ENABLED CAPACITY BUILDING

## About NESAC

North Eastern Space Applications Centre (NESAC), Department of Space, Government of India, has served the North Eastern Region for more than 25 years through Remote Sensing & GIS, Satellite Communication, Space & Atmospheric Science, UAV applications and allied space technologies.

### Water Resources Division

The Water Resources Division at NESAC has been responsible for flagship activities such as GIS based Flood Early Warning System, Development of River & Water Resources Information System, Hydro-reservoir monitoring system, Watershed management planning, Catchment-based erosion modeling, etc.



NESAC Outreach Facility

## Course contacts


**Course Director**
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**Course Officer**
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## Course at a glance

| 2 weeks | 30 | ₹9,500 |
|---|---|---|
| 09–20 Nov 2026 | maximum seats | course fee |

### Designed for practical learning

Lectures | Hands-on | Field trip

## Who should attend?

Government officials, junior- and mid-level faculty, researchers, Junior and senior graduate and post-graduate students seeking practical exposure to geospatial tools for water resources, hydrology and flood management.



NESAC Office Building • Umiam, Meghalaya

## Location & accessibility

NESAC is located at Umiam, about 20 km from Shillong. Nearest railway station: Guwahati (~80 km). Nearest airports: Shillong (~16 km) and Guwahati (~100 km).

**Umiam • Meghalaya • North Eastern Region of India**

TWO-WEEK COURSE

# Applications of Remote Sensing & GIS in Water Resources, Hydrology & Flood Management

**09–20 NOVEMBER 2026**

Water Resources Division (WRD)
North Eastern Space Applications Centre
Department of Space • Government of India

**SPACE • WATER • DATA**

Satellite observations, GIS workflows and hydrological intelligence for resilient water management.

Remote Sensing | GIS | Hydrology | Flood

**Hands-on geospatial training • Open-source tools • One field trip**

# Applications of Remote Sensing & GIS in Water Resources, Hydrology and Flood Management

## About the course

A compact two-week programme introducing the fundamentals and practical use of Remote Sensing and GIS for water resources, hydrology and flood management, with emphasis on applications relevant to the North Eastern Region and India.

### Learning format

- Concept lectures with application-focused examples
- Guided hands-on sessions using open-source GIS tools
- Freely available geospatial datasets for practical exercises
- Encouragement for additional practice beyond training hours

## Outreach environment

NESAC conducts capacity-building programmes with various Central and state agenies, R &D institutions and user departments. The outreach facility includes smart classrooms, Audio-video visuals laboratories, high-performance computing support and residential facilities for trainees.

### What you take away

- A working foundation in RS & GIS
- Practical exposure to hydrology and flood applications
- Familiarity with GEE, microwave/LiDAR and dam-break concepts
- Working knowledge on various water resources domain

## Curriculum

### FOUNDATIONS

- Fundamentals of Remote Sensing
- Remote Sensing platforms & sensors
- Fundamentals of GIS

### WATER RESOURCES APPLICATIONS

- RS & GIS in water resources and hydrology
- Watershed, river and groundwater management
- Soil erosion: watershed and river-bank applications
- Irrigation Management
- Hydrological and hydrodynamic modeling
- Flood management including flood forecasting

### ADVANCED EXPOSURE

- Basics of microwave and LiDAR technology
- Google Earth Engine (GEE) and applications
- Dam-break dynamics and modelling

### Course emphasis

Overall understanding of geospatial concepts, practical tool use, and application pathways for real-world water resources and flood-management problems.

RS | GIS | GEE | Flood Modelling

## Registration & key dates

| | |
|---|---|
| Registration opens | **29 Sep 2026** |
| Registration closes | **28 Oct 2026** |
| Selection intimation | **31 Oct 2026** |
| Fee payment deadline | **01 Nov 2026** |
| Final participant list | **02 Nov 2026** |

### Course fee ₹9,500

Includes registration kit, tuition, course materials, food during training hours and one field trip. Accommodation is not included in the fee.

## Accommodation

NESAC Hostel accommodation will be arranged on twin-sharing / single-occupancy basis. Participants will pay nominal charges for lodging and food outside training hours.

### REGISTER ONLINE

Scan the QR code or visit outreach.nesdr.gov.in

**Limited seats • Apply by 28 Oct 2026**