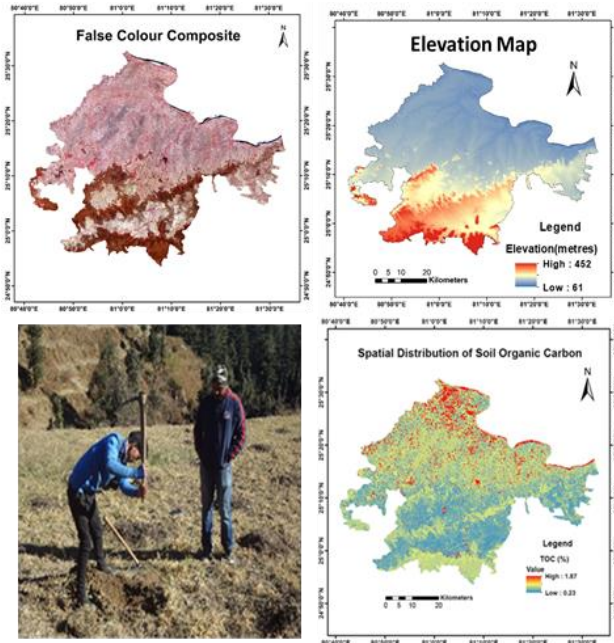


# Remote Sensing & GIS in Digital Soil Mapping

December 02 – December 13, 2024



**Indian Institute of Remote Sensing**  
Indian Space Research Organisation  
Department of Space, Govt. of India  
Dehradun

[www.iirs.gov.in](http://www.iirs.gov.in)

## About the Course

Soil information, including their spatial variability is vital for devising various soil and land management policies and strategies as well as assessing the environmental impact of different land use changes. Similarly, extensive and detailed spatial soil information is essential for answering research questions on earth system/process modelling, climate change as well as ecosystem services. Absence of spatial soil information may adversely affect proper crop and soil management that may result in increased risk for sustainable development.

Advent of Earth Observation (EO) satellites operating in different wavelength regions like optical, thermal, as well as microwave wavelength regions coupled with advanced GIS technologies have opened new vistas for generating spatial soil information systems via predictive soil mapping approaches. It is based on the use of various statistical or machine learning techniques which could combine field based soil information with data contained in correlated environmental variables and remote sensing images, for producing spatial predictions of various soil properties, at different resolutions. Various remote sensing based environmental variables define the various factors of soil formation (SCORPAN) and can be obtained in digital form from various sources like remote sensing images, digital elevation models, existing soil maps etc. at varying spatial as well as temporal resolutions. Such fine resolution soil information may aid us in various applications such as precision agriculture, environmental quality etc and may help in tackling major global issues like food and water security, climate change, land degradation, biodiversity decline, etc.

## Target Participants

- This course is designed for professionals from Central / State Govt./Universities / ICAR Institutes / State Departments /Private Industry / Organizations/NGO engaged in agriculture and environmental planning as well as soil mapping. The course is also meant for students & researchers engaged in these fields.

## Eligibility Criteria

- M.Sc./M.Tech. in Agriculture/ Soil Science/ Agri. Engg./ Hydrology/ Civil Engg./ Env. Sci./ Agric. Statistics or equivalent
- M.Sc./M.Tech. in Remote Sensing and GIS/ Geoinformatics/ Geomatics or its equivalent with specialization in Agricultural applications

*Note: Candidates nominated by the Govt. organisations & professionals working in the field of Remote Sensing & GIS Applications in Agriculture will be given preference*

## Number of Seats

- **20 (all seats for Indian nationals only)**

## Process of Application

- Only **Online Applications** will be considered. Refer course flyer on IIRS website ([www.iirs.gov.in](http://www.iirs.gov.in)) for submitting application and additional details.
- Application Fee: 500/- (Non-refundable)

## Course Fee

- ✓ Rs. 12,000/- (Rs. 4,000: Tuition Fee + Rs. 8000: Registration & Other Charges)
- ✓ Boarding & lodging charges in IIRS Hostel are extra (Rs. 5,000 approx.) and will have to be paid by the candidate as per the IIRS hostel rules & regulations

## Course Contents

- Overview of Remote Sensing and GIS
- Geospatial data processing - Terrain and Spectral data
- Digital Soil Mapping concepts
- Geostatistics for soil mapping
- Spectroscopy applications for soil studies
- Machine learning (ANN, RF, SVM) for soil studies

## Mode of training

The course includes lecture as well as practical hands-on sessions delivered by distinguished IIRS faculty as well as eminent guest faculties.

## HOW TO APPLY

Please fill up the online application form available in IIRS website (<https://admissions.iirs.gov.in>). Offline applications shall not be considered. The last date to apply for the course is October 06, 2024 [17:30 hrs]

Govt.-sponsored candidates must submit the Nomination Form from the Competent Authority of their parent organisation/institute at the time of submitting the online application. The template of the Nomination Form can be downloaded from <https://admissions.iirs.gov.in/>.

## Important Dates

- **Application starts on: 01.05.2024**
- **Last Date to Apply: 06.10.2024**
- **Announcement of selection List: 04.11.2024**
- **Course Start date: 02.12.2024**
- **Course End Date: 13.12.2024**

## ACCOMMODATION

Participants will be provided accommodation in IIRS hostel. All hostel rooms are well furnished and are allotted on single/double occupancy basis. Local candidates will be considered for hostel accommodation, only if available. Indian cuisine is served in the hostel mess. The expenditure towards boarding and lodging will have to be borne by the participants as actual rates of IIRS. **No accommodation will be provided to the accompanying person/children.**

## About IIRS

Indian Institute of Remote Sensing (IIRS) under Indian Space Research Organisation (ISRO), Department of Space, Govt. of India is a premier Training and Educational Institute set up for developing trained professionals in the field of Remote Sensing, Geoinformatics and GNSS Technology for Natural Resources, Environmental and Disaster Management. Formerly known as Indian Photo-interpretation Institute (IPI), founded in 1966, the Institute boasts to be the first of its kind in entire South-East Asia.



While nurturing its primary endeavour to build capacity among the user community by training mid-career professionals since its inception in 1966, the Institute has enhanced its programmes to meet the requirements of various stake-holders, ranging from fresh graduates to policy makers including academia, industry, different government departments and NGOs.

IIRS also hosts the headquarters of the Centre for Space Science & Technology Education in the Asia and Pacific (CSSTEAP), affiliated to the United Nations, and conducts its training and education courses in RS & GIS.

## LOCATION & ACCESSIBILITY

Indian Institute of Remote Sensing (IIRS) is located in Dehradun, the capital city of the State of Uttarakhand, at a distance of about 260 km from Delhi and is well-connected by air, rail and road. The city is famous for its picturesque landscape, pleasant climate, high quality school education and is the gateway to several places of religious and tourist importance such as Haridwar, Rishikesh, Mussoorie, etc.

*For more informations and clarifications, please write to:*

Dr. Suresh Kumar Group Head Agriculture, Forestry and Ecology Group, Course Director	Indian Institute of Remote Sensing, Department of Space, Govt. of India, 4, Kalidas Road, Dehradun - 248001, Uttarakhand Tel: 0135-2524140 Email: suresh_kumar@iirs.gov.in
Mr. Justin George K Scientist/Engineer "SE" Agriculture and Soils Department Course Officer	Indian Institute of Remote Sensing, Department of Space, Govt. of India, 4, Kalidas Road, Dehradun - 248001, Uttarakhand Tel: 0135-2524139 Email: justin@iirs.gov.in