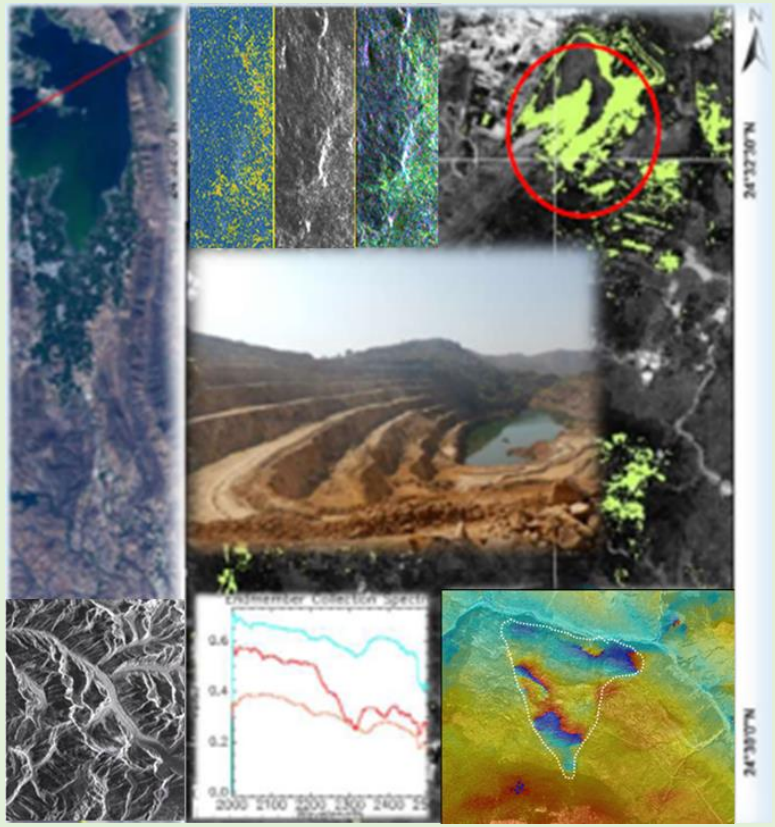
Special course on Hyperspectral and Microwave Remote Sensing for Terrestrial and Planetary Geological Studies



Indian Institute of Remote Sensing
Indian Space Research Organisation
Department of Space, Government of India
Dehradun - 248001, Uttarakhand
www.iirs.gov.in

INTRODUCTION

Advancements in earth observation technologies, particularly remote sensing and geo-information sciences, have transformed earth sciences research. Remote sensing, now vital in studying geology, geomorphology, structural geology, and mineral exploration, benefits from high spectral resolution Hyperspectral data and Synthetic Aperture Radar (SAR).

The Indian Institute of Remote Sensing (IIRS), part of ISRO, focuses on training in remote sensing, GIS, and geospatial data management for national development and high-end research. Specialized courses, like those on hyperspectral and SAR remote sensing, educate professionals on advanced techniques for geological processes and mineral exploration. SAR, utilized for over three decades, offers weather-independent, medium to high-resolution images crucial for geoscientific resource assessment, hazard evaluation, and planetary exploration. This course covers SAR principles and applications, including InSAR and DInSAR for glacier monitoring and land surface displacement analysis due to seismicity and mining. The course is of special interest for young professionals and researchers interested in updating themselves with the advancements in hyperspectral remote sensing data analysis techniques. These courses play a critical role in updating professionals with essential skills for advancing earth sciences and societal development.

AIM OF THE COURSE

The overall aim of this two-week special course is capacity building, covering basic concepts and data analysis techniques, as well as advanced applications for hyperspectral and microwave remote sensing for geological studies. An overview of the upcoming SAR missions e.g., NASA-ISRO Synthetic Aperture Radar or NISAR mission will also be provided in the course.

COURSE STRUCTURE

The course will cover following topics:

- Understanding the Fundamental Principles of Hyperspectral and Microwave Radar Remote Sensing
- Data Processing Techniques: Data reduction, end members selection, InSAR/DInSAR/PSInSAR processing etc.
- Hyperspectral and SAR Image Processing for Geological Applications: Hydrothermal alterations, Seismicity, Landslide, Land Subsidence, Glacier Dynamics, Cryospheric Studies
- Compositional and terrain analysis of terrestrial planetary bodies using hyperspectral, optical and SAR sensors

TARGET PARTICIPANTS

The course is designed for young professionals, faculty members, scientists and researchers (JRF/SRF/RA) in Geosciences and related fields. Preference will be given to the working professionals from Govt. and public sector organizations.

ELIGIBILITY

Please refer to the Course Calendar available in IIRS website (*https://www.iirs.gov.in/academiccalendar*) for the Essential Qualifications required to apply e.g., specialization, age limit and other details.

NUMBER OF SEATS

Total 20 seats are available in the course.

COURSE FEE

Rs. 12000/- (Rs. 4,000: Tuition Fee + Rs. 8,000: Registration & Other Charges). Boarding & lodging charges in IIRS Hostel are extra (Rs. 2,500/- approx.)

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 13, 2024 (17:30 hrs)**.

Important Dates*

Application Starts on	01.04.2024 [10:00 hrs]
Last date to Apply	13.10.2024 [17:30 hrs]
Announcement of selection list	21.08.2024
Course start date	09.12.2024
Course end date	20.12.2024

*The dates mentioned above may change, and the decision of the Institute shall be final.

ACCOMMODATION

The lodging and boarding facilities will be provided to the selected candidates at IIRS in its hostels. Local candidates will be considered for hostel accommodation, only if available. **No accommodation will be provided to the accompanying person/ children.** Indian cuisine is served in the hostel mess.

ABOUT IIRS

Indian Institute of Remote Sensing (IIRS) is a premier institute with a primary aim to build capacity in Remote Sensing and Geoinformatics technologies and their applications through training & education, research and outreach programmes. IIRS is a Unit of Indian Space Research Organization (ISRO), Department of Space, Government of India. Formerly known as Indian Photo-Interpretation Institute (IPI), founded in 1966, the Institute is the first of its kind in entire South-East Asia celebrated Golden Jubilee Year in 2016. While nurturing its primary endeavor 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.

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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 as the gateway to several places of religious and tourist importance.

For more information and further clarification, please write to the details given below.

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