IIRS Outreach Programme

The IIRS outreach programme, which was started in 2007 with 12 universities/ institutions has now grown substantially to 3800+ network institutes. The beneficiaries of the programme may include:

- Central/State/Private Universities & Academic Institutions
- Central & State Government Departments
- Forest Resource Professionals
- State Forest Departments/Forest Training Academies
- Research Institutes
- Geospatial Industries
- NGOs

Feedback Mechanism

IIRS takes continuous feedback from participating institutions to improve the quality of future courses.

Feedback session during IIRS Academia Meet (IAM)-2024

Awards

IIRS has received national awards for excellence in training for outreach and e-learning programme during 1st National Symposium on Excellence in Training conducted during April 11-12, 2015 in New Delhi by Department of Personnel & Training (DoPT), Govt. of India in collaboration with United Nations Development Programme (UNDP).


राष्ट्रीय उत्कृष्टता प्रशिक्षण पुरस्कार, 2015

National Award for Excellence in Training for the Year 2015


राष्ट्रीय उत्कृष्टता प्रशिक्षण पुरस्कार, 2015

National Award for Excellence in Training for the Year 2015

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 endeavor to build capacity among the user community by training mid-career professionals, the Institute has enhanced its capability and evolved many training and education programs that are tuned to meet the requirements of various target groups, ranging from fresh graduates to policy makers including academia.

IIRS also conducts e-learning programme on Remote Sensing and Geoinformation Science (*http://elearning.iirs.gov.in*).

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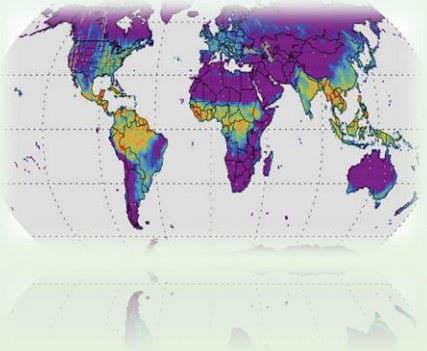
156th IIRS Outreach Programme



Geodata Processing using Python & Machine Learning

February 17-28, 2025

Organised by

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

www.iirs.gov.in

About the Course

Today, vast amounts of satellite imagery and geospatial data are being collected from various sources, available at little or no cost. When combined with the power of Geographic Information Systems (GIS), these data sets become invaluable tools for applications like environmental management, disaster response, climate change monitoring, natural resource management, wildlife conservation, land cover classification, and much more.

The real challenge is efficiently processing and extracting insights from this massive data. **Leveraging machine learning with Python can unlock meaningful information from complex geospatial datasets.** Machine learning algorithms can be great tool to automate analysis, identify patterns, and make accurate predictions, speeding up data processing and improving precision.

Curriculum

- Overview of GIS and different geospatial data types
- Overview to Python programming
- Raster Data Processing and Analysis
- Vector data processing and analysis
- Basics of Machine Learning

Expected Outcome

At the end of this course participant must be able to

- Write program in python to read, write and process different raster formats.
- Write program in python to read, write and process different vector formats.
- Understand the basics of Machine learning .
- Apply few machine learning algorithms for geospatial data processing.

Target Participants

The candidates who want to participate in the course should be a student of final year undergraduate course or postgraduate course (any year).Technical/Scientific Staff of Central/State Government/Faculty/researchers at university/institutions are also eligible to apply for this course. Applications of participants have to be duly sponsored by university/institute and forwarded through coordinators from respective centres.

Course Pre-requisite

- Knowledge of Basics of Remote Sensing and GIS
- **Basic knowledge of computer programming**
- **Basic knowledge of python is desirable but not mandatory**

Course Study Material

Course study materials like lecture slides, video recorded lectures, open source software & handouts of demonstrations, etc. will be made available through e-class. Video lectures will also be uploaded on e-class (https://www.eclass.iirs.gov.in/login).

Course Fee

There is no course fee for attending this programme.

Course Registration

- Course updates and other details will be available on URL- http://www.iirs.gov.in/Edusat-News/
- **Registered through Nodal** centres. The participant's registration must be approved by the coordinator of nodal centres.
- The participants can register and see their application status through URL- https://elearning.iirs.gov.in/edusatregistration/ . In case, the application is pending for approval then participants are advised to contact the coordinator of respective nodal centre.

Registered as "Individual registrations"-

•The participants with individual registration will be automatically approved. All the registered participants will get their login credentials for ISRO Learning Management System (LMS)- https://isrolms.iirs.gov.in

Course Funding & Technical Support

The programme is sponsored by Indian Space Research Organisation, Department of Space, Government of India.

Programme Reception

Programme can be received through e-class platform of IIRS-ISRO using internet connectivity. No specific hardware/software required. However, it is recommended good internet connectivity at user end. To run the programme in class-room, following hardware will be required:

- Desktop computer with web camera microphone and output speakers or laptop with microphone camera and output speaker.
- Large display screen/projector/TV.

Important links

To participate in this programme the interested organisations/ universities/ departments/ institutes have to identify coordinator at their end. The identified coordinator will register online his/her institute as nodal center in IIRS website (https://elearning.iirs.gov.in/edusatregistration/coordinator)

Award of Certificate

Registered through Nodal centres : Based on 70% attendance and 50% Score in Quiz students will be awarded a "Courses Merit Certificate."

Based on 70% attendance, students will be awarded a "Attended Course Certificate."

Individual Registration: A "Course Participation" certificate will be given to everyone who devotes at least 50% of each session's hours and online quiz to the course. The course participation certificate will be available for download in ISRO LMS.

There are limited number of seats.
Registration will be done on first come first serve basis