

IIRS Outreach Programme

The IIRS outreach programme, which started in 2007 with 12 universities/ institutions has now grown substantially. Currently, 631 universities / institutions spread across India are networked with IIRS. The beneficiaries of the programme may include:

- Working Professionals
- Central/State/Private Universities & Academic Institutions
- Central & State Government Departments
- Research Institutes
- Geospatial Industries
- NGOs

Feedback Mechanism

IIRS has conducted six workshops in 2007, 2009, 2010, 2013, 2014, 2015, 2016 and 2017 to take feedback from participating institutions to improve the quality of future course



1st outreach programme feedback session during IIRS User Interaction Meet (IUIM)-2017

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).



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, the Institute has enhanced its capability and evolved many training and education programmes 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 Geo-information Science (<http://elearning.iirs.gov.in>).

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Twenty Fifth IIRS Outreach Programme



Images sources : <http://swisseduc.ch/>; USGS; <https://pmm.nasa.gov/GPM>

Hyperspectral Remote Sensing and Its Applications

September 18 – 21, 2017



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

Hyperspectral remote sensing deals with measurements in a large number of narrow spectral bands over a contiguous spectral range. Because of its ability to detect narrow absorption features hyperspectral data are related to specific vegetation physio-chemical characteristics, soil physical and chemical properties, mineral composition and snow characteristics, mapping tree species, recognizing invasive plants, and identifying key geologic features. However, because of presence of a large number of bands, hyperspectral data needs different analysis approach including feature reduction, feature selection, removal of noise, detection of absorption features, advance classification techniques. This course will make the participants aware about hyperspectral remote sensing, hyperspectral data processing and its applications. This course will have thirteen sessions. First to eighth sessions will mainly be focused on topics related to hyperspectral remote sensing, ground spectro-radiometer and processing techniques; while ninth to thirteenth sessions will focus on application of hyperspectral data in five application areas.

Curriculum

- **First Session: Hyperspectral Remote Sensing (HRS): An Overview and Applications;**
- **Second Session: Hyperspectral remote sensing: Platform and sensors;**
- **Third Session: Hyperspectral Image Pre-processing;**
- **Fourth Session: Demonstration on Hyperspectral Data Pre-processing;**
- **Fifth Session: Data dimensionality reduction;**
- **Sixth Session: Optical and Thermal Hyperspectral Image Classification;**
- **Seventh Session: Demonstration on spectro-radiometer and spectral library creation;**
- **Eighth Session: Demonstration on Hyperspectral data classification;**
- **Ninth Session: Hyperspectral Remote Sensing for Agriculture and soil Studies;**
- **Tenth Session: Hyperspectral Remote Sensing for Forestry Applications;**

- **Eleventh Session: Hyperspectral remote Sensing for Geological Applications;**
- **Twelfth Session: Hyperspectral Remote Sensing for Urban Studies;**
- **Thirteenth Session: Hyperspectral Remote Sensing for Water and snow cover Studies;**

Target Participants

- The course is designed for professionals from Central/ State Govt./Private Organizations/NGO engaged in remote sensing technology and its application in various fields like; forestry, agriculture, geology, mineral studies, water resources study.
- The course participants have to be duly sponsored by their university / institution and application should be forwarded through coordinators from respective Organisations/centres. Users attending programmes under CEC-UGC/ CIET / other networks can also participate. Institutions on high speed National Knowledge Network (NKN) can also participate using A-VIEW software.

Course Study Material

Course study materials like lecture slides, video recorded lectures, open source software & handouts of demonstrations, etc. will be made available through IIRS ftp link. Video lectures will also be uploaded on YouTube Channel (<http://www.youtube.com/user/edusat2004>).

Course Fee

There is no course fee.

Course Registration

- Course updates and other details will be available on URL-<http://dlp.iirs.gov.in>
- To participate in this programme the interested organizations/ universities/ departments/ Institutes has to identify a coordinator at their end. The identified coordinator will register online his/her Institute as nodal center in IIRS website.
- All the participants has to register online through registration page by selecting his/her organization as nodal center.

Course Funding & Technical Support

The programme is sponsored by National Natural Resources Management System – Standing Committee on Training and Education (SC-T), Indian Space Research Organisation, Department of Space, Government of India and is conducted with due technical support from Amrita Virtual Interactive E-learning World (A-VIEW).

Programme Reception

Programme can be received through Internet connectivity of 2Mbps or better. Following hardware and software set-up is required at user end:

Hardware Requirements :

- High-end Computer/Laptop (Windows OS);
- Good quality web camera ;
- Headphone with Microphone;
- Speakers ;
- Large Display Screen (Projector or TV) .

Software and Internet Requirements

Desktop based: A-VIEW software (free to download from www.aview.in or IIRS ftp link: <ftp://ftp.iirs.gov.in>)
Online live access through <http://live.iirs.gov.in> with free registration.

Connectivity & Other configurations:

NKN or any other high speed internet facility (preferably without firewall, with minimum of 2 Mbps bandwidth)
Network requirements: Port 80 and RTMP (port 1935) protocol should be unblocked from user's computer and Firewall.

Note: Institutions/ universities have to bear total expenses for establishment of the classroom facility

Award of Certificate

Working Professionals: Based on 70% attendance and submission of assignments.

Students: Based on 70% attendance and online examination.