IIRS Outreach Programme
The IIRS outreach programme, which was started in 2007 with 12 universities/ institutions has now grown substantially. Currently, 920+ universities / institutions spread across India covering 29 States and 2 Union Territories are networked with IIRS. The beneficiaries of the programme may include:
• Central/State/Private Universities & Academic Institutions
• Central & State Disaster Management Centers
• State Remote Sensing Departments
• Research Institutes
• Earthquake engineering/ geotechnical Industries
• NGOs

Feedback Mechanism
The participants can submit their feedback through online portal. Feedbacks are critically analyzed and implemented in next courses. For one to one feedback the participants and participating organizations are invited to attend IIRS Academia meet (IAM) at IIRS Dehradun.

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 Geoinformation Science (https://elearning.iirs.gov.in).

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Satellite Remote Sensing for Air Pollution Studies
August 05-09, 2019

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

Air pollutants like $O_2$, fine particulate matter, $NO_2$, black carbon, CO, ammonia, sulfur, trace gases and heavy metals originating from traffic, industrial and all natural & anthropogenic combustion processes shown to have adverse effect on human health and environment. The degree of pollution is different across different cities. Air pollution is spatially highly dynamic and hence measurement from ground observation do not continuously provide the vigor and distribution. Satellite observation allows for a consistent retrieval of air pollution concentration independent of ground-based stations, especially in sparsely built or rural environments and is able to provide information about the distribution of air pollutants on a regional, national or global level. Satellite data have been used to tracking pollutant plumes, support air quality forecasting, provide evidence during exceptional air pollution events, evaluate model performance, estimate pollutant emissions, and study long-term air pollution trends. However, major challenges still needs to be answered in order to effectively apply satellite data in air pollution monitoring.

The satellite observations in conjunction with model simulations help in understanding the climate system and its changes for atmospheric chemistry, land atmosphere interaction, climate change etc. There has been growing interest among researchers & scientific community on the use of satellite data on climatological observation and modelling. However, academic, research institutions & user departments face challenge of creating useful parameter using satellite observation. The course will provide an overview on the types & forms of air pollution, parameterization, monitoring from satellite observations, air quality observations and modelling. The course is therefore of special interest for the professionals, researchers and students interested in learning utility of satellite observations in air pollution studies.

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.

The course is designed for professionals, students/researchers from Central/State Govt./Universities/Private Organizations/NGO engaged in atmospheric & environmental science.

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

The Course is free of cost.

Course Registration

- Course updates and other details will be available on URL: [https://www.irs.gov.in/Edusat-News/](https://www.irs.gov.in/Edusat-News/).
- To participate in the 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

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:**
- IIRS Learning Management System.

**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 scoring 40% marks in online examination.