

IIRS OUTREACH PROGRAMME

The IIRS outreach programme, which was started in 2007 with 12 universities/ institutions has now grown substantially to 4029+ 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.

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 Geoinformation Science (<http://elearning.iirs.gov.in>).

CONTACT DETAILS

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3D Modelling: Tools & Techniques

**April 20th – May 1st,
2026**

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

In recent years, rapid advancements in geospatial technologies have enabled the collection, processing, and visualization of vast amounts of **3D data**, making the third dimension an integral part of modern spatial information systems. This two-week online course is designed to introduce participants to the **fundamental concepts, tools, and techniques** used in 3D modelling from diverse data sources.

The course covers methods of acquiring 3D data using **space-borne, airborne, and terrestrial sensors**, along with practical exposure to widely used technologies such as **photogrammetry, LiDAR (Light Detection and Ranging), and SAR Interferometry (InSAR)**. Participants will gain an understanding of how these technologies are used to generate accurate, high-resolution 3D models of terrain, infrastructure, and objects.

Special emphasis is placed on **photogrammetry**, which has emerged as a cost-effective and accessible method for 3D reconstruction using images from **smartphones and drones**. With improvements in camera resolution and processing capabilities, modern devices have significantly enhanced the accuracy and efficiency of 3D modelling workflows, making them suitable alternatives to traditional photogrammetric equipment.

The course also introduces **LiDAR technology** for precise distance measurement and high-density point cloud generation and **SAR Interferometry (InSAR)** for surface deformation analysis and terrain modelling. Integration of multi-source data for improved 3D visualization and analysis will also be discussed.

Applications of 3D modelling will be demonstrated across sectors.

By the end of the course, participants will be able to understand the **principles of 3D data acquisition**, create **photo-realistic 3D models**, and explore their applications for planning, **monitoring, and decision-making**. The course is suitable for administrators, engineers, planners, researchers, and students interested in emerging geospatial technologies and digital modelling techniques.

COURSE FEE

There is no course fee for attending this programme.

CURRICULUM

The course structure is spread into following broad topics of teaching on:

- Concepts and Methods for Photogrammetry with Satellite, Aerial and Terrestrial Platforms
- GNSS and its utility for control data collection
- Photogrammetric Products
- Concepts and Methods of LiDAR Remote Sensing (Satellite, Aerial and Terrestrial Platforms).
- Introduction to SAR Interferometry
- Applications of 3D Modelling

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 FUNDING & TECHNICAL SUPPORT

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

COURSE REGISTRATION

Course updates and details:

Available at : <https://www.iirs.gov.in/Edusat-News/>

Registration through Nodal Centers:

Participants registering via nodal centers must obtain approval from the respective center coordinator. Application status can be viewed at: <https://elearning.iirs.gov.in/edusatregistration/>.

If an application remains pending, participants should contact their nodal center coordinator.

Individual Registration:

Participants registering individually are approved automatically. Login credentials for the ISRO Learning Management System (LMS) will be provided at : <https://isrolms.iirs.gov.in>

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>).

Video lectures will also be uploaded on e-class (<https://www.eclass.iirs.gov.in/login>).

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 centre in IIRS website (<https://elearning.iirs.gov.in/edusatregistration/coordinator>)

AWARD OF CERTIFICATE

Registered through Nodal centres : Based on 70% attendance, students will be awarded a "Courses Participation Certificate."

Individual Registration: A "Course Participation" certificate will be given to everyone who devotes at least 70% of each session's hours to the course. The course participation certificate will be available for download in ISRO LMS.

There are a limited number of seats.

Registration will be done on a first-come, first-served basis.