

Remote Sensing and GIS Applications in Agricultural Water Management

August 21 – September 01, 2023



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

www.iirs.gov.in

About the Course

Agriculture has been a vital sector and back bone of Indian rural economy. In agriculture, water is a scarce and indispensable resource for the achieving food security, sustainable ecosystems as well as maintained hydrological cycle. The changes in land use have accelerated in recent years. The estimation of water for agricultural use needs to be updated frequently, which is time-consuming and cost-ineffective with traditional field based techniques. So, new tools and techniques are requisite for precise measurement and upscaling the estimation scale for water budgeting and water management.

In present context, Earth Observation (EO) satellites operated in optical/thermal and microwave domains with frequent revisit and improved spatial resolution providing periodic monitoring of crop information such as irrigated and non-irrigated crop area mapping, crop condition, phenology, crop evapotranspiration, water stress and soil moisture for informed decision making on water management. Furthermore, availability of new airborne sensors and unmanned aerial vehicle (UAV) supported Earth observation and their combination with process based models/ground based instrumentation i.e. eddy flux tower, large aperture scintillometer, lysimeter, Bowen ratio energy balance etc. are facilitating the development of new data processing techniques as well as their integration to develop precision irrigation systems and geospatial crop water accounting. A decision support system for irrigation advisory is need of hour for field scale agricultural water management.

Target Participants

- This course is designed for professionals from Central / State Govt./Universities / ICAR Institutes / State Departments /Private Industry / Organizations/NGO engaged in agriculture, agricultural engineering & water management. The course is also meant for students & researchers engaged in these fields.

Eligibility Criteria

- M.Sc. In Phy./ Agri. Phy/ Agrometeorology/ Agronomy/ Soil Sci./ Plant Physiol./ Hort./ Agri. Botany/Irrigation science & Water Tech/ Soil Conservation & Water Management/ Climate Change Adaptation/ Env. Sci. or equivalent
- M.Tech in Agricultural Engineering/ Irrigation Engineering / Irrigation water management
- M.Sc./M.Tech. in Remote Sensing and GIS/ Geoinformatics/ Geomatics or its equivalent with specialisation in Agricultural applications

Note: Candidates nominated by the Govt. organisations & professionals working in the field of Remote Sensing & GIS Applications in Agriculture will be given preference

Number of Seats:

- **20 (all seats for Indian Nationals only)**

Process of Application

- Only **Online Applications** will be considered. Refer course flyer on IIRS website (www.iirs.gov.in) for submitting application and additional details.
- Application Fee: Nil

Course Fee

- ✓ Rs. 12,000/- (Rs. 4,000: Tuition Fee + Rs. 8000: Registration & Other Charges)
- ✓ Boarding & lodging charges in IIRS Hostel are extra (Rs. 5,000 approx.) and will have to be paid by the candidate as per the IIRS hostel rules & regulations

Course Contents

- Concept and fundamentals of agricultural water management & role of EO in water management
- Remote sensing of field scale crop type mapping (with advance approaches & sensors)
- Remote sensing of evapotranspiration, water requirement & irrigation management
- Satellite remote sensing of soil moisture, applications & global products
- UAV and advanced sensors technology for agricultural water management

Mode of training

The course includes lecture as well as practical hands-on sessions delivered by distinguished IIRS faculty as well as eminent guest faculties.

HOW TO APPLY

Please fill up the online application form available in IIRS website <https://admissions.iirs.gov.in/shortcourse>. Offline applications shall not be considered. The last date to apply for the course is June 30, 2023 [17:30 hrs]

Govt.-sponsored candidates must submit the Nomination Form from the Competent Authority of their parent organisation/institute at the time of submitting the online application. The template of the Nomination Form can be downloaded from <https://admissions.iirs.gov.in/shortcourse>.

Important Dates

- **Application starts on: 01.05.2023**
- **Last Date to Apply: 30.06.2023**
- **Announcement of selection List: 21.07.2023**
- **Course Start date: 21.08.2023**
- **Course End Date: 01.09.2023**

ACCOMMODATION

Participants will be provided accommodation in IIRS hostel. All hostel rooms are well furnished and are allotted on single/double occupancy basis. Local candidates will be considered for hostel accommodation, only if available. Indian cuisine is served in the hostel mess. The expenditure towards boarding and lodging will have to be borne by the participants as actual rates of IIRS. **No accommodation will be provided to the accompanying person/children.**

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 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.

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 is the gateway to several places of religious and tourist importance such as Haridwar, Rishikesh, Mussoorie, etc.

For more informations and clarifications, please write to:

Dr N. R. Patel Head Agriculture & Soils Department & Course Director	Indian Institute of Remote Sensing, Department of Space, Govt. of India, 4, Kalidas Road, Dehradun - 248001, Uttarakhand Tel: 0135-2524138 Email: nrpatel@iirs.gov.in
Mr. Abhishek Danodia Scientist/Engineer 'SD' Agriculture and Soils Department Course Officer	Indian Institute of Remote Sensing, Department of Space, Govt. of India, 4, Kalidas Road, Dehradun - 248001, Uttarakhand Tel: 0135-2524141 Email: abhidanodia@iirs.gov.in