

**Forestry and Ecology Department,
Indian Institute of Remote Sensing (IIRS), Dehradun**

**Indian Technical & Economic Cooperation (ITEC),
Ministry of External Affairs (MEA), Govt. Of India Sponsored Course on
“Earth Observation Applications in Forestry”
2-13 February, 2026**

Course Content

Theory

- Fundamentals of Earth Observation: Principles, Sensors, and Data Sources
- Remote sensing of vegetation in optical, thermal and microwave regions
- Forest cover classification and Land Use, Land-Use Change, and Forestry (LULUCF)
- Forest disturbance monitoring using time-series satellite data
- LiDAR remote sensing for forest height, structure and biomass estimation
- SAR Applications in forestry: Forest structure, biomass estimation and disturbance detection
- Biodiversity Assessment using In-situ and satellite data
- Wildlife tracking and habitat suitability evaluation
- Detection, burnt area & Risk Assessment of Wildfire using optical and thermal Infrared data
- Forest Productivity Modelling using EO data and Ecological models
- Assessment of Climate Change Impacts on Forests

Practicals

- Familiarization with EO (Optical, Hyper-spectral, LiDAR and SAR) datasets
- Digital image processing of EO datasets
- AI/ML for forest cover and type classification and mapping
- Field sampling at Carbon Flux tower site
- LiDAR and SAR for forest biomass estimation
- Forest fire risk modelling and burnt area assessment
- Landscape ecological analysis for conservation planning
- Brainstorming on EO solutions for country specific issues

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