**DEPARTMENT OF WATER RESOURCES DEVELOPMENT & MANAGEMENT**

**INDIAN INSTITUTE OF TECHNOLOGY ROORKEE**

**Training program on**

**APPLICATION OF REMOTE SENSING AND GIS IN AGRICULTURE**

**Venue: Department of WRD&M, IIT, Roorkee**

**Objective:** To impart knowledge on applications of remote sensing and GIS techniques inAgriculture and Water Resources Management

**Course Content:**

Open sources satellite data, image interpretation, image classification and accuracy assessment, and image processing software. Geographical information system (GIS), spatial data structure- raster and vector, spatial and non-spatial relationship. Use of remote sensing and GIS techniques in agriculture, vegetation cover mapping, crop acreage Estimation, Remote Sensing and GIS for estimation of surface and subsurface water potential, flood inundation mapping and modeling, drought monitoring, performance evaluation of irrigation commands, Selection of the site for recharge, agricultural management, and planning. Reservoir Sedimentation and Soil erosion hazard assessment, Application of Remote Sensing and GIS for Catchment Area Treatment plan.

**TIME TABLE**

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| --- | --- | --- | --- | --- |
| **Date** | **14:00-15:00** | **15:00-16:00** | **16:00-17:00** | **17:00-18:00** |
| Day-1 | On line Registration, Inaugural Function and Course orientation IIT Roorkee) |  L1 | L2 | Lab-1 |
| Day-2 | L3 |  L4 |  L5 | Lab-2 |
| Day-6 |  L6 |  L-7 | Group Discussion | Filling of Online Response Form & Valedictory Function |

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| **Lr. No.** | **Topics**  |
| **L-1** | An introduction to Remote Sensing and Geographical information system (GIS), |
| **L-2** | Image classification and accuracy assessment |
| **L-3** | Use of remote sensing and GIS techniques in agriculture, vegetation cover mapping, crop acreage Estimation |
| **L-4** | Application of remote sensing and GIS for estimation of surface water potential |
| **L-5** | Drought monitoring using remote sensing and geospatial techniques |
| **L-6** | Application of Remote Sensing and GIS for estimation of soil loss and watershed management |
| **L-7** | Application of Remote Sensing and GIS for preparation of Catchment Area Treatment (CAT) Plan |
|  | **Laboratory Work** |
| **Lab-1** | Demonstration of data download, georeferencing, google earth, DEM preparation using point data, Map preparation |
| **Lab-2** | Land Cover Classification (Supervised and Unsupervised) |

**(Prof. Ashish Pandey)**

**Course Coordinator**