**CURRICULUM PLAN 2024-25**

**B.A. (H) Geography**

**Semester – III (NEP)**

**Name of the Teacher: Dr. Awadh Narayan Choubey**

**Paper Name & Paper Code: FUNDAMENTALS OF REMOTE SENSING (PRACTICAL)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Unit No.** | **Name of Topic**  | **Tutorial/Assignment/ Presentation, etc.** | **Allocation of Lectures** | **Assessment Tasks** | **Teaching and Learning****Activity** |
| 1 | Introduction to Remote sensing: Meaning and definition, Historical Evolution of Remote Sensing, Platforms (Ground, Air, Space), Types of Remote sensing (Passive and active), Resolutions types (Spatial, spectral, Radiometric, Temporal), Satellite data sources/search engines: (EARTHDATA, USGS, GLCF, LP-DAAC), Software: (QGIS, Arc GIS, ERDAS, IDRISI, TerrSet, ENVI, R, SAGA) | Assignment and presentation  | 7 (1st Aug ,2024– 20th Aug, 2024) | Assignments, Hands-on Practice | Classroom Lectures, PPTs, discussions, Practical hands on training.  |
| 2 | Aerial Photos: Geometry and Types of Aerial Photography, Stereoscope, Annotation, Interpretation Keys, and Interpretation • Calculation of photo scale • Orientation of Aerial Photo • Annotation and Interpretation Keys | Assignment and presentation | 16(21st Aug, 2024– 14th Sept, 2024) | Hands-on Practice, practical  | Classroom Lectures, PPTs, discussions, Practical hands on training. |
| 3 | Satellite Remote Sensing: Principles. Satellite Remote Sensing: Principles, Resolutions, EMR Interaction with Atmosphere and Earth Surface Features; Major Satellites and Sensors (LANDSAT, IRS, IKONOS, SPOT, MODIS, Sentinel,QUICKBIRD, any two) • Downloading Bhuvan Data • Downloading LANDSAT data (EARTHDATA) • Band-wise reflection of EMR | Assignment and presentation | 15th Sept, 2024- 15th Oct, 2024  | Assignments, Hands-on Practice | Classroom Lectures, PPTs, discussions, Practical hands on training. |
| 4 | Satellite Image Processing: • Pre-processing (Radiometric and Geometric Correction); Enhancement (Filtering);Classification Basics (Supervised and Unsupervised), DN to reflectance conversion • Geometric Correction  | Assignment and presentation | 16th Oct, 2024- 5th Nov, 2024  | Assignments, Hands-on Practice | Classroom Lectures, PPTs, discussions, Practical hands on training. |
| 5 | Application of Remote Sensing: • Land Use/Land Cover, • Urban Sprawl, • Vegetation Monitoring | Assignment and presentation | 6th Nov, 2024- 27th Nov, 2024  | Assignments, Hands-on Practice | Classroom Lectures, PPTs, discussions, Practical hands on training. |