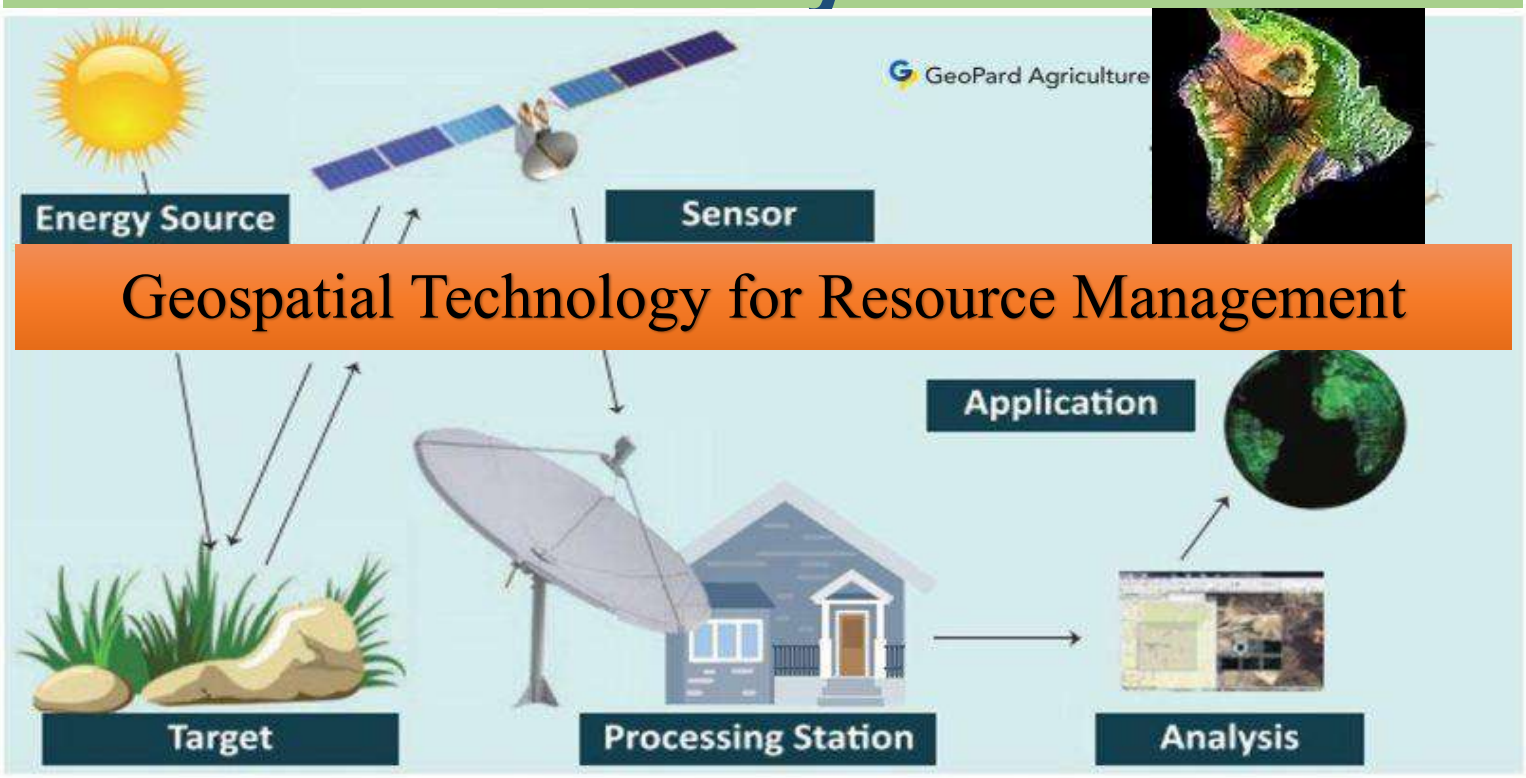
# Job Oriented Internship Programme
# 7 Days




## Geospatial Technology for Resource Management

Organised by
Department of Geography
**GOUR MAHAVIDYALAYA**

- BASIC TO ADVANCE GIS

Georeferencing, Defining Projection, Vector file (Shape file) creation and editing, Layout Generation and Thematic Map Output

- DATABASE MANAGEMENT

Attribute data and spatial data, database creation and attaching external database, Queries & Geoprocessing, Surface models

- REMOTE SENSING

Digital Image Processing, Mosaicing and Layer Stacking, Image Classification

- HYDROLOGICAL ANALYSIS

DEM, Flow Direction, Flow Accumulation, Stream Identification, Basin Area Identification.

- GPS
- FIELD PROJECTS

INFORMATION TECHNOLOGY SOLUTIONS

A **Job-Oriented GIS Internship Program** is crucial for students and professionals looking to build a career in **Geospatial Technology** and **Resource Management**.
This specialized internship provides hands-on experience with **GIS software, Resource Mapping, Watershed Analysis, flood mapping, and Environmental Monitoring**. It enhanes technical skills in **spatial analysis, remote sensing, and data visualization**, making participants industry-ready. The program also improves employability by offering **practical exposure to real-world projects**, networking opportunities, and certifications valued by government agencies, environmental consultancies, and research organizations.

- **KEY HIGHLIGHTS**
- Basic to Advance GIS using Q-GIS
- Hands-on Training of GIS software
- Project based Activity
- Real World Application of Remote Sensing Mapping
- Basics of Drone Based Remote-Sensing
- Hydro GIS using SONAR

**BLENDED MODE**

8 June to 16 June, 2025

GeoTech Solutions
Collaboration

Registration Fees: INR 500  Intake Capacity: 80

REGISTER HERE

**Carry Your Laptop if Available for Better Practice**

**Mangalbari, Malda, 732142  Contact: gmgeointernship2025@gmail.com  WWW.GOURMAHA.AC.IN**

# Syllabus of the Internship

# INTERNSHIIP
## FOR STUDENTS

| ARC GIS/Q GIS | |
|---|---|
| Introduction to GIS Software | |
| Georeferencing (image to image, image to ground), projection | |
| Shapefile Creation, editing, Advance editing, Automatic digitization | |
| Creation of database, concept of attribute data & spatial data, external database attachment, quarry: spatial query, attribute query, model building | |
| Geodatabase design, (generation/editing), Topology | |
| Add XY data, external data attachment, create relationship query | |
| Thematic map, Layout generation, Annotation | |
| Geoprocessing: Buffer, Intersect, Union, Clip | |
| Surface model and surface analysis, Virtual environment, raster algebra, zonal statistics, surface interpolation; TIN/DEM creation, slope/aspect, hill shade, view shed, 3D model, | |
| Spatial analysis: Suitable site finding, shortest path analysis, animation in Arc Map, Import/Export | |
| Concept & implementation of interpolation & creation of DEM : inverse distance weighted (IDW), spline, kriging, natural neighbor, Animation in ArcMap, Import/Export | |
| Digital image processing and enhancement, Atmospheric Correction, Mosaic, Fusion, layer Stacking | |
| Digital Image Processing (Classification): Information class, spectral class, supervised vs. unsupervised, decision rules for unsupervised classification | |
| Hydrological analysis using Digital Elevation Model, from concept to implement: Correction & rectification of DEM, calculation of flow direction, flow accumulation, identification of stream with DEM interpretation, stream order, basin area identification | |
| Introduction, concept of GNSS technology, three segments of GNSS, timing and ranging, calculating location, errors, differential GNSS, applications | |
| **Field Study Hydro GIS Application** | Application of Active Remote Sensing With **SONAR** Sensor Under Water Mapping (Sound Navigation &Mapping ) |
| | River Bed Depth Measurement , River Bed Profile Mapping ,Cross Profile & Long Profile, Soil Salinity Zonation Mapping, Water Salinity Zonation Mapping, Drone Survey & Mapping, Bathymetric Mapping |
| **Field Study Drone Mapping GPS Application** | **GPS Survey**<br>Introduction, concept of GNSS technology, three segments of GNSS, timing and ranging, calculating location, errors, differential GNSS, applications ,Field Survey & Mapping With GPS |
| | **Drone Mapping**<br>Mangrove Plantation and Drone Mapping for Orthorectified Image Creation & Understanding of Photogrammetry |

## GAIN EXPERIENCE IN:

## GIS & MAPPING • REMOTE SENSING
## SPATIAL ANALYSIS

**Brief Schedule**

| | |
|---|---|
| **Day-1: 08/06/2025-** | **Online Theoritical** |
| **Day-2-3: 10/06/25 to 11/06/25:** | **Laboratory Practical** |
| **Day-4: 12/06/2025:** | **Field based Practical** |
| **Day-5: 13/06/2025:** | **Processing of Field Data in Lab** |
| **Day-6-7: 14/06/25 to 16/06/25:** | **Post Field Works and Report Preparation** |