



DSKC Summer Internship Workshop

2023

Department of Geography
Miranda House



Unveiling Earth's Secrets: A Remote Sensing Journey

SEE THE WORLD THROUGH THE EAGLE'S EYES

5 June – 17 July 2023

HIGHLIGHTS

- Physiographical Features Extraction
- Surface Natural Resource (SNR) Evaluation
- Watershed/Springshed Management
- Ecological Weightage Assessment

- Dive into the fascinating world of Remote Sensing and GIS
- Extract the Sunlight: Convert Energy into Opportunities
- Understand the science behind Remote Sensing
- Practical applications and career opportunities
- Join the Remote Sensing community
- Hands-on Training Module

WHO TO ATTEND?

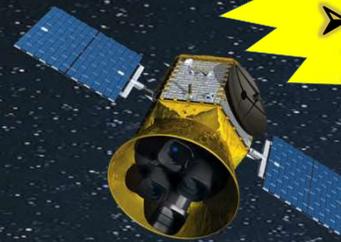
Undergraduate students with a deep passion for unraveling the secrets of our planet and exploring its extraordinary wonders that remain beyond human eyes.

Outstation girls will be provided
Miranda Hostel accommodation during
the DSKC internship

Convenor:

Prof. Bashabi Gupta

bashabi.gupta@mirandahouse.ac.in



Registration Fees

DU students: Rs. 1000/-

Non-DU students: Rs. 1500/-

Fee Payment Portal :

<https://www.onlinesbi.com/sbicollect/icollecthome.htm>

Last date of submission of Application Form: **1 June 2023**

Please fill the following google form for registration:

<https://forms.gle/vhr3dEhS5upCjDXK9>

Mentors:

Dr. Om Jee Ranjan (9818550336)

Dr. Praffulit Bisht (9773552184)



DSKC Summer Internship Workshop, 2023
Department of Geography, Miranda House, University of Delhi



Unveiling Earth's Secrets: A Remote Sensing Journey

See the World through the Eagle's Eyes

Aim:

The summer internship aims to provide participants with practical skills and knowledge in Remote Sensing and GIS, enabling them to contribute effectively in multidisciplinary research.

Objective:

The objective of the summer internship on Remote Sensing and GIS is to provide participants with a comprehensive understanding of various applications in the field of geospatial analysis and Remote Sensing. The internship will focus on four key highlights: physiographical features extraction, Surface Natural Resource (SNR) evaluation, Watershed/Springshed management, and Ecological Weightage Assessment.

Outcomes:

By the end of the summer internship, participants will achieve the following outcomes:

1. **Proficient Physiographical Features Extraction:** Participants will gain expertise in using Remote Sensing data and GIS tools to extract and analyse physiographical features such as landforms, terrain characteristics, and geological structures. They will learn how to interpret satellite imagery, apply image classification techniques, and utilize geospatial algorithms to extract relevant information from the data.
2. **Effective Surface Natural Resource (SNR) Evaluation:** Participants will develop skills to assess and evaluate surface natural resources using remote sensing and GIS tools. They will learn to identify and map key resources such as forests, water bodies, snow cover and land use. They will also explore methodologies for analysing the health and quality of these resources, considering factors such as vegetation indices, water quality indices, and land cover change analysis.
3. **Comprehensive Watershed/Springshed Management:** Participants will understand the principles and practices of Watershed and Springshed management using remote sensing and GIS technologies. They will learn to delineate and characterize Watersheds/Springsheds, analyse hydrological processes, and assess water availability and quality.
4. **Robust Ecological Weightage Assessment:** Participants will be equipped with the knowledge and tools to conduct ecological weightage assessments. They will learn how to identify ecological features, quantify their significance, and evaluate their spatial distribution and connectivity. They will also explore techniques to analyse ecological corridor mapping to support conservation and land management decisions.

WORKSHOP SCHEDULE

Module	Description	Session mode
Module 1 (5 June 2023 – 9 June 2023)		
1.1	Know the syllabus/objectives/expected outcome and platform	L
1.2	Installation and general knowledge about the platform	L+P
1.3	Know your data source, its platform, methods of retrieving data from different cloud-based sources	L+P
1.4	Features of Data and characteristics of remotely-sensed data	L+P
1.5	Hands-on based Test	Practical Test
Module 2 (12 June 2023 – 16 June 2023)		
2.1	Geographical Information System (Basic Digitization)	L+P
2.2	Geographical Information System (Advanced Digitization)	L+P
2.3	Data import/attachment, Area calculation, Uses of software-based algorithm	L+P
2.4	Pictorial and statistical representation of result	L+P
2.5	Hands-on based Test	Practical Test
Module 3 (19 June 2023 – 23 June 2023)		
3.1	Digital Elevation Model: Elevation Assessment	L+P
3.2	Slope Generation, Ruggedness Assessment	L+P
3.3	Drainage Network Identification (DNI) (River/Channel formation)	L+P
3.4	Catchment Demarcation/Watershed Delineation	L+P
3.5	Hands-on based Test	Practical Test
Module 4 (26 June 2023 – 30 June 2023)		
4.1	Retrieval process of ETM/OLI/TIRS imageries	L+P
4.2	Algorithm process on satellite data for vegetation assessment	L+P
4.3	Classification of Vegetation	L+P
4.4	Calculation of classified vegetation area	L+P
4.5	Hands-on based Test	Practical Test
Module 5 (3 July 2023 – 7 July 2023)		
5.1	Ecological Weightage Assessment (Method Discussion and Implementation)	L+P
5.2	Formula Generation for evaluation	L+P
5.3	Final Weightage Assessment	L+P
5.4	Hands-on based Test	Practical Test
5.5	Temporal Assessment of the same by taking 30 years interval	L+P
5.6	Final Output and Trend Analysis	L+P
5.7	Interpretation of the whole output	Write-up
Module 6 (10 July 2023- 14 July 2023)		
6.1	File Preparation and Submission	Write-up
6.2	Poster preparation for the competition (Entire Process-Methods- Output- Interpretation)	Designing+ Write-up
Prize winning Poster Competition/Presentation		

*L= Lecture; P= Practical