KEY SPEAKERS

Prof. Jagadish Kumar Tripathy
Faculty, Sambalpur University, Odisha

Dr. Chinmay Dash
Faculty, Sambalpur University, Odisha

Mr. Prasanta Kumar Patra
Young Professional-II, ICAR-IIWM, Odisha

Mr. Debasis Sahoo
Project Scientist, ORSAC, Bhubaneswar, Odisha

Mr. Tanmoy Chatterjee
GIS-Professional, OMC, Bhubaneswar, Odisha

Miss Krishna Manjari Jena
DST Inspire–SRF, Sambalpur University, Odisha

ABOUT THE WORKSHOP

This workshop offers a focused platform for researchers, professionals, and young scholars to explore how modern geospatial technologies are transforming Earth and environmental sciences. Covering key applications such as geological mapping, mineral exploration, hydrological modelling, and environmental assessment, it also features interactive sessions, hands-on demonstrations, and expert-led discussions. Participants will gain practical insights into cutting-edge remote sensing datasets, UAV observations, image analysis, and advanced GIS workflows driving innovative research. The workshop aims to inspire new ideas, encourage collaboration, and promote the effective integration of geospatial tools to address real-world challenges.

2 day Workshop on

1st Circular

on

Real-time analysis and problem-solving through the integration of Remote Sensing and GIS

20th-21st December, 2025

Organized by

Department of Earth Sciences
Sambalpur University, Jyoti Vihar, Burla, Sambalpur, Odisha

REGISTRATION FEE:

Participants are required to confirm their participation by completing the online **Google Registration form** and submitting it along with the prescribed registration fee. Participants are required to register for the workshop by paying the applicable fee as per the categories below:

Category	Payment
Faculty/Professionals	1000
Research Scholars/Students	500
Industry Representatives	3000

QR code for Registration:

https://forms.gle/QdEXSpfpntnHQ6ga6

MODE OF PAYMENT:

The registration fee can be paid via UPI. Attendees can pay in cash at the registration counter on the day of the Workshop.

Google Pay/Phonepe Number: 7978506160
Beneficiary Name: Asim Ranjan Pratihari

BACKGROUND

Geographic Information Systems (GIS) provide a powerful framework for acquiring, managing, and analyzing spatial data to address real-world environmental and socio-economic challenges. Major applications include assessing Land Use and Land Cover (LULC) change, supporting urban planning, and improving groundwater management by integrating satellite imagery, hydrogeological data, and spatial models. GIS-based site suitability analysis, using techniques such as weighted overlay and multi-criteria evaluation, helps identify optimal locations for agriculture, recharge structures, and infrastructure development. Core GIS operations—georeferencing, digitization, and thematic map preparation—enable accurate spatial database creation, supporting multidisciplinary applications in geology, environmental science, land management, and disaster mitigation. The growing use of Python has enhanced GIS workflows through automated processing and geo-visualization, enabling interactive web mapping. Integrating Google Earth with platforms like ArcGIS further improves smart mapping, offering high-resolution imagery for feature validation and spatial interpretation. Geostatistical techniques, including kriging, variogram analysis, and spatial autocorrelation, strengthen spatial data modeling and prediction. Recent research shows that climate change intensifies soil erosion, with increased rainfall exerting a stronger influence than LULC changes, leading to accelerated runoff and landscape degradation. Overall, GIS combined with remote sensing, Python visualization, Google Earth integration, and geostatistics provides a comprehensive approach for understanding environmental processes and supporting sustainable planning.

OBJECTIVE

1. **Analyze Land Use and Land Cover (LULC) change** using multi-temporal satellite data and GIS techniques to understand spatial–temporal patterns of landscape transformation.
2. **Evaluate the role of GIS in real-world problem solving**, including applications in urban planning, groundwater management, and site suitability assessment for sustainable resource development.
3. **Perform essential GIS operations** such as georeferencing, digitization, and thematic map preparation for generating accurate spatial datasets.
4. **Apply GIS in multidisciplinary fields** such as geology, environmental science, water resources, and land management through integrated spatial analysis.
5. **Utilize Python programming for geovisualization** and develop interactive maps and web-based mapping applications for enhanced spatial data representation.
6. **Establish a practical workflow for integrating Google Earth with ArcGIS**, enabling high-resolution visualization and smart mapping for improved spatial interpretation.
7. **Apply geostatistical techniques** (e.g., kriging, spatial autocorrelation, variogram analysis) for spatial data analysis and prediction of environmental variables.
8. **Assess the influence of climate change on soil erosion**, with emphasis on understanding how rainfall variability dominates over LULC changes in driving erosion processes.
9. **Develop a comprehensive spatial decision-making framework** combining GIS, remote sensing, Python-based visualization, and geostatistics for effective environmental and resource management.

CHIEF PATRON AND ORGANIZING COMMITTEE

Chief Patron:
Prof. Bidhu Bhusan Mishra
Vice Chancellor, Sambalpur University

Patron:
Prof. Tushar Kanti Das
P.G. Council, Sambalpur University

Co-Patron:
Shri Ashok Kumar Behera
Registrar-Incharge, Sambalpur University

Convenor:
Dr. Duryadhan Behera
HOD, Department of Earth Sciences, SU

Co-Convenor:
Prof. Jagadish Kumar Tripathy
Retired Faculty, Department of Earth Sciences, SU

Organizing Secretary:
Dr. Haridas Mohanta
Department of Earth Sciences, SU

Joint Secretaries:
Dr. Geetika Tripathy
Dr. Asim R. Pratihari
Dr. Chinmay Dash
Dr. Babita Bakhara

Organizing Committee:
Research Scholars, Students, Staffs

ACCOMMODATION:

Due to limited on-campus accommodation availability, rooms will be allocated on a first-come, first-served basis at the Sambalpur University guest house, hostels, and select nearby hostels. **Accommodation will be provided on a shared-occupancy basis on a payment basis.** Priority will be given to students, research scholars, and retired professionals from distant locations and other states.

Kindly share your travel itinerary with our designated volunteer at the earliest to ensure a smooth operation. Our volunteers will assist you with all details regarding local transportation, along with recommendations for exploring local cuisine, cultural insights, etc.

For any **travel and accommodation-related inquiries**, please contact-

- **Mr. Subhransu R. Sahoo (Mob: +91-7008731230)**
- **Mr. Smarak K Swain (Mob: +91-7683935417)**
- **Ms. Krishna Manjari Jena (Mob: +91-9556875773)**

PROGRAMME SCHEDULE:

December 20, 2025

08:00 AM - 09:30 AM: **Spot Registration & Breakfast**
09:30 AM - 11:00 AM: **Inaugural Ceremony**
11:00 AM - 11:15 AM: **Tea Break**
11:15 AM - 01:30 PM: **Keynote & Workshop Sessions I**
01:30 PM - 02:30 PM: **Lunch Break**
02:30 PM - 05:15 PM: **Workshop Sessions II**
05:15 PM - 05:30 PM: **High Tea**
05:30 PM - 07:30 PM: **Cultural Programme**
07:30 PM - 09:00 PM: **Dinner & Networking**

December 21, 2025

08:30 AM - 10:00 AM: **Breakfast**
10:00 AM - 01:00 PM: **Workshop Sessions III**
01:00 PM - 02:00 PM: **Lunch Break**
02:00 PM - 04:00 PM: **Workshop Sessions IV**
04:00 PM - 05:00 PM: **Valedictory Session**

CONTACT:

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Dr. Asim Ranjan Pratihari
Faculty, SU
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Date of the event :
20th-21st December, 2025

All attendees are requested to bring a laptop.