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Department of Geography
A B N Seal College, Cooch Behar

Add-on Course on

Application of Geospatial Technology in Modern World

COURSE CONTENT

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COURSE DURATION: 32 HOURS   **No. of Seats:** 30

COUSE CURRICULUM:

- Evolution of Cartography & Introduction to Map Projection
- Analogue Method of Remote Sensing: Identification & interpretation of surface features using Mirror Stereoscope
- Remote Sensing: Basic concepts, Acquisition of Data, Data Processing, Preparation of Layouts of different surface features, NDVI, DEM, LULC Maps
- Geographical Information System: Basic concepts, Raster & Vector Data, Geo-referencing, different processes of digitization, Preparation of Thematic Maps
- Global Positioning System: Introduction, Satellite constellation, GPS signals and data, GPS Segments, NAVSTAR, GLONASS, Indian Regional Navigational Satellite System (IRNSS), Application of GPS
- Hands on Training on Remote Sensing & GIS Software

METHODOLOGY:

- Theoretical Classes: 15 hours
- Practical Classes: 9 hours
- Field Work: 2.5 hours
- Group Discussion: 01 hour
- Assignment: 2 hours
- Evaluation: 0.5 hour

RESOURCE PERSONS:

- Dr. Writuparna Chakraborty, Associate Professor of Geography, A.B.N. Seal College
- Sri Partha Das, Assistant Professor of Geography, A.B.N. Seal College
- Dr. Prites Chandra Biswas, Assistant Professor of Geography, A.B.N. Seal College
- Dr. Suchitra Ray, Assistant Professor of Geography, A.B.N. Seal College
- Sri Subrata Mondal, Assistant Professor of Geography, A.B.N. Seal College
- Mr. Sahidul Karim, Assistant Professor of Geography, A.B.N. Seal College

Chakraborty

Head of the Department
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Cooch Behar

ADD ON COURSE

Application of Geospatial Technology in Modern World

Course Outcome:

Upon completion of this add-on course, students will acquire a comprehensive understanding of the history and development of Cartography, the fundamental principles of Remote Sensing, and the practical skills necessary to create and analyze maps using modern technologies. They will also gain proficiency in using Q-GIS and Remote Sensing software tools.

Evolution of Cartography:
The students will be able to explore the historical evolution of Cartography and understand the significance of early map making techniques, trigonometrical derivations involved in the Map Projections and their impact on navigation, explorations and researches. This provides a scope to know about the role of the pioneers in Cartography and their contributions. This course would help the students to gain insights into the technological advancements in mapmaking through the temporal scale. They would essentially develop the interest to value Cartography in modern way of living as well.

Basic Concepts of Remote Sensing:
The students will be able to understand the concept of Remote Sensing and its applications. This course informs them about the electromagnetic spectrum and its relevance to Remote Sensing. They gain informative knowledge about the various remote sensing platforms, sensors and their data collection techniques. Interpretation of remotely sensed data and Satellite Imageries along with their mapping is intended for resource analysis with environmental approach.

Analogue Method of Remote Sensing:
The students will be able to attain hands on training to read, analyze and interpret traditional aerial photography and develop basic principles of photogrammetry. They will learn stereoscopic vision and develop skills in creating Landuse and Land cover mapping from aerial photography.

Digital Remote Sensing:
They will learn the basics of digital remote sensing and handling of its data. They can master Digital Image Processing techniques for data enhancement and analysis. They will be well equipped to create digital maps and products from remotely sensed data. Remotely sensed data has wide application in various domains, such as defense, agriculture, forestry, resource management, land use, land cover, disaster management & mitigation etc. Thus, the students gain insights into the benefits as well as limitations of digital remote sensing.

Geographical Information System (GIS):
The students will be able to understand the differences between vector and raster data and learn data acquisition and management through GIS software. They will be able to perform spatial data analysis & processing and explore the integration of remote sensing data with GIS for geospatial analysis.

Hands-on Training on Using Q-GIS & Remote Sensing Software:
They will gain proficiency in using Quantum GIS (Q-GIS) for map creation and management. They learn to import, visualize, and manipulate geospatial data in Q-GIS. Gradually they master the creation and editing of maps and spatial data layers. They practice application of basic spatial analysis and geoprocessing in Q-GIS. They also practice integrating and analyzing remote sensing data within Q-GIS. They complete practical exercises and projects using Q-GIS and remote sensing software tools.

Upon successful completion of the course, students will be well-equipped to create, analyze and interpret maps using a combination of traditional and latest techniques. They will also have the practical skills to use Q-GIS and remote sensing software, enabling them to pursue careers in fields such as geography, environmental science, urban planning and more.

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