Shri Swami Vivekanand Shikshan Sanstha Kolhapur's

LAL BAHADUR SHASTRI COLLEGE OF ARTS, SCIENCE AND COMMERCE, SATARA

DEPARTMENT OF GEOGRAPHY

Distinguish Activities

Title: IIRS & Basics of Geoinformatics

The initial focus of Indian Institute of Remote Sensing (IIRS) was to use EDUSAT/INSAT 4CR satellite for distance learning but extended the scope to use internet so that access to large number of institutions/universities /individuals with little cost the User. Today this programme is linking more professional and user departments and ministries in the country to develop their skills in geospatial technologies and its applications. The IIRS outreach programme is being conducted through following two major modes:

Our college provides to use EDUSAT/INSAT 4CR satellite for distance learning to through IIRS. The open source software and data sets for practical exercises are also available to the participants. In future it is planned to give access to IIRS laboratory for practical exercises through private cloud.

The IIRS e-learning courses are flexible for anytime, anywhere learning keeping in mind the demands of geographically dispersed audience and their requirements. The program is comprehensive with variety of online delivery modes with interactive, easy to learn and having a proper blend of concepts and practical to elicit students' full potential.

IIRS & Geoinformatics is a multidisciplinary field that combines geographical information systems (GIS), remote sensing, global positioning systems (GPS), and computer science to capture, store, manipulate, analyze, and present spatial and geographic data. It plays a crucial role in understanding and managing the complex relationship between humans and the environment. This report provides an overview of the basics of geoinformatics, including its key components and applications.

Geographical Information Systems (GIS):

GIS refers to the integration of hardware, software, and data for capturing, managing, analyzing, and displaying geographically referenced information. It involves the use of spatial data, such as maps, satellite imagery, and aerial photographs, to create digital representations of the Earth's surface. GIS enables users to overlay, query, and analyze various types of data to derive meaningful insights and support decision-making processes in fields like urban planning, environmental management, and transportation.

Remote Sensing:

Remote sensing involves the acquisition of information about the Earth's surface using sensors mounted on satellites, aircraft, or other platforms. It provides valuable data in the form of images and digital elevation models, which can be analyzed to understand land cover, vegetation health, natural disasters, and climate patterns. Remote sensing plays a vital role in environmental monitoring, agriculture, disaster management, and urban planning.

Global Positioning Systems (GPS):

GPS is a satellite-based navigation system that allows precise positioning and timing information to be obtained anywhere on Earth. It consists of a network of satellites that transmit signals to GPS receivers, enabling accurate determination of geographic coordinates. GPS technology has numerous applications, including navigation, surveying, mapping, and tracking.

Data Management and Analysis:

Geoinformatics involves the management and analysis of large spatial datasets. It includes data collection, storage, organization, and retrieval, often utilizing databases and specialized software. Geospatial analysis techniques are employed to examine relationships, patterns, and trends within the data. This analysis helps in identifying

spatial correlations, predicting future outcomes, and supporting decision-making processes.

Applications of Geoinformatics:

Geoinformatics finds applications in various fields, including but not limited to:

a. Urban Planning and Infrastructure Management: GIS is used to analyze urban growth patterns, optimize infrastructure planning, and manage transportation networks.

b.Environmental Management: Geoinformatics supports environmental monitoring, conservation planning, and natural resource management.

c. Agriculture and Forestry: Remote sensing and GIS aid in crop monitoring, yield prediction, forest inventory, and disease detection.

d. Disaster Management: Geoinformatics assists in assessing the vulnerability of areas to natural hazards, mapping affected regions, and facilitating emergency response.

e. Public Health: GIS helps in disease surveillance, analyzing health patterns, and planning healthcare services.

f. Land Use Planning: Geoinformatics assists in land suitability analysis, zoning, and land management.

Conclusion:

IIRS and Geoinformatics plays a crucial role in managing and analyzing spatial data, providing valuable insights for decision-making processes in various disciplines. The integration of GIS, remote sensing, GPS, and data analysis techniques enables us to understand complex spatial relationships and address critical challenges related to urbanization, environmental conservation, agriculture, disaster management, and public health. As technology advances, geoinformatics will continue to evolve, opening new opportunities for spatial data analysis and its applications in diverse fields. These courses give more Job opportunities in various fields.

Sr. No.	Year	Name of the Course
1	2018-19	45-IIRS outreach Programme on RS and GIS Applications in Watershed Management
2	2019-20	52-IIRS outreach Programme on Global Navigation Satellite System
3	2020-21	-IIRS outreach Programme on Application of Geoinformatics in Ecological Studies
4	2020-21	61-IIRS outreach Programme on Satellite Photogrammetry and its Application
5	2020-21	62-IIRS outreach Programme on Geospatial Inputs for Enabling Master Plan Formulation
6	2021-22	93-IIRS outreach Programme on Geo-Informatics for Biodiversity Conservation Planning
7	2021-22	"Basics of Geoinformatics"
8	2022-23	7014--IIRS outreach Programme on RS and GIS Applications in Atmospheric and Oceanic Hazards
9	2022-23	"Basics of Geoinformatics"