Program: B.Sc.	[redacted]	Session : 2023-24

Paper I: Remote Sensing And GIS (UGeo-0301)

Course Learning Outcome (CLO)	After the completion of course, the students will have ability to: 1. Understand and get the knowledge about fundamental concept of Remote sensing. 2. To understand the types of remote sensing, and types of platforms in remote sensing. 3. To get a knowledge about satellite sensor and types of sensors, and their functions and Characteristics. 4. Understand the data product, types of data product and its applications and uses in remote Sensing.

Content of the Course

Unit	Topic
1.	Basics of Remote Sensing: definition, history, and Scope; Electro-magnetic Radiation: Characteristics, Spectral regions and Bands; Interaction with earth surface features and atmosphere; Spectral Signature
2.	Types of Remote Sensing: Air borne and Space borne; Aerial photos: Types and Characteristics; Remote Sensing satellites: Platforms and sensors: active and passive, Sensor characteristics: spatial resolution, spectral resolution, radiometric resolution, temporal resolution.
3.	Visual and Digital image processing techniques; Remote Sensing application in resource mapping and environmental monitoring, remote sensing in India: development and Growth. Indian Satellites, Space Organizations and data products.
4.	Introduction of GIS: Definition of Geoinformatics, Scope and Importance of Geoinformatics, History of GIS, Components of GIS, Functions of GIS,GIS tasks-Input, Manipulation, Management, Query analysis, Visualization, Topographical sheets, Surveying, Aerial photographs ,Satellite data and images, Data types-Spatial and Non spatial.
5.	Data model and data analysis: Raster data and their characteristics, Vector data and their characteristics, Raster data analysis- grid cells or Pixels. Vector data analysis- Spatial data, Generation in Vector Format, Spatial and Non Spatial data Management. Spatial information Technology.

Learning Resources: Text Books, Reference Books, Other Resources

Suggested Readings:

1. Bhatta, B. (2010): Remote Sensing and GIS, Oxford University Press, New Delhi.
2. Campbell, J.B. (2002): Introduction to Remote Sensing. 5th edition, Taylor and Francis, London
3. Curran, P.J. (1985): Principles of Remote Sensing, Longman, London
4. Lillesand, T.M. and Kiefer, R.W. (2000): Remote Sensing and Image Interpretation. 4th edition. John Wiley and Sons, New York
5. Nag Prithvish and Kudrat M. (1998): Digital Remote Sensing, Concept Publishing Company, New Delhi
6. Star J, and J. Estes, (1994), Geographic Information Systems: An Introduction, Prentice Hall, New Jersy.
7. Williams J. (1995): Geographic information from space, John Wiley and Sons, England,
8. चौनियाल, देवी दत्त (2004), सुदूर संवेदन एवं भौगोलिक सूचना प्रणाली, शारदा पुस्तक भवन, इलाहाबाद–2
9. खत्री, हरीष कुमार (2019) : सुदूर संवेदन तकनीक, कैलाप पुस्तकसदन भोपाल, मध्यप्रदेश

Suggested equivalent online course:1. epgp.inflibnet.ac.in 2. virtual lectures available on you tube

Program: B.A./B.Sc	Class: III Year.	Session : 2023-24

Paper II: Geography of Chhattisgarh (UGeo-0302)

Course Learning Outcome (CLO)	After the completion of course, the students will have ability i. Understand the about the physiographic division of Chhattisgarh State. ii. Understand the India Drainage system of Chhattisgarh Rivers. iii. Understand the climatic variation in Chhattisgarh State. iv. Examine and understand the types of vegetation of Chhattisgarh. v. Understand the variation in industrial development in Chhattisgarh State. vi. Examine and understand the developed and underdeveloped States in Chhattisgarh.

Content of the Course (Credit- 6)

Unit	Topic
1.	**Physical Features :** Geological Structure, Relief and Physiographic Regions, Drainage system, Climate
2.	**Natural Resources:** Soils – Types, characteristics and their Distribution. Water Resources (Major Irrigation and Hydel Power Projects), Forests-types, Distribution, and Conservation of Forest. Mineral Resources: Iron-ore, Coal, Lime stone, Bauxite, Tin.
3.	**Agriculture and Populations** – Agriculture: Cereals, Pulses and Millets. **Population**: Growth, Distribution, and Density; Tribal Populations; and Urban and Rural Population.
4.	**Industries** - Iron and Steel, Cement, Sugar, Aluminum; Industrial Regions of Chhattisgarh
5.	**Trade and Transport**, Tourism, Socio-Economic Development of Chhattisgarh.

Learning Resources: Text Books, Reference Books, Other Resources

Suggested Readings:

1. Jha, Vibhash Kumar and Saumya Naiyyar (2013) Chhattisgarh Samagra, Chhattisgarh Rajya Hindi Granth Akadmi, Raipur
2. Kumar, Pramila (2003): Chhattisgarh Ek Bhugolik Addhyayan. Madhya Pradesh Hindi Granth Akadmi, Bhopal
3. Nagesh Jitendra and at all (2014): Chhattisgarh Sandarbh 2014 Jansanmpark Vibhag, C.G. Govt., Raipur
4. Tiwari, Vijay Kumar (2004): Geography of Chhattisgarh, Himalya Publishing House, Pvt. Ltd
5. Tripathi, Kaushlendra and Pursottam Chandrakar (2001): Geography of Chhattisgarh, Shardaprakashan, Aazad Nagar , Bilaspur.
6. Verma ,L.N. (2017): Geography of Chhattisgarh, Madhya Pradesh Hindi Granth Akadmi, Bhopal.

Suggested equivalent online course: 1. cpgp.inflibnet.ac.in

2. virtual lectures available on YouTube

Dr. Sheela Shirdar

Program: B.A./B.Sc	Class: III Year.	Session : 2023-24

Paper II: Geography of Chhattisgarh (UGeo-0303)

Course Learning Outcome (CLO)	After the completion of course, the students will have ability i. Understand the about the physiographic division of Chhattisgarh State. ii. Understand the India Drainage system of Chhattisgarh Rivers. iii. Understand the climatic variation in Chhattisgarh State. iv. Examine and understand the types of vegetation of Chhattisgarh. v. Understand the variation in industrial development in Chhattisgarh State. vi. Examine and understand the developed and underdeveloped States in Chhattisgarh.

Content of the Course

Unit	Topic
Section A: Map Readings And Interpretation	**MM-20**
1.	Graphical Representation: Band graph
2.	Topographical Sheets: Classification and numbering system (National and International)
3.	Satellite Imageries: Describing the Marginal Information
Section B: Surveying And Field Report	**MM-20**
4.	Surveying: Plane Table Survey, Basic Principles of plane table surveying, Plane table survey including intersection and resection.
5.	Field work and field report: physical, social and economic survey of a micro - region.
Section C: Practical Record And Viva Voce	**MM-10**

Learning Resources: Text Books, Reference Books, Other Resources

Suggested Readings:

1. Archer, J.E. and Dalton, T.H. (1968): *Field Work in Geography*. William Clowes and Sons Ltd. London and Beccles.
2. Bolton, T. and Newbury, P.A. (1968): *Geography through Fieldwork*. Blandford Press, London.
3. Monkhouse, F. J. (1985): Maps and Diagrams. Methuen, London.
4. Nag, P. (ed.) (1992): Thematic Cartography and Remote Sensing. Concept Publishing Company, New Delhi.
5. Natrajan, V. (1976): Advanced Surveying, B.I. Publications., Mumbai.
6. Raisz, E. (1962): Principles of Cartography, McGraw Hill, New York.
7. Robinson, A. H., Sale. R. D., Morrison, J. L. and Muehrcke, P. C. (1984): Elements of Cartography. 5th edition, John Wiley and Sons, Inc. New York.
8. Sarkar, A. K. (1997): Practical Geography: A Systematic Approach. Orient Longman, Kolkata
9. Sharma, J. P. (2001): *Prayogik Bhugol.*, Rastogi Publication, Meerut 3rd. edition.
10. Singh, R.L. and Singh Rana P.B. (1993): *Elements of Practical Geography*. (Hindi and English editions). Kalyani Publishers, New Delhi.
11. Stoddard, Robert H. (1982): *Field Techniques and Research Methods in Geography*. Kendall/Hunt Pub. Dubuque IO.

Suggested equivalent online course: 1. epgp.inflibnet.ac.in 2. virtual lectures available on YouTube