

MA 4th Sem
Core Paper

CC-A12	Research Methodology (Theory Paper)	241/GEO/CC401
CC-A13	Applications of Geo-Spatial Techniques (Practical Paper)	241/GEO/CC402



Gurugram University, Gurugram, Haryana (India)

M.A. Geography (Semester-IV) Syllabus (as per NEP 2020 w.e.f session 2024-25)

RESEARCH METHODOLOGY

Paper Code: CC-A12 (Theory: Core Paper)

Course Id: 241/GEO/CC401

Credit: 04 (3+1+0) L+T+P Hrs/Week	Total Marks	100
Time: 3 Hours	End Semester Exam:	70 Marks
Note: The question Paper will have five units. Four units of question paper will contain two essay type questions (having 14 marks of each question) from each unit of the syllabus. Candidate(s) are required to attempt one question from each unit. The first unit having question no. 1 shall be compulsory and shall contain seven short answer type questions (having 2 marks of each question) covering the entire syllabus. All questions carry equal marks.	Internal Assessment:	30 Marks
	Attendance	5
	Assignment	5
	Sessional Exam	20

Course Outcomes (COs):

CO-01: The students will be able to understand the concept, types of Research and Research problem identification.

CO-02: They will develop the skill of literature review, Hypothesis formation and selection of Methodology.

CO-03: They will know about various data sources and their collection methods for the research.

CO-04: They will aware about Research process, Report writing and publication in a scientific way.

UNIT-I

Research: Concept, Purpose, Types and Approaches. Scientific Research in Geography. Identification of Research Problem: Aims, Objectives, Formulation of Research Question. Limitations of Research.

UNIT-II

Review of Literature: Meaning, Significance, Sources, Process, Web Based Searching, Research Gaps; Hypothesis: Meaning, Significance, Formulation, Types and Testing. Methodology: Inductive and Deductive, Qualitative and Quantitative.

UNIT-III

Data Sources and Methods of Data Collection: Types of data-(Primary and Secondary); Secondary Data Sources; Primary Data Sources: Field Survey Data Collection Techniques- Observation, Interview, Questionnaire, Schedule, PRA. Data Processing and Analysis: Tabulation and Graphic/Map Representation. Application of GIS in Research.

UNIT-IV

Research Report Writing: Structure-(Preliminary, Main Body of Text and Conclusion); Referencing and Bibliography: Style and Writing- APA, Chicago, Harvard; Ethics in Research; Publication in Research Journals; Plagiarism in Research.

Suggested Readings:

- Ahuja, Ram (2003). *Social Survey and Research* (Hindi). Jaipur: Rawat Publications.
- Basotia, G. R. and Sharma, K. K. (2002). *Research Methodology*. Jaipur: Mangal Deep Publications.
- Creswell J. (2018). *Research Design: Qualitative and Quantitative Approaches*. New Delhi: Sage Publications.
- Eyles, John and David M. Smith (1988). *Qualitative Methods in Human Geography*. Oxford: Polity Press.
- Flowerdew, R. and Martin, D. (1997). *Methods in Human Geography. A Guide for Students Doing a Research Project*. New Jersey: Prentice Hall.
- Gupta, S.P. (2021). *Statistical Methods*. New Delhi: Sultan Chand and Sons.
- Harvey, David (1969). *Explanation in Geography*. London: Edward Arnold.
- Limb, M. (2001). *Qualitative Methodologies for Geographers. Issue and Debates*. London: Edward Arnold.
- Kothari, C.R. (2004). *Research Methodology: Methods and Techniques*. New Delhi: New Age International Publishers.
- Kumar, Ranjit (2005). *Research Methodology: Step by Step Guide for Beginners*. Pearson, Australia.
- Limb, Melanie and Claire Dwyer (2001). *Qualitative Methodologies for Geographers*. London: Arnold.
- Mahmood, A. (2020). *Statistical Methods in Geographical Studies*. New Delhi: Rajesh Publications.
- Misra, H.N. and Singh, Vijai P. (2002). *Research Methodology in Geography: Social, Spatial and Policy Dimensions*. Jaipur: Rawat Publications.
- Misra, R.P. (2015). *Research Methodology: A handbook*. New Delhi: Concept Publishing Company.
- Paul Oliver (2004). *Writing your Thesis*. New Delhi: Vistar Publication.
- Robinson, Guy M. (1998). *Methods and Techniques in Human Geography*. New York: John Wiley.
- Somekh, Bridget and Cathy Lewin (2005). *Research Methods in the Social Sciences*. New Delhi: Vistar Publications.
- Stoddard, R. H. (1982). *Field Techniques and Research Methods in Geography*. Kendall/Hunt.
- Wolcott, H. (1995). *The Art of Fieldwork*. California: Alta Mira Press.



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APPLICATIONS OF GEO-SPATIAL TECHNIQUES

Paper Code: **CC-A13 (Practical: Core Paper)**

Course Id: **241/GEO/CC402**

Credit: 04 (0+0+8) L+T+P Hrs/Week	Total Marks	100
Time: 4 Hours	End Semester Practical Exam:	70 Marks
Note: Practical Exam: as the instructions mentioned under	Internal Assessment:	30 Marks
	Attendance	5
	Practical Assignment/Practical File	25

Course Outcomes (COs):

CO-01: The students will be able to understand the Geospatial Technology, GIS and types of GIS Data.

CO-02: They will develop the Capability of Mapping through Satellite Images.

CO-03: Acquaintance with different digital data products and software for the processing of satellite data.

CO-04: Enhancement of skills about processing, extracting features and functions on satellite images.

UNIT-I

1. Geo-Spatial Technology: Concept and Significance;
2. GIS: Components, Data Types- Spatial and Non-Spatial, Data Formats- Raster and Vector;
3. Satellite Images: Meaning, Types, Acquisition, Classification and Significance in Various Fields;
4. Digitization: Point, Line and Polygon; Vector Creation on Raster: Toposheet and Satellite Image;
5. Map Layout through GIS Software: QGIS (Open Source) or Arc-GIS Software etc.; Map Components; Key Map Creation of Study Area;
6. Attribute Data Integration with Vector Data; Diagrammatically Presentation of Attribute Data:
Dot map, Choropleth map, Isopleths map, Contour, Pie Diagram, Sphere Diagram, Bar graph and Line graph;

UNIT-II

1. Digital Classification of Satellite Data: Supervised and Unsupervised;
2. Application of Geospatial Techniques: in LULC, Urban, Agriculture, Water Bodies study, Networking, Disaster Management;
3. Area Calculation;
4. Buffer Analysis: Single and Multiple.
5. Overlay analysis;
6. DEM creation and Terrain Analysis.

Total Minimum (25 Exercises)

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Note:

1. The students have to prepare a comprehensive computer based practical file covering all the topics of entire syllabus.
2. The question paper would be set from the syllabus covering the full content. The question paper for the written examination (4 hours duration) shall be made by the two external examiners in assistance with the internal examiner (who generally would be the course teacher). The answer books would be evaluated by the external and internal examiner on the day of examination. The question paper in this course will be divided into two parts.

Part-I will consist of 5 short answer type questions carrying 2 marks each.

Part-II will consist of 8 Choice based descriptive (long answer type) questions/exercises from all units and carrying 10 marks each by selecting equal questions from each unit. Students will have to answer 4 questions/exercises by selecting 1 from each unit on mandatory basis.

Distribution of Marks: In Practical Paper, the marks would be divided as follows:

Sr.	Exam	Type	Marks and no. of questions	Marks	Marks	Total Marks
(1).	Written Examination	Part-I	2 Marks 5 questions	10	50	70
		Part-II	10 marks 4 questions	40		
	Viva-Voce				20	
(2).	Internal Assessment	File Record			25	30
		Attendance			5	
Total Marks =						100

Suggested Readings:

- Bhatta, B. (2021). *Remote Sensing and GIS*. New Delhi: Oxford University Press.
- Chang, Kang-tsung (2020). *Introduction to Geographic Information Systems*. New Delhi: Tata McGraw Hills Publishing Company Ltd.
- Chauhan, T.S. (2024). *Geospatial Technology fundamentals and applications*. New Delhi: Scientific Publishers.
- Chaunial, D.D. (2021). *Principles of Remote Sensing and Geographical Information System (Hindi)*. Allahabad: Sharda Pustak Bhawan.
- Emayavaramban, V. (2017). *Geospatial Technology fundamentals and applications*. New Delhi: New India Publishing Agency.
- Graser, Anita (2016). *Learning QGIS*. Birmingham: Packt Publishing Ltd.
- Heywood, Ian et. Al. (2002). *Geographical Information Systems*. Delhi: Pearson Education.
- Ian, allan (2024). *QGIS 3 For Beginners*. Kindle Edition, Amazon.
- Lillesand and R.W. Kiefer (2005). *Remote Sensing and Image Interpretation*. New York: John Wiley and Sons.
- Reddy, Anji, M. (2012). *Textbook of Remote Sensing and Geographical Information Systems*. Hyderabad: BSP B.S. Publications.
- Sharma, R.K.(2010). *Air Photos Interpretation, Remote Sensing and Geographical Information System*. Udaipur: Himanshu Publications.
- Siddiqui, M.A. (2011). *Introduction to Geographical Information Systems*. Allahabad: Sharda Pustak Bhawan.
- Simhachalam, A. (2021). *Application of Geo-Spatial Technologies in Natural Resource Management*. New Delhi: Akansha Publishing House.
- Sreekanth, P.D., Soam, S.K. and Srinivasa Rao (2020). *Practical Manual for GIS*. New Delhi: Bio-Green Books.

MA 4th Sem
DSE Paper (Optional)

DSE-04	i. Industrial Geography (Theory Paper) ii. Gender Geography (Theory Paper) iii. Crime Geography (Theory Paper) iv. Natural Resource Management (Theory Paper)	241/GEO/DS401 241/GEO/DS402 241/GEO/DS403 241/GEO/DS404
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M.A. Geography (Semester-IV) Syllabus (as per NEP 2020 w.e.f session 2024-25)

INDUSTRIAL GEOGRAPHY

Paper Code: **DSE-04 (i)** (Optional: Theory Paper)
Course Id: **241/GEO/DS401**

Credit: 03 (2+1+0) L+T+P Hrs/Week	Total Marks	75
Time: 3 Hours	End Semester Exam:	50 Marks
Note: The question Paper will have five units. Four units of question paper will contain two essay type questions (having 10 marks of each question) from each unit of the syllabus. Candidate(s) are required to attempt one question from each unit. The first unit having question no. 1 shall be compulsory and shall contain five short answer type questions (having 2 marks of each question) covering the entire syllabus. All questions carry equal marks.	Internal Assessment:	25 Marks
	Attendance	5
	Assignment	5
	Sessional Exam	15

Course Outcomes (COs):

CO-01: The students will gain a better understanding of the process of industrial localization and Industrial Development.

CO-02: They will be able to know the global and national scenario of specific industry development.

CO-03: They will develop skill to identify and assess the industrial regions in futuristic way.

CO-04: They will better study and evaluate the industrial policies and their impact on regional development.

UNIT-I

Industrial Geography: Definition, Nature, Scope and Relevance in Current Scenario. Classification of Industries, Factors of Industrial Location.

UNIT-II

Theories of Industrial Location: A. Weber, E. M. Hoover, August Losch and D. M. Smith;
Major Industrial Regions of World

UNIT-III

Industrial Regions of India: Major and Minor;
Major Industries of India: Iron and Steel, Cotton Textile, Petrochemical, Automobile, Meat and IT.

UNIT-IV

Impact of Globalization on Manufacturing Sector in Less Developed Countries; Tourism Industry: National and International; Industrial Corridor in India; Industrial impact on Environment and Society; Industrial Policy of India.

Suggested Readings:

- Alexanderson, C. (1967). *Geography of Manufacturing*. New Delhi: Prentice-Hall of India.
- Banerjee-Guha, S. (1997). *Spatial Dimensions of International Capital: Study of Multinational Corporations in India*. New Delhi: Orient Longman.
- Chaudhuri, M. R. (1976). *Indian Industries Development and Location*. Chicago: Oxford Book House.
- Hamilton, I. (1992). *Resources and Industry*. New York: Oxford University Press.
- Hamilton, F.E.I. & Lingo, G.J.R. (1979). *Spatial Analysis, Industry and Industrial Environment*. New Jersey: John Wiley.
- Hoover, E. M. (1948). *Location and Space Economy*, McGraw Hill, New York.
- Lloyd, P. E. and Dicken, P. (1972). *Location in Space-A Theoretical Approach to Economic Geography*. New York: Harper and Row.
- Losch, A. (1954). *The Economics of Location*. London: Yale University Press.
- Kulkarni, M.R. (2018). *Industrial Development*. New Delhi: National Book Trust.
- Lodha, R.M.(2021). *Audyogika Bhoogol* (Hindi). Jaipur: Rajasthan Hindi Granth Academy.
- Miller, E. (1962). *A Geography of Manufacturing*. New Jersey: Prentice-Hall.
- Misra. H.N. (2014). *Managing Natural Resources Focus on Land and Water*. New Delhi: Prentice Hall.
- Pacione, M. (1985). *Progress in Industrial Geography*. New York: Routledge.
- Riley, R. C. (1973). *Industrial Geography*. London: Chatto and Windus Ltd.
- Rostow, W.W. (1991). *The Stages of Economic Growth: A Non-Communist Manifesto*. London: Cambridge University Press.
- Smith, D. M. (1982). *Industrial Location - An Economic Geographic Analysis*. New Jersey: John Wiley and Sons.
- Seth, V.K (1987). *Industrialization in India - Spatial Perspective*. Delhi: Commonwealth Publications.
- Saxena, A. N, (1985). *Planning and Promotion of Production - The Indian Experience*, Vol.-I and II. New Delhi: National Productivity Council.
- Singh, M. B. (1990). *New Perspectives in Industrial Geography*. Varanasi: Lotus Publication.
- Watts, H. D. (1980). *Large Industrial Enterprise; Some Spatial Perspectives*. New York: Routledge.



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GENDER GEOGRAPHY

Paper Code: **DSE-04 (ii)** (Optional: Theory Paper)
Course Id: **241/GEO/DS402**

Credit: 03 (2+1+0) L+T+P Hrs/Week	Total Marks	75
Time: 3 Hours	End Semester Exam:	50 Marks
Note: The question Paper will have five units. Four units of question paper will contain two essay type questions (having 10 marks of each question) from each unit of the syllabus. Candidate(s) are required to attempt one question from each unit. The first unit having question no. 1 shall be compulsory and shall contain five short answer type questions (having 2 marks of each question) covering the entire syllabus. All questions carry equal marks.	Internal Assessment:	25 Marks
	Attendance	5
	Assignment	5
	Mid-Sem. Exam	15

Course Outcomes (COs):

CO-01: Understanding about growth and evolution of gender geography.

CO-02: Awareness about Demographic variables and spatial patterns of Female health and Literacy.

CO-03: Acquaintance with gender gaps and empowerment of women in spatial context.

CO-04: Enhancement of knowledge about gender sensitive issues and policies in India.

UNIT-I

Gender Geography: Growth and Evolution, Nature and Scope, Significance and Approaches, Connotation; Men-Women Relationship: Ancient to Modern Time; Emergence of Patriarchy; Post-Modern Feminist Movement.

UNIT-II

Demographic variables – Spatial Dynamics of Age and Sex-Ratio, Fertility, Fecundity; Mortality: Gender Gaps in Infant Mortality Rates; Maternal Mortality Rate; Female Infanticide and Feticide; Reproductive Health and Poverty; Female Literacy: Spatial Patterns in World and India.

UNIT-III

Gender Challenges: Gender Gap- Empowerment of Women and Education; Women Trafficking and Prostitution; Domestic Violence: Men against Women and Vice-Versa; Sexual Harassment and Discrimination of Women at Workplace; Heinous Crime against Women Scenario in World and India.

UNIT-IV

Regional imbalances- Women's Rights and Feminist Movements in India; Critical Evaluation of Case Studies of Gender Empowerment Projects in India: Regional / Cultural Variations, Rural-Urban, Caste-Tribe, Religious Groups; Initiatives, Planning and Policies in India.

Books Recommended :

- Banerjee, N. (1985). *Women Workers in the Unorganized Sector*. Hyderabad: Sangam Books.
- Boserup, E. (1989). *Women's Role in Economic Development*. London: Earthscan.
- Desai, N. and Krishnaraj (1987). *Women and Society in India*. New Delhi: Ajanta Publications.
- Harison, S. and Pratt, G. (1995). *Gender, Work and Space*. New York: Routledge.
- Hayford, A. (1974). *The Geography of Women: An Historical Introduction*. Antipode Vol.-6, 1-19.28.
- Lee, D. (1988). *Women in Geography-A Comprehensive Bibliography*. Florida: Boca Raton.
- Mcdowell Linda (1999). *Gender, Identity and Place*. London: Polity Press.
- Momsen Janet (2010). *Gender and Development*. New York: Routledge.
- Momsen, JH. and Townsend, J. (1987). *Geography of Gender in the Third World*. New York: Albany.
- Rege, Sharmila (2000). *Real Feminism' and Dalit Women*. EPW, Vol – XXXV No. 06, February 05, 2000.
- Rege, Sharmila (1998). *Dalit Women Talk Differently-A Critique of Difference and Towards a Dalit Feminist Standpoint Position*. Spl. Issue, EPW, Vol – XXXIII No. 44, October 31, 1998.
- Reagent, A.C.and Monk J.J. (1982). *Women and Spatial Change*. Dubuque(USA): Kendall & Hunt.
- Rege Sharmila (2006). *Writing Caste, Writing Gender: Reading Dalit Women's Testimonios*. New Delhi: Zubaan Books.
- Raju, J. et. al. (1999). *Atlas on Men and Women in India*. New Delhi: Kali for Women.
- Rege Sharmila, Devika J., Kannabiran Kalpana, John Mary E., Swaminathan Padmini and Sen Samita, (2013). *Intersections of Gender and Caste- Review of Women's Studies*. EPW Spl. Vol. XLVIII No. 18.
- Raju, Saraswati. and Bagchi, Dipika (1998). *Women and Work in South Asia: Regional Patterns and Perspectives*. New York: Routledge.
- Seager, J. and Olson (1986). *A.Women in the world – An International Atlas*. London: Pluto Press.
- Sivard, R.L (1985). *Women-A World Survey*. Washington: World Priorities.
- Sharmila Rege (2003). *More than Just Tacking Women on to the 'Macropicture: Review of Women's Studies*, EPW, Vol - XXXVIII No. 43.
- Skjelsback, I. and Smith, D. (2001). *Gender, Peace and Conflict*. London: Sage.
- Sowell, T. (1994). *Race and culture-A world View*. New York: Basic Books.
- Visvanathan, Nalini. et. al. (2011). *The Women, Gender and Development Reader*. London: Zed Books Ltd.
- Zelinsky, W., Monk, J. and Hanson, S. (1982). *Women and Geography: A Review and Prospectus*. Progress in Human Geography Journal, Vol.- 6, 357-66.



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CRIME GEOGRAPHY

Paper Code: **DSE-04 (iii)** (Optional: Theory Paper)
Course Id: **241/GEO/DS403**

Credit: 03 (2+1+0) L+T+P Hrs/Week	Total Marks	75
Time: 3 Hours	End Semester Exam:	50 Marks
Note: The question Paper will have five units. Four units of question paper will contain two essay type questions (having 10 marks of each question) from each unit of the syllabus. Candidate(s) are required to attempt one question from each unit. The first unit having question no. 1 shall be compulsory and shall contain five short answer type questions (having 2 marks of each question) covering the entire syllabus. All questions carry equal marks.	Internal Assessment:	25 Marks
	Attendance	5
	Assignment	5
	Sessional Exam	15

Course Outcomes (COs):

CO-01: They will able to understand the meaning, concept and Nature of crime Geography and Crime.

CO-01: They will able to identify the crime places with their Geographical knowledge.

CO-02: They will able to understand the Patterns, Targets and Areas of crime in India and World.

CO-03: They will able to describe the implementation of regulations and role of modern Geographical techniques (GIS) in crime control.

UNIT-I

Crime Geography: Meaning, Nature, Scope, Approaches, Concepts and Typologies of Crimes; Theological and Ideological Bases: Role of Value System, Ethics and Institutional in Crime; Nature of Crime; Place of Crime.

UNIT-II

Dynamics and Spatial Dimensions of Crime; Theories of Crime and Space: Anomie, Cultural Transmission, Crowding; Labeling and Conflict Theory.

UNIT-III

Crime Target and Criminal: Patterns of Crime in World and India; Target Group: Caste, Gender, Religion, Literacy and Poverty in Crime; Areas of Crime: Locales of Crime: Open, Built and Deserted Environment; Cyber Crime.

UNIT-IV

Crime and Regulations: Crime and Role of International Organizations; Crime, Justice and the State; Crime and Societal Regulations; Spatial Gaps in Regulation of Crimes; GIS and Crime Control.

Recommended Readings:

- Ahmad, A. (2002). *Social Geography*. Jaipur: Rawat Books Publishers.
- Banerjee, N. (1985). *Women Workers in the Unorganized Sector*. Hyderabad: Sangam Books.
- Bhushan, P.S. (1997). *Crime, Criminals and Society*. Delhi: Manisha Publications.
- Chainey, Spencer (2021). *Understanding Crime: Analyzing the Geography of Crime*. New York: Environmental Systems Research Institute Inc.
- David, J. Evans and David, T. (). *The Geography of Crime*. New York: Routledge
- Clinard Marshall B. and Abbott, D. J. (1973). *Crime in Developing Countries: A Comparative Perspective*. New Jersey: Wiley International.
- Dear, M.J. and Flusty, S. (2000). *The Spaces of Postmodernity*. Oxford: Blackwell Publishing.
- Humpheries, D. and Wallace, Don (1980). *Capital Accumulation and Urban Crime*. *Social Problems*, Vol. 28, No. 2, pp. 179-193.
- Herbert, D. (1982). *The Geography of Urban Crime*. London: Longman.
- Newman, O. (1973). *Defensible Space, Crime Prevention through Urban Design*. London: Architectural Press.
- Pain Rachel, Barke Michael, Fuller Duncan, et. al. (2001). *Introducing Social Geographies*. London: Arnold.
- Raju, J. et. al. (1999). *Atlas on Men and Women in India*. New Delhi: Kali for Women.
- Raju, Saraswati. and Bagchi, Dipika (1998). *Women and Work in South Asia: Regional Patterns and Perspectives*. New York: Routledge.
- Rege Sharmila (2006). *Writing Caste, Writing Gender: Reading Dalit Women's Testimonios*. New Delhi: Zubaan Books.
- Seager, J. and Olson (1986). *A. Women in the world – An International Atlas*. London: Pluto Press.
- Shaban Abdul (2010). *Mumbai Political Economy of Crime and Space*. Hyderabad: Orient Blackswan.
- Sharmila Rege (2003). *More than Just Tacking Women on to the 'Macropicture: Review of Women's Studies*, EPW, Vol - XXXVIII No. 43.
- Sivard, R.L (1985). *Women-A World Survey*. Washington: World Priorities.
- Sowell, T. (1994). *Race and culture-A world View*. New York: Basic Books.
- Vincent J. Del Casino (2009). *Social Geography- Critical Introduction to Geography*. New Jersey: Wiley Blackwell.



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NATURAL RESOURCE MANAGEMENT

Paper Code: **DSE-04 (iv)** (Optional: Theory Paper)
Course Id: **241/GEO/DS404**

Credit: 03 (2+1+0) L+T+P Hrs/Week	Total Marks	75
Time: 3 Hours	End Semester Exam:	50 Marks
Note: The question Paper will have five units. Four units of question paper will contain two essay type questions (having 10 marks of each question) from each unit of the syllabus. Candidate(s) are required to attempt one question from each unit. The first unit having question no. 1 shall be compulsory and shall contain five short answer type questions (having 2 marks of each question) covering the entire syllabus. All questions carry equal marks.	Internal Assessment:	25 Marks
	Attendance	5
	Assignment	5
	Mid-Sem. Exam	15

Course Outcomes:

CO-01: The students will familiar with concept of Natural Resources and their classification.

CO-02: They will study the resource models and their significance in the present time.

CO-03: They will be able to study and assess the distribution and utilization of natural resources.

CO-04: They will better understand the challenges and mitigation towards conservation and management of natural resources.

UNIT-I

Natural Resource: Meaning and Concept, Classification; Factors Affecting Distribution. Natural Resource Management: Concept, Scope and Significance. Ecology and Ecosystems: Moving Towards Sustainability.

UNIT-II

Models of Natural Resources: Zimmerman's Primitive and Advance Model of Natural Resource Process, Kirk's Decision Model and Brookfield System Model; Environmental Impact Assessment (EIA) and Auditing.

UNIT-III

Distribution and Utilization of Natural Resources: Soil Resource, Water Resource, Energy resource, Forest Resource, and Marine Resources. Future Prospects of Natural Resources: Environment, Energy and Technology.

UNIT-IV

Resource Conservation and Management Methods of Soil Resource, Mineral Resource, Water Resource, Forest Resource. Integrated Resource Management: Indian Case Studies- Plains, Mountains, Plateau, Costal and Deserts. Biodiversity: Conservation & Significance. Natural Resource Conservation Management: Programs and Policies.

Books Recommended:

- Barbier, Edward B. (2005). *Natural Resources and Economic Development*. Cambridge (UK): Cambridge University Press.
- Borton, I and R W Kates (1984). *Readings in Resource Management and Conservation*. Chicago: University of Chicago Press.
- Bruce, Mitchell (1989). *Geography and Resource Analysis*. New York: John Wiley and Son.
- Das Gupta, Biplab (1979). *The Environmental Debate*. Economic and Political Weekly, Vol. 13, No. 6/7, Annual Number (Feb., 1978).
- Francois Ramade (1984). *Ecology of Natural Resources*. New York: John Wiley and Son.
- Goel, B.K. (2022). *Resource Geography (Hindi)*. New Delhi: Laxmi Publications Pvt. Ltd.
- Guha, J L and P R Chattroj (1994). *Economic Geography- A Study of Resources*. Calcutta: The World Press Pvt. Ltd.
- Gurjar, R.K. and Jat, B.C. (2010). *Resource Geography*. Jaipur: Panchsheel Prakashan.
- Martino, R L (1969). *Resource Management*. London: Mc Graw Hill Book Co.
- Negi, B S (2000). *Geography of Resources*. Meerut: Kedar Nath and Ram Nath Publisher.
- Owen, Oliver, S. (1971). *Natural Resource Conservation: A Ecological Approach*. New Delhi: McMillion.
- Pati, R.N. and Mitra, M. (2024). *Natural Resource Management*. New Delhi: Abhijeet Publications
- Raja, M (1989). *Renewable Resources, Development*. New Delhi: Concept Publishing Co. Pvt. Ltd.
- Ramesh, A. (1984). *Resource Geography*. New Delhi: Heritage Publishers.
- Saikia, Debajit and Baaruah, Pradip Kumar (2023). *Natural Resource Management*. Dibrugarh: Mahaveer Publications.
- Zimmermann, E. W. (1951). *World Resources and Industries*. New Delhi: Harper and Brothers.