# INDIRA GANDHI NATIONAL TRIBAL UNIVERSITY, AMARKANTAK

## DEPARTMENT OF GEOGRAPHY

AMARKANTAK (M.P.)

विद्यया विन्दतेऽखिलम्

## COURSE STRUCTURE AND SYLLABUS FOR UG AND PG PROGRAMME

## (As per National Education Policy-2020)

# DEPARTMENT OF GEOGRAPHY
## Indira Gandhi National Tribal University, Amarkantak
## (Madhya Pradesh)
**(A Central University Established by an Act of Parliament of India)**

## Minutes of Board of Studies Meeting

The BOS meeting of the Department of Geography was held on 18 July 2025 at 2:00 P.M. through a blended mode in the office of the Head, Department of Geography and the following members were present in the meeting:

1. Prof. Richa Chaturvedi (Chairman)
2. Prof. Shrikamal Sharma (External Expert)
3. Prof. Byomakesh Tripathy (Member)
4. Prof. Tarun Kumar Thakur (Member)
5. Dr. Chandramauli (Member)
6. Dr. Janki Prasad (Member)

**Agenda of the meeting**

The BoS meeting of the Department of Geography was held on 18 July 2025 for the preparation of the syllabus of U.G., P.G., and Ph.D. coursework as per the guidelines of NEP 2020. The meeting was held in the department of Geography in blended mode. Prof. Shrikamal Sharma (external subject expert), formerly Professor & Head, Department of Geography & Director, Population Research Centre, Dr. Hari Singh Gour University, Sagar, connected through an online mode.

The Chairman of BoS welcomed the members of the Board of Studies and the external expert and laid out the agenda for the deliberation of the members. The following points were discussed in the meeting.

**Minutes of the Meeting**

1. Syllabus of U.G. and P.G. Programmes and the Ph.D. Coursework for the Department of Geography is prepared according to the National Education Policy 2020, guidelines of UGC, and objectives of the University.
2. Two types of Master's Degree Courses are offered in the department as per the guidelines of NEP 2020. The two-year Master's Degree will be completed in four Semesters, whereas the One-Year Master's Degree will be completed in two semesters.

3. The two-year Master's Degree course contains 80 credits (Semester-wise distribution of credits: I-24, II-16, III-20 & IV-20) and the One-Year Master's Degree course contains 40 credits (I-20 & II-20).
4. The Fourth Semester of a Two-year Master's degree course is devoted to a field-based dissertation of 20 credits, whereas the second semester of the One-Year Master's Degree is devoted to a field-based dissertation of 20 credits.
5. The two-year Master's degree will be completed with 2000 marks, and the One-Year Master's Degree will be completed with 1000 marks accordingly.
6. Each Theory Paper will be evaluated as internals (40%) and semester-end examination (60%), whereas the practical papers will be evaluated with a 100% in the semester-end exam, including viva-voce examination.
7. Three types of undergraduate degree courses are designed as per NEP 2020, namely undergraduate (3 years/ 6 semesters), undergraduate (honours) 4 years/ 8 semesters, and undergraduate (honours) with research degree 4 years/ 8 semesters.
8. A three-year UG Programme with 6 semesters has 120 credits, whereas the undergraduate (honours) 4 years/ 8 semesters and the undergraduate (honours) with research degree 4 years/ 8 semesters have 160 credits. Each semester of the UG programme uniformly has 20 credits.
9. Undergraduate (honours) with research degree contains a component of research of 12 credits in the 8th semester.
10. As per the NEP 2020, an Undergraduate syllabus contains value-added courses, courses related to the Indian knowledge system, skill enhancement courses, ability enhancement courses, and multidisciplinary courses, along with the major core and practical courses. The internship/community engagement component is also a specific aspect of all three types of the U.G. programmes.
11. The evaluation pattern is similar to the P.G. programme, such as theory papers will be evaluated as internals (40%) and semester-end examination (60%), whereas the practical papers will be evaluated 100% in the semester-end examination, including viva-voce examination.
12. Ph.D. Coursework will be for one semester of six months with 16 credits.
13. Ph.D. Coursework contains three types of papers: Compulsory, Major Elective and Minor Elective. Each Major Elective paper has 4 credits, and Minor Elective paper has 2 credits each, whereas Research Methodology and Computer Application papers are

compulsory in nature and have 4 credits each, and the Research and Publication Ethics paper will be for 2 credits.

14. All papers of Ph.D. coursework will be evaluated as internals (40%) and 60% semester-end examination.
15. Syllabus prepared according to National Education Policy 2022 will be deemed an effective Programme from the academic session 2024-25 and will be applicable to the batch admitted to U.G. and P.G.
16. In addition, consent has been made that any future change suggested by UGC/University will be incorporated into the structure, and can be approved by the internal members of the Board of Studies.
17. The allotted paper codes in this syllabus may change as per the university policy to maintain the uniformity of the syllabi.
18. As per the National Education Policy (NEP), the Structure and Syllabus of U.G. and P.G. programs and Ph.D. Coursework were discussed and approved after the corrections suggested by the expert and the rest of the BoS members.

The Chairman thanked all the members of BoS for their suggestions and substantial inputs provided in the meeting.

Prof. Shrikamal Sharma
( External Subject Expert)

Prof. Byomakesh Tripathy
(Member)

Prof. Tarun Kumar Thakur
(Member)

Dr. Chandramauli
(Member)

18/7/2025
Dr. Janki Prasad
(Member)

18/07/2025
Prof. Richa Chaturvedi
(Chairman)

Head
Department of Geography
Indira Gandhi National Tribal University
Amarkantak (M.P.)

# COURSE STRUCTURE AND SYLLABUS

## DEPARTMENT OF GEOGRAPHY

## Indira Gandhi National Tribal University Amarkantak (MP)

**Course Structure for the One-Year P.G. Programme (NEP-2020)**

**SEMESTER- I**

| Paper Code | Papers | Credits | Internal Assessment | End. Sem. Exam. | Total |
|---|---|---|---|---|---|
| MGOGMT-101 | Geomorphology | 4 | 40 | 60 | 100 |
| MGOGMT-102 | Regional Development and Planning | 4 | 40 | 60 | 100 |
| MGOGMT-103 | Geography of Indian Tribes | 4 | 40 | 60 | 100 |
| MGOGMT-104 | Remote Sensing and GIS | 4 | 40 | 60 | 100 |
| MGOGMP-105 | Cartographic Techniques | 4 | - | - | 100 |
| | **Total Credits** | **20** | | | **500** |

**SEMESTER- II**

| Paper Code | Dissertation | Credits | Internal Assessment | End. Sem. Exam. | Total |
|---|---|---|---|---|---|
| **MGOGD-201 (A)** | Lab Work/Field Work/Field Survey/Industrial Visit/Institutional Visit/Data Collection/Internship etc. | **4** | - | - | 100 |
| **(B)** | Pre-Submission Presentation (After Completion of Writing Work) | **4** | - | - | 100 |
| **(C)** | Report Writing/Write-up/Dissertation Report (After the Incorporating the Changes Suggested in Pre-Submission Presentation) | **8** | - | - | 200 |
| **(D)** | Viva- voce examination | **4** | - | - | 100 |
| | **Total Credits** | **20** | | | **500** |

(Shrikamal Sharma)

18/07/2025

**M.A./M.Sc.**
**Semester- I**

| Paper Code | Paper Name | Credit: 04 |
|---|---|---|
| MGOGMT-101 | Geomorphology | Contact Hours: 60 |

**Objectives**

1. To introduce the basic concepts, principles, and theories of geomorphology.
2. To familiarise students with geomorphic processes and systems
3. To understand the applied aspects of geomorphology.

**Learning Outcomes**

1. Students will be able to know the basic concepts, principles, and theories of geomorphology.
2. Students will be acquainted with various landforms along with their geomorphic processes
3. Students will be able to understand the applied aspects of geomorphology.

**Unit I**

Nature and Scope of Geomorphology; Principles and Fundamental Concepts in Geomorphology; Geomorphic Processes and Systems.

**Unit II**

Weathering and Erosion: Agents and Classification; Mass Movement and Land Sliding; Soil Forming Processes. Drainage Patterns and Morphometric Analysis.

**Unit III**

Concepts of Base Level Change, Grade, Rejuvenation, Headward Erosion and River Capturing; Cycle of Erosion: WM Davis, W Penck, and LC King; Interruption in the Cycle of Erosion; Multi-cyclic and Poly-genetic Landforms.

**Unit IV**

Theories of Slope Evolution: WM Davis, W Penck, and Wood; Landforms associated with Fluvial, Arid, Glacial, and Coastal.

**Unit V**

Applied Geomorphology: Hydrology, Mineral Exploration, Engineering Works, Hazard Management; Techniques of Applied Geomorphology.

***Suggested Readings***


1. Bloom A.L. (2012): Geomorphology, A Systematic Analysis of Late Cenozoic Landforms.
2. Chorley, R.J. (1972): Spatial Analysis in Geomorphology. Methuen, London.
3. Dayal, P. (2019): A Textbook of Geomorphology, Rajesh Publications.
4. Dury, G.H. (1959): The Face of the Earth. Penguin Harmondsworth.
5. Fairbridge, R.W. (1968): Encyclopedia of Geomorphology. Reinholdts, New York.
6. Garner, H.F. (1974): The Origin of Landscape: A Synthesis of Geomorphology. Oxford University Press, London.
7. Goudie, A. (1993): The Nature of the Environment. Oxford and Blackwell, London.
8. Gupta S. L. (2008): *Bhooakriti Vigyan: Bhoo-bhuatiki Tatha Bhoo-aakritiyan,* Hindi Madhyam Karyanvayan Nideshalay, Delhi University.
9. Kale, V.S. and Gupta, A. (2018). Introduction to Geomorphology, The Orient BlackSwan.
10. Mitchell, C.W. (1973): Terrain Evaluation. Longman, London.
11. Ollier, C.D. (1979): Weathering. Longman, London.
12. Patwardhan, A. M. (2012): The Dynamic Earth System, PHI, India.
13. Pitty, A.F. (1971): Introduction to Geomorphology. Methuen, London.
14. Sharma, H.S. (ed.) (1980): Perspectives in Geomorphology. Concept Publication, New Delhi, 1980.
15. Singh, Savindra (2017): Physical Geography. Pravalika Publicaton, Prayagraj.
16. Singh, Savindra (2021): Cryogeography. Pravalika Publicaton, Prayagraj.
17. Singh, Savindra. (2014): Geomorphology. Pravalika Publicaton, Prayagraj.
18. Skinner, B.J. and Porter, S.C. (1995): The Dynamic Earth. John Wiley, New York.
19. Sparks, B.W. (1960): Geomorphology. Longman, London.
20. Stoddart, D.R. (ed.) (1996): Process and Form in Geomorphology. Routledge, New York.
21. Thornbury, W.D. (1960): Principles of Geomorphology. John Wiley, New York.
22. Tinkler, K.J. (1989): History of Geomorphology: From Hutton to Hack (Reprint 2014), Springer.

# M.A./M.Sc.
## Semester- I

**Paper Code**
**MGOGMT-102**

**Paper Name**
**Regional Development and Planning**

**Credit: 04**
**Contact Hours: 60**

**Objectives**

1. The aim is to understand and evaluate the concept of region in geography and its role and relevance in regional planning.
2. To identify the issues relating to the region's development through the spatial organization of various attributes and their interrelationship.
3. It also means helping students identify the causes of regional disparities in development, perspectives and policy imperatives.

**Learning Outcome**

1. The students will learn about the basic principles of regional planning.
2. The students will study the regional planning process's different theoretical backgrounds and structures.
3. Students will be able to examine the different programs and policies in force for the overall development of rural society in India.

**Unit I**

Meaning and Concepts of Regional Development; Objectives of Regional Development; Meaning and Approaches of Regional Planning; Methods and Techniques of Regional Planning.

**Unit II**

Models of Regional Development: W.W. Rostov, Myrdal, Francois Perroux, Hurshman and Friedman.

**Unit III**

Strategies of Regional Planning: Centralized, Decentralized, Micro Regional Planning and Multilevel Planning.

**Unit IV**

Regional Planning Approach: Top-down and Bottom-up Approaches; Integrated Area Development; Role of Panchayati Raj Institutions in Regional Planning of India; Problems and Prospects of Regional Planning in India.

**Unit V**

Special Area Plans: Tribal Area Development, Drought Prone Area and Coastal, Regional Planning in India (DVC).

**Suggested Readings**


1. Chandana R.C. (2015): Regional Planning and Development. Kalyani Publishers, New Delhi.
2. Chandna, R.C. (2000): Regional Planning: A Comprehensive Text. Kalyani Publishers, New Delhi.
3. Chaudhuri, J.R. (2001): An Introduction to Development and Regional Planning with special reference to India. Orient Longman, Hyderabad.
4. Friedmann, J. & Alonso, W.(ed.) (1973): Regional Development and Planning. The MIT Press, Mass.
5. Isard, W. (1960): Methods of Regional Analysis. MIT Press, Cambridge.
6. Kuklinski, A. R. (1972): Growth Poles and Growth Centres in Regional Planning. Mouton and Co., Paris.
7. Kuklinski, A.R. (ed.) (1975): Regional Development and Planning: International Perspective. Springer.
8. Leys, C. (1996): The Rise and Fall of Development Theory. India University Press, Bloomington and James Curry, Oxford.
9. Misra, R.P. & Natraj, V.K. (1978): Regional Planning and National Development. Vikas Publishers, N. Delhi.
10. Misra, R.P. (ed.) (1992): Regional Planning: Concept, Techniques, Policies and Case Studies (2nd edition). Concept Publishing Company, New Delhi.
11. Misra, R.P., Sundaram, K.V. Prakash Rao, V.L.S. (1976): Regional Development Planning in India. Vikas Publishers, New Delhi.
12. Moseley, M.J. (1974): Growth Centres in Spatial Planning. Pergamon Press, Oxford.
13. Pathak, C.R. (2003): Spatial and Processes of Development in India. Regional Science Association, Kolkata.
14. Sanyal, B. M. (2001): Decentralized Planning: Themes and Issues. Concept Publishing Company, New Delhi.

**M.A./M.Sc.**

**Semester- I**

| Paper Code | Paper Name | Credit: 04 |
|---|---|---|
| MGOGMT-103 | Geography of Indian Tribes | Contact Hours: 60 |

**Objectives**

1. To familiarize students with the concept of tribes, tribal population and their habitats in India.
2. To become acquainted with the spatial, social, and cultural process of development and change among the tribes in the country.
3. To know the issues and problems of tribes and the constitutional provisions and laws for them.

**Learning Outcomes**

1. Students will be able to understand the spatial, social, and cultural dimensions of the tribal population in India.
2. Students will be able to know the changing scenario of tribal life in terms of social, cultural, and political aspects.
3. Students will be able to understand tribal issues, problems, and concerns and the way forward for tribal development in light of legal provisions, policies, and programs.

**Unit I**

Concept of Tribes; Scheduling and De-scheduling of Tribes in India; Habitual Environment; Spatial Distribution of Tribal Population; Theories and Processes: Isolation (V. Elwin), Assimilation (G.S. Ghurye) and Integration (J.L. Nehru).

**Unit II**

Evolution of Tribal Regions and Ethnic Identities; Core and Periphery formation of Tribal Region; State Formation in Tribal Region-Case study; Continuity and Change of Tribes in India; Processes and Challenges of Modernization and Integration of Tribes in India.

**Unit III**

Environment and Development Paradigm Shift; Tribal Development with reference to Inclusive Growth; Land Acquisition and Displacement in Tribal Inhabited Areas; Government Policy towards Tribal Development.

**Unit IV**

Scheduled Areas and Tribal Areas: Fifth Schedule, Sixth Schedule and Autonomous District Councils; Panchayats (Extension to the Scheduled Areas) Act, 1996; Tribal Forest Rights and Conflicts of Forest Rights.

**Unit V**

Society and Culture of Major Tribes of India: Gond, Santhal, Bhil, Naga, Khasi, and Toda.

***Suggested Readings***


1. Ahmad, A. (1999): Social Geography, Rawat Publication, Jaipur.
2. Ashok Lata: Formation of Tribal Region, Unpublished Ph. D Thesis, JNU, New Delhi.
3. Ghurye, G.S. (1963): The Scheduled Tribes, Popular Prakashan, Bombay.
4. Government of India (1959): Adivasi, Publication Division, New Delhi.
5. Government of M.P. (1964): The Tribes of Madhya Pradesh, Bhopal.
6. Government of India (1973): The Tribal People of India, Publication Division, New Delhi.
7. Hasnain, N. (2022): Tribal India (revised, expanded and updated edition), Palaka Prakashan, Delhi.
8. Lathan, R.G. (1959): Ethnography of India, London: Macmillan.
9. Majumdar, D.N. (1950): The Affairs and Tribes- A Study in Tribal Dynamics, University Publishers, Lucknow.
10. Raza, M. and Ahmad, A. (1990): An Atlas of Tribal India, Concept Publishing Company, New Delhi.
11. Narayan, S. (2002): The Dynamics and Tribal Development Issues and Challenges, Gyan Publishing House.

12. Pande, G.C. (1991): Indian Tribal, Habitat, Society, Economy and Change, Anmol Publications.
13. Planning Commission of India, National Sub Plan for Tribal and Backward Area Development, Government of India Publication.
14. Sharma, B.D. (1978): A New Approach for the Development of Tribal Areas and Tribal Communities, Fifth Plan.
15. Singh, K. S. (1985): Tribal Society in India- An Anthropo-historical Perspective, Manohar Publications, New Delhi.
16. Singh, K. S., ed. (1993): Tribal Ethnography, Customary Law, and Change, New Delhi: Concept Publishing Company.
17. Singh, K. S., ed. (1998): Antiquity to Modernity in Tribal India- Tribal Movements in India, Inter-India Publications, New Delhi.
18. Singh, K. S., ed. (2002): The Tribal Situation in India, Indian Institute of Advanced Study, Shimla.
19. Rao, V.S. ed. (2021): Tribal Integration in India- Northeast and Beyond, Indian Books and Periodicals, New Delhi.
20. Singh, N.K. and Chaudhari, S.K. (2017): Tribal Life in Northeast India-Ethno-cultural Practices and Reproductive Health Issues, Indian Books and Periodicals, New Delhi.
21. Mondal, H.K., Mukherjee, S. and Datta, A. (2002): India- An Illustrated Atlas of Tribal World, Anthropological Survey of India, Kolkata.

**M.A./M.Sc.**

**Semester- I**

| Paper Code | Paper Name | Credit: 04 |
|---|---|---|
| MGOGMT- 104 | Remote Sensing and GIS | Contact Hours: 60 |

**Objectives**

1. To understand the basic knowledge of aerial and satellite remote sensing systems, GIS, GPS, and its process.
2. To understand the basics of EMR, digital image processing, and elements of image interpretation.
3. To acquire knowledge of the GIS data structure and modern trends in GIS.

**Learning Outcomes**

1. Students will be able to understand the basic knowledge of aerial and satellite remote sensing systems, GIS, GPS and its process.
2. Students will be able to understand the basics of EMR, digital image processing and elements of image interpretation.
3. Students will be able to acquire knowledge of the GIS data structure and modern trends in GIS.

## Unit I

Remote Sensing: Meaning and Definition; Process of Remote Sensing; Electro-Magnetic Radiation (EMR) and Spectrum; Types of Remote Sensing.

## Unit II

Aerial Photographs: Types, and Scale; Geometric Properties of Aerial Photos; Sensors Resolution: Spatial, Radiometric, Spectral and Temporal.

## Unit III

Elements of Image Interpretation; Digital Image Processing (DIP): Pre-processing, Classification and Image Enhancement.

## Unit IV

Geographical Information System: Meaning and Definition; Components of GIS; Processes of GIS; GIS Data Structure: Raster and Vector; Database Management Systems: Types

## Unit V

Global Positioning System (GPS): Concept, Segments and Application; Modern Trend of GIS: Web GIS and Mobile GIS; Application of GIS.

***Suggested Readings***


1. Aronoff S. (1989): Geographic Information Systems: A Management Perspective. DDL Publication Ottawa.
2. Burrough P.A. (1986): Principles of Geographic Information Systems for Land Resource Assessment. Oxford University Press, New York.
3. Campbell, J. B. (2002): Introduction to Remote Sensing (5th edition). Taylor and Francis, London.
4. Cracknell, A., and Hayes, L. (1990): Remote Sensing Year Book. Taylor and Francis, London.
5. Curran, P.J. (1985): Principles of Remote Sensing. Longman, London.
6. Floyd, F. and Sabins. (1986): Remote Sensing- Principles and Interpretation. W.H. Freeman, New York.
7. Fraser Taylor D.R. (1991): Geographic Information Systems. Pergamon Press, Oxford.
8. Hallert, B. (1960): Photogrammetry. McGraw-Hill Book Company, Inc., New York.
9. Hord, R.M. (1982): Digital Image Processing of Remotely Sensed Data. Academic Press, New York.
10. Lillesand, T.M. and Kiefer, R.W. (2000): Remote Sensing and Image Interpretation (4th edition). John Wiley and Sons, New York.
11. Lo, C.P. & Yeung, Albert K.W. (2007): Concept &Techniques of Geographic Information Systems. Pearson Prentice Hall.
12. Maguire D.J., M.F. Goodchild, and D. W. Rhind (eds.) (1991): Geographic Information Systems-Principles and Application. Taylor and Francis, Washington.
13. Nag, P. (ed.) (1992): Thematic Cartography and Remote Sensing. Concept Publishing. Company, New Delhi.

**M.A./M.Sc.**

**Semester- I**

| Paper Code | Paper Name | Credit: 04 |
|---|---|---|
| MGOGMP- 105 | Cartographic Techniques | Contact Hours: 60 |

**Objectives**

1. To understand the meaning, definition, scope and historical development of cartography.
2. To understand the basics of several types of thematic maps and methods of quantitative data display.
3. To understand the relation between Digital Cartography, Remote Sensing & GIS.

**Learning Outcomes**

1. Students will be able to comprehend the meaning, definition, scope and historical development of cartography.
2. Students will be able to acquire knowledge to prepare maps from geographical data and the ability to interpret them.
3. Students will be able to understand the relation between Digital Cartography, Remote Sensing & GIS.

**Unit I**

Meaning, Definition and Scope of Cartography; Historical Development of Cartography.

**Unit II**

Source of Cartographic Data; Maps: Classification and Types; Principles of Map Design.

**Unit III**

Representation of Data: Symbols, Dots, Choropleth, and Traffic Flow Diagrams; Interpretation of Thematic Maps.

**Unit IV**

Graphical Data Analysis: Frequency Distribution, Cumulative Frequency Distribution, Frequency Polygon and Frequency Curve.

**Unit V**

Digital Cartography: Elements of Digital Cartography; Relation between Cartography, Remote Sensing & GIS; Conventional Mapping Vs Digital Mapping; Application of Remote Sensing & GIS: Land Use Land Cover; Urban Sprawl Mapping.

***Suggesting Readings***


1. Cuff J. D. and Mattson M. T. (1982): Thematic Maps: Their Design and Production. Methuen Young Books.
2. Dent B. D., Torguson J. S., and Holder T. W. (2008): Cartography: Thematic Map Design (6th Edition). Mcgraw-Hill Higher Education.
3. Gupta K. K. and Tyagi V. C. (1992): Working with Maps. Survey of India, DST, New Delhi.
4. Kraak M. J. and Ormeling F. (2003): Cartography: Visualization of Geo-Spatial Data. Prentice-Hall.
5. Mishra R. P. and Ramesh A. (1989): Fundamentals of Cartography. Concept, New Delhi.
6. Sharma J. P. (2010): *Prayogic Bhugol*. Rastogi Publishers, Meerut.
7. Singh R. L. and Singh R. P. B. (1999): Elements of Practical Geography. Kalyani Publishers.
8. Slocum T. A., McMaster R. B., and Kessler F. C. (2008): Thematic Cartography and Geovisualization (3rd Edition). Prentice Hall.
9. Tyner J. A. (2010): Principles of Map Design. The Guilford Press.
10. Sarkar, A. (2015): Practical Geography: A Systematic Approach. Orient Black Swan Private Ltd., New Delhi.
11. Singh, L R and Singh, R. (1977): *Manchitra aur Pryaogatamek Bhugol*. Central Book Depot, Prayagraj.
12. Singh R. L. and Dutta P. K. (2012): *Prayogatama Bhugol*. Central Book Depot, Prayagraj.

| Paper Code<br>MGOGD -201 | M.A./M.Sc.<br>Semester- II<br>Paper Name<br>**Dissertation** | Credit: 20<br>Contact Hours: 60 |
|---|---|---|

**Objectives**

1. To enable students to conduct in depth research on a specific geographical topic research, demonstrating their ability to apply to geographical theories and methodologies.
2. To acquaint the students with tools of Geography and its practical applicability.

**Learning Outcomes**

1. Students will be able to conduct in depth research on a specific geographical topic research, demonstrating their ability to apply to geographical theories and methodologies.
2. Students will be able to acquaint the students with tools of Geography and its practical applicability.

All students will be assigned field-based dissertation work on different themes/areas. They will complete his/her dissertation under the supervision of allotted supervisors. Their dissertation will be submitted to the Department and appear in the viva-voce examination for the award of a master's degree in Geography.

Dissertation has four components as follows:

| Paper Code | Dissertation | Marks |
|---|---|---|
| MGOGD-201<br>(A) | Lab Work/Field Work/Field Survey/Industrial Visit/Institutional Visit/Data Collection/Internship, etc. | 100 |
| (B) | Pre-Submission Presentation (After Completion of Writing Work) | 100 |
| (C) | Report Writing/Write-up/Dissertation Report (After Incorporating the Changes Suggested in Pre-Submission Presentation) | 200 |
| (D) | Viva-voce Examination | 100 |
| **Total** | | **500** |

# DEPARTMENT OF GEOGRAPHY
## Indira Gandhi National Tribal University, Amarkantak, M.P.

**Course Structure for the Two-Year P.G. Programme (NEP-2020)**

**SEMESTER- I**

| Paper Code | Papers | Credits | Exam Pattern | | |
|---|---|---|---|---|---|
| | | | Internal Assessment | End Sem. Exam. | Total |
| MGOGMT-101 | Research Methodology | 4 | 40 | 60 | 100 |
| MGOGMT-102 | Emerging Geographical Thoughts | 4 | 40 | 60 | 100 |
| MGOGMT-103 | Hydrology and Oceanography | 4 | 40 | 60 | 100 |
| MGOGMT-104 | Climatology | 4 | 40 | 60 | 100 |
| MGOGMP-105 | Quantitative Methods and Techniques | 4 | - | - | 100 |
| MGOGMP-106 | Field Study Tour | 4 | - | - | 100 |
| | **Total Credits** | **24** | | | **600** |

**SEMESTER- II**

| Paper Code | Paper Name | Credits | Exam Pattern | | |
|---|---|---|---|---|---|
| MGOGMT-201 | Advanced Geography of India | 4 | 40 | 60 | 100 |
| MGOGMT-202 | Population Geography | 4 | 40 | 60 | 100 |
| MGOGMT-203 | Urban Geography | 4 | 40 | 60 | 100 |
| MGOGMP-204 | Instrumental Field Survey | 4 | - | - | 100 |
| | **Total Credits** | **16** | | | **400** |

**SEMESTER- III**

| Paper Code | Paper Name | Credits | Exam Pattern | | |
|---|---|---|---|---|---|
| MGOGMT-301 | Geomorphology | 4 | 40 | 60 | 100 |
| MGOGMT-302 | Regional Development and Planning | 4 | 40 | 60 | 100 |
| MGOGMT-303 | Geography of Indian Tribes | 4 | 40 | 60 | 100 |
| MGOGMT-304 | Remote Sensing and GIS | 4 | 40 | 60 | 100 |
| MGOGMP-305 | Cartographic Techniques | 4 | - | - | 100 |
| | **Total Credits** | **20** | | | **500** |

**SEMESTER- IV**

| Paper Code | Dissertation | Credits | Exam Pattern | | |
|---|---|---|---|---|---|
| **MGOGD-401** (A) | Lab Work/Field Work/Field Survey/Industrial Visit/Institutional Visit/Data Collection/Internship etc. | 4 | - | - | 100 |
| (B) | Pre-Submission Presentation (After Completion of Writing Work) | 4 | - | - | 100 |
| (C) | Report Writing/Write-up/Dissertation Report (After the Incorporating the Changes Suggested in Pre-Submission Presentation) | 8 | - | - | 200 |
| (D) | Viva- voce | 4 | - | - | 100 |
| | **Total Credits** | **20** | | | **500** |

18/07/2025

**M.A./M.Sc.**
**Semester- I**

**Paper Code**
**MGOGMT-101**

**Paper Name**
**Research Methodology**

**Credit: 04**
**Contact Hours: 60**

**Objectives**

1. To familiarize students with the Identification and selection of research problems in Geography.
2. To acquaint students with different research methods and techniques applicable in Geography.
3. To enable students to understand the data collection tools, procedures, and data processing and analysis. Students further familiarize themselves with the report writing.

**Learning Outcomes**

1. Students will be able to understand geography's research problems and their selection.
2. Students will be able to understand about the tools of data collection and their procedures for different research themes in Geography.
3. Students will be able to learn different methods and techniques of data processing and analysis applicable in the discipline. They are also able to write the research report.

**Unit I**

Meaning and Characteristics of Research; Steps in Research Process; Selection of the Research Problem; Identification of Objectives and Formulation of Research Questions/Hypotheses; Literature Review.

**Unit II**

Methods of Research: Basic, Applied, and Action Research; Approaches of Research: Qualitative, Quantitative, Inductive, and Deductive; Drafting a Research Proposal.

**Unit III**

Research Design: Variables and their Selection; Tools of Primary Data Collection: Questionnaire and Schedule (Characteristics, Qualities and Preparation).

**Unit IV**

Meaning of Population and Sample; Determination of Sample Size; Sampling Techniques: Probability and Non-Probability; Measurement Scales of Data, Data Processing: Editing, Coding, Organization and Classification; Analysis of Data and their Representation.

**Unit V**

Report Writing: Preliminary Section, Content Section, Chapters, Supplementary Section (Appendices, References, Abstract), Format and Style of Referencing.

***Suggested Readings***


1. Agrawal, Y. P. (1988): Better Sampling: Concepts, Techniques and Evaluation. SterlingPublishers Private Ltd. New Delhi.
2. Broota, K. D. (1992): Experimental Design in Behavioral Research (2nd ed.). Wiley EasternLimited, New Delhi.
3. David de Vaus. (2014): Survey in Social Research (Sixth Edition). Routledge Publication.
4. Edwards, A. L. (1957): Techniques of Attitude Scale construction. Appleton-Country, New York.
5. Garrett, H. E. and Woodworth, R. S. (1969): Statistics in Psychology and Education. Vakils,Feeffer and Simons Pvt. Ltd. Bombay.
6. Goode, W. J. and Hatt, Paul K. (1952): Methods in Social Research. McGraw-Hill, New York.
7. Gopal, M. H. (1964): An Introduction to Research Procedure in Social Sciences. Bombay AsiaPublishing House.
8. John. W. (1993): Research in Education (6th ed.) Prentice-Hall of India Pvt. Ltd, New Delhi.
9. Kumar, Ranjit. (2011): Research Methodology: A Step-by-Step Guide for Beginners. LosAngeles: SAGE.
10. Payne, Geoff and Payne, Judy. (2005): Key Concepts in Social Research. Sage Publications,London.
11. Rawntree, D. (2018): Statistics without Tears, Penguin Books.
12. Sahu, P. K. (2013): Research methodology: A Guide for Researchers in Agricultural Science,Social Science and other Related Fields (Vol. 432). Nadia: Springer.
13. Sansanwal, D.N. (2020): Research Methodology and Applied Statistics, Shipra Publications.

**M.A./M.Sc.**
**Semester-I**

| Paper Code | Paper Name | |
|---|---|---|
| **MGOGMT-102** | **Emerging Geographical Thoughts** | **Credit: 04**<br>**Contact hours: 60** |

**Objectives**

1. To familiarize students with emerging geographical concepts, ideas, approaches, and philosophy.
2. To acquaint students with the locational analysis, models, and systems in geography.
3. To enable students to learn about contemporary trends and advancements in geography.

**Learning Outcomes**

1. Students will be able to understand and apply geography's recent theoretical and philosophical aspects.
2. Students will be able to learn systematically about the growth, development, philosophical influences, and relevance of geography from the 1950s to the present.
3. Students will be able to describe the theoretical and philosophical traditions and methodological standpoints of leading geographers.

**Unit I**

Nature and Scope of Geography, Aims and Approaches of Geography; Modern Schools of Geographical Thought.

**Unit II**

Concept of Chorology; Concepts of Space and Place; Concept and Classification of Regions; Geography as a Science of Morphology of Landscape.

**Unit III**

Modern Trends: Philosophy of Positivism, Quantitative Revolution, Locational Analysis, Models and System Analysis.

**Unit IV**

Contemporary Geographical Approaches: Behavioural, Radical, Marxist, Humanist, Structural, and Post-modernism.

**Unit V**

Cultural Turn in Geography; Concept of Development and Sustainable Development; Changing Paradigms in Geography; Contemporary Trends in Indian Geography.

***Suggested Readings***


1. Adhikari, S. (2015): Fundamentals of Geographical Thoughts, Orient BlackSwan, New Delhi.
2. Amedeo, D. (1971): An Introduction to Scientific Reasoning in Geography, John Wiley, USA.
3. Barnes, T. and Gregory, D. (eds.) (1997): Readings in Human Geography- The Poetics and Politics of Inquiry, Arnold, London.
4. Bunkse, E. V. (2004): Geography and the Art of Life, Johns Hopkins University Press, Baltimore.
5. Buttimer, A. (1971): Society and Milieu in the French Geographic Tradition, Rand McNally, Chicago.
6. Dear, M. J. and Flusty, S. (2002): The Spaces of Postmodernity- Reading in Human Geography, Blackwell Publishers, Oxford.
7. Dikshit, R. D. (2017): Geographical Thought- A Contextual History of Ideas, Prentice-Hall of India, Delhi.
8. Dikshit, R.D. (ed.) (1959): The Art and Science of Geography, Rand Me Nally & Co.
9. Doel, M. (1999): Poststructuralist Geographies- The Diabolical Art of Spatial Science, Edinburgh University Press, Edinburgh.
10. Hartshorne, R. (1959): Perspectives on Nature of Geography, Rand Me Nally & Co.
11. Harvey, D. (1969): Explanation in Geography, Arnold, London.
12. Harvey, H. E. and Holly, P.B. (2002): Themes in Geographic Thought, Rawat Publications, Jaipur and New Delhi.
13. Holt-Jenson, A. (1980): Geography- Its History and Concepts, Harper and Row, London.
14. Hubbard, P., Kitchin, R., Bartley, B. and Fuller, D. (2002): Thinking Geographically- Space, Theory and Contemporary Human Geography, Continuum, London.
15. Husain, M. (1984): Evolution of Geographic Thought, Rawat Publication, Jaipur.

16. Johnston, R.J. (1983): Philosophy and Human Geography, Edward Arnold, London.
17. Johnston, R.J. (2003): The Future of Geography, Methuen and Company Ltd., New York.
18. Johnston, R.J. and Sidaway, J.D. (2004): Geography and Geographers (6th edition), Edward Arnold, London.
19. Kaushik, S.D. (2003): Geographical Thought and Methodology (in Hindi), Rastogi Publication, Meerut.
20. Livingstone, D.N. (1998): Modern Geographical Thought, Blackwell Publishers.
21. Martin, G.J. (2005): All Possible Worlds, Oxford University Press, London.
22. Minshull, R. (1970): The Changing Nature of Geography, Hutchinson University Library, London.
23. Peet, R. (2011): Modern Geographical Thoughts, Rawat Publications, Jaipur.
24. Rana, L. (2014): Geographical Thoughts- Classical to Contemporary, Concept Publishing Company. Ltd., New Delhi.
25. Samuel's M.S. eds. (1978): Humanistic Geography-Problems and Prospects, Maroufa Press, Chicago.

**Paper Code**
**MGOGMT-103**

**M.A./M.Sc.**
**Semester-I**

**Credit: 04**
**Contact Hours: 60**

**Paper Name**
## Hydrology and Oceanography

**Objectives**

1. To make students aware of the status and circulation of water on the Earth and the atmosphere and provide knowledge about estimation and affecting factors of water availability.
2. To know about the oceanic temperature, pressure, density, salinity, etc., and updates on marine sediments and their source and types.

**Learning Outcomes**

1. To develop knowledge and skills about the state and circulation of water and the factors that measure and influence hydrological components such as rainfall, evaporation, infiltration and runoff.
2. Acquires updated knowledge of ocean temperature, pressure, density, salinity, etc., and knows about marine sediment sources and types.

**Unit I**

Meaning and Scope of Hydrology; Hydrological Cycle: Process, Importance and affecting factors; Hydrological Input and Output.

**Unit II**

Precipitation Types and Characteristics; Evaporation: Factors Affecting from Water Surface and Soil; Measurement of Evaporation; Evapotranspiration: Estimation and Its Affecting Factors; Water Balance.

**Unit III**

Infiltration: Measurement and its Affecting Factors; Estimating Water Potential; Surface Runoff: its Sources, Components and Affecting Factors; Hydrograph and its Components.

**Unit IV**

Meaning and Scope of Oceanography; Oceanic Relief; Temperature and Salinity; Ocean Currents.

**Unit V**

Marine Resources: Definition and its Classification; Ocean Deposits; Marine Organisms; Coral Reefs.

***Suggested Readings***


1. Alan P Trujillo and Harold V Thurman (2019): Essentials of Oceanography. Pearson Education India; Eleventh edition, India.
2. Barry, R.G. & Chorley, P.J. (1998): Atmosphere, Weather and Climate. Routledge, London & New York.
2. Fein. J.S. and Stephens, P.N. (1987): Monsoons. Wiley Inter-Science.
3. H.M. Raghunath (2015). Hydrology: Principles, Analysis, Design. New Age International Pvt Ltd; Third edition, India.
4. P. Jaya Rami Reddy (2016): Hydrology. Laxmi Publications; Third edition, India.
5. Peterson, S. (1969): Introduction to Meteorology. McGraw-Hill Book, London.
6. Pinet, P.R. (2016): Invitation to Oceanography. Jones and Bartlett Learning.
7. Reddy, J.P. (1998): A Textbook of Hydrology. Laxmi Publication, New Delhi.
8. Richfield, J.H. (1993): General Climatology. Prentice Hall, India, New York.
9. Singh, M.B. (1998): Climatology and Hydrology. Tara Book Agency, Varanasi (in Hindi)
10. Singh, Savindra (2011): Oceanography. Prayag Pustak Bhawan, Prayagraj.
11. Singh, Savindra (2015): Fundamentals of Hydrology. Prayag Pustak Bhawan, Prayagraj.
12. Trewartha, G.T. (1980): An Introduction to Climatology. McGraw-Hill Student Edition, New York.
13. Ward, R.C. and Robinson, M. (2000): Principles of Hydrology. McGraw-Hill, New York.

**M.A./M.Sc.**
**Semester- I**

**Paper Code**
**MGOGMT- 104**

**Paper Name**
**Climatology**

**Credit: 04**
**Contact Hours: 60**

**Objectives**

1. To provide students with a comprehensive knowledge of climatology and relationship with meteorology.
2. To understand the general circulation of the atmosphere and mechanism of monsoon.
3. To understand the extreme events and their impacts.

**Learning Outcomes**

1. The students will be able to understand the earth's climate and relationship with meteorology.
2. The students will be able to comprehend the circulation of the atmosphere and mechanism of monsoon
3. The students will be able to understand the extreme events and their impacts.

**Unit I**

Nature and Scope of Climatology and its Relationship with Meteorology, Composition and Structure of Atmosphere.

**Unit II**

General Circulation of the Atmosphere, Local and Seasonal Winds, Insolation: Factors affecting the Distribution of Insolation.

**Unit III**

Atmospheric Depletion of Solar Radiation, Process of Heat Energy Transfer, Heat Budget, Clouds: Formation and Classification.

**Unit IV**

Ocean- Atmospheric Interaction, Mechanism of Monsoon: Jet- Streams, Southern Oscillation, El-Nino, La-Nina. Concept of Air Masses and Fronts, Origin of Cyclones: Tropical and Temperate, Anticyclones.

**Unit V**

Climatic Classification of Koppen and Thornthwaite; Human Impact on Global Climate; Climate Change and Global Warming, Indian Strategy.

***Suggested Readings***


1. Barry, R.G. and Chorley P.J. (1998): Atmosphere, Weather and Climate, Routledge, London and New York.
2. Richfield, J.H. (1993): General Climatology, Prentice Hall, India, New York.
3. Das, P.K. (1987): Monsoons National Trust, New Delhi.
4. Fein. J.S. and Stephens, P.N. (1987): Monsoons. Wiley Inter science.
5. Lal. D.S. (1986): Climatology Chaitanya Publication, Allahabad.
6. Lydolph, P.E. (1985): The Climate of the Earth, Rowman.
7. Menon, P.A. (1989): Our Weather, N.B.T., New Delhi.
8. Robinson, P.J. and Henderson S. (1999): Contemporary Climatology, Henlow.
9. Thompson, R.D. and Perry, A (ed.) (1997): Applied Climatology, Principles and Practice, Routledge, London.
10. Reddy, J.P. (1998): A Textbook of Hydrology, Laxmi Publication, New Delhi. 4th edition.
11. Singh, M.B. (1998): Climatology and Hydrology. Tara Book Agency, Varanasi. (in Hindi).
12. Singh,S. (2018): Climatology. Pravalika Publication, Allahabad,
13. Singh, S. (2008): Jalvay evm Samundra Vigyan. Prayag Pustak Bhavan, Allahabad (In Hindi).
14. Trewartha, G.T. (1980): An Introduction to Climatology. McGraw-Hill Student Edition. New York.
15. Gupta, S. L., Jalvayu Vigyan, (in Hindi), Vishvvidyalaya Prakashan.

**M.A./M.Sc.**
**Semester-I**

**Paper Code**
**MGOGMP-105**

**Paper Name**
**Quantitative Methods and Techniques**

**Credit: 04**
**Contact Hours: 60**

**Objectives**

1. To know the various statistical methods in geographical research.
2. To know the analysis of the calculation results of various quantitative methods in geography.

**Learning Outcomes**

1. After completing the course, students will know the calculation and utilization of quantitative methods.
2. At the end of the course, the students will be able to learn how to analyse the result of the calculation.

## Unit I

Geographical Survey: Meaning, Importance and Process of Questionnaire; Differences between Different Methods of Survey; Sources of Quantitative Data Collection: Primary and Secondary.

## Unit II

Sampling: Meaning, Definition and Importance; Probability Sampling: Simple Random, Stratified Random, Systematic and Cluster; Non-Probability Sampling: Convenience, Judgment, Quota and Snowball.

## Unit III

Theory of Distribution: Normal Distribution, Properties, Computation and its Limitations.

## Unit IV

Hypothesis: Meaning, Types and Procedure of Testing Hypothesis; Test of Significance: Chi-Square Test, Student 't' Test, Analysis of Variance.

## Unit V

Time Series Analysis; Component of Time Series Analysis; Application of Remote Sensing and GIS in Geographical Research.

### *Suggested Readings*


1. Ahuja, R. (2001): Research Methods, Rawat Publication. Jaipur and New Delhi.
2. Bhattacharyya, D.K. (2005): Research Methodology. Excel Books, New Delhi.
3. Denzin, N. K. and Lincoln, Y.S., (eds.) (2000): Handbook of Qualitative Research. Thousand Oaks, CA. Sage Publications.
4. Eyles J. and Smith D. M. (1988): Qualitative Methods in Human Geography. Polity Press, Dales Brewering, Cambridge.
5. Flowerdew, R. and Martin, D. (eds.) (1997): Methods in Geography. A Guide for Students Doing a Research Project, Longman Harlow.
6. Hay, I. (ed.) (2000): Qualitative Research Methods in Human Geography. Oxford University Press, New York.
7. Kitchin, R. and Tata, N., (2001): Conducting Research into Human Geography: Theory, Methodology and Practice. Prentice-Hall, London.
8. Limb, M. (2001): Qualitative Methodologies for Geographers: Issues and Debates. Edward Arnold, London.
9. Longley, P., Goodchild, M.F., Maguire, D. and Rhind, D. (1999): Geographic Information Systems: Principles, Techniques, Management, Applications. John Wiley and Sons, New York.
10. Mikkelsen, B. (2005): Methods for Development Work and Research: A New Guide for Practitioners. Sage Publications, London.
11. O'Leary, Z. (2005): The Essential Guide in Doing Research. Vistaar Publication, New Delhi.
12. Peet, R. and Thrift, N. (eds.) (2002): New Models in Geography (2 vols.). Rawat Publishers, Jaipur and New Delhi.
13. Robson, C. (1993): Real World Research: A Resource for Social Scientists and Practitioners- Researchers.

**M.A./M.Sc.**
**Semester- I**

**Paper Code**
**MGOGMP- 106**

**Paper Name**
**Field Study Tour**

**Credit: 04**
**Contact Hours: 60**

**Objective**

To provide students with field learning opportunities outside of the classroom setting, allowing them to observe, analyze, and understand geographical processes, and phenomena in diversified natural and social environment.

**Learning Outcome**

Students will be able to learn about geographical phenomena through their field experiences. They will also prepare themselves how to write field report.

1. Field Study Tour will be conducted in Indian Territory and neighboring countries. The study tour will be based on Socioeconomic study/ Study of Society, Culture and associated environment/ land use study/ Survey of topographic features/drainage pattern/watershed study, etc.

2. Tour will be 10 to 15 days.

3. Students will prepare their own field report and appear in the viva -voce examination.

NOTE: If any student fails to attend the field study tour in unavoidable circumstances, then he/she can be given a Village or Town for Socio-Economic Survey/ Land Use study or Morphological Studies. Student must submit his/her report to the concerning teacher and will appear in Viva-Voce for the award of field study tour marks.

***Suggested Readings***


1. Archer, J.E. and Dalton, T.H. (1968): Field Work in Geography. William Clowes and Sons Ltd. London and Beccles.
2. Hay, Iain (ed.) (2005): Qualitative Research Methods in Human Geography. Oxford University Press, Melbourne. 2nd Ed.
3. Kitchen, Rob and Tate, Nicholas J. (2009): Conducting Research into Human Geography: Theory, Methodology & Practice. Prentice Hall-Pearson, Harlow U.K. 2nd Ed.
4. Mishra,R,N. and Shatrma, P.K. (2023): Practical Geography Methods and Techniques. Pareek Publication, Jaipur.
5. Pugh, J.C. (1975): Surveying for Field Scientists. Methuen and Company Ltd. London.
6. Parsons, Tony and Knight, Peter G. (2005): How to do your Dissertation in Geography and Related Disciplines. Routledge, London. 2nd Ed.
7. Stoddard, Robert H. (1982): Field Techniques and Research Methods in Geography. Kendall/Hunt Pub. Dubuque IO. Blackwell Publishers, Oxford.

**M.A./M.Sc.**
**Semester-II**

| Course Code | Course Name | Credit: 04 |
|---|---|---|
| MGOGMT- 201 | Advanced Geography of India | Contact Hours: 60 |

**Objectives**

1. This course on the geography of India assumes' that the students will be familiar with the basic landforms, climate, soil, vegetation, population, resources and industry characteristics of India.
2. It is a course designed to enable students to broaden and deepen their understanding of India.

**Learning Outcomes**

1. Students will learn about the physical and resource diversities and interrelationships of India.
2. The spatial variations of mineral and natural biodiversity would help them to increase the vitality and vulnerability of the country.
3. Students will understand India's agricultural, industrial, trade and transport aspects.

**Unit I**

Introduction, Geological Structure; Physiographic Divisions; Drainage Systems; Climatic Characteristics: Mechanism of the Indian Monsoon.

**Unit II**

Population Growth: Trends and Patterns; Population: Distribution and Density; Patterns and Trends of Urbanization.

**Unit III**

Land Use Pattern, Major Crops and their Distribution (Wheat, Rice, Sugarcane, Cotton and Tea), Modernization in Indian Agriculture: Green, White, Yellow Revolutions, Agro-climatic regions in India.

**Unit IV**

Distribution and Production of Major Minerals (Iron ore, Manganese and Bauxite) and Power Resources (Coal, Petroleum and Natural Gas, Hydroelectricity and Solar).

**Unit V**

Spatial distribution of Industries (Iron and Steel, Cotton Textile and Sugar), Trade and Transport.

***Suggested Readings***


1. Chauhan, P.R. & Prasad, M. (2003): *Bharat Ka Vrihad Bhugol*. Vasundhara Prakashan, Gorakhpur.
2. Gautam, Alka: Advanced Geography of India. Sarada Pustak Bhawan, Prayagraj.
3. Husain, Majid (2015): Geography of India, McGraw-Hill publication, New Delhi.
4. Khullar, D.R. (2007): India. A Comprehensive Geography, Kalyani Publishers, New Delhi.
5. Krishnan, M.S. (1968): Geology of India and Burma. 4th edition, Higgins Bothams Pvt. Ltd, Madras.
6. Mamoria, Chaturbhuj (2012): Geography of India. Sahitya Bhawan Publication, Agra.
7. Nag. P. and Gupta, S.S. (1992): Geography of India. Concept Publishing Company, New Delhi.
8. Sharma, T. C. (2003): India: Economic and Commercial Geography, Vikas Publication, New Delhi.
9. Singh, J. (2001): *Bharat: Bhaugolik Adhar Avam Ayam*. Gyanodaya Prakashan, Gorakhpur.
10. Singh, J. (2003): India: A Comprehensive & Systematic Geography, Gyanodaya Prakashan, Gorakhpur.
11. Singh, R.L. (ed.) (1971): India A Regional Geography, National Geographical Society of India, Varanasi.
12. Tirtha, R. (2002): Geography of India, Rawat Publications, Jaipur and New Delhi.
13. Tiwari, R. C. (2007): Geography of India, Pustak Bhawan, Allahabad.
14. Tiwari, R.C. (2007): Geography of India. Prayag Pustak Bhawan, Prayagraj.
15. Wadia, D. N. (1959): Geology of India. MacMillan and Company, London and Madras.

**Paper Code**
**MGOGMT- 202**

**M.A./M.Sc.**
**Semester- II**
**Paper Name**
**Population Geography**

**Credit: 04**
**Contact Hours: 60**

**Objectives**

1. To introduce the basic concepts of population geography and their measurement.
2. To familiarize the theories of population geography.
3. To analyze the contemporary issues in population geography.

**Learning Outcomes**

1. Students will be able to understand concepts of population geography.
2. Students will become familiar with the theories of population geography.
3. Students will be able to develop an understanding of contemporary issues in population geography.

## Unit I

Nature and Scope of Population Geography; Sources of Data: Census, Vital Statistics, Population Registers and Sample Surveys; World Population: Distribution and Growth; World Urbanization.

## Unit II

Concept and Measures of Fertility, Mortality and Migration.

## Unit III

Theories of Population Growth: Malthus and Neo-Malthusian, Ester Boserup, Demographic Transition; Theories of Migration: Ravenstein, Reilly, and Everett Lee.

## Unit IV

Population and Resources: Under, Over, Optimum Population; Concepts of Human Development and Human Development Index; Sustainable Development Goals.

## Unit V

Concepts and Definitions in Indian Census; Characteristics of Population of India: Age-Sex Structure, Urbanization, Literacy, Social and Religious Profile, Language; National Population Policy-2000.

***Suggested Readings***


1. Bhende, A. A. and Kanetkar, T. (2003): Principles of Population Studies. Himalaya Publishing House, Mumbai.
2. Bose, A. (ed.) (2001): Population in India's Development, 1947-2000. Vikas Publications, New Delhi.
3. Champion, T. (ed.) (1993): Population Matters. Paul Chapman, London.
4. Chandna, R. C. (2006): Geography of Population. Kalyani Publishers, New Delhi.
5. Clark, J.I. (1972): Population Geography. Pergamon Press, Oxford Publication, Jaipur and New Delhi.
6. Ehrlich, P.R. and Ehrlich, A. H. (1996): Eco-science- Population, Resources and Environment (6th ed.). W.H. Freeman and Company, San Francisco.
7. Garnier, B.J. (1993): Geography of Population (3rd edition). Longman, London.
8. Jones, H. R. (2000): Population Geography (3rd edition). Paul Chapman, London.
9. Pathak, L.P. (ed.) (1998): Population Studies. Rawat Publications, Jaipur and New Delhi.
10. Peters, G.L. and Larkin, R.P. (1983): Population Geography. Problems, Concepts and Prospects. Kendall/Hunt, Dubuque, IA.
11. Poston, D. L. and Michael, M. (2005): Handbook of Population, Springer Heidelberg, Germany.
12. Singh, K.N. and Singh, D.N. (eds.) (1992): Population Growth, Environment and Development. EDSC, Varanasi.
13. Srinivasan, K. and Vlassoff, M. (2001): Population Development Nexus in India: Challenges for the New Millennium. Tata McGraw Hill, New Delhi.
14. Trewartha, G.T. (1985): Geography of Population: World Patterns. John Wiley and Sons, New York.
15. Woods, R. (1979): Population Analysis in Geography. Longman, London.

**M.A./M.Sc.**

**Semester- II**

| Paper Code | Paper Name | Credit: 04 |
|---|---|---|
| MGOGMT-203 | Urban Geography | Contact Hours: 60 |

**Objectives**

1. To familiarize students with the towns and cities and the complexities of urban landscapes.
2. To supplement theories and models regarding the origin, internal structure, and morphology of cities.
3. To explain urbanization, urban system, urban planning, and governance.

**Learning Outcomes**

1. Students will be able to comprehend the typology of towns and cities and their structure, functions, and morphology.
2. Students will be able to understand various theories and models, urban systems, and the spatial, societal, and economic processes that operate in urban areas and their surrounding areas.
3. Students will be able to critically analyse contemporary urban problems from a geographical perspective and will understand the urban planning, policies, and programs for urban development.

**Unit I**

Meaning and Scope of Urban Geography; Theories of Origin of Towns: Gordon Childe, Henri Pirenne and Lewis Mumford; Concepts and Classification of Towns and Cities.

**Unit II**

Models of Internal Structure of Cities: Burgess, Hoyt, Ullman, Mann, and White; City Models of Latin America, Africa, and South Asia; Morphology of Indian Cities.

**Unit III**

Trends and Patterns of Urbanisation in the World and India; Functional Classification of Towns; Hierarchy of Urban Settlements; Rank-Size Rule; Concepts of Rural-Urban Fringe and Periurban Area.

**Unit IV**

Urban Problems: Urban Sprawl, Housing, Slums and Squatters, Pollution, Sanitation, and Solid Waste Generation.

**Unit V**

Urban Planning: Meaning, Types and Approaches (Garden City, New Town, Urban Renewal, and Master Plan); Urban Development Programmes in India: AMRUT, Smart Cities Mission, Swachh Bharat Mission, and Urban Housing Schemes.

***Suggested Readings***


1. Ambrose, Peter (1970): Concepts in Geography (Vol. I) Settlement Pattern, Longman.
2. Carter, H. (1973): The Study of Urban Geography, London.
3. Taneja, K.L. (1971): Morphology of Indian Cities, NGSI, Varanasi.
4. Haggett, P., Andrew, D., Cliff and Allen, ed. (1979): Locational Models, Arnold Heinemann.
5. Hall, T. and Barrett, H. (2012): Urban Geography, Routledge, London.
6. Ministry of Urban Development, Govt. of India (2016): Handbook of Urban Statistics.
7. King, L. (1986): Central Place Theory, Saga Publications, New Delhi.
8. Knox, P. and Pinch, S. (2010): Urban Social Geography, Pearson, London.
9. Mandal, R.B. (2001): Urban Geography, Concept Publishing Company, New Delhi.
10. Mayer, M. Harold and Clyde F. Kohn, eds. (1967): Readings in Urban Geography, Central Book Depot, Allahabad.
11. Pacione, M. (2009): Urban Geography-A Global Perspective. Routledge, London and New York.
12. Prakasa, Rao, V.L.S. (1983): Urbanisation in India-Spatial Dimensions, Concept Publishing Co., N Delhi.
13. Ramachandran, R. (1992): Urbanisation and Urban Systems in India, Oxford University Press, N Delhi.
14. Shaw, A. (2012): Indian Cities, Oxford University Press, New Delhi.
15. Singh, O.P. (2016): Urban Geography (in Hindi), Sharda Pustak Bhawan, Allahabad.
16. Tiwari, R.C. (2009): Settlement Geography (Hindi), Prayag Pustak Bhawan, Allahabad.
17. Verma, L.N. (2016): Urban Geography, Rawat Publications, Jaipur.

## M.A./M.Sc.
## Semester- II

**Paper Code**
**MGOGMP-204**

**Paper Name**
**Instrumental Field Survey**

**Credit: 04**
**Contact Hours: 60**

**Objectives**

1. To inculcate the diverse methods of land surveying methods, their usefulness and drawbacks.
2. To develop an understanding of how this knowledge may be applied in practice for the optimum and efficient utilization of space.

**Learning Outcomes**

1. The students will be able to explain the basic principles and types of land surveying.
2. The students will be able to know important techniques of situation and relief representation.

**Unit I**

Surveying: Introduction, Types of Surveying, Precautions and Principles.

**Unit II**

Nautical Sextant: Introduction, Parts and Functions, Methods and Processing of Surveying, Preparation of Field Book and Plotting.

**Unit III**

Abney Level: Introduction, Methods and Processing of Surveying, Preparation of Field Book.

**Unit IV**

Dumpy Level: Introduction, Parts and Functions, Methods and Processing of Surveying, Preparation of Field Book and Plotting.

**Unit V**

Theodolite: Introduction, Methods and Processing of Surveying, Preparation of Field Book.

***Suggested Readings***


1. Singh, R.L. and Singh, Rana P.B. (1993): Elements of Practical Geography, (Hindi and English editions), Kalyani Publishers, New Delhi.
2. Kanetker, T.P. and Kulkarni, S.V. (1967): Surveying and Levelling, Vol. I and II, V.G. Prakashan, Poona, India.
3. Natrajan, V. (1976): Advanced Surveying, B.I. Publications, Mumbai.
4. Pugh, J.C. (1975): Surveying for Field Scientists, Methuen and Company Ltd., London, First Edition.
5. Punmia, B.C. (1994): Surveying, Vol I, Laxmi Publications Private Ltd, New Delhi.
6. Shephard, F.A. (1968): Surveying Problems and Solutions, Edward Arnold (Publishers) Ltd, London.

**M.A./M.Sc.**
**Semester- III**

**Paper Code**
**MGOGMT-301**

**Paper Name**
**Geomorphology**

**Credit: 04**
**Contact Hours: 60**

**Objectives**

1. To introduce the basic concepts, principles, and theories of geomorphology.
2. To familiarise students with geomorphic processes and systems
3. To understand the applied aspects of geomorphology.

**Learning Outcomes**

1. Students will be able to know the basic concepts, principles, and theories of geomorphology.
2. Students will be acquainted with various landforms along with their geomorphic processes
3. Students will be able to understand the applied aspects of geomorphology.

## Unit I

Nature and Scope of Geomorphology; Principles and Fundamental Concepts in Geomorphology; Geomorphic Processes and Systems.

## Unit II

Weathering and Erosion: Agents and Classification; Mass Movement and Land Sliding; Soil Forming Processes. Drainage Patterns and Morphometric Analysis.

## Unit III

Concepts of Base Level Change, Grade, Rejuvenation, Headward Erosion and River Capturing; Cycle of Erosion: WM Davis, W Penck, and LC King; Interruption in the Cycle of Erosion; Multi-cyclic and Poly-genetic Landforms.

## Unit IV

Theories of Slope Evolution: WM Davis, W Penck, and Wood; Landforms associated with Fluvial, Arid, Glacial, and Coastal.

## Unit V

Applied Geomorphology: Hydrology, Mineral Exploration, Engineering Works, Hazard Management; Techniques of Applied Geomorphology.

***Suggested Readings***


1. Bloom A.L. (2012): Geomorphology, A Systematic Analysis of Late Cenozoic Landforms.
2. Chorley, R.J. (1972): Spatial Analysis in Geomorphology. Methuen, London.
3. Cooke, R. U. and Doornkamp, J.C., (1974): Geomorphology in Environmental Management- An Introduction. Clarendon Press, Oxford.
4. Dayal, P. (2019): A Textbook of Geomorphology, Rajesh Publications.
5. Dury, G.H. (1959): The Face of the Earth. Penguin Harmondsworth.
6. Fairbridge, R.W. (1968): Encyclopedia of Geomorphology. Reinholdts, New York.
7. Garner, H.F. (1974): The Origin of Landscape: A Synthesis of Geomorphology. Oxford University Press, London.
8. Goudie, A. (1993): The Nature of the Environment. Oxford and Blackwell, London.
9. Gupta S. L. (2008): *Bhooakriti Vigyan: Bhoo-bhuatiki Tatha Bhoo-aakritiyan,* Hindi Madhyam Karyanvayan Nideshalay, Delhi University.
10. Kale, V.S. and Gupta, A. (2018). Introduction to Geomorphology, The Orient BlackSwan.
11. Mitchell, C.W. (1973): Terrain Evaluation. Longman, London.
12. Ollier, C.D. (1979): Weathering. Longman, London.
13. Patwardhan, A. M. (2012): The Dynamic Earth System, PHI, India.
14. Pitty, A.F. (1971): Introduction to Geomorphology. Methuen, London.
15. Sharma, H.S. (ed.) (1980): Perspectives in Geomorphology. Concept Publication, New Delhi, 1980.
16. Singh, Savindra (2017): Physical Geography. Pravalika Publicaton, Prayagraj.
17. Singh, Savindra (2021): Cryogeography. Pravalika Publicaton, Prayagraj.
18. Singh, Savindra. (2014): Geomorphology. Pravalika Publicaton, Prayagraj.
19. Skinner, B.J. and Porter, S.C. (1995): The Dynamic Earth. John Wiley, New York.
20. Sparks, B.W. (1960): Geomorphology. Longman, London.
21. Stoddart, D.R. (ed.) (1996): Process and Form in Geomorphology. Routledge, New York.
22. Thornbury, W.D. (1960): Principles of Geomorphology. John Wiley, New York.
23. Tinkler, K.J. (1989): History of Geomorphology: From Hutton to Hack (Reprint 2014), Springer.
24. Whittow J.B. (2000): Dictionary of Physical Geography, Penguin.

**M.A./M.Sc.**
**Semester- III**

**Paper Code**
**MGOGMT-302**

**Paper Name**
**Regional Development and Planning**

**Credit: 04**
**Contact Hours: 60**

**Objectives**

1. The aim is to understand and evaluate the concept of region in geography and its role and relevance in regional planning.
2. To identify the issues relating to the region's development through the spatial organization of various attributes and their interrelationship.
3. It also means helping students identify the causes of regional disparities in development, perspectives and policy imperatives.

**Learning Outcomes**

1. The students will learn about the basic principles of regional planning.
1. The students will study the regional planning process's different theoretical backgrounds and structures.
2. Students will be able to examine the different programs and policies in force for the overall development of rural society in India.

**Unit I**

Meaning and Concepts of Regional Development; Objectives of Regional Development; Meaning and Approaches of Regional Planning; Methods and Techniques of Regional Planning.

**Unit II**

Models of Regional Development: W.W. Rostov, Myrdal, Francois Perroux, Hurshman and Friedman.

**Unit III**

Strategies of Regional Planning: Centralized, Decentralized, Micro Regional Planning and Multilevel Planning.

**Unit IV**

Regional Planning Approach: Top-down and Bottom-up Approaches; Integrated Area Development; Role of Panchayati Raj Institutions in Regional Planning of India; Problems and Prospects of Regional Planning in India.

**Unit V**

Special Area Plans: Tribal Area Development, Drought Prone Area and Coastal, Regional Planning in India (DVC).

***Suggested Readings***


1. Chandana R.C. (2015): Regional Planning and Development. Kalyani Publishers, New Delhi.
2. Chandna, R.C. (2000): Regional Planning: A Comprehensive Text. Kalyani Publishers, New Delhi.
3. Chaudhuri, J.R. (2001): An Introduction to Development and Regional Planning with special reference to India. Orient Longman, Hyderabad.
4. Friedmann, J. & Alonso, W.(ed.) (1973): Regional Development and Planning. The MIT Press, Mass.
5. Isard, W. (1960): Methods of Regional Analysis. MIT Press, Cambridge.
6. Kuklinski, A. R. (1972): Growth Poles and Growth Centres in Regional Planning. Mouton and Co., Paris.
7. Kuklinski, A.R. (ed.) (1975): Regional Development and Planning: International Perspective. Springer.
8. Leys, C. (1996): The Rise and Fall of Development Theory. India University Press, Bloomington and James Curry, Oxford.
9. Misra, R.P. & Natraj, V.K. (1978): Regional Planning and National Development. Vikas Publishers, N. Delhi.
10. Misra, R.P. (ed.) (1992): Regional Planning: Concept, Techniques, Policies and Case Studies (2nd edition). Concept Publishing Company, New Delhi.
11. Misra, R.P., Sundaram, K.V. Prakash Rao, V.L.S. (1976): Regional Development Planning in India. Vikas Publishers, New Delhi.
12. Moseley, M.J. (1974): Growth Centres in Spatial Planning. Pergamon Press, Oxford.
13. Pathak, C.R. (2003): Spatial and Processes of Development in India. Regional Science Association, Kolkata.
14. Sanyal, B. M. (2001): Decentralized Planning: Themes and Issues. Concept Publishing Company, New Delhi.

## M.A./M.Sc.

## Semester- III

| Paper Code | Paper Name | Credit: 04 |
|---|---|---|
| MGOGMT-303 | Geography of Indian Tribes | Contact Hours: 60 |

**Objectives**

1. To familiarize students with the concept of tribes, tribal population and their habitats in India.
2. To become acquainted with the spatial, social, and cultural process of development and change among the tribes in the country.
3. To know the issues and problems of tribes and the constitutional provisions and laws for them.

**Learning Outcomes**

1. Students will be able to understand the spatial, social, and cultural dimensions of the tribal population in India.
2. Students will be able to know the changing scenario of tribal life in terms of social, cultural, and political aspects.
3. Students will be able to understand tribal issues, problems, and concerns and the way forward for tribal development in light of legal provisions, policies, and programs.

**Unit I**

Concept of Tribes; Scheduling and De-scheduling of Tribes in India; Habitual Environment; Spatial Distribution of Tribal Population; Theories and Processes: Isolation (V. Elwin), Assimilation (G.S. Ghurye) and Integration (J.L. Nehru).

**Unit II**

Evolution of Tribal Regions and Ethnic Identities; Core and Periphery formation of Tribal Region; State Formation in Tribal Region-Case study; Continuity and Change of Tribes in India; Processes and Challenges of Modernization and Integration of Tribes in India.

**Unit III**

Environment and Development Paradigm Shift; Tribal Development with reference to Inclusive Growth; Land Acquisition and Displacement in Tribal Inhabited Areas; Government Policy towards Tribal Development.

**Unit IV**

Scheduled Areas and Tribal Areas: Fifth Schedule, Sixth Schedule and Autonomous District Councils; Panchayats (Extension to the Scheduled Areas) Act, 1996; Tribal Forest Rights and Conflicts of Forest Rights.

**Unit V**

Society and Culture of Major Tribes of India: Gond, Santhal, Bhil, Naga, Khasi, and Toda.

***Suggested Readings***


1. Ahmad, A. (1999): Social Geography, Rawat Publication, Jaipur.
2. Ashok Lata: Formation of Tribal Region, Unpublished Ph. D Thesis, JNU, New Delhi.
3. Ghurye, G.S. (1963): The Scheduled Tribes, Popular Prakashan, Bombay.
4. Government of India (1959): Adivasi, Publication Division, New Delhi.
5. Government of M.P. (1964): The Tribes of Madhya Pradesh, Bhopal.
6. Government of India (1973): The Tribal People of India, Publication Division, New Delhi.
7. Hasnain, N. (2022): Tribal India (revised, expanded and updated edition), Palaka Prakashan, Delhi.
8. Lathan, R.G. (1959): Ethnography of India, London: Macmillan.
9. Majumdar, D.N. (1950): The Affairs and Tribes- A Study in Tribal Dynamics, University Publishers, Lucknow.
10. Raza, M. and Ahmad, A. (1990): An Atlas of Tribal India, Concept Publishing Company, New Delhi.
11. Narayan, S. (2002): The Dynamics and Tribal Development Issues and Challenges, Gyan Publishing House.
12. Pande, G.C. (1991): Indian Tribal, Habitat, Society, Economy and Change, Anmol Publications.

13. Planning Commission of India, National Sub Plan for Tribal and Backward Area Development, Government of India Publication.
14. Sharma, B.D. (1978): A New Approach for the Development of Tribal Areas and Tribal Communities, Fifth Plan.
15. Singh, K. S. (1985): Tribal Society in India- An Anthropo-historical Perspective, Manohar Publications, New Delhi.
16. Singh, K. S., ed. (1993): Tribal Ethnography, Customary Law, and Change, New Delhi: Concept Publishing Company.
17. Singh, K. S., ed. (1998): Antiquity to Modernity in Tribal India- Tribal Movements in India, Inter-India Publications, New Delhi.
18. Singh, K. S., ed. (2002): The Tribal Situation in India, Indian Institute of Advanced Study, Shimla.
19. Rao, V.S. ed. (2021): Tribal Integration in India- Northeast and Beyond, Indian Books and Periodicals, New Delhi.
20. Singh, N.K. and Chaudhari, S.K. (2017): Tribal Life in Northeast India-Ethno-cultural Practices and Reproductive Health Issues, Indian Books and Periodicals, New Delhi.
21. Mondal, H.K., Mukherjee, S. and Datta, A. (2002): India- An Illustrated Atlas of Tribal World, Anthropological Survey of India, Kolkata.

**M.A./M.Sc.**
**Semester- III**

| Paper Code | Paper Name | Credit: 04 |
|---|---|---|
| MGOGMT- 304 | Remote Sensing and GIS | Contact Hours: 60 |

**Objectives**

1. To understand the basic knowledge of aerial and satellite remote sensing systems, GIS, GPS, and its process.
2. To understand the basics of EMR, digital image processing, and elements of image interpretation.
3. To acquire knowledge of the GIS data structure and modern trends in GIS.

**Learning Outcomes**

1. Students will be able to understand the basic knowledge of aerial and satellite remote sensing systems, GIS, GPS and its process.
2. Students will be able to understand the basics of EMR, digital image processing and elements of image interpretation.
3. Students will be able to acquire knowledge of the GIS data structure and modern trends in GIS.

## Unit I

Remote Sensing: Meaning and Definition; Process of Remote Sensing; Electro-Magnetic Radiation (EMR) and Spectrum; Types of Remote Sensing.

## Unit II

Aerial Photographs: Types, and Scale; Geometric Properties of Aerial Photos; Sensors Resolution: Spatial, Radiometric, Spectral and Temporal.

## Unit III

Elements of Image Interpretation; Digital Image Processing (DIP): Pre-processing, Classification and Image Enhancement.

## Unit IV

Geographical Information System: Meaning and Definition; Components of GIS; Processes of GIS; GIS Data Structure: Raster and Vector; Database Management Systems: Types

## Unit V

Global Positioning System (GPS): Concept, Segments and Application; Modern Trend of GIS: Web GIS and Mobile GIS; Application of GIS.

***Suggested Readings***


1. Aronoff S. (1989): Geographic Information Systems: A Management Perspective. DDL Publication Ottawa.
2. Burrough P.A. (1986): Principles of Geographic Information Systems for Land Resource Assessment. Oxford University Press, New York.
3. Campbell, J. B. (2002): Introduction to Remote Sensing (5th edition). Taylor and Francis, London.
4. Cracknell, A., and Hayes, L. (1990): Remote Sensing Year Book. Taylor and Francis, London.
5. Curran, P.J. (1985): Principles of Remote Sensing. Longman, London.
6. Floyd, F. and Sabins. (1986): Remote Sensing- Principles and Interpretation. W.H. Freeman, New York.
7. Fraser Taylor D.R. (1991): Geographic Information Systems. Pergamon Press, Oxford.
8. Hallert, B. (1960): Photogrammetry. McGraw-Hill Book Company, Inc., New York.
9. Hord, R.M. (1982): Digital Image Processing of Remotely Sensed Data. Academic Press, New York.
10. Lillesand, T.M. and Kiefer, R.W. (2000): Remote Sensing and Image Interpretation (4th edition). John Wiley and Sons, New York.
11. Lo, C.P. and Yeung, Albert K.W. (2007): Concept and Techniques of Geographic Information Systems. Pearson Prentice Hall.
12. Maguire D.J., M.F. Goodchild, and D. W. Rhind (eds.) (1991): Geographic Information Systems-Principles and Application. Taylor and Francis, Washington.
13. Nag, P. (ed.) (1992): Thematic Cartography and Remote Sensing. Concept Publishing. Company, New Delhi.

**M.A./M.Sc.**
**Semester- III**

| Paper Code | Paper Name | Credit: 04 |
|---|---|---|
| MGOGMP -305 | Cartographic Techniques | Contact Hours: 60 |

**Objectives**

1. To understand the meaning, definition, scope and historical development of cartography.
2. To understand the basics of several types of thematic maps and methods of quantitative data display.
3. To understand the relation between Digital Cartography, Remote Sensing & GIS.

**Learning Outcomes**

1. Students will be able to comprehend the meaning, definition, scope and historical development of cartography.
2. Students will be able to acquire knowledge to prepare maps from geographical data and the ability to interpret them.
3. Students will be able to understand the relation between Digital Cartography, Remote Sensing & GIS.

## Unit I

Meaning, Definition and Scope of Cartography; Historical Development of Cartography.

## Unit II

Source of Cartographic Data; Maps: Classification and Types; Principles of Map Design.

## Unit III

Representation of Data: Symbols, Dots, Choropleth, and Traffic Flow Diagrams; Interpretation of Thematic Maps.

## Unit IV

Graphical Data Analysis: Frequency Distribution, Cumulative Frequency Distribution, Frequency Polygon and Frequency Curve.

## Unit V

Digital Cartography: Elements of Digital Cartography; Relation between Cartography, Remote Sensing & GIS; Conventional Mapping Vs Digital Mapping; Application of Remote Sensing & GIS: Land Use Land Cover; Urban Sprawl Mapping.

***Suggested Readings***


1. Cuff J. D. and Mattson M. T. (1982): Thematic Maps: Their Design and Production. Methuen Young Books.
2. Dent B. D., Torguson J. S., and Holder T. W. (2008): Cartography: Thematic Map Design (6th Edition). Mcgraw-Hill Higher Education.
3. Gupta K. K. and Tyagi V. C. (1992): Working with Maps. Survey of India, DST, New Delhi.
4. Kraak M. J. and Ormeling F. (2003): Cartography: Visualization of Geo-Spatial Data. Prentice-Hall.
5. Mishra R. P. and Ramesh A. (1989): Fundamentals of Cartography. Concept, New Delhi.
6. Sharma J. P. (2010): *Prayogic Bhugol*. Rastogi Publishers, Meerut.
7. Singh R. L. and Singh R. P. B. (1999): Elements of Practical Geography. Kalyani Publishers.
8. Slocum T. A., Mcmaster R. B. and Kessler F. C. (2008): Thematic Cartography and Geovisualization (3rd Edition). Prentice Hall.
9. Tyner J. A. (2010): Principles of Map Design. The Guilford Press.
10. Sarkar, A. (2015): Practical Geography: A Systematic Approach. Orient Black Swan Private Ltd., New Delhi.
11. Singh, L R and Singh, R. (1977): *Manchitra aur Pryaogatamek Bhugol*. Central Book, Depot, Prayagraj.
12. Singh R. L. and Dutta P. K. (2012): *Prayogatama Bhugol*. Central Book Depot, Prayagraj.

**Paper Code**
**MGOGD-401**

**M.A./M.Sc.**
**Semester- IV**
**Paper Name**
**Dissertation**

**Credit: 20**
**Contact Hours: 60**

**Objectives**

1. To enable students to conduct in depth research on a specific geographical topic research, demonstrating their ability to apply to geographical theories and methodologies.
2. To acquaint the students with tools of Geography and its practical applicability.

**Learning Outcomes**

1. Students will be able to conduct in depth research on a specific geographical topic research, demonstrating their ability to apply to geographical theories and methodologies.
2. Students will be able to acquaint the students with tools of Geography and its practical applicability.

All students will be assigned field-based dissertation work on different themes/areas. They will complete his/her dissertation under the supervision of allotted supervisors. Their dissertation will be submitted to the Department and appear in the viva-voce examination for the award of a master's degree in Geography.

Dissertation have four components as follows:

| Paper Code | Dissertation | Marks |
|---|---|---|
| **MGOGD-401 (A)** | Lab Work/Field Work/Field Survey/Industrial Visit/Institutional Visit/Data Collection/Internship, etc. | 100 |
| **(B)** | Pre-Submission Presentation (After Completion of Writing Work) | 100 |
| **(C)** | Report Writing/Write-up/Dissertation Report (After Incorporating the Changes Suggested in Pre-Submission Presentation) | 200 |
| **(D)** | Viva-voce Examination | 100 |
| | **Total** | **500** |