

D.D.U. Gorakhpur University
Department of Geography

M.A. Geography: 2 Years Semester Course (CBCS) Outline, 2019

The M.A Curriculum in Geography consists of four semesters spread over two years. In addition to compulsory paper, few optional papers are offered in each semester. There shall be five Theory papers in each semester, along with internal assessment in each paper. Besides, there shall be one practical based on field survey in semester first and third.

Programme Specific Outcomes

After going through this programme, students should be able to:

- Understand the theoretical and applied aspects of geography as a branch of Knowledge.
- Establish Spatio-temporal analysis of geographical phenomena and analyse man environment relations in a better way.
- Develop their field observations, data gathering and interpretations skill.
- Comprehend key methodological and different approaches to interpret geographical facts.
- Enhance their practical skill through field visits and firsthand experience of tools/equipment.
- Familiarize with the applied aspects in different sub branches of geography
- Identify frontier area of research and sub-branches of geography for further research.
- Broaden their job prospects in qualifying various competitive examinations and join various industries and research institutes like Tourism, Rural Development, Disaster Management, Environmental Planning, and Cartography to pursue a bright career.

Department of Geography
M.A. in Geography, CBCS Programme

M.A. Two Years Choice Based Credit System Programme					
Paper Code	Title of the Paper	Course	Marks		Total Marks
			Written	Internal	
GEO 101	Geographical Thought: Concepts & Issues	Core	70	30	100
GEO 102	Principles of Geomorphology	Core	70	30	100
GEO 103	Principles of Economic Geography	Core	70	30	100
GEO 104	a) Cartography	Core	60	--	100
	b) Field Survey- Instrumental		--	40#	
GEO 105*	Environmental Studies	Elective	70	30	100
GEO 106*	Marketing Geography	Elective	70	30	100
	Total marks of Semester-I		Total		500
GEO 201	Advanced Geomorphology	Core	70	30	100
GEO 202	Physical and Economic Geography of India	Core	70	30	100
GEO 203	Cultural Geography	Core	70	30	100
GEO 204	Quantitative Geography	Core	70	30	100
GEO 205*	Resource Appraisal & Management	Elective	70	30	100
GEO 206*	Rural Development	Elective	70	30	100
	Total marks of Semester-II		Total		500
GEO 301	Oceanography	Core	70	30	100
GEO 302	Regional Geography of India	Core	70	30	100
GEO 303	Population Geography	Core	70	30	100
GEO 304	a) Regional Analysis	Core	60	--	100
	b) Field Work Dissertation		--	40#	
GEO 305*	Agricultural Geography	Elective	70	30	100
GEO 306*	Industrial Geography	Elective	70	30	100
GEO 307*	Remote Sensing	Elective	70	30	100
GEO 308*	Transport Geography	Elective	70	30	100
	Total marks of Semester-III		Total		500
GEO 401	Climatology	Core	70	30	100
GEO 402	Research Methodology	Core	70	30	100
GEO 403	Environmental Hazards & Disaster Risk Reduction	Core	70	30	100
GEO 404	Geospatial Technology	Core	70	30	100
GEO 405*	Political Geography	Elective	70	30	100
GEO 406*	Geography of Tourism	Elective	70	30	100
GEO 407*	Geographical Information System (GIS)	Elective	70	30	100
GEO 408*	Regional Planning	Elective	70	30	100
GEO 409*	Urban Geography	Elective	70	30	100
	Total marks of Semester-IV		Total		500

*In each semester any one elective paper is to be opted.

#**Justification of Internal:** Field survey and surveying with different instruments are integral part of the discipline. Internal evaluation process involved proper evaluation with internal and external examiners

M.A. in Geography
First Year (Previous) (Effective from Session 2019-2020)

The previous year consists of two semesters, called the first and second semester. In each of these semesters, there will be five core/elective papers. Evaluation of performance in these papers will be based on internal evaluation as well as written examination. There will be 30% internal evaluation and 70% written examination. The internal evaluation in each paper will be based on:

- | | |
|-------------------------|----------|
| 1. Attendance | 10 Marks |
| 2. Seminar / Assignment | 10 Marks |
| 3. Class Test | 10 Marks |

The written papers will be of 5 credits (maximum 70marks), except where stated otherwise. Their examinations will be held in the months of December and May respectively. Each paper will be of three hours duration.

Format of the Question Paper:-

The question papers for the written examination of each paper will be consisting of three sections; section A, section B and section C. There shall be 5 short answer type questions based on the whole syllabus in section A and it will be compulsory one. In section B, there will be 10 questions of medium type answers from five units (two from each unit), out of which 5 questions will have to be answered (one from each unit). Section C will be of questions for long type answer. There will be five questions (one from each unit) in all out of which any two will have to answer.

Semester-I

Paper	Course	Paper Code	Title of the Paper
Paper-1	Core	GEO 101	Geographical Thought: Concepts & Issues
Paper-2	Core	GEO 102	Principles of Geomorphology
Paper-3	Core	GEO 103	Principles of Economic Geography
Paper-4	Core	GEO 104	a) Cartography b) Field Survey- Instrumental
Paper-5	Elective	GEO 105*	Environmental Studies
	Elective	GEO 106*	Marketing Geography

Semester-II

Paper	Course	Paper Code	Title of the Paper
Paper-1	Core	GEO 201	Advanced Geomorphology
Paper-2	Core	GEO 202	Physical and Economic Geography of India
Paper-3	Core	GEO 203	Cultural Geography
Paper-4	Core	GEO 204	Quantitative Geography
Paper-5	Elective	GEO 205*	Resource Appraisal & Management
	Elective	GEO 206*	Rural Development

M.A. in Geography
Second Year (Final) (Effective from Session 2020-2021)

The final year consists of two semesters, called the third and fourth semester. In each of these semesters, there will be five core/elective papers. Evaluation of performance in these papers will be based on internal evaluation as well as written examination. There will be 30% internal evaluation and 70% written examination. The internal evaluation in each paper will be based on:

- | | |
|-------------------------|----------|
| 1. Attendance | 10 Marks |
| 2. Seminar / Assignment | 10 Marks |
| 3. Class Test | 10 Marks |

The written papers will be of 5 credits (maximum 70marks), except where stated otherwise. Their examinations will be held in the months of December and May respectively. Each paper will be of three hours duration.

Format of the Question Paper:-

The question papers for the written examination of each paper will be consisting of three sections; section A, section B and section C. There shall be 5 short answer type questions based on the whole syllabus in section A and it will be compulsory one. In section B, there will be 10 questions of medium type answers from five units (two from each unit), out of which 5 questions will have to be answered (one from each unit). Section C will be of questions for long type answer. There will be five questions (one from each unit) in all out of which any two will have to answer.

Semester-III

Paper	Course	Paper Code	Title of the Paper
Paper-1	Core	GEO 301	Oceanography
Paper-2	Core	GEO 302	Regional Geography of India
Paper-3	Core	GEO 303	Population Geography
Paper-4	Core	GEO 304	a) Regional Analysis b) Field Work Dissertation
Paper-5	Elective	GEO 305*	Agricultural Geography
	Elective	GEO 306*	Industrial Geography
	Elective	GEO 307*	Remote Sensing
	Elective	GEO 308*	Transport Geography

Semester-IV

Paper	Course	Paper Code	Title of the Paper
Paper-1	Core	GEO 401	Climatology
Paper-2	Core	GEO 402	Research Methodology
Paper-3	Core	GEO 403	Environmental Hazards & Disaster Risk Reduction
Paper-4	Core	GEO 404	Geospatial Technology
Paper-5	Elective	GEO 405*	Political Geography
	Elective	GEO 406*	Geography of Tourism
	Elective	GEO 407*	Geographical Information System (GIS)
	Elective	GEO 408*	Regional Planning
	Elective	GEO 409*	Urban Geography

Semester-I

Paper – I (Code: GEO101)

Course: Core

Title of the Paper: Geographical Thought: Concepts and Issues

Credits- 05, Marks- 70

Continuous Internal Assessment, Marks-30

Unit	Topics	Sub Topics	Periods
1	Introduction	Changing Paradigm of Geography, Development of Dualism in Geography, Physical v/s Human Systematic v/s Regional, Fallacy of Dualism	05 05
2	Positivism in Geography	Concept of Positivism, Quantitative Revolution and its Impact; Systems and Models in Geography; Theories and Laws in Geography.	04 03 06 05
3	Major Concepts	Concept of Earth Surface; Concept of landscape; Concept of Region, Typology and Regionalisation Concept of Spatial Organization.	02 02 04 02
4	Humanistic Geography	Radical Geography: Geography as a Science of Human Welfare; Behavioralism & Phenomenology in Geography	06 03
5	Post-modernism in Geography	Concept of Post-modernism in Geography, Salient features of Post-modernism, Feminist & Gender Geography	05 04 04
Continuous Internal Assessment			30
Assignment/ presentation/Exercises/Field work			

Course Outcomes

- Introduce the students changing Paradigm in Geography based on various thoughts from ancient to modern periods,
- It enhances the conceptual and philosophical knowledge of Geography.
- It explains how Geography as a Science of Human Welfare?

Books Recommended:

1. Adhikari, Sudipto (2009): Fundamentals of Geographical Thought, Chaitanya Pub. House, Allahabad.
2. Arild, H. J. (1999): Geography: History and Concepts, SAGE Publications, London
3. Chorley, R. J. (Ed): Directions in Geography, Methuen and Co., London
4. Chorley, R.J. & Haggett, P. eds. (1967): Integrated Models in Geography, Methuen, London.
5. Davies, W.K.D. (1972): The Conceptual Revolution in Geography, University of London Press, London.
6. Dear, M. J. and Flusty, S. (2002): The Spaces of Postmodernity: Readings in Human Geography. Blackwell Publishers, Oxford.
7. Dickinson, R.E. (1969): The Makers of Modern Geography, Routledge and Kegan Paul, London.
8. Dikshit, R. D. (2004): Geographical Thought. A Critical History of Ideas. Prentice-Hall of India, New Delhi. (in English and Hindi).
9. Dikshit, S.K. (2001): Bhaugolik Chintan Ka Udbhav Avam Vikas, Vishwavidyalaya Prakashan, Varanasi.
10. Hartshorne, R. (1959): Perspectives on the Nature of Geography, John Murray, London.

11. Harvey, D. (1969): Explanation in Geography, Edward Arnold, London.
12. Harvey, M. E. and Holly, P.B. (2002): Themes in Geographic Thought. Rawat Publications., Jaipur and New Delhi.
13. Hubbard, P., Kitchin, R., Bartley, B. and Fuller, D. (2002): Thinking Geographically: Space, Theory and Contemporary Human Geography. Continuum, London.
14. Husain, Majid (2001): Evolution of Geographical Thought, Rawat Publications, Jaipur.
15. James, P.E. & Jones, C.F. (1954): American Geography : Inventory & Prospect, Syracuse Univ. Press, New York.
16. James, P.E. (1980): All Possible World: A Hundred Years of Geography, Sachin Pub. Jaipur.
17. Johnston, R, Gregory D, Pratt G, Watts M. and Whatmore S. (2003): The Dictionary of Human Geography. Blackwell Publishers, Oxford. 5th edition.
18. Johnston, R.J. (1984): Geography and Geographers, Arnold Heinemann, London.
19. Johnston, R.J. (1985): The Future of Geography, Methuen and Company Ltd., New York. (2003 edition published).
20. Johnston, R.J. and Sidaway, J.D. (2004): Geography and Geographers. 6th edition, Edward Arnold, London.
21. Peet, R. (1998): Modern Geographical Thought. Blackwell Publishers Inc, Massachusetts.
22. Richard, P. (1998): Modern Geographical Thought, Blackwell, Singapore
23. Richard, Peet (1977): Radical Geography, Methuen & Co. Ltd., London.
24. Sack, R. D. (ed.) (2002): Progress. Geographical Essays. John Hopkins University Press, Baltimore.
25. Sauer, C. O. (1963): Land and Life. University of California Press, Berkeley.
26. Singh, Jagdish (2008): Bhaugolik Chintan KeMooladhar, GyanodayaPrakashan, Gorakhpur.
27. Taylor, G. (ed.) (1953): Geography in the Twentieth Century. Methuen and Company Ltd., London.

Paper – II (Code: GEO102)

Course: Core

Title of the Paper: Principles of Geomorphology

Credits- **05**, Marks- 70,

Continuous Internal Assessment, Marks-30

Unit	Topics	Sub Topics	Periods
1	Fundamentals of Geomorphology	Meaning & Scope, Fundamental Concepts of Geomorphology, Evolution of Geomorphic Ideas during Medieval and Modern Period, Recent Trends in Geomorphology.	02 06 03 03
2	Tectonism	Earth Movements–Epeirogenesis and Orogenesis, Concept of Plate Tectonics- Mountain Building, Vulcanicity and Earthquakes, Palaeomagnetism	02 06 04
3	Geomorphic Agents and Processes	Denudation-Weathering & Erosion, Mass Movement, Types & Resultant Landforms.	05 03
4	Processes and landforms	Geomorphic Cycle & Landforms by Fluvial, Arid, Glacial, Periglacial, Underground & Marine Processes.	18
5	Structural Geomorphology	Polycyclic Landforms; Erosional Surfaces, Uniclinal Structures & Landforms	02 04 02
Continuous Internal Assessment			30
Assignment/ presentation/Exercises/Field work			

Course Outcomes

- Appraise the students as scientific study of landforms
- Able to explain the formation of physical features through the grand theory of plate tectonics
- Comprehend the morphometric analysis of relief.

Recommended Books:

1. Anhert, F. (1996): Introduction to Geomorphology, Edward Arnold, London.
2. Bloom. A.L. (1979): Geomorphology, Prentice Hall, New Jersey, USA.
3. Chorley, R. J., Schumm, S.A. and Sugden, D.E. (1984): Geomorphology, Methuen, London.
4. Dayal, P. (1987): Geomorphology (in Hindi), Patna.
5. Dikshit, K.R. et.al. (1994): India Geomorphological Diversities, Rawat Pub. Jaipur.
6. Fairbridge, R.W. (1968): Encyclopaedia of Geomorphology, Reinholdts, New York.
7. Kale, V.S. and Gupta, A. (2001): Introduction to Geomorphology, Orient Longman, Hyderabad.
8. King, C.A.M. (1968): Techniques in Geomorphology, Edward Arnold, London.
9. Melhorn, W.N. & Flemal, R.C. (1981): Theories of Landforms Development, George Allen Unvin, London.
10. Miller, A. A. (1953): The Skin of the Earth, Methuen and Co. Ltd., London
11. Ollier, C.D. (1981): Tectonics and Landforms, Longman, London.
12. Sharma, H.S. (1987): Tropical Geomorphology, Concept Publishing company, New Delhi.
13. Sharma, H.S. and Kale, V.S. (2009): Indian Geomorphology, Rawat Pub. Jaipur.
14. Singh, Savindra (2005): Geomorphology, PrayagPustak Bhawan, Allahabad. (Hindi & English)
15. Small, R.J. (1976): The Study of Landforms, Cambridge University Press, Cambridge.
16. Sparks, B.W. (1988): An Introduction to Geomorphology, Longman, London.
17. Steers, A. (1958): The Unstable Earth, Methuen, London
18. Strahler, A.H. and Strahler, A.N. (1992): Modern Physical Geography, John Wiley, New York
19. Strahler, A. N. (1964): Quantitative Geomorphology of Drainage Basins and Channel Networks, In: Handbook of Applied Hydrology, Ven Te Chow, Ed., Section 4-II, McGraw-Hill Book Company, New York
20. Tarbuck, E. J. and Lutgens, F. K. (2009): Earth Science, Prentice Hall, New Jersey
21. Thornbury, W.D. (1969): Principles of Geomorphology, New Age International (p) Ltd., New Delhi.
22. Tricart, J. & Cailleux, A. (1972): Introduction to Climatic Geomorphology, Longman, London.
23. Twidale, C.R. (1976): Analysis of Landforms, John Wiley. London.
24. Wooldridge, S.W. and Morgan, R.S. (1959): The Physical Basis of Geography- An Outline of Geomorphology. Longmans Green, London

Paper – III (Code: GEO103)

Course: Core

Title of the Paper: Principles of Economic Geography

Credits-05, Marks- 70,

Continuous Internal Assessment, Marks -30

Units	Topic	Subtopic	Periods
1	Introduction	Nature and scope,	3
		Methods & Approaches of study,	3
		Recent trends in Economic Geography	4
2	Fundamental Concepts	Salient features and concepts of Economic Geography	8
3	Location and Economic Activities	Location Theories-Von-Thunen, Modern Theory,	6
		Industrial Location Theories- Minimum Cost Theory Market Competition Theory, Integrated Theory,	9

		Central place Theory.	
4	Economic Development	Changing concept of development Theories of Economic development:Classical and New Classical Modern Theories-Growth Pole Theory, MyrdalsTheory World Development Pattern , Sustainable development.	3 4 4 4 2
5	International Trade	Factors influencing the international trade, Modern Theory of International trade, World Trade Pattern, Concept of Globalization, Liberalization and Privatization	3 3 2 2
Continuous Internal Assessment			30
Assignment/ presentation/Exercises/Field work			

Course Outcomes

- Introduces nature, scope, methods, approaches and recent trends in economic geography
- Impart knowledge on different locational theory
- Able to explain changing concept of development, world trade patterns and theory on International trade.

Recommended books:

1. Alexander, J.W. (2012): Economic Geography, Prentice Hall of India, New Delhi.
2. Berry, B.J.L. et al. (1976): Geography and Economic Systems, Prentice Hall, Englewood Cliff.
3. Boyce, R.D. (1990): Bases of Economic Geography, Holt Rinehart & Winston, New York. Cliffs, N.J. Prentice.
4. Dreze, J. and Sen, A. (1996): Economic Development and Social Opportunity. Oxford University Press, New Delhi.
5. Haggett, P. (1966): Locational Analysis in Human Geography, St. Martin's Press, New York.
6. Hanink, D.M. (1997): Principles and Applications of Economic Geography, Economy,
7. Hartshorne, T.A. & Alexander, J.W. (1994): Economic Geography, Prentice Hall of India, New Delhi.
8. Hodder, B.W. & Lee, R. (1996): Economic Geography, Methuen, London.
9. Janaki, V.A. (1985): Economic Geography, Concept Publishing Co., New Delhi.
10. Jones & Darkenwald (1960): Economic Geography, New York.
11. Knox, P. and J. Agnew (1998): The Geography of the World Economy. Arnold, London.
12. Lloyd, P. And P. Dicken (1972): Location in Space: A theoretical approach to Economic Geography, Harper and Row, New York.
13. McCarty, H.H. and J.B. Lindberg (1966): A preface to Economic Geography, Englewood, New York.
14. Rostov, W.W. (1960): The Stages of Economic Growth, Cambridge Univ. Press, London.
15. Singh, K.N and Siddiqui, A (2012): Economic Geography, PrayagPustak Bhawan, Allahabad
16. Singh, K.N. & Singh, J. (1996): ArthikBhoogolKeMooltatva, GyanodayaPrakashan, Gorakhpur.
17. Smith, G.H. (2000): Conservation of Natural Resources, John Wiley, New York.
18. Thomas, Conkling and Yeates (1974): Geography of Economic Activity, Mc Graw Hill, University Press, New Delhi.
19. Wheeler, J.O. et.al. (1995): Economic Geography, John Wiley, New York.

Paper – IV (Code: GEO104)

Course: Core

Title of the Paper: Cartography

Credits- **03**, Marks- 60,

Continuous Internal Assessment-30Marks

Units	Topic	Sub topic	Periods
1	Projections	Meaning, Classification and Choice of Projections; Construction and Characteristics of Projections – Lambert’s Conical, Polyconic, Galls’, Equatorial Zenithal 6usoidal, Mollweide and their Interrupted Cases, International Projection.	13
2	Cartograms	Climatic Diagrams, Rainfall Dispersion Diagram; Water Budget; Ergo-graph – Climatic and Circular; Thematic Cartograms – Choropleth, Isopleth, Chorochromatic Diagram; Multiple Dot, Spherical Diagram, Traffic Flow, Land Utilisation Maps	12
3	Geological Maps	Beds, bedding Plane, Strike lines, Outcrop Drawing of Cross Sections – Horizontal, Inclined, Folded, Faulted Strata and Unconformable Series; Interpretation of Geological History – Nature of Relief and Rock Structure and their Correlation	13
Continuous Internal Assessment			18
Assignment/ Presentation/Exercises/Field Work			

Field Survey- Instrumental

Credis- **02**,

Continuous Internal Assessment-40Marks

Units	Topic	Sub topic	Periods
1	Surveying	Levelling and Plotting by Dumpy Level Measurement of Horizontal and Vertical Angle by Theodolite and Telescopic Alidade	26
2	Survey Camp	Contouring and Plotting of a given area (Outside of the Campus), at least for two days	26
Continuous Internal Assessment			12
Assignment/ Presentation/Exercises/Field Work			

Course outcomes

- Impart drawing skill on map projections, various maps and diagrams
- Able to identify and interpret geological conditions of places
- Student able to handle surveying instruments: Dumpty Level, Theodolite, and Telescopic Alidade

Reference Books:

1. Chauhan P,R. (2014):Prayogatmak Bhoogol, Vasundhara Publicaiions, Gorakhpur
2. Davis, R.E. and Foote, F.S.: Surveying - Theory and Practices, Tokyo.
3. Kanetkar, T.P. & Kulkarni, S.V.: Surveying and Leveling, Pune.
4. Mailing, D.H. (1973): Co-ordinate Systems and Map Projections. George Philip and Sons Ltd.
5. Misra, R.P. and Ramesh, A. (1999): Fundamentals of Cartography. Concept Publishing Company, New Delhi.
6. Monkhouse, F.J. and Wilkinson, H. R (1962): Maps and Diagrams,Methuen and Company Ltd. and Company Ltd., London.
7. Raisz, E. (1962): Principles of Cartography. McGraw Hill Books Company, Inc., New York.

8. Robinson (1991): Aerial Photography and Cartography, Mac Millan, London.
9. Robinson, A. H. H., Sale R., Morrison J. and Muehrcke, P. C (1984): Elements of Cartography, 6th edition John Wiley and Sons, New York.
10. Sahani, P.B. (1993): Advance Surveying, New Delhi.
11. Singh, J. et.al. (1990): BhaumikiyaManchitro Ki Ruprekha, Vasundhara Prakashan, Gorakhpur.
12. Singh, L.R. (2001): Practical Geography, Sharda Pustak Bhawan, Allahabad.
13. Singh, R. L. and Singh, Rana P.B. (1993): Elements of Practical Geography. Kalyani Publishers, Ludhiana and New Delhi. (English and Hindi editions).
14. Tiwari, R.C. and Tripathi, Sudhakar (2001): Abhinav PrayogatmakBhoogol, PrayagPushtak Bhawan, Allahabad.

Paper – V (Code: GEO105)

Course: Elective

Title of the Paper: Environmental Studies

Credits- **05**, Marks- 70

Continuous Internal Assessment-30

Units	Topic	Sub topic	Periods
1	Concept	Concept of Environment, main elements, approaches to study the Environment	3
2	Ecosystem	Ecosystem: concepts and components, Ecosystems forms and Functions: Trophic level, Ecological Pyramids, Energy flows, Bio-Geo-Chemical Cycles: Carbon, Nitrogen, Oxygen	2 6 6
3	Major Terrestrial Ecosystem	Agriculture, Forests, Grasslands and Deserts, Population Growth and Environment, Carrying Capacity of the Earth: Limits to Growth	7 2 2
4	Environmental Degradation	Types and causes of Environmental Degradation, Environmental Pollution: Types, causes and impact (Air, Water and Land)	6 8
5	Legislation and Management	The Stockholm Conference, The Earth Summit, Environmental monitoring Standards; WTO and India, Environmental policies and Legislations in India (The Wildlife Act, Water Act and Environmental Protection Act), Environmental Management	02 04 6 6

Course outcomes

- The paper introduces meaning, elements and different approaches to study environment
- It familiarizes with the forms and functions of ecosystems.
- It enhances the knowledge on various legislation and act on environmental management with special reference to India

Reference Books:

1. Chandna, R. C. (2002): Environmental Geography, Kalyani, Ludhiana
2. Cunningham, W. P. and Cunningham, M. A. (2004): Principles of Environmental Science: Inquiry and Applications, Tata McGraw Hill, New Delhi
3. Goudie, A. (2001): The Nature of the Environment, Blackwell, Oxford
4. Mathur, H. S. (2003): Essentials of Biogeography. Pointer Publication, Jaipur.
5. Miller, G. T. (2004): Environmental Science: Working with the Earth, Thomson Brooks Cole, Singapore

6. MOEF (2006): National Environmental Policy-2006, Ministry of Environment and Forests, Government of India, New Delhi
7. Nag, P., Kumra, V.K. and Singh, J. (1990): Geography and Environmental Issues at Local, Regional and National Levels. (in 3 vols.), Concept Publishing Company, New Delhi.
8. Odum, E.P. (1975): Ecology. Rowman and Littlefield, Lanham USA.
9. Rajagopalan, R. (2005): Environmental Studies: From Crisis to Cure, Oxford University Press, New Delhi.
10. Reddy, M. A. (2004): Geoinformatics for Environmental Management. B. S. Publishers., Hyderabad.
11. Saxena, H. M. (1999): Environmental Geography. Rawat Publications., Jaipur and New Delhi.
12. Saxena, H. M. (2000): Environmental Management. Rawat Publications., Jaipur and New Delhi
13. Saxena, K.K. (2004): Environmental Studies. University Book House Private Ltd., Jaipur
14. Singh, D.N., Singh, J. and Raju, K.N.P. (eds.) (2003): Water Crisis and Sustainable Management, Tara Book Agency, Varanasi
15. Singh, J. (2001): Paryavaran Evam Samvikas. GyanodayaPrakashan, Gorakhpur.
16. Singh, O., Nag P., Kumra V.K. and Singh J. (eds.) (1993): Frontier in Environmental Geography. Concept Publishing Company, New Delhi.
17. Singh, R. B. (ed.) (1990): Environmental Geography. Heritage Publication, New Delhi.
18. Singh, Rana P.B. (ed.) (1993): Environmental Ethics: Discourses and Cultural Traditions. National Geographical Society of India, BHU, Varanasi.
19. Singh, S. (2006): Environmental Geography. PrayagPustak Bhawan, Allahabad.
20. Singh, S. (2007): ParyavaranBhugol. PrayagPustak Bhawan, Allahabad.
21. Singh, S. N. (1993): Elements of Environmental Geography and Ecology in Hindi), Tara Book Agency, Varanasi
22. UNEP (2007): Global Environment Outlook: GEO4: Environment For Development, United Nations Environment Programme.

Paper – V (Code: GEO106)

Course: Elective

Title of the Paper: Marketing Geography

Credits-05, Marks- 70

Continuous Internal Assessment-30Marks

Unit	Topics	Sub Topics	Periods
1	Concept & Evolution	Definition, Scope and Evolution of Marketing Geography, Spatial Organization of Markets	08 04
2	Typology of Markets	Periodic & Regulated Markets, Urban & Rural Markets Hierarchy of Markets and their Role in Economic Development.	02 02 06
3	Spatio-temporal Characteristics of Markets	Market Cycles, Development of Marketing System, Market Area Region, Vertical and Horizontal Relations of a Market.	02 04 04 04
4	Marketing and Rural Development	Role of Marketing in Rural Development, Christaller's Central Place Theory, Market as a Service Centre	02 06 04

5	Globalization & Marketing	Impact of Globalization on Marketing, Social Structure and Marketing. Marketing and Innovation Diffusion.	04 04 04
Continuous Internal Assessment			30
Assignment/ Presentation/Exercises/Field Work			

Course outcomes

- The paper introduces the meaning and scope of marketing geography and spatial organization of markets.
- Explain market cycles, and development of markets, importance in rural development
- Student able to identify and analyse, impact of Globalization on Marketing, Social Structure and Marketing, Marketing and Innovation Diffusion

Reference Books:

1. Garnier, J. Beaujau & Delobez, A. (1979): Geography of Marketing, Longman, London.
2. Shrivastava, V.K. & Dixit, R.S. (1995): VipranBhoogol, Madhya Pradesh Hindi Granth Academy, Bhopal.
3. Bromley, R.J. (1979): Periodic Markets, Daily Markets and Fares : A Bibliography, Monash Pub.
4. Davies, R.L., (1977): Marketing Geography with Special Reference to Retailing Methun, London
5. Shrivastava, V.K. (1987): Geography of Marketing and Rural Development, Inter India Pub. New Delhi.
6. Saxena, H.M. (1984): Marketing Geography, Starling Publication, New Delhi.
7. Saxena, H.M. (1975): Geography of Transport & Marketing, S, Chand & Com., New Delhi.
8. Saxena, H.M. (1988): Rural Markets and Development, Rawat Publications, Jaipur.
9. Shrivastava, V.K. & Chauhan, P.R. (2001): Marketing of Agricultural Produce & Rural Development, Vasundhara Prakashan, Gorakhpur.
10. Shrivastava, Hari Om (1992): VipranBhoogol, Vasundhara Prakashan, Gorakhpur.
11. Berry, B.J.L. (1967): Geography of Market Centres and Retail Distribution, Prentis Hall, Englewood Cliff.
12. Alvater, E. (1992): The Future of the Markets, Verso, London.
13. Dixit, R.S. (2004): Agricultural Marketing in India, Shubhi Publications, Gurgaon.

Semester II

Paper – I (Code: GEO201)

Course: Core

Title of the Paper: Advanced Geomorphology

Credits- 05, Marks- 70

Continuous Internal Assessment-30

Unit	Topics	Sub Topics	Periods
1	Geological Time	Concept of time: cyclic, graded and steady state; Concept of morphogenetic region; Geological Time Scale	02 03 05
2	Models in Geomorphology	Models of Landscape Development by W.M. Davis, W. Penk, L.C. King and M. Morisawa, Slope Evolution and Classification; Theories of Slope Development by Davis, Penk and King;	08 03 06
3	Morphometry	Morphometric Analysis of Relief – Hypsometric Curve, Altimetric Frequency Curve, Histogram and Clinographic Curve; Strahler's Method of Drainage Ordering; Frequency and Density of the Drainage	06 03
4	Regional Geomorphology	Geomorphology of Jammu & Kashmir Region, Chhotanagpur Plateau Region, Deccan Trap, Arawali Region, Rajasthan Desert.	03 03 03 02 03
5	Applied Geomorphology	Geomorphology & Minerals, Energy, Civil Projects- Dam & Road Construction Geomorphology in Disaster Management;	04 04 02
Continuous Internal Assessment			30
Assignment/ Presentation/Exercises/Field Work			

Course Outcomes

- Introduces concept of time scale in Geomorphology
- Impart knowledge on different models of landscape development
- Explain its scope on applied aspects with respect to civil projects, disaster management, minerals and energy

Recommended Books:

1. Anhert, F. (1996): Introduction to Geomorphology, Edward Arnold, London.
2. Bloom. A.L. (1979): Geomorphology, Prentice Hall, New Jersey, USA.
3. Chorley, R. J., Schumm, S.A. and Sugden, D.E. (1984): Geomorphology, Methuen, London.
4. Dayal, P. (1987): Geomorphology (in Hindi), Patna.
5. Dikshit, K.R. et.al. (1994): India Geomorphological Diversities, Rawat Pub. Jaipur.
6. Fairbridge, R.W. (1968): Encyclopaedia of Geomorphology, Reinholdts, New York.
7. Kale, V.S. and Gupta, A. (2001): Introduction to Geomorphology, Orient Longman, Hyderabad.
8. King, C.A.M. (1968): Techniques in Geomorphology, Edward Arnold, London.
9. Melhorn, W.N. & Flemal, R.C. (1981): Theories of Landforms Development, George Allen Unvin, London.
10. Miller, A. A. (1953): The Skin of the Earth, Methuen and Co. Ltd., London
11. Ollier, C.D. (1981) Tectonics and Landforms, Longman, London.
12. Sharma, H.S. : (1987) Tropical Geomorphology, Concept, New Delhi.

13. Sharma, H.S. and Kale, V.S. (2009): Indian Geomorphology, Rawat Pub. Jaipur.
14. Singh, Savindra (2005): Geomorphology, PrayagPustak Bhawan, Allahabad. (Hindi & English)
15. Small, R.J. (1976): The Study of Landforms, Cambridge University Press, Cambridge.
16. Sparks, B.W. (1988): An Introduction to Geomorphology, Longman, London.
17. Steers, A. (1958). The Unstable Earth, Methuen, London
18. Strahler, A.H. and Strahler, A.N. (1992): Modern Physical Geography, John Wiley, New York
19. Strahler, A. N. (1964): Quantitative Geomorphology of Drainage Basins and Channel Networks, In: Handbook of Applied Hydrology, Ven Te Chow, Ed., Section 4-II, McGraw-Hill Book Company, New York
20. Tarbuck, E. J. and Lutgens, F. K. (2009): Earth Science, Prentice Hall, New Jersey
21. Thornbury, W.D. (1969) : Principles of Geomorphology, New Age International (p) Ltd., New Delhi.
22. Tricart, J. & Cailleux, A. (1972): Introduction to Climatic Geomorphology, Longman, London.
23. Twidale, C.R. (1976): Analysis of Landforms, John Wiley. London.
24. Wooldridge, S.W. and Morgan, R.S. (1959): The Physical Basis of Geography- An Outline of Geomorphology. Longmans Green, London

Paper – II (Code: GEO202)

Course: Core

Title of the Paper: Physical and Economic Geography of India

Credits- **05**, Marks- 70

Continuous Internal Assessment-30

Unit	Topics	Sub Topics	Periods
1	Geology & Relief	Geological Evolution– Plains, Plateaus, Mountains and Coasts; Origin of Himalayas, Origin of River Systems of India. Delimitation & Characteristics of Physiographic Regions	06 02 02 06
2	Climatic Characteristics	Mechanism of the Indian Monsoon Climatic Regions Agro-Climatic Regions	04 02 04
3	Resource Base	Population Characteristics. Population Resource Regions; Role of Green Revolution & Bio technology in agriculture; Agricultural Regions & New Trends in Indian Agriculture Mineral Resource Regions;	02 02 03 02 02
4	Industrial Development	Industrial Policies & Trend of Industrialization; Industrial Regions & Industrial Complexes. Impact of Globalization on Indian Economy;	03 04 03
5	Development pattern	Regional Development and Disparities Special Economic Zones; Problems & Prospects of Industrially Backward Regions; Planning Regions of India: Delimitation and Salient Features.	03 03 03 04
Continuous Internal Assessment			30
Assignment/ Presentation/Exercises/Field Work			

Course Outcomes

- Introduces physical aspects of the Indian sub-continent
- Appraise the climatic characteristics and resource base of India
- Discuss the pattern and level of development in India

Recommended Books:

1. Bansal, S.C. (1999): Advanced Geography of India, Meenakshi Publication, Meerut.
2. Chauhan P.R. (2001): Bharat Ka VrihatBhoogol, Vasundhara Prakashan, Gorakhpur.
3. Deshpande C.D (1992): India: A Regional Interpretation, Northern Book Centre, New Delhi.
4. Gautam, Alka (2001): Geography of India, Sharda Pustak Bhawan, Allahabad.
5. Govt. of India : Economic Survey, Ministry of Finance, New Delhi (Different Issues)
6. Hussain, Majid (2008): Advance Geography of India, Tata Mc Graw Hill, New Delhi.
7. Johnson, B.L.C. (1983): Development in South Asia, Penguin Books, Harmondsworth.
8. Khullar, D.R. (2006): India: A Comprehensive Geography, Kalyani Pub., New Delhi.
9. Krishnan, M. S. (1968): Geology of India and Burma, 4th edition. Higgin Bothams Private. Ltd., Madras.
10. Nag, P. and Gupta S. S. (1992): Geography of India, Concept Publishing. Company, New Delhi.
11. Sharma, T. C. (2003): India: Economic and Commercial Geography, Vikas Publication., New Delhi.
12. Singh, J. (2003): India: A Comprehensive and Systematic Geography, GyanodayaPrakashan, Gorakhpur.
13. Singh, R. L. (ed.) (1971): India. A Regional Geography, National Geographical Society of India, Varanasi.
14. Spate, O.H.K. & Learmonth, A.T.A. (1954): India & Pakistan, Methuen, London.
15. Tiwari, R. C. (2007): Geography of India, PrayagPustak Bhawan, Allahabad
16. Wadia, D. N. (1959): Geology of India. MacMillan and Company, London and Madras.

Paper – III (Code: GEO203)

Course: Core

Title of the Paper: Cultural Geography

Credits- 05, Marks- 70

Continuous Internal Assessment-30

Units	Topic	Sub topic	Periods
1	Introduction	Concept of Culture, Nature Scope and Significance of Cultural Geography; Approaches and Development; Relationships of Culture with Environment, Resources and Technology.	02 04 02 02
2	Origin of Man & Races	Origin & Dispersal of Man, Types & Dispersal of Human Races; Racial Composition of India; Linguistic and Religious Structure of the World. Cultural Diffusion	02 03 03 05 02
3	Cultural Development	Use of Fire and its control, Domestication of Plants and Animals; Renewal and Dispersal Activities of Crops – Paddy, Maize, Sugarcane and Rubber	02 04 09
4	Innovations	Agricultural Practices and Innovations; Industrial and Technological Revolution and its impact on Culture. Globalization and Cultural Development	03 03 04
5	Cultural Realms and Ecology	Concept of Cultural Hearths; Major Cultural Realms and Regions of the World. Cultural Landscape and Cultural Ecology	02 04 04
Continuous Internal Assessment			30
Assignment/ Presentation/Exercises/Field Work			

Course Outcomes

- Introduces the students how culture play a key role in relationship between man and environment.
- Discuss about cultural landscape, origin of race, domestication of plants and animals, innovation and agricultural practices
- Able to explain how do culture impact on industrial and technological revolution

Recommended Books:

1. Anderson, K., Domosh, M., Pile, S. and Thrift, N. (2003): Handbook of Cultural Geography, SAGE Publications, London
2. Blunt, A., Gruffudd, P., May, J., Ogborn, M. and Pinder, D. (2003): Cultural Geography in Practice, Edward Arnolds Limited, London
3. Carter, G.F. (1998) Man and the Land: A Cultural Geography, Rienhart, New York.
4. Coulborn, R. (1959): The Origin of Civilized Societies, Princeton University Press, Princeton, New Jersey.
5. Dicken, S.N. & Pitts, F.R. (1970): Introduction of Cultural Geography : A Study of Man and his Environment, Edwin & Co. Waltham, Massachusetts.
6. Dikshit, S.K. & Tripathi, R.D. (2001): SanskriticBhoogol, Vasundhara Prakashan, Gorakhpur.
7. Dohus, F.E. & Sommers, L.M. (ed) (1967): Cultural Geography – Selected Readings, Dunn – Donnally Publishing Corporation, New York.
8. Domosh, M., Neumann, R. P., Price, P. L. and Jordon-Bychkov, T. G. (2009): The Human Mosaic-A Cultural Approach to Human Geography, WH Freeman, New York
9. Duncan, J. S., Johnson, N. C., and Schein, R. H. (2004): A Companion to Cultural Geography, Blackwell Publishing Ltd, Oxford
10. Frazier, E.F. (1957): Race and Cultural Contacts in the Modern World; A.A. Knopf, New York.
11. Iaian, R. and Richards, P. (2003): Studying Cultural Landscapes, Oxford University Press, London
12. Jordon, G. (1995): Cultural Politics, Blackwell, Oxford
13. Mike, C. (1998): Cultural Geography, Routledge, London
14. Rostlund, F. (1988): Outline of Cultural Geography, California Book Co. Berkley.
15. Salter, C.L. (1971): The Cultural Landscape, Durbury Press, California.
16. Sopher, D.E. (1978): Geography of Religions, Prentice Hall, New Jersey.
17. Spencer, J.E. and Thomas, W.L. (1978): Introducing Cultural Geography, John Willey and Sons, New York.
18. Wagner, P.J. and Mikesell, M.W. (1962): Readings in Cultural Geography, University of Chicago Press.
19. Wagner, P.L. (1972): Environment of People, Prentice Hall, Englewood Cliffs

Paper – IV (Code: GEO204)

Course: Core

Title of the Paper: Quantitative Geography

Credits- 05, Marks- 70

Continuous Internal Assessment-30

Units	Topic	Sub topic	Periods
1	Statistical Methods	Collection, Processing and Management of Data; Measurement of Scale; Concept and Methods of Sampling; Correlation – Pearson’s Product Moment(r), Spearman’s Rank Correlation (ρ), Coefficient of Determination; Regression Analysis and Confidence Limit; Residuals and Residuals Mapping; Test of Significance; Chi square and Student ‘t’ test.	20
2	Measurement of Spatial	Measurement of Spatial Pattern and Inequality – Z	20

	Pattern	score, Lorenz Curve and Gini's Coefficient, Location Quotient, Coefficient of Localization & Localization Curve,	
3	Spatial Techniques	Nearest Neighbour Analysis, Network Analysis, Graph Techniques and Degree of Connectivity, Shape Analysis, Gravity Model	20
Continuous Internal Assessment			30
Assignment/ Presentation/Exercises/Field Work			

Course outcomes

- Introduces different statistical methods
- Impart knowledge on quantitative measurement of spatial patterns and spatial techniques

Recommended Books:

1. Bailey, T. and Gatrell, A. C. (1995): Interactive Spatial Data Analysis. Longman, Harlow.
2. Berry, B.J.L. & Marble, D.F. (1968) Spatial Analysis: A Reader in Statistical Geography, Prentice Hall, Englewood.
3. Chauhan P,R. (2014) PrayogatmakBhoogol, Vasundhara Publicaiions, Gorakhpur
4. Dorling, D. and Fairborn, D. (1997): Mapping. Ways of Representing the World. Longman, Harlow.
5. Duncan, O.D. et.al. (1961) : Statistical Geography, Free Press of Glen Co., New York.
6. Gregory, S. 1968) : Statistical Methods and Geographers, Longman, London.
7. Griffith, D. A. and Amehein (1997): Multivariate Statistical Analysis for Geographers. Prentice Hall, Englewood Cliffs, New Jersey.
8. Griffith, D. A. and Amehein (1997): Statistical Analysis for Geographers. Prentice Hall, Englewood Cliffs, New Jersey.
9. Haggett, P. & Chorley, R.J. (1969): Network Analysis, Edward Arnold, London.
10. King, L.J. (1969): Statistical Analysis in Geography, Longman, London.
11. Nag, P. (ed.) (1984): Census Mapping Survey, Concept Publishing Company, New Delhi.
12. Nair, N. B. (1996): Encyclopedia of Surveying, Mapping and Remote Sensing. Rawat Publications, Jaipur and New Delhi.
13. Pal S.K (1998) Statistics for Geoscientists, Concept Publications, New Delhi.
14. Rogerson, P.A. (2001): Statistical Methods in Geography, Sage, London.
15. Shaw, G. and Wheeler, D. (1994): Statistical Techniques in Geographical Analysis, Prentice Hall, Englewood Cliffs, New Jersey.
16. Shirvastava, V.K. & Prasad, M. (2007): Statistical Methods in Geography (in Hindi), Vasundhara Prakashan, Gorakhpur.
17. Singh, K.N and Siddiqui, A (2012) Economic Geography, PrayagPustak Bhawan, Allahabad.
18. Taylor, P.J. (1977): Quantitative Methods in Geography, HughtonMiffin Co., Boston.
19. Thrower, N. (1996): Maps and Civilization. Cartography, Culture and Society, University of Chicago Press, Chicago.
20. Unwin, D. (1982): Introductory Spatial Analysis, Methuen and Company Ltd., London.
21. Walford, N. (1995): Geographical Data Analysis. John Wiley and Sons, Chichester.

Paper – V (Code: GEO205)

Course: Elective

Title of the Paper: Resource Appraisal & Management

Credits- **05**, Marks- 70

Continuous Internal Assessment-30

Unit	Topic	Subtopic	Periods
1	Introduction	Concept of Resources ,	2
		Classification of Resources ,	2
		Attributes of resources ,	2
		Natural resources-Definition, Concepts and Approaches of Resource management.	6
2	Utilization of Natural Resources	Distribution, Utilization and problems of natural resources with special reference to India.	2
		Land , Water, Forest, Energy Resources	8
3	Problems of Resource Utilization	Population explosion and pressure on resources.	4
		Resource Regions of the World,	3
		Development and environmental crises,	2
		Natural hazards and Risk management with emphasis on Earthquake , Flood & Drought	8
4	Conservation And Management	Meaning, Principles and Approaches to conservation,	3
		Resource appraisal and management methods,	3
		Emerging issues.	3
5	Policies and Planning	Land , Water and Forest policy in India,	5
		Sustainable Resource development – Concept, Methods and Dimensions.	3
		Integrated Resource development –Ecological, Economic and Social aspects.	4
Continuous Internal Assessment			30
Assignment/ Presentation/Exercises/Field Work			

Course outcomes

- It introduces basic concept of resources, classifications and approaches to study resource management
- Appraise problems of resource utilization, conservation and management.
- Able to analyse policy planning and integrated resource development.

Recommended Books:

1. Behra, Deepak Kumar (2000): Resource Management Through Indigenous Knowledge, New Delhi.
2. Berry, B. J.L. (1976): Geography of Economic Systems, Prentice Hall, Englewood Cliff
3. Boyce, R. D. (1974): Bases of Economic Geography, Holt, Rinehart and Winston, New York
4. Hartshorne, T. A. and Alexander, J. W. (2010): Economic Geography, PHI, New Delhi
5. Holechek, J.L. et.al. (2000): Natural Resources: Ecology, Economics and Policy, Prentice Hall, New Jersey.
6. Kellogg, C.F. (1986): Food, Soil and People, The Manhattan Publishing Co. New York.
7. Rao, B.P. (2006): Resources and Environment, Vasundhara, Prakashan, Gorakhpur.
8. Siddhartha, K. (2000): Economic Geography: Theories, Process and Patterns,
9. Simmans, I.G. (1981): The Ecology of Natural Resources, Edward Arnold, London.
10. Singh, Jagdish (1998): SansadhanBhoogol, GyanodayaPrakashan, Gorakhpur.
11. Smith, D. M. (1971): Industrial Location: An Economic Geographical Analysis, John Wiley and Sons, New York.

12. Singh, K.N and Siddiqui, A (2012): Economic Geography, PrayagPustak Bhawan, Allahabad
13. Smith, G.H. (ed.) (2000): Conservation of Natural Resources, John Wiley, New York.
14. Smith, J.R. (1987): Industrial and Commercial Geography, London.
15. United Nations (2007): Human Development Report, Oxford, UNDP.
16. Zimmermann, E.W. (1966): Introduction to World Resources, Harper & Row, New York.

Paper – V (Code: GEO206)

Course: Elective

Title of the Paper: Rural Development

Credits- **05**, Marks- 70

Continuous Internal Assessment-30

Unit	Topics	Sub Topics	Periods
1	Introduction	Concept and Models of Rural Development, Dualism in Development, Integrated Area Development	04 03 03
2	Infrastructure	Irrigation, Transport and Marketing; Sanitation & Health facilities	08 02
3	Major Issues	Problems of Rural Areas, Causes & Consequences of Rural Population Migration in India. Sectoral Imbalances in Rural Development	02 06 07
4	Sectors of Rural Development	People's Participation and Panchayati Raj Role of Administrative and Political Nexus Rural-Urban Divide and Continuum, Core and Periphery Relations.	05 03 04 03
5	Policies & Programmes	Rural Development policies & programmes, Appraisal of Rural Development under Five Year Plans, Priority in Rural Development in India, PURA Implementation of Rural Development Programmes.	02 03 03 02
Continuous Internal Assessment			30
Assignment/ Presentation/Exercises/Field Work			

Course Outcomes

Recommended books

1. Arora, R.C. (1999): Integrated Rural Development, S. Chand & Company, New Delhi.
2. Bhadauria, B.P.S. (1988): Rural Development Strategy and Perspective, Anmol Publication, Delhi.
3. Chauhan, P.R. (1996): Regional Disparities in the Levels of Development, AMGI, Gorakhpur.
4. Dak, T.M. (1987): Social Inequalities and Rural Development, National Publishing House, New Delhi.
5. Desai, Basant (1988): Rural Development VI Vols., Himalaya Publishing House, Mumbai.
6. Dubey, Bechan (1990): Integrated Rural Development (Hindi), Mishra Trading Company, Varanasi.
7. Mishra, R.P. (1987): Rural Development – Capitalist and Socialist Paths, Concept, New Delhi.
8. Misra, R.P. & Sundaram, K.V. (1988): Rural Area Development: Perspective and Approaches, Sterling Publishers, New Delhi.

9. Sharma, S.K. (1990): Integrated Rural Development: Approaches, Strategy and Perspectives, Abhinav Publication, New Delhi.
10. Singh, Katar (1990) Rural Development : Principles, Policies and Management, Sage Publications, New Delhi.
11. Singh, S.K. (2002): Rural Development Policies & Programmes, Northern Book Centre, New Delhi.
12. Srivastava, V.K., Sharma N. & Chauhan, P.R. (2002): Pradeshik Niyojan Avam Santulit Vikas, Vasundhara Prakashan, Gorakhpur.
13. Dikshit, S.K. (2012): Population and Regional Development, Radha Publication, New Delhi.

Semester III
Paper – I (Code: GEO301)

Course: Core

Title of the Paper: Oceanography

Credits- **05**, Marks- 70

Continuous Internal Assessment-30

Unit	Topics	Sub-topics	Periods
1	Introduction	Definition, Scope, and Historical development of Oceanography; Major relief features of ocean basins, Relief features of Indian Ocean	4 4
2	Dynamics of Ocean Water	Distribution of temperature, salinity, and density. Circulation and Circulation Patterns in oceans: Surface Waves, Currents, and Tides	6 9
3	Marine Biological Environment	Types of Marine Deposits and its Distribution in the Atlantic, Pacific and Indian Ocean, Biotic, Mineral and Energy resources, Coral Reefs and Atolls: Theories of their Formation.	5 3 4
4	Marine Ecosystem	Coastal, Estuaries, Deltas, Barrier Island, Reefs, Continental-Shelf, Continental - slope and Deep Sea Plain, Pelagic Environment and Ocean Basins, their Economic Importance.	15
5	Political and Economic Significance	Law of the Sea; Exclusive Economic Zone, Geopolitics of Indian Ocean Region, Anthropogenic Pollution, Sea Level Change and Coastal Erosion	10
Continuous Internal Assessment			30
Assignment/ Presentation/Exercises/Field Work			

Course outcomes

- The paper introduces physical environment and different oceanic circulations of the marine water.
- It enhances the knowledge regarding the deposits and resources available in marine water
- One can comprehend knowledge on geopolitics with special reference to Indian ocean

Recommended Books:

1. Garrison, T. (1993): Oceanography – An Invitation to Marine Science, Wadsworth
2. Gerald, S. (1985): General Oceanography: An Introduction, New York.
3. Gross, G. M. (1990): Oceanography, Macmillan Publication, New York
4. Joseph, W. S. and Parish, H. I. (1974): Introductory Oceanography, McGraw Hill, Tokyo
5. King, C.A. (1986); Oceanography, C.E. Arnold, London.
6. Lal, D.S. (2003): Oceanography, Sharda Pustak Bhawan, Allahabad.
7. Murrey, A.F. (1980): Applied Oceanography, Longman, London and New Jersey
8. Pinet, P. R. (2009): Invitation to Oceanography, Jones and Bartlett Publishers, Boston Publication Co., California
9. Sharma, R.C. & Vatal, Mira (1995): Oceanography for Geographers, Chaitanya Pub. House, Allahabad.

10. Singh, Savindra (2007): Oceanography, PrayagPustak Bhawan, Allahabad.
11. Stowe, K. S. (1979): Ocean Science, John Wiley and Sons, New York
12. Thurman, H. V. and Trujillo, A. P. (1997): Introductory Oceanography, Prentice Hall,
13. Thurman, H.B. (1983): Introductory Oceanography, Longman, London.
14. Upadhyay, D.P. & Singh, R. (2001): Oceanography (Hindi), Vasundhara Prakashan, Gorakhpur.

Paper – II (Code: GEO302)

Course: Core

Title of the Paper: Regional Geography of India

Credits- **05**, Marks- 70

Continuous Internal Assessment-30

Unit	Topics	Sub Topics	Periods
1	Region and Regionalization	Concept of Region and Regional Geography, Types of Region, Methods of Regionalization	03 03 04
2	Regionalization of India	Bases of Delimitation of Macro, Meso and Micro Regions of India. Attempts of Regionalization with reference to Stamp, Spate, R.L. Singh and C.D. Deshpande,	02 12
3	Regional Analysis of Problematic Regions	Kashmir Himalaya, North Eastern Region Tribal Regions Middle Ganga Plain	03 03 03 03
4	Problems and Prospects of Development- Case Studies	Chhotanagpur Plateau Malabar Coast Punjab Plain, Malwa Plateau,	03 03 03 03
5	Development Programmes of Specific Areas	Drought Prone Areas, Flood Prone Areas Desert Areas Hill Areas	03 03 03 03
Continuous Internal Assessment			30
Assignment/ Presentation/Exercises/Field Work			

Course outcomes

- It introduces the concept of region and regionalisation and regionalization of India
- Able to identify problems and prospects of development of different region of India
- Comprehend development programmes of specific areas.

Reference Books:

1. Bansal, S.C. (1999): Advanced Geography of India, Meenakshi Publication, Meerut.
2. Chauhan P.R. (2001): Bharat Ka VrihatBhoogol, Vasundhara Prakashan, Gorakhpur.
3. Deshpande C.D (1992): India: A Regional Interpretation, Northern Book Centre, New Delhi.
4. Gautam, Alka (2001): Geography of India, Sharda Pustak Bhawan, Allahabad.
5. Govt. of India: Economic Survey, Ministry of Finance, New Delhi.
6. Hussain, Majid (2008): Advance Geography of India, Tata Mc Graw Hill, New Delhi.
7. Johnson, B.L.C. (1983): Development in South Asia. Penguin Books, Harmondsworth.
8. Khullar, D.R. (2006) India: A Comprehensive Geography, Kalyani Pub., New Delhi.

9. Krishnan, M. S. (1968): Geology of India and Burma. 4th edition. Higgin Bothams Private. Ltd., Madras.
10. Nag, P. and Gupta S. S. (1992): Geography of India. Concept Publishing. Company, New Delhi.
11. Sharma, T. C. (2003): India: Economic and Commercial Geography. Vikas Publication., New Delhi.
12. Singh, J. (2003): India: A Comprehensive and Systematic Geography. GyanodayaPrakashan, Gorakhpur.
13. Singh, R. L. (ed.) (1971): India. A Regional Geography. National Geographical Society of India, Varanasi.
14. Spate, O.H.K. & Learmonth, A.T.A. (1954) : India & Pakistan, Methuen, London.
15. Tiwari, R. C. (2007): Geography of India, PrayagPustak Bhawan, Allahabad
16. Wadia, D. N. (1959): Geology of India. MacMillan and Company, London and Madras.

Paper – III (Code: GEO303)

Course: Core

Title of the Paper: Population Geography

Credits- **05**, Marks- 70

Continuous Internal Assessment-30

Unit	Topic	Sub-topics	Periods
1	Conceptual background	Meaning & Scope of Population Geography	3
		Approaches - Systematic, Regional, Historical, Behavioural, Welfare, & System,	3
		Development of Population Geography,	2
		Sources of Population Data;	3
		Reliability & Comparability of Secondary Data.	1
2	Population Scenario	Distribution & Density of Population:.,	5
		World Patterns of Population,	1
		Population Explosion,	2
		Distribution & Growth of India's Population.	4
3	Population Theories	Pre Malthusian Views,	1
		Malthusian Theory,	1
		Neo Malthusianism,	1
		Demographic Transition Theory,	2
		Optimum Population Theory,	2
		Biological Theories of Population,	3
Social Theories of Population	2		
4	Composition of Population	Age and Sex Composition;	3
		Social & Economic Composition;	3
		Literacy;	3
		Urbanization.	3
5	Contemporary Problems & Policies	Types of Migration, Causes and Consequences,	3
		Migration Laws,	5
		India's Population Policy,	2
		Population Planning with special reference to India.	2
Continuous Internal Assessment			30
Assignment/ Presentation/Exercises/Field Work			

Course outcomes

- Introduces meaning, scope and approaches to study population geography
- It appraises different population theories
- Student may comprehend population scenarios, its composition and contemporary problems and policies.

Recommended Books:

1. Agarwal, S. M. (1974): India's Population Problems, McGraw Hill Publishing Co. Ltd., New Delhi.
2. Beaujeu, Garnier (1978): Geography of Population, Longman, London.
3. Berelson, B. (1974): Population Policy in Developed Countries, MacMillan, London
4. Bhende, A. A. and Kanitkar, T. (2011): Principles of Population Studies, Himalaya
5. Chandana, R. C. & Sidhu, M.S (2013): Population Geography, Kalyani Publications, Delhi
6. Desoza, A. A. (1983): Indian Population Problem in Perspective and Social Action, Concept Publications, New Delhi
7. Hazel, B. R. (1994): Population Geography, Singapore Publishers Pvt. Ltd., Singapore
8. Hiralal (2000): JansankhyaBhoogol, Radha Publications, New Delhi.
9. Panda, B.P. (1991): Population Geography (in Hindi), Madhya Pradesh Hindi Granth Academy, Bhopal.
10. Sundaram, K.V. (1985): Population Geography, Heritage Publishers, New Delhi.
11. Trewartha, G.T. (1969): Geography of Population: World Patterns, John Wiley & Sons, New York.
12. Tripathi, R.D. (2008): JansankhyaBhoogolAvamJanakiki, Vasundhara Prakashan, Gorakhpur.

Paper – IV (Code: GEO304)

Course: Core

Title of the Paper: Regional Analysis

Credits- **03**, Marks- 60

Units	Topic	Sub topic	Periods
1	Concepts	Regional Analysis: Concept and Needs, Development: Concepts, Identification of Indicators and Determinants	13
2	Development Sectors	Sectors of Development: Indicators of different Sectors, Methodology used in Measurement of different Sectors, Regional Pattern of Development in India: Agriculture, Education, Health, and Employment	12
3	Approaches to Social & Human Development	Quality of life, Basic needs: Objectives and Subjective needs, Human Development Index, Capability Index, Gender Sensitive Index, HDI	13
Continuous Internal Assessment			16
Assignment/ Presentation/Exercises/Field Work			

Field Work Dissertation

Credis- 02, Continuous Internal Assessment-40 Marks

Units	Topic	Sub topic	Periods
1	Field Study	Detailed field observation with sample survey. Preparation of	26

	Tour	a report using sketches, diagrams & photographs of visited area.	
2	Socio-Economic Survey	Making questionnaire format; Conducting village and household survey and report writing	26
Continuous Internal Assessment			20
Assignment/ Presentation/Exercises/Field Work			

Course outcomes

- It introduces concept of regional analysis
- Explain sector of development, indicators of development.
- It appraises different approaches to study Social & Human Development issues.
- Exposure to field based data collection, tabulation, interpretation and report writing.

Recommended Books:

1. Alonso, W. & Friedmann, E. (1970): Regional Development and Planning, Longman, London.
2. Bhat, L.S. (1973): Regional Planning in India, Statistical Publishing Society, Kolkata.
3. Chand, M. and Puri, V. K. (2003): Regional Planning in India, Allied Publishers Pvt. Ltd., New Delhi
4. Chandana, R. C. (2000): Regional Planning: A Comprehensive Text, Kalyani Publishers, Ludhiana
5. Dube, K. N. (1990): Planning and Development in India, Asia Publishing House, New Delhi
6. Dubey, K.K. & Singh. M.B. (1988): PradeshikNiyojan, Tara Publication, Varanasi.
7. Friedmann, J. and Alonso, W. (1967): Regional Development and Planning: A Reader, MIT Press, New York
8. Ginsburg, N.S. (1959): The Regional Concept and Planning, Regional Planning UNO, New York.
9. Glassen, John (1978): An Introduction to Regional Planning, Hutchinson, Educational, London.
10. Glasson, J. and Marshall, T. (2007): Regional Planning, Routledge, New York
11. Glikson, Arther (1985): Regional Planning and Development, London.
12. Govt. of India (1986): Regional Plan 2001: National Capital Region, NCRPB, Ministry of Urban Development, New Delhi
13. India Year Book (2014): Publication Division, New Delhi
14. Isard, W (1963) Methods of Regional Analysis: an Introduction to Regional Science, The MIT Press, Cambridge, Massachusetts.
15. Mishra, H. N. (2005): Regional Planning, Rawat Publication, Jaipur
16. Mishra, R. P. (2002): Regional Planning in India- Concept Publication, New Delhi
17. Mishra, R.P. (1992): Regional Planning: Concepts, Techniques, Policies and Case Studies, Concept Pub., New Delhi.
18. Mishra, R.P. et. Al. (1987): Regional Development Planning in India : A New Strategy, Vikas Pub., New Delhi.
19. Mishra, R.P. et.al. (1980): Multi Level Planning, Heritage Publishers.
20. Ojha, R.N. (1987): PradeshikNiyojan, Kitabghar Acharya Nagar, Kanpur.
21. Singh, J. (1981): Central Places & Integrated Development in a Backward Economy, Gorakhpur.
22. Smith, David M. (1977): Human Geography – A Welfare Approach, Edward Arnold Publishers Ltd., London
23. Srivastava, V.K., Sharma N. & Chauhan, P.R. (2002): PradeshikNiyojanAvamSantulit Vikas, Vasundhara Prakashan, Gorakhpur.

Paper – V (Code: GEO305)

Course: Elective

Title of the Paper: Agricultural Geography

Credits- **05**, Marks- 70

Continuous Internal Assessment-30

Unit	Topics	Sub Topics	Periods
1	Introduction	Definition, Scope and Approaches of Agricultural Geography,	4
		Agriculture in Innovations & Diffusion	6
2	Land Use Analysis	Land Capability Classification with Special Reference to India	4
		Land Use Classification with Special Reference to India.	4
		Carrying Capacity of Land; Kostrowicki's Classification of World Agriculture.	3
3	Measurement of Agricultural Efficiency	Methods of Agricultural Productivity;	2
		Measurement – Kendall's Ranking Coefficient Method,	5
		Weighted Ranking Coefficient Method; Regional Imbalances in the levels of Agricultural Productivity in India	4
4	Regionalisation of Agricultural Pattern	Agricultural regions: Concepts and Techniques, Methods of agricultural regionalisation;	8
		Cropping Intensity and Diversification;	3
		Measurement of Level of Agricultural Development, Models in Agricultural Geography	4
5	Development & Policies	Concept of Agricultural Development,	3
		Impact of Modern Agriculture on Environment;	2
		Sustainable Agriculture	2
		Agricultural revolutions & Recent Policies	6
Continuous Internal Assessment			30
Assignment/ Presentation/Exercises/Field Work			

Course outcomes

- To analyse and understand complex classification of agriculture, land capability & land uses
- To understand the methods of agricultural productivity I.e. Kendal method etc.
- To introduce a systemic framework for issues, conservation and management in agriculturally backward region and their livelihood.
- To support and assimilate the information relating to the levels of agricultural development & policies, to check the disparities in levels of agricultural development.

Reference Books:

1. Giri, H.H. (1975): Land Utilization in Gonda District, Shivalaya Prakashan, Gorakhpur.
2. Grigg, D. (1995): An Introduction to Agricultural Geography, Routledge, London
3. Hussain, Majid (1998): Agricultural Geography, Rawat Publications, Jaipur.
4. Kumar, Pramila & Sharma, S.K. (1990) : Agricultural Geography (Hindi), M.P. Hindi Granth Academy, Bhopal.
5. Misra, R.P. (1968): Diffusion of Agricultural Innovation, Concept Publication, New Delhi.
6. Mohammad Ali (1977) Food and Nutrition in India, K.B. Publications,
7. Mohammad Ali (1978) Studies in Agricultural Geography, Rajesh Publishers, New Delhi
8. Mohammad, Noor (1980): Perspectives in Agricultural Geography (Vol. I-IV), Concept Pub. Co., New Delhi.

9. Negi, B.S. (1980): Agricultural Geography, Kdarnath Ramnath, Meerut.
10. Pandey, J.N. & Kamlesh, S.R. (2003) : Agricultural Geography (in Hindi), Vasundhara Prakashan, Gorakhpur.
11. Singh, B.B. (1979): Agricultural Geography (Hindi), GyanodayaPrakashan, Gorakhpur.
12. Singh, Jasbir& Dillon, S.S. (1984): Agricultural Geography, Tata Mc Graw Hill Pub., New Delhi.
13. Singh, S.N. (1994): Agricultural Development in India, Kaushal Publications, Shillong.
14. Symons, L. (1970): Agricultural Geography, G. Bell and Sons Ltd., London
15. Tiwari, R.C. & Singh, B.N. (1994) : Agricultural Geography (Hindi), PrayagPushtakBhawan, Allahabad.
16. Vaidya, B. C. (1997): Agricultural Land use in India, Manak Publications, New Delhi

Paper – V (Code: GEO306)

Course: Elective

Title of the Paper: Industrial Geography

Credits- **05**, Marks- 70

Continuous Internal Assessment-30

Unit	Topics	Sub Topics	Periods
1	Concepts	Meaning and Scope of Industrial Geography; Industrial Revolution and its Consequences; Trends of Industrialization in India	03 02 04
2	Location Theories	Factors of Location of Industries; Theories of Industrial Location – Weber, Hoover, Losch;	02 06
3	Spatial Pattern	Distribution and Spatial Pattern of Iron & Steel, Textile, Sugar & Fertilizer Industry; Industries and Economic Development, Problems and Prospects of Industrial Sprawl.	08 02 04
4	Industrial Regionalization	Centralization and Decentralization of Industries, Linkages of Industries; Major Industrial Regions of World	02 02 12
5	Globalization& Industrial Development	Impact of Globalization on Industrial Development, Industrial Policies and their Implications in Industrialization in India, Sustainable Industrial Development.	04 05 04
Continuous Internal Assessment			30
Assignment/ Presentation/Exercises/Field Work			

Course outcomes

- It introduces Meaning and Scope of Industrial Geography and trends of Industrialization in India
- Familiarize different location theories
- Identify spatial patterns of industrialization, globalization and industrial development

Recommended Books:

1. Alexanderson, C. (1967): Geography of Manufacturing, Prentice Hall, India.
2. Chaudhary, M.R (1970):Indian Industries – Development & Location,Oxford & IBH Company.
3. Kuchhal, S.C. (1997): Industrial Economics of India, Chaitanya Publication, Allahabad.
4. Kumar, Pramila & Sharma, S.K. (1985): Industrial Geography (Hindi), M.P.HindiGranthAcademy, Bhopal.
5. Miller, A. (1962): Geography of Manufacturing, Prentice Hall, New Jersey. Publishing Co. Ltd., New Delhi
6. Seth, V.K. (1987) Industrialization in India: Spatial Perspective, DelhiCommonwealth Publication.

7. Sharma, V.N. (2001): Spatial Pattern of Industrial Development in M.P., Radha Publication, New Delhi.
8. Singh, J. and Dhillon, S. S. (1994): Agricultural Geography, Tata McGraw Hill
9. Sinha, B.N. (1987): Industrial Geography of India, Oxford Book House, New Delhi.
10. Smith, D.M.(1982) Industrial Location : An Economic Geographic Analysis, John Wiley & Sons, New York.
11. Symons, L. (1970): Agricultural Geography, G. Bell and Sons Ltd., London
12. Vaidya, B. C. (1997): Agricultural Land use in India, Manak Publications, New Delhi
13. Weber, Alfred (1957): Theory of Location of Industries, Chicago University Press.

Paper – V (Code: GEO307)

Course: Elective

Title of the Paper: Remote Sensing

Credits- **05**, Marks- 70

Continuous Internal Assessment-30

Unit	Topics	Sub-topics	Periods
1	Overview of Remote Sensing	Definitions, Scope, and Historical Development (With Special Reference to India), Stages of Remote Sensing, Platforms and Sensors, Types of Remote Sensing	8
2	Aerial Photo and Photogrammetry	Introduction to Elements of Photographic System: Camera System, Film. Basic Geometry & Characteristics of Aerial Photograph, Scale, Concept of Relief Displacement, Image Parallax, Ortho Photo.	4 8
3	Satellite Remote Sensing	Principle of EMR and Electromagnetic Spectrum, Interaction of EMR With Atmosphere and Earth Surface, LANDSAT And IRS Satellite System: Sensors, Characteristics, and Uses, High Resolution Satellites: IKONOS, Quickbird	15
4	Image Processing	Fundamentals of Visual Image Interpretation, Digital Image Processing: Concept of Image Rectification, Image Enhancement, Image Classification-Supervised & Unsupervised,	2 8
5	Applications & Recent advances	Applications In Disaster Management, Land Use/ Land Cover Change, Forestry, Water Resource and Urban and Regional Planning, Thermal, Microwave and Hyper Spectral Images: Characteristics and Applications	15
Continuous Internal Assessment			30
Assignment/ Presentation/Exercises/Field Work			

Course outcomes

- It gives an overview of remote sensing process
- It introduces aerial photo and photogrammetry and satellite remote sensing
- Enables image processing procedure and identify applications of remote sensing

Recommended Books:

1. American Society of Photogrammetry (1983): Manual of Remote Sensing, Falls Church, VA.
2. Avery, T. E. and Berlin, G.L. (1992): Fundamentals of Remote Sensing and Air photo Interpretation, Mc Millan, N. York.
3. Barrett, E.C.& Curtis, L.F. (1992): Introduction to Environmental Remote Sensing, Chapman & Hall, New York.
4. Campbell, J. B. (2002): Introduction to Remote Sensing. 5th edition. Taylor and Francis, London.

5. Chaunial, D.D. (2001): Remote Sensing and G.I.S. (in Hindi), Sharda Pustak Bhawan, Allahabad.
6. Cracknell, A.P. and Hayes, L.W.B. (1993): Introduction to Remote Sensing, Taylor & Francis, London.
7. Curran, P.J. (1985): Principles of Remote Sensing, Longman, London.
8. Floyd, F. and Sabins, Jr. (1986): Remote Sensing: Principles and Interpretation, W.H. Freeman, New York.
9. George Joseph (2005): Fundamentals of Remote Sensing, New Delhi.
10. Guham, P. K. (2003): Remote Sensing for Beginners. Affiliated East-West Press Private Ltd., New Delhi.
11. Harry, C.A. (ed.) (1978): Digital Image Processing, IEEE Computer Society, California
12. Hord, R.M. (1982): Digital Image Processing of Remotely Sensed Data, Academic Press, New York.
13. Jensen, J.R. (2000): Remote Sensing of the Environment, Dorling Kundersley Publishing Inc. John Wiley and Sons, Singapore
14. Leuder, D.R. (1959): Aerial Photographic Interpretation: Principles and Application. McGraw Hill, New York.
15. Lillesand, T.M. and Kiefer, R.W. (2000): Remote Sensing and Image Interpretation. 4th edition. John Wiley and Sons, New York.
16. Nag, P. (ed.) 1992: Thematic Cartography and Remote Sensing, Concept Publishing. Company, New Delhi.
17. Sabins, F. F. (1996): Remote Sensing: Principles and Interpretation, W.H Freeman, New York
18. Sharma, H.S. (2003): Remote Sensing for Resource Survey, Concept Publication, New Delhi.
19. Spurr, R. (1960): Photogrammetry and Photo Interpretation, The Roland Press Company, London.
20. Survey of India, (1973): Photogrammetry, Survey of India, Dehradun.
21. Tyagi, N and Rana, N.K (2015): Geospatial technology: Applications in Natural Resource Appraisal & Management, R. K. Books, Dariya Ganj, Delhi.

Paper – V (Code: GEO308)

Course: Elective

Title of the Paper: Transport Geography

Credits- **05**, Marks- 70

Continuous Internal Assessment-30

Unit	Topic	Sub-topic	Periods
1	Introduction	Definition, Scope & Relevance to the study of Transport Geography, Historical Development of Transport System, Relative Importance of Different Modes of Transport.	5 3 3
2	Spatial Interaction	Concept of Spatial Interaction , Bases of Spatial Interaction –Complementarity, Intervening Opportunity and Transferability.	3 5
3	Structure of Transport Network	Evolution of Transport network with special reference to Taffee , Morrill and Gould 's Model. Network analysis- Concept of accessibility and connectivity Measures of connectivity-Graph theoretic measures – Cyclomatic, Alpha, Beta ,Gama & Detour Index	5 15
4	Modes of Transport	State of Modes and Means of Transport in India – Rail, Road, Waterways and Air	10
5	Policy and Planning	Transport policy in India , Transport planning , Role of Transport in Regional development.	4 3 4
Continuous Internal Assessment			30
Assignment/ Presentation/Exercises/Field Work			

Course outcomes

- It introduces meaning and Scope & relevance of the study of Transport Geography.
- Comprehend concept of spatial interaction and its base.
- Examine mode of transport and policy planning with special reference to India.

Recommended Books:

1. Houle. B.S. (1973): Transport and Development, Mc Millan, London.
2. Hurst, Elliot (1973): Transport Geography – Readings and Comments, Mc Graw Hill Book Co. New York.
3. Jain, J.K. (1997): Transport Economics, Chaitanya Pub. House, Allahabad.
4. Kansky, J. (1963): Structure of Transport Network, University of Chicago, Deptt. of Geography.
5. Raza, M. & Agrawal, Y. (1986): Transport Geography of India, Concept Pub., New Delhi.
6. Robinson, H. & Banford, C. (1978): Geography of Transport, Mc Donald & Evans, London.
7. Singh, J. (1969): Transport Geography of South Bihar, N.G.S.I., B.H.U.
8. Singh, K.N. (1990): Transport Network in Rural Development in Eastern U.P., I.R.E.D., Gorakhpur.
9. Singh, K.N. (2005): ParivahanBhoogol, GyanodayaPrakashan, Gorakhpur.
10. Taffee, E.J. & Gauthier, H.L. (1973): Geography of Transportation, Prentice Hall.
11. White, H.P. & Senior, M.L. (1983): Transport Geography, Longman, London.

Semester IV

Paper – I (Code: GEO401)

Course: Core

Title of the Paper: Climatology

Credits- **05**, Marks- 70

Continuous Internal Assessment-30

Unit	Topic	Sub-topics	Periods
1	Introduction	Definition and Scope of Climatology, Weather & Climate,	3
		Development of Modern Climatology	2
		Atmosphere: Evolution, Composition and Structure of the Atmosphere	3
		Insolation, Electromagnetic Spectrum and Heat Balance of the Earth	2
2	Climate	Vertical and Horizontal Distribution of Temperature (Lapse rate & inversion of temperature)	2
		Mechanism of Monsoon – Recent Concepts,	2
		Criteria for Climatic Regionalisation,	6
		Climatic Classifications: Koppen, Thornthwaite, and Trewartha,	2
		Factors Affecting Air Pressure and Winds, Geostrophic Wind and Gradient Wind,	3
Models for General Circulation of the Atmosphere	3		
3	Circulation of the Atmosphere	Air masses and Fronts – Concept, Classification and Properties,	4
		Tropical and Temperate Cyclones,	3
		Humidity – Basic Concepts, Factors Affecting Condensation & Evaporation,	3
		Types of Precipitation.	1
4	Human Impact	Role of Climate in Human Life	3
		Human Impact of Human Activities on Climate – Green House Effect, Ozone Depletion.	3
		Atmospheric Pollution and Global Warming & Climate Change	6
5	Applied Climatology	Climate and Landforms, Climate and Natural Vegetation & Animals,	3
		Climate and Agriculture, Climate and House Types & Settlement	2
		Regional Climatology – Macro, Meso & Micro Level,	3
		Urban Climatology - Heat Islands, Weather Forecasting.	4
Continuous Internal Assessment			30
Assignment/ Presentation/Exercises/Field Work			

Course outcomes

- Introduces the meaning, scope and development of modern climatology
- Critically examine the mechanism of monsoon and climatic regionalisation.
- Comprehend circulation of atmosphere, human impact on the climate and applied climatology.

Recommended Books:

1. Banerji, R.C. & Upadhyay, D.S. (1999): Mausam Vigyan, Rajasthan Hindi Granth Academy, Jaipur.
2. Critchfield, H.J. (2002): General Climatology, Prentice Hall of India, New Delhi.
3. Hobbs, J.E. (1983): Applied Climatology, Butterworths, London.
4. Kendrew, W.G. (1972): Climatology, Oxford Uni. Press.
5. Lal, D.S.(2001): Climatology, Chaitanya Pub. House, Allahabad.
6. Lockwood, J.G. (1974): World Climatology and Environmental Approach, Edward Arnold, London.
7. Mathur, J.R. (1974): Climatology: Fundamentals and Applications, Mc Hill Book Company, New York.
8. Negi, B.S. (1999): Climatology and Oceanography (in Hindi), Kedarnath Ramnath, Meerut.
9. Rob Van Den Berg (2009) Evaluating Climate Change and Development. Prentice Hall, Englewood Cliffs, New Jersey 0762, 1998
10. Sidhartha, K. (2002): Atmosphere, Weather and Climate, Kislav Pub. Pvt. Ltd., New Delhi.
11. Singh, Savindra (2005): Climatology, PrayagPustak Bhawan, Allahabad.
12. Subrahmaniam, V.P. (1992): Contribution to Indian Geography Part – III – General Climatology, Heritage Publication, New Delhi.
13. Trewartha, G.T. (1954): An Introduction to Climate, Mc Graw Hill Series in Geography. New York
14. Upadhyay, D.P. & Singh, R. (2003): Climatology and Hydrology (in Hindi), Vasundhara Prakashan, Gorakhpur.

Paper – II (Code: GEO402)

Course: Core

Title of the Paper: Research Methodology

Credits- **05**, Marks- 70

Continuous Internal Assessment-30

Unit	Topics	Sub-topics	Periods
1	Scientific Research in Geography	Concept, Meaning and Objectives of Research, Types of Research, Overview of Research Process	8
2	Methods and Models	Methods of Explanation in Geography: Systems and Models.	5 5
3	Methods and Sources of Data collection	Techniques of Data Collection: Questionnaire and Interview Schedule, Interview, Observation, Case Study; Preparation of Questionnaire, Sampling Design, Selection of Respondents. Sources of Data: (A) Secondary Data: Census, NSS, CSO, Aerial Photographs and Satellite Imageries, Web Portal(B) Primary Data: Observational Method, Questionnaires and Interviews; Sampling Methods.	8 7
4	Research Process	Defining Research Problem: Identification of Problems, Specification of Objectives, Review of Literature, and Conceptualization of Research Problem, Research Questions and Hypotheses. Research Plan.	12
5	Report writing	Tabulation and Compilation of Data, Content Analysis, Citation, References, Bibliography, Review of Literature, Formatting of Research Reports	15
Continuous Internal Assessment Assignment/ Presentation/Exercises/Field Work			30

Course outcomes

- Can understand scientific research in Geography.
- Comprehends method and models

- Explain research process and know report writing.

Recommended Books:

1. Davis, P.C. (1985): Data Description and Presentation, Oxford, London.
2. Flowerdew, R. et.al. (1997): Methods in Human Geography: A Guide for Students Doing a Research Project, Longman, Harlow.
3. Goudie, A. (Ed) (2004): Encyclopaedia of Geomorphology, Routledge, London,
4. Gregory, D., Johnston, R., Pratt, G., Watts, M. and Whatmore, S. (2009): The Dictionary of Human Geography, Wiley-Blackwell, Singapore
5. Kothari, C.R. (1982): Research Methodology in Social Sciences, Inter India Pub., New Delhi.
6. Mishra, H.N. & Singh, V.P. (2002): Research Methodology in Geography, Rawat Publications, Jaipur.
7. Misra, R.P. & Ramesh, A. (1999): Fundamentals of Cartography, Concept Pub. Co., New Delhi.
8. Misra, R.P. (1985): Research Methodology, Concept Publishing Co., New Delhi.
9. Stoddart, R.H. (1982): Field, Techniques and Research Methods in Geography, Kendall Hunt, Dubuque.
10. Tandon, B.C. (1997): Research Methodology in Social Sciences, Chaitanya Pub., Allahabad.
11. Warf, B. (Ed)(2006): Encyclopedia of Human Geography, SAGE Publications, London.

Paper – III (Code: GEO403)

Course: Core

Title of the Paper: Environmental Hazards and Disaster Risk Reduction

Credits- **05**, Marks- 70

Continuous Internal Assessment-30

Unit	Topics	Sub-topics	Periods
1	Introduction	Concepts and Definition of Environmental Hazards, Disaster, Risk, and Resilience	4
2	Understanding Environmental Hazards	Bases of Classification and Types of Hazards, Characteristics, spatio-temporal distribution, impacts and risk reduction measures of- (A) Major geological hazards: Volcanic eruption, Earthquakes, Tsunami and Landslides (B) Major hydro-meteorological hazards: Floods, Drought, Cyclones, Cloud burst	1 8 8
3	Disaster risk reduction	Paradigm and approaches in disaster management, Concepts of Disaster Risk Reduction, Disaster Management Cycle, Pre disaster stage-preparedness, prevention, mitigation; On disaster stage-response, Post disaster stage-Relief, Recovery, Rehabilitation	2 2 6
4	Techniques and methods	Process of hazard identification and mapping Indicators and factors of vulnerability Risk assessment process	3 4 3

5	International and National initiatives	UN and its programmes: International Decade of Natural Disaster Reduction (IDNDR), International Strategy for Disaster Risk Reduction (ISDR), Hyogo Framework for Action (HFA) – 2005, Major hazards profile of India: Flood, drought, earthquake, tsunami, cyclones; Institutions: National Disaster Management Authority (NDMA), National Institute of Disaster Management (NIDM), Policy: Disaster management act 2005, Disaster management system in India	5 8 2 2 2
Continuous Internal Assessment			30
Assignment/ Presentation/Exercises/Field Work			

Course Outcomes

- Able to understand the fundamental and basics of Environmental hazards.
- Examine the theories and process of disaster risk reduction.
- Comprehend the national and international initiatives for disaster risk reduction programme.

Recommended Books:

1. Alexander, D. (1993): Natural Disasters, Springer, Berlin
2. Bolt, B.A. et.al. (ed.) (1950): Geological Hazards, Springer, Verlay, New York.
3. Burton, I. et.al. (1978) Environment as Hazards, O.P.O., New York.
4. Goudie, A. (1990): Geomorphological Techniques, Unwin Hyman, London
5. Hart, M. G. (1986): Geomorphology: Pure and Applied, George Allen and Unwin, London
6. Kusky, T. (2012): Encyclopedia of the Hazardous Earth, Viva Books, New Delhi
7. Petak, W.J. and Atkinson, A.D. (1982): Natural Hazards Risk Assessment and Public Policy, Springer, Verlay, New York.
8. Roy, P.S. et.al. (2000): Natural Disaster and their Mitigation, ITC Publication.
9. Valdiya, K. S. (1987): Environmental Geology, Tata McGraw Hill, New Delhi
10. White, G.F. (ed) (1974): Natural Hazards, Local, National and Global, Oxford University Press, London.

Paper – IV (Code: GEO404)

Course: Core

Title of the Paper: Geospatial Technologies

Credits- 05, Marks- 70

Continuous Internal Assessment-30

Units	Topic	Sub topic	Periods
Unit-1	Aerial Photograph	Concepts, Photogrammetry – Stereovision Test	4
		Determination of scale of aerial photographs	3
		Concept of height on aerial photographs	2
		Visual Interpretation of single vertical & stereo pair of aerial photographs and Preparation of Land Use Map	8
Unit-2	Remote Sensing	Concept & Evolution of remote sensing	2
		Introduction to reference system of IRS satellites,	4

		data products and formats Visual Interpretation of satellite images Calculation of the Area on the Remotely Sensed Data	5 2
Unit-3	Computers, GIS & GPS	Introduction to Computers: Exercise on Microsoft word, excel,& power point GIS Concepts, Data Models Introduction to GIS software (open source) Database creation GPS systems	4 6 4 4 6
Continuous Internal Assessment			30
Assignment/ Presentation/Exercises/Field Work			

Course outcomes

- Familiarize the basic concept and application of Aerial Photography.
- Introduced basic concept and process of remote sensing.
- Comprehend Geographical Information System (GIS) and Geographical Positioning System (GPS).

Recommended Books:

1. Brown, L.A. (1949) : Maps and Map Makers, Batsford, London.
2. Bygott, J. (1967) : An Introduction to Map Work and Practical Geography, University Tutorial, London
3. Chauhan P,R. (2014) PrayogatmakBhoogol, Vasundhara Publicaiions, Gorakhpur
4. Debenham, F. (1936) : Map Making, M.S. Mill & Co. New York
5. Dickinson, G.C. (1969) : Maps and Air Photographs, Edward Arnold, London
6. Lawrence, G.R.P. (1971) : Cartographic Method, Methuen, London
7. Monkhouse, F.J. and Wilkinson, H.R. (1966) : Maps and Diagrams, Methuen, London.
8. Raise, E. (1946) : General Cartography, Mc Graw Hill, New York.
9. Robision A., et.al (1978) : Elements of Cartography, John Wiley and Sons, New York.
10. Singh, R.L., Singh, R.P.B. (1991) : Elements of Practical Geography, Kalyani Pub., New Delhi.
11. Yadav, H.L. (2001) : Prayogatmak Bhoogol, Radha Pub., New Delhi.

Paper – V (Code: GEO405)

Course: Elective

Title of the Paper: Political Geography

Credits- 05, Marks- 70

Continuous Internal Assessment-30

Unit	Topics	Sub-topics	Periods
1	Introduction	Nature& Scope, Evolution & Development of Political Geography Contribution of German, British & American Scholars	2 2 5
2	Approaches	Approaches to the Study of Political Geography in reference to Functional and Unified Field Theory	10
3	Nation and State	The Concept of Nation and State;	2

		Spatial Factors and Anatomy of State: Core Areas and Capitals; Frontiers and Boundaries. Evolution of Federalism, Origin and Success of Federalism in India	4 2 3
4	Strategic Views	Global Strategic Views with particular emphasis on the ideas of Mahan, Mackinder, Spykman and Deseveresky, Geopolitical Setting of India, Significance of Indian Ocean;	10 2 3
5	Spatial Organisation	Elements of Electoral Geography; Geopolitical Problems of India in Relation to its Neighbours; Contemporary Problems of India; Regional Co-operations – SAARC, ASEAN, European Union.	3 6 6

Continuous Internal Assessment

30

Assignment/ Presentation/Exercises/Field Work

Course Outcomes

- To understand the scope and development of the subject matter with the understanding of the various approaches involved
- To develop the understanding on the concepts related to the anatomy of the state based on the current philosophy and established theories.
- To understand the spatial processes involved in the success of the federalism and electoral geography.
- To understand the Geopolitical Setting of India in relation to the neighbours and its significance in the world regional settings.

Recommended Books:

1. Adhikari, S. (2005): Political Geography of India, Sharada Pustak Bhawan, Allahabad
2. Busted, M.A. (1980): Developments in Political Geography, London.
3. Carlson, L. (1971): Geography and World Politics, Prentice Hall, New Jersey.
4. Chauhan, P.R. (1996): RajnitikBhoogol, Vasundhara Prakashan, Gorakhpur.
5. Cox, K. (2002): Political Geography: Territory, State and Society, Wiley-Blackwell
6. Dikshit, R.D. (1989): Political Geography: A Contemporary Perspective, Tata Mc Graw Hill, New Delhi.
7. Dikshit, S.K. (2007): RajnitikBhoogolAvamBhurajniti, Vishwavidyalaya Prakashan, Varanasi.
8. Dwivedi, R.L. (1980): Political Geography, Chaitanya Publishing House, Allahabad.
9. Glassner, M.L. & Blij, H.J.de (1968): Systematic Political Geography, John Wiley, New York.
10. John, R. S. (2002): An introduction to Political Geography, Taylor & Francis.
11. Johnston, R.J. (1982): Geography and the State, Mac Millan, London.
12. Kasperson, R.E. & Minghi, J.V. (1971): Structure of Political Geography, London.
13. Pounds, N. J.G. (1977): Political Geography, Mc Graw Hill, New York.
14. Sinha, Manorama (1995): Political Geography, Horizon Publication, Allahabad.
15. Sukhwal, B.L. (1985): Modern Political Geography of India, Sterling Publication, New Delhi.
16. Taylor, P. (1985): Political Geography, Longman, London, 1985.

Paper – V (Code: GEO406)

Course: Elective

Title of the Paper: Geography of Tourism

Credits- **05**, Marks- 70

Continuous Internal Assessment-30

Unit	Topic	Sub-topic	Periods
1	Introduction	Concept, Nature, Scope & Approaches;	4
		Elements of Tourism;	2
		Evolution of Tourism Studies;	2
		Multiplier Effect of Tourism.	4
2	Types & Impact	Types of Tourism – Cultural, Adventure, National & International.	4
		Cultural, Environmental, Socio-cultural & Economic Impact of Tourism.	4
3	Infrastructure	Role of Infrastructure in Promotion of Tourism – Transport & Communication, and Markets; Information Technology; Travel Agents & Tour Operators.	5
			4
4	Tourist Circuits	Major Tourist Circuits of the World;	4
		Evolution & Growth of Tourism in India;	3
		Trend of Tourism in India,	4
		Major Tourist Circuits (India) & their Salient Features	8
5	Organisations	Tourist Organizations: Domestic and International;	4
		Problems & Prospects of Tourism in India;	3
		Planning & Management of Tourism.	5
Continuous Internal Assessment			30
Assignment/ Presentation/Exercises/Field Work			

Course outcomes

- Introducing relationship between geographical elements and tourism based on natural and cultural factors.
- Discuss about evolution of tourism studies in Geography and Role of infrastructure, information technology, transportation and communication in tourism promotion.

Recommended Books:

1. Bhatia, A. K. (1991): International Tourism - Fundamentals and Practices, Sterling Publisher, New Delhi
2. Bhatia, A. K. (1996): Tourism Development: Principles and Practices, Sterling Publisher Ltd., New Delhi
3. C.Huster and H.Green: Tourism and the Environment: A Sustainable Relationship,Routledge,London,1995.
4. C.M.Hall and S.J.Page: The Geography of Tourism and Recreation, Environment, Place and Space, Routledge,London,1999.
5. D.Milton: Geography of World Tourism, Prentice Hall ,New York,1993.
6. D.S.Bhardwaj and M.Chaudhary (1997): Contemporary Issues in Tourism, Himalaya Mumbai.
7. Das, M. (1999): India: A Tourist Paradise, Sterling Publishers, New Delhi.
8. E.Inskeep: Tourism Planning: An Integrated and Sustainable Development Approach, Van Nostrand and Rein hold, New York,1991.
9. G.Shaw and A.M.Williams: Critical Issues in Tourism: A Geographical Perspective, Blackwell,Oxford,1994.
10. H.Robinson: A Geography of Tourism, Macdonald and Evans, London, 1976.
11. J. Lee: Tourism and Development in the Third World, Routledge, London, 1988.
12. N.K.Garg (1996): Tourism and Economic Development, Avishkan, Jaipur.
13. P.C.Sinha: International Encyclopaedia of Tourism Management, Vol.1-12,Anmol, New Delhi
14. Pearce, D. G. (1987): Tourism Today: A Geographical Analysis, Longman, Harlow.
15. R.K.Kaul: Dynamics of Tourism and Recreation, Inter India, New Delhi, 1985.
16. Ryan Cris (1991): Recreational Tourism: A Social Science Perspective, Routledge, London.
17. Smith, L. J. S. (2010): Tourism Analysis: A Handbook, Halstead Press, Sydney.

Paper – V (Code: GEO407)

Course: Elective

Title of the Paper: Geographical Information System

Credits- **05**, Marks- 70

Continuous Internal Assessment-30

Unit	Topics	Sub Topics	Periods
1	Introduction	Definitions & Scope, Objectives and Development Component of GIS, Functional Elements of GIS.	04 02 04
2	Data Handling in GIS	GIS Hardware & Software, The Basis of GIS Mapping: Geographical Data: Types and Characteristics; Map Projections, Datum, Spherical and Plane Coordinate Systems, Geometric Rectification. Data Inputs: Scanning, Digitization & Editing, Topology Creation, Errors in GIS,	04 06 07 02
3	Data Structure	Data Structure-Raster & Vector, Spatial Data Analysis – Raster – Vector Based, Data Visualization: Types of Visualization, Map Layout Design and Symbology Integration of Remote Sensing and GIS;	07 02
4	Database Structure	Database Structure – Hierarchical, Network, Relational & Object Oriented, DBMS, RDBMS. GIS Database Management Systems;	09
5	Applications	Digital Elevation Model (DEM): Characteristics & its Applications. Concept of GPS & its Application, GIS Applications, GIS & Disaster Management. Recent Trends In GIS,	03 04 04 02
Continuous Internal Assessment			30
Assignment/ Presentation/Exercises/Field Work			

Course outcomes

- Introduce meaning and scope, development and functional element of GIS
- Impart training on data handling process and data and data base structure.
- Explain application of Digital Elevation Model (DEM), Global Positioning System (GPS) and GIS applications in Disaster Management

Recommended Books:

1. Bhatia, J.B. (2008) Remote Sensing & GIS, Oxford.
2. Bonham, Carter G.F. (1995): Information Systems for Geoscientists – Modelling with GIS. Pergamon, Oxford.
3. Bruce E. Davis (1996) GIS : A Visual Approach, Onward Press.
4. Burrough, P.A. (1986) Principles of GIS for Land Resource Assessment, Oxford.
5. Burrough, P.A. and McDonnell, R. (1998): Principles of Geographic Information Systems. Oxford University Press, Oxford. London
6. Chang, K.T. (2003): Introduction to Geographic Information Systems. Tata McGraw Hill Publications Company, New Delhi.
7. Chauniyal, D. D. (2004): Remote Sensing and Geographic Information Systems. (in Hindi). Sharda Pustak Bhawan, Allahabad.
8. ESRI (1993): Understanding GIS. Redlands, USA
9. Fraser Taylor, D.R. (1991): Geographic Information Systems. Pergamon Press, Oxford.

10. George, J. (2003): Fundamentals of Remote Sensing. Universities Press Private Ltd, Hyderabad.
11. Girard, M. C. and Girard, C. M. (2003): Processing of Remote Sensing Data. Oxford and IBH, New Delhi.
12. Glen, E. M. and Harold, C. S. (1993): GIS Data Conversion Handbook. Fort Collins, Colorado, GIS Word Inc.
13. Goodchild, M.F.; Park, B. O. and Steyaert, L. T. (eds.) (1993): Environmental Modelling with GIS. Oxford University Press, Oxford.
14. Guptill, S.C., and Morrison, J.L. (1995): Elements of Spatial Data Quality. Elsevier/ Pergamon, Oxford.
15. Heywood, I. (2003): An Introduction to Geographical Information Systems. 2nd edition, Pearson Publishing Company, Singapore.
16. Lillesand, T. M., Kiefer, R. W. and Chipman, J. W. (2004): Remote Sensing and Image Interpretation, Wiley, New York
17. Lo, C.P. and Yeung, A. K. W. (2002): Concepts and Techniques of Geographic Information Systems. Prentice Hall of India, New Delhi.
18. Longley, P. and Batty, M. (eds.) (1996): Spatial Analysis: Modelling in a GIS Environment. GeoInformation International, Cambridge.
19. Longley, P., Goodchild, M.F., Maguire, D. and Rhind, D. (1999): Geographic Information Systems. Principles, Techniques, Management, Applications. John Wiley and Sons, New York.
20. Maguire, D. J.; Michael F. G. and David W. R. (1999): Geographical Information Systems: Principles and Application. Geo Information International, Vol.2, Longman Publication., New York.
21. Michael F. G. and Karan K. K. (ed.) (1990): Introduction to GIS. NCGIA, Santa Barbara, California. Prentice Hall, Englewood Cliffs
22. Tomlin, C. D. (1990): Geographic Information Systems and Cartographic Modeling, Englewood Cliffs, NJ-Prentice Hall

Paper – V (Code: GEO408)

Course: Elective

Title of the Paper: Regional Planning

Credits- **05**, Marks- 70

Continuous Internal Assessment-30

Unit	Topic	Sub-topics	Periods
1	Concept	Concept and Scope of Regional Planning, Approaches to regional Planning	2 3
2	Theories & Models	Economic Base Theory, Central Place Theory, Concept of Growth Centres; Growth Centre Strategy for Regional Planning; Core – Periphery Relation.	4 6 3
3	Planning Regions	Concept and Delimitation of Planning Regions; Planning Regions of India: Attempts of their delimitation , Hierarchy of Planning Regions, Regional Planning for Rural Development with Special Reference to Eastern U.P.	2 5 4
4	Infrastructure and their Role in Regional Development	Meaning and Types of Infrastructure and their Role in Regional Development – Irrigation, Power, Transport, Marketing and Institutional factors	16

5	Regional Planning as a Strategy of Development	Formulation and purpose of Five Year plans in India, Priorities and achievements of Five Year plans, Rural Development Programmes in Five Year plans	4 3 8
Continuous Internal Assessment			30
Assignment/ Presentation/Exercises/Field Work			

Course outcomes

- It helps to understand the scope and based upon various theories it establishes the need of planning of a region.
- To understand the strategies of regional planning and involved the intricacies of delimiting a region and core-periphery relations.
- To understand the role of infrastructure in regional planning and to understand the importance of regional planning as a tool for the development strategy.

Recommended Books:

1. Alonso, W. & Friedmann, E. (1970): Regional Development and Planning, Longman, London.
2. Bhat, L.S. (1973): Regional Planning in India, Statistical Publishing Society, Kolkata.
3. Chand, M. and Puri, V. K. (2003): Regional Planning in India, Allied Publishers Pvt. Ltd., New Delhi
4. Chandana, R. C. (2000): Regional Planning: A Comprehensive Text, Kalyani Publishers, Ludhiana
5. Dube, K. N. (1990): Planning and Development in India, Asia Publishing House, New Delhi
6. Dubey, K.K. & Singh. M.B. (1988): PradeshikNiyojan, Tara Publication, Varanasi.
7. Friedmann, J. and Alonso, W. (1967): Regional Development and Planning: A Reader, MIT Press, New York
8. Ginsburg, N.S. (1959): The Regional Concept and Planning, Regional Planning UNO, New York.
9. Glassen, John (1978) : An Introduction to Regional Planning, Hutchinson, Educational, London.
10. Glasson, J. and Marshall, T. (2007): Regional Planning, Routledge, New York
11. Glikson, Arther (1985): Regional Planning and Development, London.
12. Govt. of India (1986): Regional Plan 2001: National Capital Region, NCRPB, Ministry of Urban Development, New Delhi
13. India Year Book (2014): Publication Division, New Delhi
14. Mishra, H. N. (2005): Regional Planning, Rawat Publication, Jaipur
15. Mishra, R. P. (2002): Regional Planning in India- Concept Publication, New Delh
16. Mishra, R.P. (1992): Regional Planning: Concepts, Techniques, Policies and Case Studies, Concept Pub., New Delhi.
17. Mishra, R.P. et. Al. (1987): Regional Development Planning in India : A New Strategy Vikas Pub., New Delhi.
18. Mishra, R.P. et.al. (1980): Multi Level Planning, Heritage Publishers
19. Ojha, R.N. (1987): PradeshikNiyojan, Kitabghar Acharya Nagar, Kanpur.
20. Sharma, N. (2012): PradeshikNiyojan Geography, DrishtikonPrakashan, New Delhi.
21. Singh, J. (1981): Central Places & Integrated Development in a Backward Economy, Gorakhpur.
22. Srivastava, V.K., Sharma N. & Chauhan, P.R. (2002): PradeshikNiyojanAvamSantulit Vikas, Vasundhara Prakashan, Gorakhpur.

Paper – V (Code: GEO409)

Course: Elective

Title of the Paper: Urban Geography

Credits- **05**, Marks- 70

Continuous Internal Assessment-30

Unit	Topic	Sub-topics	Periods
1	Introduction	Meaning & Scope; Development of Urban Geography in India	3
		Urban Growth in Ancient, Medieval, and Modern Period	3
		Modern Urban Settlements: Origin & Location	4
		Urban Growth Models: Concentric Zone, Sectoral, and Multi-nuclei Model,	3
		Megalopolis & Conurbation, Trends of Urbanisation in India.	2
2	Influence Area	Umland: Meaning & Nomenclature, Delimitation with reference to India, Urban Fringe: Concept & Characteristics; Causes of Development & Delimitation with reference to India	5 5
3	Size, Shape & Functions	Functional Classification of Urban Centres, Methods of Functional Classification	4
		Urban Hierarchy: Concept, and Method of Determination;	3
		Concept of Rank Size Rule.	4
4	Morphology	Definition, Factors Affecting on Urban Morphology, Types of Urban Morphology, Morphology of Indian cities;	5
		Urban Amenities; Demographic Structure & Characteristics of Urban Population in India; Qualitative trends of Urban Population.	5
			5
5	Urban Policies & Planning	Problems of cities	2
		Concept of Town Planning: Aims & Principles of Town Planning, Problems and Prospects of Town Planning, Town Planning in India	5
		Urban Policies & Smart Cities	2
Continuous Internal Assessment			30
Assignment/ Presentation/Exercises/Field Work			

Course outcomes

- To know the scope and advancement of the Urban Geography as an established branch of the Geography as a subject
- To understand the spatial processes of urban growth and factors which affect the origin and development of urban settlements.
- To build the theoretical understanding based on certain models related to the processes of the urban morphology.
- To understand the theoretical and functional classification of the urban settlements and the related socio-economic problems and planning issues.

Recommended Books:

1. Alam, S.M. (1965) Hyderabad-Secundrabad : A Study in Urban Geography, Allied Publishers, Mumbai.
2. Bansal, S.C. (2008) Urban Geography (in Hindi), Meenakshi Prakashan, Meerut.
3. Bose, A. (1980): India's Urbanisation, Tata McGraw Hill, New Delhi.
4. Carter, H. (1979): The Study of Urban Geography, Arnold Heinemann, London.

5. Gibbs, J. P. (Ed.), (1961): Urban Research Methods, Princeton.
6. Hall, T. (2006): Urban Geography, Routledge, London.
7. Karan, M.P. (1991) Urban Geography (in Hindi), Kitab Ghar Acharya Nagar, Kanpur.
8. Mandal, R.B. (2000) Urban Geography: A Textbook, Concept Publishing Company, New Delhi.
9. Mayer, H.M. & Kohn, C.F. (1967): Reading in Urban Geography, Central Book Depot, Allahabad.
10. Pacione, M. (2009): Urban Geography, Routledge, New York Press, New Delhi.
11. Ramchandran, R. (1997): Urbanization and Urban Systems in India, Oxford University.
12. Rao, B.P. and Sharma, N. (2000) Urban Geography (in Hindi), Vasundhara Prakashan, Gorakhpur.
13. Siddharth, K. and Mukherjee, S. (2013): Cities, Urbanization and Urban System, KisalayaPrakashan,
14. Singh, O.P. (1979) Urban Geography (in Hindi), Tara Publication, Varanasi.
15. Singh, R.L. (1955) Banaras: A Study in Urban Geography, Nand Kishore & Sons, Varanasi.
16. Singh, Ujagir (1974) Urban Geography (in Hindi), Uttar Pradesh Hindi Granth Academy, Lucknow.
17. Taylor, G. (1964) Urban Geography, Methuen, London.
18. Yadav, C.S. (1992) Urban Planning and Policies, Concept Publishing Company, New Delhi.