

National Education Policy-2020

Siddharth University Kapilvastu, Siddharth Nagar, Uttar Pradesh

MA Geography: 2 Years Semester Course (CBCS) Outline, 2022

The MA Curriculum in Geography consists of four semesters spread over two years. This course is designed for regular course students. No private candidate shall be allowed to offer Geography in M.A. In addition to compulsory papers, a few optional papers are offered in the third and fourth semesters, from which students will have to select one paper from each elective group. There shall be four Theory papers and one Practical paper in each semester, along with an internal assessment in each paper. The student will have to do a comprehensive research project in Post-graduation (first and second year). This research project can also be interdisciplinary / multidisciplinary / industrial training / Internship / survey work. The research project will be done under the supervision of a teacher. A Co-supervisor belonging to any industry, company, research institute, technical institute can also be chosen by students from any other institutions. The student will be required to undertake a research project of 4 credits in each semester. The student shall submit a dissertation/report of their research project carried out in both semesters at the end of the year. This research project will carry 100 marks. At the end of the year, the evaluation of dissertation/report shall be carried out jointly by the Supervisor and the external examiner nominated by the University. In which 50 marks will be determined on the project report submitted by them; 25 marks will be on viva and 25 marks will be given to the students whose research paper related to their research project will be published in UGC CARE Listed Journal or Peer Reviewed Journal. The grades will be marked based on the marks obtained in the research project and will also be included in the calculation of CGPA. The total number of credits for a 2-year course is 100 (52+48). The more detailed information about the program outcome, core, and elective papers, practicals, and evaluation of this course is given below on the next pages-

Course certificate

❖ Suggested Continuous Evaluation Methods in this course are Assignment/test/Quiz (MCQ)/Seminar/Presentations/Research orientation of students.

PROGRAMMESPECIFICOUTCOMES(PSOs)-

ProgramOutcome(After2 YearsofStudy)

- a) Thiscourseprovides theadvanced ideasand conceptsofAspectofGeography.
- b) ThiscourseintendstoorientthelearnerwiththeApproachestothebroaderdisciplineof Geography.
- c) Itwillhelpdevelopanalytical, criticalthinking,and research ability o n thethemesandissuesof geography.
- d) Itwillpreparethestudentstounderstandthedevelopmentofthesubjectanddelve into issues suited to the needs of the contemporary world.
- e) It will help in an exhaustive understanding of the basic and advanced concepts of Geography and an awareness of the emerging areas of the field.
- f) Acquisitionofin-depthunderstandingoftheappliedaspectsofGeographyaswellas interdisciplinary subjects in everyday life.
- g) Improvementofcriticalthinkingandskillsfacilitating.
- h) The application of knowledge gained in the field of Geography in the classroom to the practical solving of societal problems.
- i) Theprogrammeorientsstudentswithtraditionalgeographicalknowledgeand advanced contemporary skills like remote sensing and GIS.
- j) Enhance their practical skill through field visits and firsthand experience of tools/equipment.
- k) Familiarize with the applied aspects in different sub-branches of geography. Identify frontier areas of research and sub-branches of geography for further research.
- l) Broaden their job prospects in qualifying for various competitive examinations and join multiple industries and research institutes like Transport, Rural Development, Urban geography, Regional Planning, and Cartography to pursue a bright career

List of all papers in all four semesters.

Semester-wise Titles of the Papers in M.A. (Geography)

M.A. Ist Semester

Year	Sem.	Course Code	Paper Title	Theory/Practical	Credits	Total Number
1	I	MGEC-401	Advanced Geomorphology	Core Paper I/Theory	4	100
1	I	MGEC-402	Climatology	Core Paper II/Theory	4	100
1	I	MGEC-403	Oceanography	Core Paper III/Theory	4	100
1	I	MGEC-404	Research Methodology	Core Paper IV/Theory	4	100
1	I	MGEL-405	Practical	Practical	4	100
1	I	MGEM-406	Man and Biosphere	Minor elective	4	100
1	I	MGEP-407	Topic allotted by the Head of the department /incharge	Research Project (4 Hour per week)	4	100

M.A. IInd Semester

1	II	MGEC-411	Modern Geographical Thought	Core Paper I /Theory	4	100
1	II	MGEC-412	Physical Geography of India	Core Paper II/Theory	4	100
1	II	MGEC-413	Cultural Geography	Core Paper III/Theory	4	100
1	II	MGEC-414	Resource Planning	Core Paper IV/Theory	4	100
1	II	MGEL-415	Practical	Practical	4	100
1	II	MGEP-416		Research Project (4 Hour per week)	4	100

M.A. IIIrd Semester

***Students will have to select one elective paper from the each elective group.**

2	III	MGEC-501	Socio- economic Geography of India	Core Paper I /Theory	4	100
2	III	MGEC-502	Population Geography	Core Paper II /Theory	4	100
2	III	MGEE-503A	Agricultural Geography	Elective Paper III /Theory	4	100
2	III	MGEE-503B	Statistical Methods in Geography	Elective Paper III /Theory	4	100
2	III	MGEE-503C	Remote Sensing & Photogrammetry	Elective Paper III /Theory	4	100
2	III	MGEE-504A	Political Geography	Elective Paper IV /Theory	4	100
2	III	MGEE-504B	Regional Planning	Elective Paper IV /Theory	4	100
2	III	MGEE-504C	Geographical Information System	Elective Paper IV /Theory	4	100
2	III	MGEL-505	Practical	Practical	4	100
2	III	MGEP-506		Research Project (4 Hour per week)	4	100

M.A. IVth Semester

2	IV	MGEC-511	Bio- Geography	Core Paper I /Theory	4	100
2	IV	MGEC-512	Environmental Geography	Core Paper II /Theory	4	100
2	IV	MGEE-513A	Industrial Geography	Elective Paper III /Theory	4	100
2	IV	MGEE-513B	Geography of Rural Settlement	Elective Paper III /Theory	4	100
2	IV	MGEE-513C	Marketing Geography	Elective Paper III /Theory	4	100
2	IV	MGEE-514A	Urban Geography	Elective Paper IV /Theory	4	100
2	IV	MGEE-514B	Transport Geography	Elective Paper III /Theory	4	100
2	IV	MGEE-514C	Geography of Health	Elective Paper III /Theory	4	100
2	IV	MGEL-515	Practical	Practical	4	100
2	IV	MGEP-516		Research Project (4 Hour per week)	4	100

Syllabus Developed by:

S. No.	Name	Designation	Department	College/University
1	<i>Dr. Pradip Kumar Convener B.O.S.</i>	<i>Associate Professor</i>	<i>Geography</i>	<i>Shivharsh Kisan P.G. College Basti</i>
2	<i>Dr. Rohit Singh Special invitee member</i>	<i>Assistant Professor</i>	<i>Geography</i>	<i>Shivharsh Kisan P.G. College Basti</i>
3	<i>Mr. Vishal Prakash Special invitee member</i>	<i>Assistant Professor</i>	<i>Geography</i>	<i>Shivharsh Kisan P.G. College Basti</i>
4	<i>Mr. Sanjai Singh Member BOS.</i>	<i>Assistant Professor</i>	<i>Geography</i>	<i>Shivharsh Kisan P.G. College Basti</i>

Semester I
Paper I (Theory)

Programme: UG With Research		Year: Fourth	Semester: First
Subject: Geography			
Course Code: MGEC-401		Course Title: Advanced Geomorphology	
Course outcomes: Students will be able to understand			
❖ The Earth's geomorphic transition from the beginning to the present day.			
❖ Plate tectonics and related movements.			
❖ Landforms carved by various agents of erosion.			
Credits: 4		Core Compulsory	
Max. Marks: 25+75		Min. Passing Marks: 40	
Unit	Topics		No. of Lectures
I	Fundamental concepts of geomorphology; (Concept of time: cyclic, graded, and steady-state; Concept of a morphogenetic region; Concept of dynamic equilibrium); Recent trends in geomorphology		15
II	Land Forms in Humid, Arid, Glacial, and Sea, Polycyclic Land Forms, Models of Landscape Development W.M. Davis, W. Penck, Morisawa,		15
III	Morphometric Analysis of Relief, Basin morphometry, Hypsographic Curve, Altimetry Frequency Curve, Histogram and Climographic Curve, Strahler Method of Drainage Ordering, Frequency and Density of the Drainage.		15
IV	Applied Geomorphology – Relevance of Geomorphologic Knowledge to Regional Planning, Road and Dam engineering construction, Mining, Urbanization, and Natural Hazards		15
Suggested Readings:			
1. Singh, Savindra (2018), Physical Geography (Eng./Hindi) Allahabad, India: Prayag Pustak			
2. Huggett, R.J. (2007): <i>Fundamentals of Geomorphology</i> . New York, U.S.A.: Routledge.			
3. Khullar, D.R. (2012). <i>Physical Geography</i> . New Delhi, India: Kalyani Publishers.			
4. Strahler, A. H. and Strahler, A N. (2001): <i>Modern Physical Geography</i> (4/E). New York, U.S.A.: John Wiley and Sons, Inc.			
5. Thornbury, W.D. (2004): <i>Principals of Geomorphology</i> . New York, U.S.A.: Wiley.			
6. Bloom, A. L. (2003). <i>Geomorphology: A Systematic Analysis of Late Cenozoic Landforms</i> , New Delhi, India: Prentice-Hall of India			

**Semester I
Paper II (Theory)**

Programme: UG With Research		Year: Fourth	Semester: First
Subject: Geography			
Course Code: MGEC-402		Course Title: Advanced Climatology	
Course Learning Outcomes On completion of this course, learners will be able to: <ul style="list-style-type: none"> ❖ Understand the basic and advanced concept of Climate ❖ Understand the mean global atmospheric circulations and disturbances, world climate systems, climatic variability and changes. 			
Credits: 4		Core Compulsory	
Max. Marks: -25+75		Min. Passing Marks: 40	
Unit	Topics		No. of Lectures
I	Climatology and its relationship with meteorology, Heat budget, air masses, Fronts, Cyclones, anticyclones, Precipitation, and related forms		15
II	Mechanism of Monsoon – Recent Concepts (El-Nino, La-Nina, Walker Circulation, and Southern Oscillation): Climatic classification of Koppen's and Thornthwaite's,		15
III	Climate Change: Meaning and Concept, Measuring Climate Change: Stress, exposure, risk, and vulnerability related to climatic hazards and disasters (Green House Effect, Ozone Depletion, Tropical cyclones).		15
IV	Applied Climatology, Climate and Natural Vegetation & Animals, Climate and Agriculture, Heat Islands, Weather forecasting, Weather and Human behavior.		15
Suggested Readings: <ol style="list-style-type: none"> 1. Ahrens, C.D. (2012): Essentials of Meteorology: An Invitation to the Atmosphere; Cengage Learning, Boston 2. Ahrens, C.D., Jackson, P.L., Jackson, C.E.J. and Jackson, C.E.O. (2012): Meteorology Today: An Introduction to Weather, Climate and the Environment; Cengage Learning; Boston 3. Barry, R.G. and Chorley, R.J. (2003): Atmosphere, Weather and Climate; Psychology Press, Hove; East Sussex. 4. Chawan S.V. (ed) (2015): Physical Geography, Paper I, Published by Director (I/C), Institute of Distance and Open Learning, University of Mumbai. 5. Critchfield, H.J., (1975): general Climatology, Prentice Hall, New Jersey. 6. Lal D.S. (1997): Climatology; Sharda Pustak Bhavan; Allahabad 7. Lydolph, P.E. (1985): The Climate of the Earth, Rowman and Allanheld, Totowa, New Jersey. 8. Mather, J.R. (1974): Climatology: Fundamentals and Applications; Mc Craw Hill Book Co., USA. 			

Semester I
Paper III(Theory)

Programme: UG With Research		Year:Fourth	Semester:First
Subject:Geography			
CourseCode:MGEC-403		CourseTitle:Oceanography	
Course Learning Outcomes On completion of this course, learners will be able to:			
❖ Understand the dynamics of ocean physiography and water movement.			
❖ It will help them understand the relevance of oceans as a resource in times to come.			
Credits:4		Core Compulsory	
Max.Marks:25+75		Min. Passing Marks:40	
Unit	Topics		No. of Lectures
I	Definition and scope of Oceanography; Plate tectonics and origin of Oceans; Major relief features of ocean basins with special reference to the Indian Ocean.		15
II	Chemical composition of ocean water; Temperature and density of ocean; Salinity; Circulation of oceanic water (Waves, Tide, Currents, El Nino and La Nina; Ocean Deposits		15
III	Oceans as an Ecosystems; Energy flow: Food Chains and Food Webs; Mangroves and Estuarine Ecology; Coral Reefs: Formation, distribution, importance and bleaching; Marine Pollution		15
IV	Classification of oceanic resources; Mineral resources; Energy resources; Food resources; Indian marine and submarine explorations		15
Suggested Readings			
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, Prayag Pustak 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.			

Semester I
Paper IV (Theory)

Programme: UG With Research		Year: Fourth	Semester: First
Subject: Geography			
Course Code: MGEC-404		Course Title: Research Methodology	
Course Learning Outcomes On completion of this course, learners will be able to:			
<ul style="list-style-type: none"> ● Basic concept of research and their significance 			
Credits: 4		Core Compulsory	
Max. Marks: -25+75		Min. Passing Marks: 40	
Unit	Topics		No. of Lectures
I	Concept and significance of research in geography, Types of Research: (Descriptive/Analytical, Applied/Functional, Qualitative/Quantitative, Conceptual/Empirical;) Necessity of Geographical Research and its Significance		15
II	Research Process: Identification of Problems, Specification of Objectives, Review of Literature, Formulation of Hypotheses, Preparing Research Design, Determining Sample Design, and Limitation of Research.		15
III	Questionnaire and Interview Schedule, Sources of Data: (A) Secondary Data: Census, NSS, CSO, Primary Data: Observational Method, Questionnaires and Interviews; Sampling Methods, Case Study		15
IV	Preparing a Research Project, Formation of Tables, Analysis of Data, Mapping Techniques, Testing of Hypotheses, Generalization and Interpretation, Ethical consideration in geographical research, Format for Scientific Report Writing, Citation, Referencing style, Footnoting and Endnoting, Bibliography,		15
Suggested Readings:			
<ol style="list-style-type: none"> 1. Mishra R.P. (1989) Research Methodology, Concept Publishing Co. New Delhi. 2. Kothari, C.R. (1988) Research Methodology: Methods & Techniques, Wiley Eastern Ltd., New Delhi. 3. Mishra, H.N. & Singh, V.P. (2002) Research Methodology in Geography, Rawat Pub. Jaipur. 4. Bose, P.K. (1994) : Research Methodology : A Trend Report, ICSSR, New Delhi. 5. Stoddart, R.H. (1982) Field, Techniques and Research Methodology in Geography, Kendall Hunt, Dubuque. 6. Chandran, P.R. (1971) Training in Research Methodology in Social Sciences in India, ICSSR, New Delhi. 7. Robert, W.P. (1971) Geographical Research and Writing, New Crowell & Co. 8. Agnihotri, Vidyadhar (1980) Techniques of Social Research, MN Publications, New Delhi. 9. Bajpai, S.R. (2005) Methods of Social Survey and Research, Kitabghar, Kanpur. 10. Sharma, K.R. (2004) Research Methodology, National Publishing House, Jaipur. 11. Harvey, David (1987) Explanations in Geography, New York, Adward Arnold. 			

**Semester I
Paper V (Practical)**

Programme: UG With Research		Year: Fourth	Semester: First
Subject: Geography			
Course Code: MGEL-405		Course Title: Practical	
Course outcomes: Students will be able to understand			
❖ In-depth knowledge of Cartographic techniques and methods and application of Aerial Photo Interpretation and photogrammetry.			
❖ Learn to prepare geological Maps.			
❖ Learn to prepare Project Report.			
Credits: 4		Core Compulsory	
Max. Marks: 25+75		Min. Passing Marks: 40	
Unit	Topics		No. of Lectures
I	Introduction of cartography; source of Data cartographic data collection; primary and secondary data (15 Marks)		15
II	Cartographic techniques and methods in preparation of diagrams and maps. (15 Marks)		15
III	Geological Maps: Drawing of Cross Section: Inclined, Folded, Faulted Strata, Unconformable Series and Intrusion and Interpretation of Geological History; Nature Relief and Rock Structure (15 Marks)		15
IV	Photogrammetry: Aerial Photo Interpretation, Elements and Development of Aerial Photography, Determination of Scale of Photographs; Flight Planning; Calculation of Number of Runs & Photo for a given area; (15 Marks)		15
V	Record & Viva (15 Marks)		
Suggested Readings:			
1. Monkhouse, F. J. and Wilkinson, F.J. (1985): Maps and Diagrams. Methuen, London			
2. Raisz, E. (1962): General Cartography. John Wiley and Sons, New York. 5th edition.			
3. Sarkar, A. K. (1997): Practical Geography: A Systematic Approach. Orient Longman, Kolkata.			
4. Sharma, J. P. (2001): Prayogik Bhugol., Rastogi Publication, Meerut 3rd. edition.			
5. Singh, R.L. and Singh, Rana P.B. (1993): Elements of Practical Geography. (Hindi and English editions). Kalyani Publishers, New Delhi,.			
6. Singh, L.R. (2006): Fundamentals of Practical Geography, Sharda Pustak Bhawan, Allahabad.			

Semester II
Paper I (Theory)

Programme: UG With Research		Year: Fourth	Semester: Second
Subject: Geography			
Course Code: MGEC-411		Course Title: Modern Geographical Thought	
Course outcomes: Students will be able to understand			
<ul style="list-style-type: none"> ❖ Thorough knowledge of the growth, development, philosophical influences, and relevance of Geography from 1970 to the present time. ❖ Knowledge of emerging areas and new theorizations within the discipline ❖ An appreciation of the discipline's dynamic and inclusive nature 			
Credits: 4		Core Compulsory	
Max. Marks: 25+75		Min. Passing Marks: 40	
Unit	Topics		No. of Lectures
I	Concepts: space, place, time, and spatial organization; Concept of Sustainable Development, Quantitative revolution and challenges		15
II	Philosophy and geography: Humanistic and phenomenological geography Laws, Theories and Models in Geography, Behaviouralism in Geography.		15
III	Radical concept; Welfare approach; Concept of gender Geography - Feminism; Modernism and Post-Modernism in Geography.		15
IV	Methods Explanation in Geography; Nature of Geographical Theories and Laws; Geography as a General Spatial System Theory		15
Suggested Readings:			
<ol style="list-style-type: none"> 1. Ali, S.M. (1960): Arab Geography, Institute of Islamic Studies, Aligarh Muslim University, Aligarh, First Edition. 2. Dikshit, R. D. (2003): Geographical Thought. A Critical History of Ideas. Prentice-Hall of India, New Delhi. (in English and Hindi). 3. Dube, B. (1967): Geographical Concepts in Ancient India, National Geographical Society of India, Varanasi 4. Getice, A., Getis, J. and Fellman, J. D. (2007): Introduction to Geography. 10th edition. McGraw Hill, New York. 5. Hartshorne, R. (1959): Perspective on the Nature of Geography, John Murray, London 19 6. Harvey, D. (1969): Explanations in Geography. Arnold, London. 7. Husain, Majid. (2002): Evolution of Geographical Thought, Rawat Publications, Jaipur. in the Twentieth Century. Methuen and Company, London. 			

**Semester II,
Paper-II (Theory)**

Programme: UG With Research		Year: Fourth	Semester: Second
Subject: Geography			
Course Code: MGEC-412		Course Title: Physical Geography of India	
Course outcomes: Students will be able to understand			
❖ The detailed physical characteristics of India such as Physiographic, drainage, Climate, Soil, and Forest.			
❖ About climate change, problems related to soil and forest and its conservation strategies.			
Credits: 4		Core Compulsory	
Max. Marks: 25+75		Min. Passing Marks: 40	
Unit	Topics		No. of Lectures
I	Physiographic Divisions of India (Evaluation and structure of Mountains, Plains, Plateaus); Origin of Himalayas, Geological Structure of India,		15
II	Drainage: Evolution of Extra-peninsular Drainage -A Critical Study of Indo-Brahm Theory, System and Pattern of Peninsular Drainage.; differences between the Himalayan and Peninsular Drainage.		15
III	Climate: Origin and Mechanisms of Indian Monsoon – A Critical Review of Classical and Modern Views Regarding its Origin: Effects of El-Nino on Indian Monsoon. Delimitation and Characteristic Climatic & Agro-Climatic Regions		15
IV	Soils and Forests: Problems of Soil - Soil Erosion and Conservation; Saline and Alkaline Soils -their measures of reclamation; Problems of Indian Forestry; Forest Development Programs.		15
Suggested Readings :			
1. Khullar, D. R. (2006): India. A Comprehensive Geography. Kalyani Publishers., New Delhi.			
2. Krishnan, M. S. (1968): Geology of India and Burma. 4th edition. Higgin Bothams Private. Ltd., Madras.			
3. Nag, P. and Gupta S. S. (1992): Geography of India. Concept Publishing. Company, New Delhi.			
4. Sharma, T. C. (2003): India: Economic and Commercial Geography. Vikas Publication., New Delhi.			
5. Singh, J. (2003): India: A Comprehensive and Systematic Geography. GyanodayaPrakashan, Gorakhpur.			
6. Singh, R. L. (ed.) (1971): India. A Regional Geography. National Geographical Society of India, Varanasi.			
7. Tirtha, R. (2002): Geography of India. Rawat Publications., Jaipur and New Delhi.			
8. Tiwari, R. C. (2007): Geography of India, PrayagPustak Bhawan,			

Semester II
Paper III (Theory)

Programme: UG With Research	Year: Fourth	Semester: Second
Subject: Geography		
Course Code: MGEC-413	Course Title: Cultural Geography	
<p>Course Learning Outcomes</p> <p>On completion of this course, learners will be able to:</p> <ul style="list-style-type: none"> ❖ Define the meaning, concepts, and approaches of Cultural Geography ❖ Understand the nature of Cultural activities and Resource generation. ❖ Understand the Effect of Innovation and Technological Development. 		
Credits: 4	Core Compulsory	
Max. Marks: 25+75	Min. Passing Marks: 40	
Unit	Topics	No. of Lectures
I	Concept of Culture, Relationships of Culture with Environment, Resources, and Technology. Origin of Man, Origin & Dispersal of Human Races; Linguistic and Religious Structure of India.	15
II	Resource Extraction Technology; Use of Fire and its control, Domestication of Plants and Animals; Resource Conservation Technology;	15
III	Innovations Agricultural Practices and Innovations; Industrial and Technological Revolution and its impact on Culture. Globalization and Cultural Development	15
IV	Concept of Cultural Hearths; Cultural Regions in India. Cultural Landscapes and Cultural Ecology	15
<p>Suggested Readings:</p> <ol style="list-style-type: none"> 1) Ahmad, A. (1999): Social Geography, Rawat Publication, New Delhi. 2) Dreze J. and Sen, A. (1996): Economic Development and Social Opportunity, Oxford University press, New Delhi. 3) Dubey, S.C., (1991): Indian Society, National Book Trust, New Delhi. 4) Erin H. Fouberg, Alexander B. Murphy, Harm J. de Blij, (2012): Human Geography: People, Place, and Culture. John Wiley, New York. 5) Gregory, D. and Larry, U.J. (ed.), (1985): Social relations and Spatial Structures, McMillan, London. 6) Haq, M. (2004): Reflection on Human Development. Oxford University Press, New Delhi. 7) Hussain, Majid (2012) Manav Bhugol. Rawat Publications, Jaipur 8) Kaushik, S.D. (2010) Manav Bhugol, Rastogi Publication, Meerut. 9) Maurya, S.D. (2012) Manav Bhugol, Sharda Pustak Bhawan. Allahabad 		

**Semester II,
Paper IV (Theory)**

Programme: UG With Research		Year: Fourth	Semester: Second
Subject: Geography			
Course Code: MGEC-414		Course Title: Resource Planning	
<p>Course Learning Outcomes On completion of this course, learners will be able to:</p> <ul style="list-style-type: none"> ❖ Visualize different resource-rich and scarce areas in water, forest, marine, mineral, and energy resources. ❖ Know the values of resource preservation and sustainable resource utilization. 			
Credits: 4		Core Compulsory	
Max. Marks: 25+75		Min. Passing Marks: 40	
Unit	Topics		No. of Lectures
I	Meaning, purpose and scope of resource planning; Methods and techniques of resource appraisal; Concept of Resource Adequacy and Scarcity, Human resource development.		15
II	Principles of resource conservation; Resource management; Conservation and planning of resources: land, water, forest, and minerals (with special reference to India).		15
III	Resource utilization and development in Indian perspectives; Impact of resource utilization on the environment; Environmental planning and policy in India; Resource potentials and resource regions; Population resource regions.		15
IV	Case Study of India- Resource planning units and development strategies in special reference to Damodar Valley and National Capital Region (NCR).		15
<p>Suggested Readings:</p> <ol style="list-style-type: none"> 1. Adam, M.G. (2000a): Kumasi Natural Resources Management, Final Technical Report, Natural Resources Institute, University of Greenwich-UK 2. Holechek, J. L., Cole, R., Fisher, J., and Valdez, R. (2000): Natural Resources: Ecology, Economics and Policy. Prentice-Hall, New Jersey. 3. Mitchell, B. (1979): Geography and Resource Analysis. Longman, London Mitchell, B. (1997): Geography and Environmental Management. Longman, Harlow and London. 4. Mitra, A. (1999): Resource Studies; Shridhar Publications., Calcutta. Prasad, H. et al. (eds.) (2005): Sustainable Management of Water Resources, Tara Book Agency, Varanasi 5. Preston, P. W. (1996): Development Theory: An Introduction. Blackwell Publications, Oxford. 6. Rao, P. K. (2001): Sustainable Development: Economics and Policy. Blackwell Publications., Oxford. 7. Raza, M. (ed.) (1989): Renewable Resources for Regional Development: The Indian and the Soviet Experience. Concept Publishing Company, New Delhi. 8. Rees, J. (1985): Natural Resources: Allocation, Economics and Policy. Methuen and Company Ltd., London. 9. Reid, S. (2000): Global Environmental Outlook. Earthscan, London. 10. Simon, D. and Nārman, A. (eds.) (1999): Development Theory and Practice. Longman. 			

**Semester II
Paper V (Practical)**

Programme: UG With Research		Year:Fourth	Semester:Second
Subject:Geography			
CourseCode: MGEL-415		CourseTitle:Practical (Instrumental Survey)	
Courseoutcomes:Studentswillbeabletounderstand ❖ The basic surveying instruments and its implementation in surveying, plotting, levelling, contouring and map making			
Credits:4		CoreCompulsory	
Max.Marks:25+75		Min.PassingMarks: 40	
Unit	Topics		No. of Lectures
I	Surveying: Definition, Nature, Scope, types of Surveying, selected Surveying Instruments: Surveying and plotting Plane Table - Resection: two and three-point problems, Surveying and Plotting of a given area by Telescopic Alidade (15 marks)		15
II	Prismatic compass- Surveying and Plotting by intersection and transverse method Sextant: - Angle, Distance and Height Measurement (15 Marks)		15
III	Profile Leveling by Dumpy Level (10 Marks) Measurement of Horizontal and Vertical Angle by Theodolite (5 Marks)		15
IV	Survey Camp: Survey camp in a given area for at least three days and Surveying and Plotting of Leveling and Contouring. (15 Marks)		15
V	Record & Viva (15 Marks)		
SuggestedReadings: 1.Monkhouse, F. J. and Wilkinson, F.J. (1985): Maps and Diagrams. Methuen, London 2. Raisz, E. (1962): General Cartography. John Wiley and Sons, New York. 5th edition. 3. Sarkar, A. K. (1997): Practical Geography: A Systematic Approach. Orient Longman, Kolkata. 4. Sharma, J. P. (2001): PrayogikBhugol., Rastogi Publication, Meerut 3rd. edition. 5. Singh, R.L. and Singh, Rana P.B. (1993): Elements of Practical Geography. (Hindi and English editions). Kalyani Publishers, New Delhi,. 6. Singh, L.R. (2006): Fundamentals of Practical Geography, Sharda Pustak Bhawan, Allahabad.			

Semester III
Paper I(Theory)

Programme: Post-Graduate		Year:Fifth	Semester:Third
Subject:Geography			
CourseCode:MGEC-501		CourseTitle: Socio-Economic Geographyof India	
CourseLearning Outcomes			
Oncompletionofthiscourse,learnerswillbeableto:			
<ul style="list-style-type: none"> ● Understandtheimportanceof‘EkBharatShresthaBharat’ ● Understand the Geographical aspects of the socio-economiccondition of India 			
Credits:4		Core Compulsory	
Max.Marks:25+75		Min.PassingMarks: 40	
Unit	Topics		No. of Lectures
I	Population: Growth, distribution, and population density; Demographicattributes:sex-ratio,agestructure,literacyrate,workforce, dependency ratio, longevity; migration (inter-regional, intraregional and international) and associated problems; Population problems andpolicies; Health indicators.		15
II	New trends in Indian Agriculture; Dry land farming, Green – White Revolutions, Eco-Farming; Conventional and Non-Conventional Energy – Production & Distribution; locational factors of Indian Industries; Industrial Regions.		15
III	Five year planning in India: Achievements and Failures; Multi-Level Planning; Planning at National, State, District, Block and Panchayat level, Planning Regions – Bases of delimitation & Classification.		15
IV	Geography of Eastern Uttar Pradesh: Population distribution and characteristics; Population problems; Agriculture problem and prospects; Resource base in eastern UP; Industrial development- Problem and perspective;Problem and solution of drought and flood-prone areas; Causes and Problem of migration		15
SuggestedReadings:			
<ol style="list-style-type: none"> 1. Gautam,A.(2006):AdvancedGeographyofIndia,ShardaPustakBhawan, Allahabad 2. Nag,P.andGupta,S. S.(1992):GeographyofIndia,ConceptPublishingCompany,New Delhi. 3. Rao,B.P.(2007):BharatkeeBhaugolikSameeksha,VasundharaPrakashan,Gorakhpur. 4. Sharma,T.C.andCoutinho,O.(2003):EconomicandCommercialGeographyofIndia,Vikas Publishing House Private Ltd. New Delhi. 5. Singh,J.(2003):India:AComprehensiveSystematicGeography.GyanodayaPrakashan, Gorakhpur 6. Singh,J.(2001):Bharat:BhougholikAadharAvamAyam,GyanodayaPrakashan, Gorakhpur.(Hindi) 7. Singh,R.L.(ed.)(1971):India:AREgionalGeography.NationalGeographicalSocietyofIndia, Varanasi. 8. Tiwari,R.C.(2007):GeographyofIndia,PrayagPustakBhawan,Allahabad. 9. Wadia,D.N.(1959):GeologyofIndia.Mac-MillanandCompany,Londonandstudentedition, Madras. 10. Khullar,D.R.(2007):India:AComprehensiveGeography,KalyaniPublishers,NewDelhi. 			

Semester III

Paper II (Theory)

Programme: Post-Graduate	Year: Fifth	Semester: Third
Subject: Geography		
Course Code: MGEE-502	Course Title: Population Geography	
<p>Course Learning Outcomes On completion of this course, learners will be able to:</p> <ul style="list-style-type: none"> ● Understand the nature, scope, and development of Population geography. ● Understand the various aspects such as population growth and distribution, population dynamics, and Population resource region. 		
Credits: 4	Core Compulsory	
Max. Marks: 25+75	Min. Passing Marks: 40	
Unit	Topics	No. of Lectures
I	Nature and scope of population geography; Sources of population data; Methodological problems; Recent developments in population geography	15
II	Population growth and distribution – Classical and modern theories; Concepts of ‘under’ ‘over’ and optimum population; Population composition, Demographic transition theories.	15
III	Population Dynamics – Measurement of fertility and mortality; Migration theories (Gravity model and, Ravenstein Law of Migration, Lee’s theories)	15
IV	Population planning; Population policies in under-developed and developed countries; Human development index, Analysis of Fertility Index	15
<p>Suggested Readings:</p> <ol style="list-style-type: none"> 1. Bhende, A. A. and Kanetkar T. (2003): Principles of Population Studies, Himalaya Publishing House, Mumbai. 2. Bose, A. (ed.) (2001): Population in India’s Development, 1947-2000. Vikas Publications, New Delhi. 3. Champion, T. (ed.) (1993): Population Matters. Paul Chapman, London. 4. Chandna, R. C. (2006): Geography of Population. Kalyani Publishers., New Delhi. 5. Clark, J. I. (1972): Population Geography. Pergamon Press, Oxford. 6. Dube, K.K. and Singh, M.B. (1994): <i>Jansankhya Bhoogol</i>, Rawat Publications, Jaipur and New Delhi. 7. Pathak, L. P. (ed.) (1998): Population Studies. Rawat Publications., Jaipur and New Delhi. 8. Poston, D. L. and Michael, M. (2005): Handbook of Population, Springer Heidelberg, Germany. 9. Ross, John A. (ed.) (1982): International Encyclopaedia of Population. Free Press, New York. 10. Singh, K.N. and Singh, D.N. (eds.) (1992): Population Growth, Environment and Development. EDSC, Varanasi. 11. Trewartha, G.T. (1985): A Geography of Population. World Patterns. John Wiley and Sons, New York. 12. Zelinsky, W. (1966): A Prologue to Population Geography. Prentice Hall, Englewood Cliffs, 		

Semester III

Paper III-A(Theory)

Elective

Programme: Post-Graduate	Year: Fifth	Semester: Third
Subject: Geography		
Course Code: MGEE-503A	Course Title: Agriculture Geography	
<p>Course Learning Outcomes; Upon completion of this course, learners will be able to</p> <ul style="list-style-type: none"> ● Understand the Meaning, scope, & Development of Agricultural Geography. ● Understand the different Determinants, Land use, and shifting cropping patterns and theories related to agriculture. 		
Credits: 4		Elective
Max. Marks: 25+75		Min. Passing Marks: 40
Unit	Topics	No. of Lectures
I	Meaning and scope of Agricultural Geography; Origin and dispersal of agriculture – major agricultural hearths; Diffusion of agricultural innovations	15
II	Determinants of agriculture- physical, economic, political, technological, socio-cultural, cropping intensity, degree of commercialization, diversification, specialization, efficiency, and productivity (Only reference to India), crop combination regions-Method of Delimitation by Weaver and Doi	15
III	Von-Thunen's model and its modification – Sinclair's approach, Whittlesey's classification of agricultural regions; Agricultural typology, Land use and land capability classification.	15
IV	new trends in Indian agriculture – Green revolution, white revolution, Nutritional index, Problems & Policies of Indian agriculture; Agriculture and environmental degradation, Food Security in India	15
Suggested Reading;		
<ol style="list-style-type: none"> 1. Bansil, B. C. (1975): 'Agricultural Problems of India', Delhi. 2. Bayliss Smith, T.P. (1987) : The Ecology of Agricultural Systems. Cambridge University Press, London . 3. Berry, B.J.L. et. al.(1976) : The Geography of Economic Systems. Prentice Hall, New York. 4. Gregor, H.P.: Geography of Agriculture. Prentice Hall, New York, 1970. 5. Grigg, D. (1984): 'An Introduction to Agricultural Geography', Hutchinson Publication, London 6. Grigg, D.B.(1974) : The Agricultural Systems of the World. Cambridge University Press, New York. 7. M.Shafi,(2006); Agricultural Geography. Dorling Kindersly (India) pvt, ltd, Licensees of Pearson Education in South Asia. New Delhi. 8. Majid Hssain, (2002): Systematic Agricultural Geography Rawat Publication, Jaipur & New Delhi. 9. Morgan W.B. and Norton, R.J.C. (1971): Agricultural Geography. Methuen, London, 10. Morgan, W. B. and Munton, R. J. C. (1977): 'Agricultural Geography' Methuen, London. 10. Morgan, W.B.(1978): Agriculture in the Third World - A Spatial Analysis. Westview Press, Boulder. 11. Sauer, C. O. (1952): 'Agricultural Origins and Dispersals', American Geographical Journal 12. Sauer, C.O.(1969): Agricultural Origins and Dispersals. M.I.T. Press, Mass, U.S.A. 		

Semester III

Paper III-B(Theory)

Elective

Programme: Post-Graduate	Year: Fifth	Semester: Third
Subject: Geography		
Course Code: MGEE-503B	Course Title: Statistical Methods in Geography	
<p>Course Learning Outcomes; Upon completion of this course, learners will be able to</p> <ul style="list-style-type: none"> ❖ Understand and use to describe and explain various geographical patterns and relationships. ❖ Based on the nature of the data and purpose of study, students would be able to make a rational choice between parametric and non-parametric statistical methods in their research projects. ❖ Students shall be allowed analog calculator only 		
Credits: 4	Elective	
Max. Marks: 25+75	Min. Passing Marks: 40	
Unit	Topics	No. of Lectures
I	Statistics, Geography and Statistics, Significance of Statistics in geographical studies, Primary and Secondary Data, Levels of data measurement: Nominal, Ordinal, Interval, and Ratio.	15
II	Measures of Central Tendency: Mean, Median, Mode, and their geographical significance, Standard Distance	15
III	Measures of dispersion and concentration: Mean deviation, Standard Deviation; Coefficient of Variation, Lorenz Curve and Gini's Coefficient; Location Quotient	15
IV	Correlation and regression: Scatter diagram, correlation by Spearman's Rank Difference and Karl Pearson's Product Moment, Significance testing of Correlation	15
<p>Suggested Reading;</p> <ol style="list-style-type: none"> 1. Bansil, B. C. (1975): 'Agricultural Problems of India', Delhi. 2. Bayliss Smith, T.P. (1987) : The Ecology of Agricultural Systems. Cambridge University Press, London . 3. Berry, B.J.L. et. al.(1976) : The Geography of Economic Systems. Prentice Hall, New York. 4. Gregor, H.P.: Geography of Agriculture. Prentice Hall, New York, 1970. 5. Grigg, D. (1984): 'An Introduction to Agricultural Geography', Hutchinson Publication, London 6. Grigg, D.B.(1974) : The Agricultural Systems of the World. Cambridge University Press, New York. 7. M.Shafi,(2006); Agricultural Geography. Dorling Kindersly (India) pvt, ltd, Licensees of Pearson Education in South Asia. New Delhi. 8. Majid Hssain, (2002): Systematic Agricultural Geography Rawat Publication, Jaipur & New Delhi. 9. Morgan W.B. and Norton, R.J.C. (1971): Agricultural Geography. Methuen, London, 10. Morgan, W. B. and Munton, R. J. C. (1977): 'Agricultural Geography' Methuen, London. 10. Morgan, W.B.(1978): Agriculture in the Third World - A Spatial Analysis. Westview Press, Boulder. 11. Sauer, C. O. (1952): 'Agricultural Origins and Dispersals', American Geographical Journal 12. Sauer, C.O.(1969): Agricultural Origins and Dispersals. M.I.T. Press, Mass, U.S.A. 13. Singh J.(1997): Agricultural Development in South Asia: A Comparative A Study in the Green Revolution Experiences, national Books Organization, New Delhi. 14. Singh, J. and Dhillon, S. S. (2000): 'Agricultural Geography', McGraw Hill, New Delhi. 18. The Hindu (2006): Survey of Indian Agriculture 2006. New Delhi. 19. Wigley, G.(1981), Tropical Agriculture: The Development of Production, 4th edition, Arnold, London Universit 		

Semester III
Paper III-C(Theory)
Elective

Programme: Post-Graduate		Year:Fifth	Semester:Third
Subject:Geography			
CourseCode:MGEE-503C		CourseTitle:RemoteSensing and Photogrammetry	
CourseLearning Outcomes: ❖ Upon completion of this course, learners will be able to understand the theoretical aspects and practical implementation of Remote sensing Techniques in geography.			
Credits:4		Elective	
Max.Marks:25+75		Min.PassingMarks:40	
Unit	Topics		No. of Lectures
I	Remote Sensing: Meaning, Definition, significance, and utility of remote sensing in Geography. Advantages and Limitations of Remote Sensing.		15
II	Principles of Remote Sensing. EMR: its properties, Electromagnetic spectrum, and characteristics of different wavelength regions. EMR: interaction mechanisms. Atmospheric interaction and their types; Surface interaction and their types; Spectral signature. Spatial, Spectral, Radiometric, and Temporal Resolutions.		15
III	Aerial Photography, its geometry, Relief Displacement, and Image Formations. Classification of Aerial Photographs and their Utility, Elements of Image Recognition and Aerial Photo interpretation		15
IV	Types of Sensor: Active and Passive. Types and Characteristics of Remote Sensing Platforms; Geostationary and Polar-orbiting Satellites. Digital Image Processing: Pre-Processing- Radiometric, Geometric and atmospheric Corrections; Enhancements; Image Classification-Supervised and Unsupervised		15
Suggested Readings:			
1. Choniyal,DD,(2016)SudurSamvadenevamBhogolicSuchnaPranalikesighant,ShardaPustak Bhavan, Allahabad.			
2. Lillesand,T.M.andKiefer,R.W.(2000):RemoteSensingand ImageInterpretation.4 th edition. John Wiley and Sons, New York			
3. Campbell,J.B.(2002):IntroductiontoRemoteSensing.5thedition,TaylorandFrancis,London			
4. Bhatta,B.(2010):RemoteSensingandGIS,OxfordUniversityPress,NewDelhi.			
5. NagPrithvishandKudratM.(1998):DigitalRemoteSensing,ConceptPublishing Company, New Delhi			
6. Curran,P.J.(1985):PrinciplesofRemoteSensing, Longman, London			

**Semester III,
Paper IV-A (Theory)
Elective**

Programme: Post-Graduate		Year: Fifth	Semester: Third
Subject: Geography			
Course Code: MGEE-504A		Course Title: Political Geography	
<p>Course Learning Outcomes On completion of this course, learners will be able to:</p> <ul style="list-style-type: none"> ❖ To understand the scope and development of the subject matter with the understanding of the various approaches involved ❖ To develop an understanding of 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 federalism and electoral geography. ❖ To understand the Geopolitical Setting of India concerning the neighbors and its significance in the regional world settings. 			
Credits: 4		Elective	
Max. Marks: 25+75		Min. Passing Marks: 40	
Unit	Topics		No. of Lectures
I	Nature and Scope of Political Geography, Approaches to the Study of Political Geography with special reference to German, British and American Schools.		15
II	The State and Nation; Anatomy of States: Core Areas and Capitals, Buffer zone, Frontiers and Boundaries; Functions and Classifications, Functional and unified field theory approaches		15
III	Global Strategic views with particular emphasis on ideas of Mahan, Mackinder, Spykman, Elements of Electoral Geography, Contemporary International Problems, and Problematic Areas		15
IV	The geopolitical setting of India, Origin, and Success of Federalism in India in view of its Politico Administrative Structure India-Pakistan Indo –China Border Dispute		15
<p>Suggested Readings:</p> <ol style="list-style-type: none"> 1. Adhikari, S. (2005): Political Geography of India, Sharada Pustak Bhawan, Allahabad 2. Busteed, 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): Rajnitik Bhoogol, 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): Rajnitik Bhoogol Avam Bhurajniti, 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. Johnston, R.J. (1982): Geography and the State, Mac Millan, London. 			

Semester III
Paper IV-B (Theory)
Elective

Programme: Post-Graduate		Year:Fifth	Semester:Third
Subject:Geography			
CourseCode:MGEE-504B		CourseTitle: Regional Planning	
Course Learning Outcomes			
❖ To understand the concept of Region and Regional Planning.			
❖ To familiarize the students with Theories and Models for Regional Planning.			
❖ To develop an understanding of regional development and planning in India.			
Credits:4		Elective	
Max.Marks:25+75		Min.PassingMarks:40	
Unit	Topics		No. of Lectures
I	Philosophy, Concept, Scope, and Purpose of Regional Planning. Types of Regional planning, Formal, Functional, and Planning Regions.		15
II	Theories of Regional Development(Albert O. Hirschman, Gunnar Myrdal, John Friedman, Dependency theory of Underdevelopment,		15
III	Planning Processes – Sectoral & Temporal Approaches to Regional Planning at Micro, Meso, and Macro Levels; The Concept of Growth Centres, Growth Centre Strategy		15
IV	Regional Planning; Concept of Rural Economy and Core-Periphery Relationship, Planning Regions of India Role of Innovation Diffusion; Significance and Role of Irrigation and Transport Communication in Regional Planning		15
Suggested Readings:			
1. Agyeman, Julian, Robert, D. Bullard and Bob, Evans. (Eds.) (2003). Just Sustainabilities: Development in an Unequal World. London: Earthscan. (Introduction and conclusion.)			
2. Anand, Subhash., (2011). Ecodevelopment :Glocal Perspectives. New Delhi, India: Research India Press.			
3. Misra, R. P., Sundaram, K.V., and Rao, V.L.S. (1974). Regional Development planning in India. Delhi, India: Vikas Publishing House.			
4. Singh, M B, () Pradeshik Vikas Niyogan, Tara Book Agency, Varanasi.			
5. Peet, R. (1999). Theories of Development. New York, U.S.A.: The Guilford Press.			
6. Berry, B.J.L. and Horton, F.F. (1970): Geographic Perspectives on Urban Systems. Prentice Hall, New Jersey.			
7. Bhat L.S. (1972): Regional Planning In India, Statistical Publishing Society			
8. Blij H. J. De, 1971: Geography: Regions and Concepts, John Wiley and Sons.			
9. Kulshetra ,S.K,(2012) : Urban and Regional Planning in India : A hand book for Professional Practioners , Sage Publication , New Delhi			
10. Kundu, A. (1992): Urban Development Urban Research in India, Khanna Publ. New Delhi.			
11. Misra , R.P, Sundaram K.V, PrakashRao , V.L.S. (1974): Regional Development Planning in India , Vikas Publication , New Delhi.			
12. Misra, R.P (1992): Regional Planning: Concepts , techniques , Policies and Case Studies , Concept , New Delhi			
13. Friedmann, J. and Alonso W. (1975). Regional Policy - Readings in Theory and Applications. Massachusetts, USA: MIT Press.			

Semester III

Paper IV-C (Theory)

Elective

Programme: Post-Graduate	Year: Fifth	Semester: Third
Subject: Geography		
Course Code: MGEE-504C	Course Title: Geographical Information System	
Course Learning Outcomes ❖ To understand the concept of Geographical Information systems and their application in geographical studies. ❖ To familiarize the students with Current Issues and Recent Trends in GIS and Data Handling in GIS. ❖ To develop an understanding of spatial data analysis, Network analysis, and DEM applications in Geographical studies.		
Credits:4		Elective
Max.Marks:25+75		Min.PassingMarks:40
Unit	Topics	No. of Lectures
I	Definitions, Development, and Objectives of GIS; Component of GIS; Functional elements of GIS-data Inquisition; Pre-Processing, Data Management, Product Generation	15
II	Current Issues and Recent Trends in GIS; Computer Fundamentals for GIS - Hardware & Software; Spatial & Non-Spatial Data; Data Structure – Raster & Vector; Concept of Data Base; Database Structures – Hierarchical, Network, Relational, DBMS, RDBMS	15
III	Data Handling in GIS – Data Source, Georeferencing, Data Input-Verification, and Editing, Errors in GIS, Spatial Data Analysis – Raster – Vector-Based, Network Analysis, DEM & its Application	15
IV	Concept and Application of Remote Sensing and GPS in GIS, GIS. Application in Planning & Disaster Management.	15
Suggested Readings: 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. 39 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. Goodchild, M.F.; Park, B. O. and Steyaert, L. T. (eds.) (1993): Environmental Modelling with GIS. Oxford University Press, Oxford.		

**Semester III
Paper V (Practical)**

Programme: Post-Graduate		Year:Fifth	Semester:Third
Subject:Geography			
CourseCode: MGEL-505		CourseTitle:Practical (Laboratory)	
Courseoutcomes:Studentswillbeabletounderstand <ul style="list-style-type: none"> ● In-depthknowledge of statistical methods andtheirapplication. ● Understand In-depth knowledge and practical implications of System Analysis and Analysis of Drainage and Network patterns. ● Learntoprepare Field Book, steps and methods for preparing Tour report. 			
Credits:4		CoreCompulsory	
Max.Marks:25+75		Min.PassingMarks:40	
Unit	Topics		No. of Lectures
I	Statistical Methods: Collection, Processing, and Management of Data; Concept and Methods of Sampling; Test of significance: chi-square test, student's t-test, (15 Marks)		15
II	System Analysis: Measurement of Spatial Pattern and Inequality – Z score, Nearest Neighbour Analysis, Network analysis, Drainage ordering method by Strahler (15 Marks)		15
III	How to prepare Field Book, steps and methods for preparing Tour report, Methodology for Research in Field Trip, Various aspects of study in Field Trip, Preparation of Surveying in Field Trip. (30lecturesshallbetakenbeforeandduring the fieldtrip) (30 Marks)		30
IV	Record & Viva (15 Marks)		
Suggested Readings:			
1. Monkhouse, F. J. and Wilkinson, F.J. (1985): Maps and Diagrams. Methuen, London 5. Singh, L.R. (2006): Fundamentals of Practical Geography, Sharda Pustak Bhawan, Allahabad. 6. Sharma, JP. (2008): Prayogatmak Bhugol Ki Rooprekha, Rastogi Publications-Meerut.			
Suggested Continuous Evaluation Methods:			
The following shall be the guidelines and structure of the Educational tour; Geographical Excretion Committee According to the seniority list, all faculty members shall organize geographical excretion as tour in-charge in rotation. HOD shall head the geographical Excretion Committee. Tour incharge shall act as committee convener and convene a meeting at the beginning of the session or semester. All other teachers of the department shall be a member of the committee. In addition, the tour in charge shall invite four/Five meritorious students based on the last available examination result to participate in the meeting as committee members. Committee shall: 1. Review the tour plan. 2. Confirm that all arrangements are made in advance. 3. Listen to the opinion of students and give recommendations to tour in-charge accordingly.			

4. Review the academic nature of the tour and evaluate the day-wise tour plan and academic activity as submitted by the Tour incharge.

Structure of the tour party

For 20 or less the 20 students, one Faculty member with one non-teaching staff shall accompany the Tour party. For 21 to 50 students, Two Faculty members with one non-teaching staff shall accompany the Tour party. If students are more than 50, then a separate tour batch shall be constituted.

If female students are also participating in tour and tour in-charge, accompany other faculty member or Non-teaching staff none are female then one female attended (Female faculty member from Geography or any other departments/female non-teaching staff) shall accompany with tour party.

Responsibilityfortourin-charge

Tourshallatleast15 days stay at location with inter-regionalvariation (Out of Ganga Plain).

Tourin-chargeshall submit a tentativeday-wiseactivityreportin advanceto HOD.

Tourin-chargeshallcoordinatewithInstitutes/Colleges/Universities/Researchinstitutesetc.in a location where tour is being planned for the following activities;

1. Interactionofstudents.
2. Lecturesonvariouslocalphysicalandculturalattributesoftheareabythe experts.
3. Localvisitwithfacultymembershavingan academicunderstandingofthearea.

Lectures by tour in-charge on physical and human characteristics of area being visited for an educational tour.

Surveywith students with at least one instrument likeDumpyLevel, Sextant, Theodolite, GPS, etc. Questionnaire survey on various socio-cultural or any other aspects. The questionnaire must be prepared in advance and shared during the Geographical Excretion Committee meeting.

Tour incharge shall collect undertaking from all students, which their guardian shall countersign.

Tour in-charge will prepare a list of students accompanying the tour with their mobile number, address, guardian contact information, and one recent color photo. One copy will also be submitted to the head of the department.

The teachershallalwaystrytominimizetourexpeditureofstudentsby;

1. Useconcessiontrainreservationsandavoidbusesifpossible.
2. Makingstayarrangementsforstudentsinadvanceinyouthhostels/lodges/guesthousesetc.
3. Try to visit a few important locations only and avoid unnecessary travel for sightseeing. After the completion of the tour, students shall present learning outcomesandexperiencesunderthesupervisionoftourin-charge.The

presentationshallbeattendedby Geographical Excretion committee members and other facultymembers, staff, students, etc. In addition,

allstudentshallsubmittourreportsundert he supervisionofTourin-chargeforevaluation.Tour report shall portray all activities conducted, and places visited for study.

In case of any incident/injury where one or more than one student can't join tour party in return journey. One teaching/non-teaching staff member shall stay with the student until the student's guardian arrives or the college does not make alternative arrangements. In case tour in-charge stays, the other teacher/staff member shall act as tour in-charge for the remaining tour period according to seniority.

T.A.DA,andotherexpenses

The college shall meet out the T.A., DA, and other expenses of teachers and attendants as admissible to their cadre as per government rule.

Semester IV

Paper I (Theory)

Programme: Post-Graduate	Year:Fifth	Semester:Fourth
Subject:Geography		
CourseCode:MGEC-511	CourseTitle: Biogeography	
<p>CourseLearning Outcomes Students will be able to understand</p> <ul style="list-style-type: none"> ❖ The course aim is to give a detailed understanding of the Concepts, scope, and development of Biogeography ❖ Understand the different types of ecosystems, Biomes, and biogeographical realms and their distribution. 		
Credits:4		Core Compulsory
Max.Marks:25+75		Min.PassingMarks:40
Unit	Topics	No. of Lectures
I	Biogeography– Development and scope; Biosphere- definition, nature, and composition; Environment, Habitat, and Plant-animal association	15
II	Biogeochemical cycles - the hydrological cycle, the carbon cycle, the oxygen cycle, the nitrogen cycle, the phosphorous cycle.	15
III	Ecosystem - Meaning, types, components, and functioning of ecosystem, Biomes- Meaning and types, Plant successions; National Forest Policy of India; Conservation of Biotic Resources	15
IV	Bio-geographical realms: Zoogeographical realms; Zoogeography and its Environmental Relationship; Palaeo-botanical and Palaeo-climatological records of environmental change in India.	15
<p>SuggestedReadings:</p> <ol style="list-style-type: none"> 1. Agarwal, D.P. (1992): Man and Environment in India through Ages, Books & Books, New Delhi. 2. Bradshaw, M.J. (1979): Earth and Living Planet, ELBS, London. 3. Cox. CD and Moore, P.D. (1993): Biogeography: An Ecological and Evolutionary Approach (Fifth Edition), Blackwell. 4. Gaur, R. (1987): Environment and Ecology of Early Man in Northern India, R.B. Publication, New Delhi. 5. Hoyt, J.B. (1992): Man and the Earth, Prentice Hall, U.S.A. 6. Huggett, R.J. (1998): Fundamentals of Biogeography, Routledge, New York. 7. Illics, J. (1974): Introduction to Zoogeography, Mcmillian, London. 8. Khoshoo, T.N. and Sharma, M. (ed.) (1991): Indian Geosphere- Biosphere, HarAnand Publication, Delhi. 14 9. Lapedes, D.N. (ed.) (1974): Encyclopedia of Environmental Science, McGraw Hill, New York. 10. Mathur, H.S. (1998): Essentials of Biogeography, Anuj Printers, Jaipur. 11. Pears, N. (1985): Basic Biogeography. 2nd ed., Longman, London. 12. Simmon. I.G. (1974): Biogeography, Natural and Cultural, Longman, London. 13. Tivy, J. (1992): Biogeography: A Study of Plants in Ecosphere, 3rd Edition. Oliver and Boyd, U.S.A 		

Semester IV
Paper II (Theory)

Programme: Post-Graduate	Year: Fifth	Semester: Fourth
Subject: Geography		
Course Code: MGEC-512	Course Title: Environmental Geography	
<p>Course Learning Outcomes Students will be able to understand</p> <ul style="list-style-type: none"> • The course aims to give a detailed understanding of the Concepts & components of Environment, Ecology and ecosystem, and Climate. • Students will understand the concept of appraisal, conservation, and Management of the Environment. • It will help in developing an understanding of various Impacts of Climate Change. 		
Credits: 4		Core Compulsory
Max. Marks: 25+75		Min. Passing Marks: 40
Unit	Topics	No. of Lectures
I	Concepts & components of Environment, Bio-diversity and its conservation, Environmental Degradation- Concept, cause and consequences	15
II	Deforestation and its impact, Desertification, Air pollution, water pollution, Disposal of solid waste. Energy Crisis, Ganga Action Plan	15
III	International Programmes and Policies (Brundtland Commission, Kyoto Protocol, Agenda 21, Sustainable Development Goals, Paris Agreement)	15
IV	Environmental management- Concept and significance, Environmental Impact assessment, the concept of Eco-Development, Environmental Management, Nature of change of human-environment relationship	15
<p>Suggested Readings:</p> <ol style="list-style-type: none"> 1. Casper J.K. (2010). <i>Changing Ecosystems: Effects of Global Warming</i>. New York, U.S.A.: Infobase Pub. 2. Hudson, T. (2011). <i>Living with Earth: An Introduction to Environmental Geology</i>. Delhi, India: PHI Learning Private Limited. 3. Miller, G.T. (2007). <i>Living in the Environment: Principal, Connections, and Solutions</i>. Belmont, Australia: Brooks/ Cole Cengage Learning. 4. Singh, R.B. (1993) <i>Environmental Geography</i>. Delhi, India: Heritage Publishers. 5. UNEP. (2007). <i>Global Environment Outlook: GEO4: Environment For Development, United Nations Environment Programme</i>. U.K.: University Press, Cambridge. 6. Government of India. (2011). <i>Disaster Management in India</i>. Delhi, India: Ministry of Home Affairs. 7. Singh, Savendra (2019) <i>Pryavaran Bhugol</i>, Pravalika Publication, Allahabad 8. Kapur, A. (2010). <i>Vulnerable India: A Geographical Study of Disasters</i>. Delhi, India: Sage Publication. 9. Singh, Savendra (2019) <i>Apada Prabandhan</i>, Pravalika Publication, Allahabad. 10. Ramkumar, M. (2009). <i>Geological Hazards: Causes, Consequences and Methods of Containment</i>. New Delhi, India: New India Publishing Agency. 		

Semester IV
Paper III-A (Theory)
Elective

Programme: Post-Graduate	Year: Fifth	Semester: Fourth
Subject: Geography		
Course Code: MGEE-513A	Course Title: Industrial Geography	
Course Learning Outcomes		
❖ To know the scope and advancement of industrial Geography as an established branch of the Geography as a subject.		
❖ To build the theoretical understanding based on certain models related to the processes of the industrial location.		
❖ Identify spatial patterns of industrialization, globalization, and industrial development		
Credits: 4		Elective
Max. Marks: 25+75		Min. Passing Marks: 40
Unit	Topics	No. of Lectures
I	Definition and Scope of Industrial Geography; Recent Trends in Industrial Geography; Industrial Location Factors; Linkage in Industries;	15
II	Industrial Location Theories – A. Weber, I.M. Hoover, Losch and Isard; Bases of Identification of Industrial Regions; Industrial Regions of USA, Japan, U.K. and West Europe.	15
III	Industrialization in India – Industrial Development and Policies, Industrial Regions and Complexes; Impact of Globalization and Problems of Industrialization; Environmental Impact of Industrialization;	15
IV	Tourism as an Industry; Elements of Tourism; Tourism in Uttaranchal and Eastern UP.	15
Suggested Readings:		
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. Hindi Granth Academy, 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, Delhi Commonwealth 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.		

Semester IV
Paper III-B (Theory)
Elective

Programme: Post-Graduate		Year:Fifth	Semester:Fourth
Subject:Geography			
Course Code: MGEE-513B		CourseTitle: Rural Settlement Geography	
<p>Course Learning Outcomes On completion of this course, learners will be able to:</p> <ul style="list-style-type: none"> ❖ Visualize different Types and Patterns of Rural Settlement. ❖ Understand Planning of Rural Settlement. 			
Credits:4		Elective	
Max.Marks:25+75		Min.PassingMarks:40	
Unit	Topics		No. of Lectures
I	Nature, Scope, Significance and Development of Rural Settlement; Approaches to Settlement		15
II	Types and Pattern of Rural Settlement; Histrogenesis, Spatio-temporal Dimensions, and Morphogenesis of Rural Settlement; Site, Shape, Size, and Spacing of Rural Settlement		15
III	Geography Morphology and Functions; Cause of Rural-Urban Nexus; Spatial Relation of an Indian Rural Settlement;		15
IV	Rural House Type; Rural Service Centres and Planning of Rural Settlement.		15
<p>Suggested Readings:</p> <ol style="list-style-type: none"> 1. Adam, M.G.(2000a): Kumasi Natural Resources Management, Final Technical Report, Natural Resources Institute, University of Greenwich-UK 2. Holechek, J. L., Cole, R., Fisher, J., and Valdez, R. (2000): Natural Resources: Ecology, Economics and Policy. Prentice-Hall, New Jersey. 3. Mitchell, B. (1979): Geography and Resource Analysis. Longman, London Mitchell, B. (1997): Geography and Environmental Management. Longman, Harlow and London. 4. Mitra, A. (1999): Resource Studies; Shridhar Publications., Calcutta. Prasad, H. et al.(eds.) (2005): Sustainable Management of Water Resources, Tara Book Agency, Varanasi 5. Preston, P. W. (1996): Development Theory: An Introduction. Blackwell Publications, Oxford. 6. Rao, P. K. (2001): Sustainable Development: Economics and Policy. Blackwell Publications., Oxford. 7. Raza, M. (ed.) (1989): Renewable Resources for Regional Development: The Indian and the Soviet Experience. Concept Publishing Company, New Delhi. 8. Rees, J. (1985): Natural Resources: Allocation, Economics and Policy. Methuen and Company Ltd., London. 9. Reid, S. (2000): Global Environmental Outlook. Earthscan, London. 10. Simon, D. and Närman, A. (eds.) (1999): Development Theory and Practice. Longman. 11. Simon, D. (ed.) (2005): Fifty Key Thinkers on Development. Routledge, London. 12. Singh, M. B. et. al. (eds.) (2005): Sustainable Management of Natural Resources. Tara Book Agency, Varanasi. 			

Semester IV
Paper III-C (Theory)
Elective

Programme: Post-Graduate		Year:Fifth	Semester:Fourth
Subject:Geography			
Course Code: MGEE-513C		CourseTitle: Marketing Geography	
<p>Course Learning Outcomes On completion of this course, learners will be able to:</p> <ul style="list-style-type: none"> ❖ 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. ❖ Students can identify and analyze the impact of Globalization on Marketing, Social Structure and Marketing, Marketing, and Innovation Diffusion. 			
Credits:4		Elective	
Max.Marks:25+75		Min.PassingMarks:40	
Unit	Topics		No. of Lectures
I	Definition, Scope, and Evolution of Marketing Geography, Spatial Organization of Markets; Typology of Markets Periodic & Regulated Markets, Urban & Rural Markets		15
II	Hierarchy of Markets and their Role in Economic Development. Spatiotemporal Characteristics of Markets Market Cycles, Development of Marketing System, Market Area Region,		15
III	Vertical and Horizontal Relations of a Market. Marketing and Rural Development Role of Marketing in Rural Development, Christaller's Central Place Theory, Market as a Service Centre		15
IV	Impact of Globalization on Marketing, Social Structure, and Marketing. Marketing and Innovation Diffusion.		15
Suggested Readings:			
<ol style="list-style-type: none"> 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. Alwater, E. (1992): The Future of the Markets, Verso, London. 13. Dixit, R.S. (2004): Agricultural Marketing in India, Shubhi Publications, Gurgaon. 			

Semester IV
Paper IV-A (Theory)
Elective

Programme: Post-Graduate		Year:Fifth	Semester:Fourth
Subject:Geography			
CourseCode:MGEE-514A		CourseTitle: Urban Geography	
Course Learning 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 urban morphology.			
❖ To understand the theoretical and functional classification of the urban settlements and the related socio-economic problems and planning issues.			
Credits:4		Elective	
Max.Marks:25+75		Min.PassingMarks:40	
Unit	Topics		No. of Lectures
I	Meaning, Scope, and Development of Urban Geography; Factors of Urban Growth – Ancient, Medieval, and Modern Period; Origin and Location of Modern Urban Settlement		15
II	the Models of Urban Growth – Concentric Zone, Sectoral and Multi-nucle; Conurbations and Megalopolis; Urban Umland and Urban Fringe; Functional Classification of Urban Centres; Urban Hierarchy and Rank Size Relationship; Morphology of Urban Settlement		15
III	Indian Urban Scenario – Demographic Structure and Characteristics of Urban Population, Trend of Urbanization, Occupational Pattern, Urban Amenities, Urban Land Use, Urban Problems, Urban Planning;		15
IV	Town Planning in India; Smart Cities; The Role of Geographer in Town Planning; Special Study of KAVAL Towns of UP – Residential Problems, Morphological, and Functional Characteristics.		15
Suggested Readings:			
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. 42			
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.			

Semester IV
Paper IV-B (Theory)
Elective

Programme: Post-Graduate	Year: Fifth	Semester: Fourth
Subject: Geography		
Course Code: MGEE-514B	Course Title: Transport Geography	
<p>Course Learning Outcomes</p> <ul style="list-style-type: none"> ❖ To know the scope and advancement of the Transport Geography from ages as an established branch of the Geography as a subject ❖ Students shall learn about the significance of transport in multifaceted development, various models and theories related to transport networks, accessibility and connectivity, and policy intervention ❖ To understand the transport system in India concerning Uttar Pradesh and the concept of Transport Planning. 		
Credits:4		Elective
Max.Marks:25+75		Min.PassingMarks:40
Unit	Topics	No. of Lectures
I	Definition and Scope of Transport Geography; Evolution of Transportation – Pre Industrial Era, Ninetieth Century, Twentieth Century; Characteristic and Relate Significance of Different Means of Transport.	15
II	Evolution of Transport Network Model with special Reference to Taaffe, Morrill, and Gould; Structure of Transport Network	15
III	Concept of Accessibility and Locational Utility; Bases of Spatial Interaction – Complementarity, Intervening Opportunity; Transferability; Concept of Gravity Potential Model and Spatial Interaction. Theories Related to Freight Determination.	15
IV	Transport System in India and Uttar Pradesh (i) Rail (ii) Road (iii) Waterway (iv) Air Transport; Major Transport Routes of the World; Concept of Accessibility; Transport and Regional Development' Transport Planning	15
Suggested Readings:		
<ol style="list-style-type: none"> 1. Bamford, C.G. and Robinson, H. (1978), Geography of Transport, Macdonald and Evans, London. 2. Bhaduri S. (1992), Transport and Regional Development, Concept Publishing Company, New Delhi. 3. Eliot Hurst, ME (1972), A Geography of Economic Behaviour: An Introduction, Duxbury Press, California. 4. Hammond, R. and Mc Cullagh, P.S. (1989), Quantitative Techniques in Geography; An Introduction, Clarendon Press, Oxford. 5. Hoyle, Band and Knowles, R. (2000), Modern Transport Geography, John Wiley and Sons, New York. 6. Mangat, H.S. and Gill, Lakhvir Singh. (2015), Haryana: Levels of Road Transportation, Punjab Geographer, Vol. 11, October, Punchkula, pp.87-102. 7. Raza, M. and Aggarwal, Y.P. (1985), Transport Geography of India, Concept Publishing Company, New Delhi. 8. Saxena, H.M. (2010), Transport Geography, Rawat Publications, New Delhi. 9. Subodh Rani and Chamar, K.V. (2016), Levels of Road Connectivity in Haryana, Punjab Geographer, Vol. 12, October, Punchkula. 10. Taaffe, E.J. and Gauthier, H.L. (1973) Geography of Transportation, Prentice Hall Englewood Cliff, New Jersey. 11. Vaidya, B.C. (1998), Reading's in Transport Geography, Devika Publications, Delhi. 		

Semester IV
Paper IV-C (Theory)
Elective

Programme: Post-Graduate	Year: Fifth	Semester: Fourth
Subject: Geography		
Course Code: MGEE-514C	Course Title: Geography Of Health	
Course Learning Outcomes ❖ To know the scope and advancement of the Geography of health as an established branch of the Geography as a subject. ❖ To understand the Classification of Diseases, their pattern, and distribution globally. ❖ To build the theoretical understanding based on certain models related to the processes of the Health Geography. ❖ To understand the role of Health Care organizations of the world in disease eradication and health for all.		
Credits:4		Elective
Max.Marks:25+75		Min.PassingMarks:40
Unit	Topics	No. of Lectures
I	Meaning, Scope, Significance, Development, Methods, and Techniques of Geography of Health; Geographical Factors Affecting Human Health & Diseases – Physical, Social, Economic and Environmental; Ecology,	15
II	Vital & Health India Cses; Classification of Diseases Genetic, Communicable & Non-communicable Occupational and Deficiency Diseases; Geography of Hunger and Malnutrition; Pattern of Distribution of Major Diseases in the World	15
III	Etiology and Transmission of Major Diseases – Cholera, malaria, Tuberculosis, Hepatitis, Cancer, AIDS, and STDS and their regional study with special reference to India; Disease Diffusion Models and Health Care; Accessibility Models	15
IV	Health Care – International Level – WHO, UNICEF & REDCROSS; National Level – Government and NGOs, Health Planning and Policy in India Family Welfare, Immunization, National Disease Eradication & Health for all	15
Suggested Readings:		
1. Akhtar Rais (Ed.), 1990: Environment and Health Themes in Medical Geography, Ashish Publishing House, New Delhi. 2. Avon Joan L. and Jonathan A Patzed.2001: Ecosystem Changes and Public Health, Baltimin, John Hopling Unit Press(ed). 3. Bradley,D.,1977: Water, Wastes and Health in Hot Climates, John Wiley Chichesten. 4. Christaler George and HristopolesDionissios, 1998: Spatio Temporal Environment Health Modelling , Boston Kluwer Academic Press. 5. Cliff, A.D. and Peter,H., 1988 : Atlas of Disease Distributions, Blackwell Publishers, Oxford. 6. Gatrell, A.,andLoytonen, 1998 : GIS and Health, Taylor and Francis Ltd, London. 7. Hardham T. and TannavM.,(eds): Urban Health in Developing Countries; Progress, Projects, Earthgoan, London. 8. Murray C. and A. Lopez, 1996 : The Global Burden of Disease, Harvard University Press.		

**Semester IV
Paper V (Practical)**

Programme: Post-Graduate		Year:Fifth	Semester:Fourth
Subject:Geography			
CourseCode: MGEL-515		CourseTitle: Practical	
<p>Courseoutcomes:Students will be able to</p> <ul style="list-style-type: none"> ❖ In-depth theoretical and practical knowledge of Cartogramsand Map Projection. ❖ To understand the shape analysis and gravity model. ❖ To present data through graphical and diagrammatic formats. ❖ Learntoprepare Practical Files. 			
Credits:4		CoreCompulsory	
Max.Marks:25+75		Min.PassingMarks: 40	
Unit	Topics		No. of Lectures
I	Lorenz Curve and Gini Coefficient, Location Quotient, Coefficient of Localization& Localization Curve, Shape Analysis, Gravity Models, Retail Gravitation (15 Marks)		15
II	Map Projections: Meaning, Classification, and Choice of Projections; Construction and Characterization of Projection – Lambert’s Conical, Polyconic, Galls, Mercator’s Gnomonic Equatorial Zenithal, Sinusoidal, Mollweide and their interrupted cases, International UTM (15 Marks)		15
III	Cartograms - Climatic Diagrams Rainfall Dispersion Diagram; Water Budget; Ergo-graph – Climatic and Circular, Shape Analysis (15 Marks)		15
IV	Thematic Cartograms – Choropleth, Isopleth, Chorochromatic Diagram; Multiple Dot, Traffic Flow, Population Projection by Graphical and logarithm methods, Gravity Models, Retail Gravitation (15 Marks)		15
V	Record & Viva (15 Marks)		
SuggestedReadings:			
<ol style="list-style-type: none"> 1. Raisz, E. (1962): General Cartography. John Wiley and Sons, New York. 5th edition. 2. Sarkar, A. K. (1997): Practical Geography: A Systematic Approach. Orient Longman, Kolkata. 3. Sharma, J. P. (2001): PrayogikBhugol., Rastogi Publication, Meerut 3rd. edition. 4. Singh, R.L. and Singh, Rana P.B. (1993): Elements of Practical Geography. (Hindi and English editions). Kalyani Publishers, New Delhi,. 5. Singh, L.R. (2006): Fundamentals of Practical Geography, Sharda Pustak Bhawan, Allahabad. 			

**Geography
Semester I or II
Minor Elective**

Programme: UG With Research	Year: Fourth	Semester: I or II
Subject: Geography		
Course Code: MGEM-406	Course Title: Man and Biosphere	
<p>Course Learning Outcomes</p> <ul style="list-style-type: none"> • The course aims to give a detailed understanding of the Concepts & components of Ecosystem, and Biomes. • Students will understand the inter-relationship between man and their environment • It will develop an understanding of Impacts of Industrial revolution and impact of green revolution on the biosphere. 		
Credits:4	Minor Elective	
Max.Marks:25+75	Min.PassingMarks:40	
Unit	Topics	No. of Lectures
I	Biosphere as a Global Eco-system; Unity and Diversity in the Biosphere; Structure and Function of the Major Ecosystem; Major Biome of the World; Productivity, Stability and Liability of the Ecosystem,	15
II	Man in the Biosphere; The Pleistocene Environment; Emergence of Homo Sapiens and Spread over the Globe; Resource Extraction Technology; Use of Fire; Domestication of Plants and Animals;	15
III	Nature of Environmental Crisis; Resource Conservation Technology; The Impact of Industrial Revolution, Impact of Green Revolution on the Biosphere	15
IV	Man and Environment System –Environment, Development and Culture; Concept of Sustainable Development; Alternative Source of Energy; Technological Alternatives with Special Reference to Biotechnology.	15
<p>Suggested Readings:</p> <ol style="list-style-type: none"> 1. Agrawal, D.P. : Man and Environment in India Through the Ages. 2. Hoy, J.B. : Man and Earth. 3. Odum, E.P. : Fundamentals of Ecology. 4. Harvey, B. & Hallet, J.D. : Environment and Society. 5. Paul, R. : Man and Environment : Crisis and Strategy of Coise. 6. Southwick, Carles : Global Ecology. 7. CSE : The State of Indian Environment : A Citizen Report. 8. Joy, T. : Bio-geography 9. Singh, Savindra : Environmental Geography (Hindi & English). 		