OK

MAA SHAKUMBHARI UNIVERSITY
SAHARANPUR

POST GRADUATE

As per National Education Policy-2020

M.A. Geography

Syllabus

(Session 2024-25 onwards)

MAA SHAKUMBHARI UNIVERSITY, SAHARANPUR

Syllabus

(Session 2024-25 onwards)

M.A., Geography

In the last decade the discipline of Geography has experienced vast expansion of knowledge, new multi-disciplinary frontiers and a technological revolution based on remote sensing and Geographic Information System (GIS). Thus, to provide excellence in knowledge of the subject it becomes essential to incorporate the new knowledge in the subject by updating and reframing the syllabus. This objective led to restructuring of syllabus of M.A./M.Sc. Geography of Maa Shakumbhari University, Saharanpur.

The entire content was divided into 20 papers of 100 equal marks; sixteen four papers of theory and four papers of practical. There shall be equal sharing in theory papers for marks awarded by external as well as internal examiners. The University will bear ranging to conduct theory examination and evaluation by external examiners for 75 marks in each theory paper. While the internal 25 marks shall be awarded by conducting 1 test.

In all the theory papers, for purpose of examination, ten questions are to be set, 2 questions from each unit. Five questions will be as very short answer questions, three as short answer questions and five as long answer questions. All very short questions will be compulsory and will contain 15 marks (3 marks for each question). Two questions will have to attempt from short questions containing 7½ marks each. Three questions will have to attempt from long questions. Each long question will be of 15 marks.

Year – IV
B.A. in Research Geography- Semester-VII
M. A. Geography
Semester I/Year-I
Course I
Theory

Programme Class: Certificate/ MA	Year: First	Semester: First
Subject: Geography		
Compulsory Courses	Course Code: 0118001	Course Title: **Geomorphology**

Course Outcomes: Students will be able to understand.

- Geomorphology – Concept, evolution of landscape.
- Endogenetic forces and their impact
- Exogenetic forces – Process and their works
- Evolution of landscape and models
- Types of Geomorphology
- Regional Geomorphology of Siwaliks and Plains.

Credits: 4	Core Compulsory
Max. Marks: 25+75	Min. Passing Marks: 40

Total No. of Lectures- 12 Periods Per Unit (Theory Exam-75 Internal Assessment-25)

Objectives: To acquaint with the physical structure of the earth.

Unit	Topics	No. of Lectures
Unit-I:	Nature and scope of Geomorphology, Fundamental concepts- uniformitarianism, multicyclic and polygenetic evolution of landscapes. Interior of the earth, Plate tectonics.	12
Unit- II:	Earth movements –epeirogenic and orogenic earth movements. Forces of crustal instability, isostasy, Fold, Fault, Earthquake and Vulcan city.	12
Unit- III:	Exogenic Processes: Concept of gradation, Agents and processes of gradation, causes, types and classification of weathering, mass wasting, erosional, and depositional processes and resultant landforms and soil formation.	12
Unit- IV:	Landscape evaluation models: WM Davis, Penck, LC King, dynamics of fluvial, glacial, Aeolian, and karst processes and resulting land forms, complexities in geomorphological processes.	12

Unit- V:	Applied geomorphology–hydro–geomorphology, urban geomorphology, environmental geomorphology, geomorphic hazards and mitigation measures, Regional Geomorphology of Siwalik Hills of U.P., Ganga Yamuna Doab of U.P.	12

Suggested Readings

- Ahmed, E. (1985): Geomorphology, Kalyani Publishers, New Delhi.
- Bloom,A.L.(1998/2001): Geomorphology, 3rd Edition, Prentice Hall of India, New Delhi.
- Chorley, R.J., Schumm, S.A. and Sugden, D.E. (1984): Geomorphology, Methuen and Company Ltd., London.
- Chorley, R.J.(1972): Spatial Analysis in Geomorphology, Methuen, London.
- Dayal,P.(1996): A Text Book of Geomorphology, Shukla Book Depot, Patna.
- Dury, G.H. (1959): The Face of the Earth, Penguin Harmondsworth.
- Fairbridge, R.W.(1968): Encyclopedia of Geomorphology, Reinholdts, New York.
- Garner, H.F. (1974): The Origin of landscape- A Synthesis of Geomorphology, Oxford University Press, London.
- Singh, Savindra : Geomorphology (in Hindi & English both), Prayag Pustak Bhawan, Prayagraj.

Year – IV
B.A. in Research Geography- Semester-VII
M. A. Geography
Semester I/Year-I
Course II
Theory

Programme Class: Certificate/ MA	Year: First	Semester: First
Subject: Geography		
Compulsory Courses	Course Code: 0118002	Course Title: **Natural Resource Management**
Outcomes: Student will be able to understand. • Concept and nature of Resources • Use and misuse of Resources • Conservation and management of resources • Policy making for various resources • Resources sustainability and their development		
Credits: 4		Core Compulsory
Max. Marks: 25+75		Min. Passing Marks: 40
Total No. of Lectures- 12 Periods Per Unit (Theory Exam-75 Internal Assessment-25)		
Objectives: To acquaint with the utility of various resources.		

Unit	Topics	No. of Lectures
Unit-I	Introduction: Concept, models and approaches to natural resource management; problems of resource utilization; population pressure, development and resource utilization, natural hazards and risk management.	12
Unit-II	Use and misuse of Resources: Global and Indian scenario; historical background and future prospects of various resources; soil, water, minerals, forests.	12
Unit-III	Conservation and management of resources: Meaning, principles, philosophy and approaches to resource conservation; resource conservation and management methods.	12
Unit-IV	Resource appraisal and policy making: appraisal of Land resources, geophysical, geochemical, geo-botanical; Policy models towards better management and conservation of resources.	12

Unit-V	Resource Development: Concept of Sustainable resource, methods, dimension and sustainable system; integrated resource development and its application.	12

Selected Readings

- Adams, W. M.: Green Development: Environment and Sustainability in the Third World, Routledge and Chapman Hall, New York, 1990.
- Burton, I. And Kates, R.W. (1978): Readings in Resources Management and
- Conservation. Mc Graw Hill, New York.
- Clark, G.L., Feldman, M.P. and Gertler, M.S. (eds.) (2000): The Oxford Handbook of Economic Geography. Oxford University Press, Oxford and New York. Ehrlich, P.R., Ehrlich, R.H. and Holdren, J.P. (1998): Eco science: Population, Resources and Development. 2nd edition. Freeman and Company, San Francisco.
- Granfelt, T.R. (1999): Management the Globalized Environment, J. & L. Composition Ltd, New York.
- Holechek, J.L. et al (2000): Natural Resources: Ecology, Economics & Policy, Prentice Hall, New Jersey.
- Hooja, R & Joshi, R. (1994): Desert, Drought and Development, Studies and Resource Management and sustainability; Rawat Publication, Jaipur.
- Saxena, H.M. & Others (2020): Economic Geography, Rajasthan Hindi Granth Academy, Jaipur.
- Gupta and Chattoraj (1964): A new approach to Economic Geography. The World Press Pvt. Ltd. Kolkata.

Year – IV
B.A. in Research Geography- Semester-VII
M. A. Geography
Semester I/Year-I
Course III
Theory

Programme Class: Certificate/ MA	**Year: First**	**Semester: First**
Subject: Geography		
Compulsory Courses	Course Code: 0118003	Course Title: **History of Geographical Thought**
Out comes: Students will be able to understand • Geography – meaning and purpose, Areal and Spatial Organisation • Geography development in various periods • Contribution of French, German, Russian Geographers • Dualism in geography • Development of geographical thought in various developed countries and India.		
Credits: 4	Core Compulsory	
Max. Marks: 25+75	Min. Passing Marks: 40	
Total No. of Lectures- 12 Periods Per Unit (Theory Exam-75 Internal Assessment-25)		
Objectives: To acquaint with the development of geography subject in different periods and to know the views of various geographers.		

Unit	**Topics**	**No. of Lectures**
Unit-I:	The field of geography: Meaning, philosophy and purpose of Geography. Geography as a social science and natural science. Concepts in the philosophy of geography distributions, relationships, interactions, Areal differentiation and spatial organization.	12
Unit-II:	Geography in the ancient and medieval period: Contribution of Greek and Roman Geographers- Character of Geography in medieval period- the Dark Age, the Arabic period and the Renaissance period.	12
Unit-III:	Geography in the modern period: Contribution of German (Humboldt, Ritter & Ratzel), French (Blache and Brunhes), Russian (Gerasimov, Lomonosov), British (L.D. Stamp and Mackinder) and American(Richard Hartshorne, Semple & Huntington)Schools.	12

Unit-IV :	Dualisms in geography: systematic & regional geography; physical & human geography. The myth and reality about dualism. Regional geography. Concept of region, regionalization and the regional methods.	12
Unit-V:	History and Development of Geographical Thought in India: Contribution of Indian Scholars in Geography. Geographical contribution in British Period. Development of Indian Geography after independence. Expansion of Geography Teaching in Indain Universities and Professional Institutions.	12

Suggested Readings:

- Abler, Ronald; Adams, Jons, S. Gould, Peter, N.J. (1971): Spatial Organization: The Geographer's View of the World, Prentice Hall, New Jersey.
- Ali, S. M.(1966): The Geography of Puranas, Peoples Publishing House, Delhi.
- Amedeo, Douglas (1971): An Introduction to Scientific Reasoning in Geography, John Wiley, U.S.A.
- Dikshhit, R.D.(ed.) (1994): The Art & Science of Geography Integrated Readings, Prentice Hall of India, New Delhi.
- Daniels, P., Bradshow, M., Shaw, D. And Sidaway, J. (2000): An Introduction to Human Geography. Issues for the 21st Century. Prentice Hall, London.
- Dikshit, R.D.(2004): Geographical Thought: A Critical History of Ideas. Prentice-Hall of India, New Delhi. (in English and Hindi).
- Kaushik,S.D. and Rawat, D.S.(2018): The History of Geographical Thoughts(in Hindi & English), Rastogi Publishing House, Meerut.
- Bansal, S.C. (2019): The History of Geographical Thought (in Hindi) Meenakshi Prakashan, Meerut.

Year – IV
B.A. in Research Geography- Semester-VII
M. A. Geography
Semester I/Year-I
Course IV
Theory

Programme Class: Certificate/ MA	**Year: First**	**Semester: First**
Subject: Geography		
Compulsory Courses	Course Code: 0118004	Course Title: **Advanced Geography of India (Physical & Regional)**
Outcomes: Students will be able to understand • Geological and physical structure of India • Hydrological and climate characteristics • Soils and vegetation Region • Disasters: Types and their management • Case study of Hilly and Plain Regions		
Credits: 4	Core Compulsory	
Max. Marks: 25+75	Min. Passing Marks: 40	
Total No. of Lectures- 12 Periods Per Unit (Theory Exam-75 Internal Assessment-25)		
Objectives: To know about the Physical aspects of Indian geography.		

Unit	**Topics**	**No. of Lectures**
Unit-I :	Making of India through Geological Time: Geology, Structure and Relief of India, Physical Divisions of India.	12
Unit-II:	Drainage System and Watersheds, Hydrology and Water Balance, Climate Characteristics, Mechanism of Indian Monsoon, Climatic Regions of India.	12
Unit-III:	Soil Resource & Conservation, Problem of Soil Erosion, Problem of deforestation, Forest Resources and their Conservation, Types of Soils and Natural Vegetation, Resource Regions of India.	12
Unit-IV:	Different Schemes of Physiographic Regionalization of India, their bases and Comparative Studies. Disasters: Concept, types of disasters in India, and their management.	12
Unit-V:	Detailed case Studies of Uttarakhand Himalayas and Gangetic Plain with respect to their Geology, Structure, Relief, Drainage and Physiographic Divisions.	12

Suggested Readings:

- Deshpande, C.D. (1992): India: A Regional Interpretation ICSSR & Northern Book Centre.
- Ganguly, S. and Neil, De Votta (eds.) (2003): Understanding Contemporary India. Lynne Reinner Publishers, Boulder and London.
- Gautam, A.(2.005): Geography of India(in Hindi & English): Rastogi Publishing House, Meerut.
- Bansal, S.C. (2019): India: A Comprehensive Geography of India, Meenakshi Prakashan, Meerut.
- Gole, P.N. (2001): Nature Conservation and Sustainable Development in India. Rawat Publications, Jaipur and New Delhi.
- Khullar, D.R. (1968): India. A Comprehensive Geography. Kalyani Publishers, New Delhi, 2006.
- Krishnan, M.S.: Geology of India and Burma, 4th Edition, Higgin Bothams Private Ltd., Madras.
- Majid, Husain (2008): Geography of India, Tata McGraw Hill Company, New Delhi.
- Nag, P. and Gupta, S.S. (1992): Geography of India, Concept Publishing Company, New Delhi.
- Pathak, G.K. & A.K. Pathak (2022) : Environment, Disaster Mangement and climate change, Rajesh Publications, Delhi.
- Singh, J. (2003): India: A Comprehensive and Systematic Geography, Gyanodaya Prakashan, Gorakhpur.
- Singh, R.L.(Ed.)(1971): India: A Regional Geography, National Geographical Society of India, Varanasi

Year – IV
B.A. in Research Geography- Semester-VII
M. A. Geography
Semester I/Year-I
Course V
Theory

Programme Class: Certificate/ MA	Year: First	Semester: First
Subject: Geography		
Optional	Course Code: 0118005	Course Title: **Biogeography**

Out comes: Students will be able to understand

- Meaning and concept of Biogeography
- Plants and their Communication
- Zoo community and Environment
- Palo – botanical and climate logical records and impact and climate change
- National policy – forest and biotic Resources

Credits: 4	Core Compulsory
Max. Marks: 25+75	Min. Passing Marks: 40

Total No. of Lectures- 12 Periods Per Unit (Theory Exam-75 Internal Assessment-25)

Objectives: To acquaint with the Plants and zoo environment.

Unit	Topics	No. of Lectures
Unit-I:	Scope and development of Biogeography. Ecosystem Environment, Habitat and Plant-animal association, biome types.	12
Unit-II:	Elements of plant geography, distribution of forests and major communities. Plant successions in newly formed landforms. Examples from flood plains and glacial fore fields.	12
Unit III:	Zoogeography and its Environmental Relationship.	12
Unit- IV:	Palaeobotanical and Palaeo climatological records of environmental change in India.	12
Unit- V:	National Forest Policy of India. Conservation of Biotic Resources.	12

Suggested Readings:

- Agarwal, D.P. (1992): Man and Environment in India Through Ages, Book & Books.

- Bradshaw, M.L. (1979): Earth and Living Planet, ELBS London.
- Cox, C.D. and Moore, P.D. (1993): Biogeography: An Ecological and Evolutionary Approach 5th edn. Blackwell.
- Gaur, R. (1987): Environment and Ecology of Early Man in Northern India R.B. Publication Corporation.
- Hoyt, J.B. (1992): Man and the Earth, Prentice Hall, U.S.A.
- Huggett. R.J. (1998): Fundamentals of Biogeography. Routledge, U.S.A.
- Illies, J. (1974): Introduction of Zoogeography, Mcmillan, London.
- Khoshoo, T.N. and Sharma, M. (eds.) (1991): Indian Geosphere-Biosphere Har-Anand Publication, Delhi.
- Lapedes, D.N. (ed.) (1974): Encyclopedia of Environmental Science, McGraw Hill.
- Mathur H.S. (1998): Essentials of Biogeography, Anuj Printers, Jaipur.
- Pears, N. (1985): Basic Biogeography. 2nd edn. Longman, London.
- Simmon. I.G. (1974): Biogeography, Natural and Cultrual, Longman, London.
- Tivy, J. (1992): Biogeography: A study of Plants in Ecosphere 3rd edn. Oliver an Boyd, U.S.A.

Year – IV
B.A. in Research Geography- Semester-VII
M. A. Geography
Semester I/Year-I
Course VI
Theory

Programme Class: Certificate/ MA	**Year: First**	**Semester: First**
Subject: Geography		
Optional	Course Code: 0118006	Course Title: **Geography of Water Resources**

Out comes: Students will be able to understand

- Water as a resource
- Demand and supply of water for various uses
- Water use in industrial sector
- Water resource management, drought and floods
- Conservation of water resources

Credits: 4	Core Compulsory
Max. Marks: 25+75	Min. Passing Marks: 40

Total No. of Lectures- 12 Periods Per Unit (Theory Exam-75 Internal Assessment-25)

Objectives: To know the importance of water resource especially in India and in various Sectors.

Unit	**Topics**	**No. of Lectures**
Unit-I:	Water as a focus of geographical interest, inventory and distribution of world's water resources (surface and subsurface); world hydrologic cycle: quantitative estimates; water storages. Glaciers, river channels, lakes and reservoirs; soil moisture, ground water.	12
	The basic hydrologic cycle: precipitation: potential, evapotranspiration and interception losses; runoff	
Unit-II:	Water demand and use: methods of estimation - agricultural, industrial and municipal uses of water.	12
	Agricultural use of water: estimation of crop - water requirement; soil-water- crop relationships; water balance and drought; major and minor irrigation: methods of distribution of water to farms; water harvesting techniques, soil water conservation.	

	Irrigation – water logging, salinity and alkalinity of soil-over exploitation of ground water, land subsidence, saline water intrusion into the coastal aquifers. Water quality parameters, water pollution-river and ground water - floride and arsenic.	
Unit-III:	Industrial use of water: methods of estimation; demand for water in the industrial sector of India.	12
	Municipal use of water: general trends in water supply to the urban and rural communities in India, Internal navigation, hydel power and recreation.	
Unit-IV:	Problems of water resource management: flood hazards, embankments, reservoirs, channel improvement, soil conservation, afforestation, flood forecasting, evacuation floodplains; landuse regulation and insurance. Case studies of major floods.	12
	Droughts occurrence, major drought management.	
Unit- V:	Conservation and planning for the development of water resources-social and institutional considerations; integrated basin planning; conjunctive use of surface and groundwater resources; watershed management; international and inter-state river water disputes and treaties; some case studies. - Rain water harvesting.	12

Suggested Readings:

- Agarwal, Anil and Sunita Narain (1997): Dying Wisdom: Rise, Fall and Potential of India's Traditional Water Harvesting System. Centre for Science and Environment, New Delhi.
- Economic and Social Commission for Asia and the Pacific, United Nations (1989): Guidelines for the preparation of National Master Water Plans.

Year – IV
B.A. in Research Geography- Semester-VII
M. A. Geography
Semester I/Year-I
Course VII
Practical

Programme Class: Certificate/ MA	**Year: First**	**Semester: First**
Subject: Geography		
Compulsory Courses	Course Code: 0118080	Course Title: **Statistical Techniques in Geography**
Course Learning Outcomes: •		
Credits: 4	Core Compulsory	
Max. Marks100	Min. Passing Marks: 40	
Total No. of Lectures- 12 Per Unit **Note:- No Internal Exam in Practical**		

Unit	**Topics**	**No. of Lectures**
Unit-I :	Types of profiles, Slope Analysis by different methods (Wentworth and Henry Raisz), Morpho-metric Analysis.	12
Unit-II:	Standard Deviation, Mean, Quartiles One and Three, Ranking methods. Probability. Theory of Probability Geographical Application of statistical techniques.	12
Unit-III:	Correlation: Spearman's and Carl Parsons Methods, Line of Regression, Chi-square test, binomial test.	12
Unit-IV :	Techniques of Mappings– Drainage density, flow diagrams, population mapping.	12
Unit-V:	Fieldwork– Field work and data processing techniques, sampling tests, dispersion diagrams.	12
Note:	For written test in all 10 questions shall be given selecting 02 questions from each unit. The students shall be attempting five questions selecting one question from each unit. Each question shall be carrying 12 marks.	
	For Examination the break-up of marks- Written Test (3Hrs.) 60 marks Field Study 20 marks Viva-voce 10 marks Record work 10 marks	

Suggested Readings:

- David Unwin (1981): Introductory Spatial Analysis, Methuen, London.
- Gregory, S.(1978): Statistical Methods and the Geographer, Longman, London. Hammond, R. and P.S. McCullagh (1974): Quantitative Techniques in Geography: An Introduction, Clarendan Press, Oxford.
- John, P. Cole and Cuchlaine A.M. King (1968): Quantitative Geography, John Wiley, London
- Johnston R.J.(1973): Multivariate Statistical Analysis in Geography, Longman, London. Koutsoyannis, (1973): Theory of Econometrics, Mcmillan, London.
- Maurice Yeats (1974): An Introduction to Quantitative Analysis in Human Geography.
- R.N. Mishra & P.K. Sharma (2023): Practical Geography: Methods and Techniques, Pareek Publications, Jaipur.

Year – IV
B.A. in Research Geography- Semester-VIII
M. A. Geography
Semester II/Year-I
Course IX
Theory

Programme Class: Certificate/ MA	**Year: First**	**Semester: Second**
Subject: Geography		
Compulsory Courses	Course Code: 0218001	Course Title: **Climatology and Oceanography**

Out comes: Students will be able to understand

- Meaning and importance of Climatology
- Movement of air, humidity pattern, ocean waves effecting climate
- Climate Region by various Scholars
- Oceanography – Concept, floor configuration
- Ocean water movement pattern

Credits: 4	Core Compulsory
Max. Marks: 25+75	Min. Passing Marks: 40

Total No. of Lectures- 12 Periods Per Unit (Theory Exam-75 Internal Assessment-25)

Objectives: To acquaint with the activities of atmosphere oceans.

Unit	**Topics**	**No. of Lectures**
Unit-I:	Nature and scope of climatology and its relationship with meteorology. Composition and structure of the atmosphere. Insolation and Heat Budget. Green House Effect. Distribution of Temperature and Pressure. Planetary wind system. Jet Streams and Monsoon machanism.	12
Unit-II :	Humidity and Precipitation. Acid Rain, Air Masses and Fronts, Origin of Cyclones, Anti-cyclones and Thunder storms and their effects. Ocean atmospheric interaction: El Nino and La Nina Phenomenon.	12
Unit- III:	Climatic classification of Koeppen and Thornthwaite, Major climates of the world- tropical, temperate, desert and mountain climate. Climatic changes and Global warming.	12
Unit-IV:	Nature and scope of oceanography. Distribution of land and water. Surface configuration of the ocean floor. Sub-marine relief of the	12

	pacific. Atlantic and Indian Ocean, Composition of Oceanic Water. Distribution of Temperature and Salinity.	
Unit-V :	Circulation of Oceanic Water: Waves, Tides and Currents. Ocean Deposits: their sources and kinds. Corals and coral reefs: Types and theories of their origin.	12

Suggested Readings :

- Barry, R.G. and Chorley P.J. (1998): Atmosphere, Weather and Climate. Routledge, London and New York.
- Critch field, J. H. (1993): General Climatology, Prentice Hall, India, New Delhi.
- Das, P.K. (1987): Monsoons, National Book Trust, New Delhi.
- Fein, J.S. and Stephens, P.N. (1987): Monsoons, Wiley Inter science.
- Indian Met. Deptt. (1968): Climatological Tables of Observatories in India, Govt. of India.
- Lal, D.S. (1986): Climatology, Chaitanya Publication, Prayagraj.
- Lydolph, P.E. (1985): The Climate of the Earth, Rowman.
- Menon, P.A. (1989): Our Weather, P.B.T. New Delhi.
- Peterson,S.(1969): Introduction to Meteorology, McGraw Hill Book, London.
- Robinson, P. L. and Henderson S.(1999): Contemporary Climatology, Henlow.
- Sharma, R.C. & Meera Vatal: Oceanography for Geographers.

Year – IV
B.A. in Research Geography- Semester-VIII
M. A. Geography
Semester II/Year-I
Course CX
Theory

Programme Class: Certificate/ MA	**Year: First**	**Semester: Second**
Subject: Geography		
Compulsory Courses	Course Code: 0218002	Course Title: **Geography of Rural Settlements**

Out comes: Students will be able to understand

- Meaning and concept of rural settlements
- Rural-urban differentials
- Types and pattern of rural settlements
- Social issues in rural areas
- Environment structure in rural areas
- Rural cultural landscape

Credits: 4	Core Compulsory
Max. Marks: 25+75	Min. Passing Marks: 40

Total No. of Lectures- 12 Periods Per Unit (Theory Exam-75 Internal Assessment-25)

Objectives: To know the geographical factor of rural areas.

Unit	**Topics**	**No. of Lectures**
Unit-I:	Nature, scope, significance and development of rural settlement geography. Approaches to rural settlement geography. Rural-urban continuum	12
	Definition and characteristics of rural settlements in the fringe areas and sparsely settled areas. Distribution of Rural settlements: size and spacing of rural settlements. Nearest Neighbour Analysis.	
Unit-II :	Types, forms and Patterns of rural settlements: cause and effect, Classification of rural settlements, Rural service centres, their nature, hierarchy and functions, rural-urban fringe-structure, characteristics and functions.	12
Unit-III:	Social issues in rural settlements: poverty, housing and shelter, depriation and inequality, empowerment of women, healthcare, rural-urban interaction.	12

Unit-IV :	Environmental issues in rural settlements: access to environmental infrastructure, water supply, sanitation, drainage, health hazards.	12
Unit-V:	Cultural landscape elements in rural settlements in different Geographical environments with special reference to India; House types and field patterns, Origin, evolution, size, socio, spatial, structure of Indian villages. Rural development planning in India.	12

Suggested Readings:

- Alam, S.M. et. al. (1982): Settlement System of India, Oxford and IBH Publication Co., New Delhi.
- Brock, J.O.M. and Welb, J.W. (1978): Geography of Mankind, McGraw Hill, London.
- Chisholm,M.(1967):Rural Settlement sand Land Use, John Wiley, New York.
- Clout, H.D. (1977): Rural Geography, Permajon, Oxford.
- Daniel, P. and Hopkinson, M. (1986): The Geography of Settlement, Oliver & Byod, Edinburg.
- Bansal, S.C. (2021): Grains Basti Bhugool, Meenakshi Prakashan, Meerut.
- Grover, N. (1985): Rural Settlement - A Cultural Geographical Analysis, Inter-India Publication, Delhi.
- Hudson,F.S.(1976): A Geography of Settlement, MacDonald & Evans, New York.

Year – IV
B.A. in Research Geography- Semester-VIII
M. A. Geography
Semester II/Year-I
Course XI
Theory

Programme Class: Certificate/ MA	**Year: First**	**Semester: Second**
Subject: Geography		
Compulsory Courses	Course Code: 0218003	Course Title: **Advanced Geography of India (Socio-economic)**
Out comes: Students will be able to understand • Indian agriculture pattern • Power resources- types and sustainability • Industrial development and their pattern • Social (Population) Pattern • Economic regions- micro and micro		
Credits: 4	Core Compulsory	
Max. Marks: 25+75	Min. Passing Marks: 40	
Total No. of Lectures- 12 Periods Per Unit (Theory Exam-75 Internal Assessment-25)		
Objectives: To know the economic features of India.		

Unit	**Topics**	**No. of Lectures**
Unit- I :	Agricultural system and technological problems of Indian agriculture, developments, agrarian reforms, green revolution achievements and short comings, need of 2nd green revolution, Agro-climatic regions of India. Regionalization of agriculture in India, Crop combination regions of India, Food production and population growth.	12
Unit- II:	Energy in India- Conventional and Non-conventional power resources, regional set- up of Hydro and Thermal Power stations, locational patterns and analysis of coal & petroleum resources, govt. policies and conservation of energy resources.	12
Unit-III:	Analysis of Agro-Based (Sugar), Forest Based (Paper & Pulp) and Mineral based industries (Iron & Steel), Industrial regions of India, Modes of transport, their significance and development. The pattern of foreign trade.	12

Unit- IV:	Socio-economic implications of explosive growth of population, distribution and density of population, population resource regions, trends of urbanization, urban regions, population problems and policies.	12
Unit- V:	Basis of Economic Regionalization macro, meso and micro regional division of India, economic regionalization in India, Detailed study of the meso-regions of Great- Plains-their inter-regional disparities with reference to agricultural, human Resource development.	12

Suggested Readings:

- Brahmanand, P.R. et., (1987): The Development Process of Indian Economy, Himalaya Publishing House, New Delhi.
- Deshpande, C.D. (1992): India: A Regional Interpretation, ICSSR, New Delhi.
- Farmer, B.H. (1983): Introduction to South Asia. Methuen and Company Ltd. and Company Ltd., London.
- Ganguly, S. and Neil, De Votta(eds.) (2003): Understanding Contemporary India. Lynne Reinner Publishers., Boulder and London.
- Gole, P.N. (2001): Nature Conservation and Sustainable Development in India. Rawat Publications, Jaipur and New Delhi.
- Johnson, B.L.C.(1983):Development in South Asia. Penguin Books, Harmonsworth.

Year – IV
B.A. in Research Geography- Semester-VIII
M. A. Geography
Semester II/Year-I
Course XII
Theory

Programme Class: Certificate/ MA	Year: First	Semester: Second
Subject: Geography		
Compulsory Courses	Course Code: 0218004	Course Title: **Regional Planning and Development**

Out comes: Students will be able to understand

- Regional concept and planning
- Physical and planning regions
- Regions and their utility
- Regional development strategies
- Various level of planning

Credits: 4	Core Compulsory
Max. Marks: 25+75	Min. Passing Marks: 40

Total No. of Lectures- 12 Periods Per Unit (Theory Exam-75 Internal Assessment-25)

Objectives: It will acquaint the student with the development plan at regional level.

Unit	Topics	No. of Lectures
Unit - I :	Regional concept in geography, Concept, Nature and Scope of Regional Planning., Changing concept of the region from an inter-disciplinary view-point, Concept of space, area and locational attributes. Types of region: Formal and functional; Uniform and Nodal, Single purpose and Composite regions in the context of planning; Regional hierarchy.	12
Unit - II:	Physical regions, Planning regions of India, Regional divisions according to variations in levels of socio-economic development; Special purpose regions-river valley regions, Metropolitan regions, Problem regions–hilly regions, Tribal regions, Regions of drought and floods.	12
Unit - III:	Approaches to Delimitation of different types of regions and their utility in planning. Planning process - Sectoral, Temporal and spatial dimensions; Short- term and Long term perspectives of planning.	12

Unit - IV:	Regional development strategies–Concentration vs. Dispersal, Case studies for plans of developed and developing countries, Regional plans of India.	12
Unit - V:	Concept of Multi-level planning; Decentralized planning; Panchayati Raj System, role and relationship of Panchayati Raj Institutions (Village Panchayat, Panchayat Samiti and Zila Parishad) and administrative structure (Village, Block and District). Regional development in India, Problems and Prospects.	12

Suggested Readings:

- Bhat, L. S. (1973): Regional Planning in India, Statistical Publishing Society, Kolkata.
- Bhat, L.S.etal. (1976): Micro-Level Planning: A Case Study of Karnal Area, Haryana, K.B. Publications, New Delhi.
- Chandna, R.C. (2000): Regional Planning: A Comprehensive Text, Kalyani Publishers., New Delhi.
- Chaudhuri, J. R. (2001): An Introduction to Development and Regional Planning with special reference to India. Orient Longman, Hyderabad.
- Friedmann, J. (1992): Empowerment: The Politics of Alternative Development. Blackwell, Cambridge MA and Oxford.

Year – IV
B.A. in Research Geography- Semester-VIII
M. A. Geography
Semester II/Year-I
Course XIII
Theory

Programme Class: Certificate/ MA	**Year: First**	**Semester: Second**
Subject: Geography		
Optional	Course Code: 0218005	Course Title: **Geography of Transport**

Out comes: Students will be able to understand

- Transport Geography Concept
- Significance of various modes of transport
- Accessibility types and their pattern
- Modes and network system
- Transport development planning

Credits: 4	Core Compulsory
Max. Marks: 25+75	Min. Passing Marks: 40

Total No. of Lectures- 12 Periods Per Unit (Theory Exam-75 Internal Assessment-25)

Objectives: It will acquaint the student with the pattern, type, layout and areas of development of transport.

Unit	**Topics**	**No. of Lectures**
Unit-I:	Nature, concept scope, significance and development of Transport Geography, Factors associated with the development of transport system: physical, economic, social, cultural and institutional; economic, technological and regional development and transport development.	12
Unit-II:	Characteristics and relative significance of different modes of transport: railways, roads, airways and waterways, pipelines etc.	12
Unit-III:	Structure- Accessibility and Flow models; network structure, graph theoretic measures, measurement of accessibility, models of network change. Linear programming and gravity models, Theories related to freight rate structure, bases of spatial interaction, complementary intervening opportunity and transferability.	12

Unit-IV:	Pattern of movement: the type, patterns of movement and transport modes, simple model of interaction, transportation network: the functions, pattern of movement, movement geometry, transport development.	12
Unit-V:	Transport policy and planning transport development in developing countries, urban, transportation: growth and problems of urban transportation, transport and environmental degradation; vehicular pollution and congestion, alternatives to transport system in mega cities of India, National Highway Development and Transport Planning in India.	12

Suggested Readings:

- Chorley R.J. & Haggett P.(1967): Models in Geography Methuen & Co. London.
- Hurst, M.E.(ed: (1974): Transportation Geography, McGraw-Hil
- Hagget, F and Chorley, R.J. (1968): Network Analysis', Edward Arnold, London.
- Hay, A(1973): Transport Economy, MacMillan, London.
- Hoyle, B.S.(ed.) (1973): Transport and Development, MacMillan, London.
- Raza, M. and Agrawal Y.P(1985): Transport Geography of India, Concept, New Delhi.
- Robinson H & Bamford C.G.(1978): Geography of Transport Macdonald & Evans. London.
- Taffe, E.J. & Gauthier (Jr.) H.L(1973): Geography of Transportation, Prentice-Hall, Englewood Cliffs, N.J..
- Ullman E.L.(1957). American Commodity Flow University of Washington Press.
- White H.P. and Senior, M.L.(1983): Transport Geography Longman, London.

Year – IV
B.A. in Research Geography- Semester-VIII
M. A. Geography
Semester II/Year-I
Course XIV
Theory

Programme Class: Certificate/ MA	Year: First	Semester: Second
Subject: Geography		
Optional	Course Code: 0218006	Course Title: **Political Geography**
Outcomes: Students will be able to understand • Political Geography. Concept and importance • Elements of the state • Nations characteristics, periphery concepts • Geo political significance of strategic regions • Indian political geographical characteristics		
Credits: 4	Core Compulsory	
Max. Marks: 25+75	Min. Passing Marks: 40	
Total No. of Lectures- 12 Periods Per Unit (Theory Exam-75 Internal Assessment-25)		
Objectives: Importance and role of geography in the political events.		

Unit	Topics	No. of Lectures
Unit-I:	Nature, scope, subject matter and recent development in political geography; approaches to study, major schools of political thought. (Heartland Theory)	12
Unit-II:	Geographic Elements and the State: Physical Elements; Human elements; Economic elements; Political geography and environment interface.	12
Unit-III:	Themes in Political Geography: State, Nation, Nation-State and Nation-building, Frontiers and boundaries, Colonialism, decolonization, Neocolonialism, Federalism and other forms of governance. The changing patterns of World Powers, Perspectives on core-periphery concept, Conflicts and cooperation.	12
Unit-IV:	Geopolitical significance of Indian Ocean: Political geography of any one of the following regions: SAARC Region, South-East Asia, West Asia, East Asia, ASEAN	12

Unit-V:	Political geography of contemporary India with special reference to : The changing political map of India, centripetal & centrifugal forces; stability & instability; Interstate issues (like water disputes & riparian claims) and conflict resolutions insurgency in border states; Emergence of New States; Federal India: Unity in Diversity.	12

Suggested Readings

- Alexander, L.M. (1963): World Political Patterns Ran McNally, Chicago.
- De Blij, H.J. and Glassner, Martin (1968): Systematic Political Geography, John Wile, New York.
- Dikshit, R.D. Political Geography (1996): A Contemporary Perspective. Tata McGraw Hill New Delhi.
- Dikshit, R.D. Political geography (1999): A Centry of progress, Sage, New Delhi.
- Sukhwal, B.L. (1968): Modern Political Geography of India Sterling Publishers, New Delhi.
- Taylor, Peter (1985): Political Geography Longman, London.
- Fisher Charles A. (1968): Essays in Political Geography, Mehthuen, Landon.
- Pounds N.J.G. (1972): Political Geography. McGraw Hill, New York.
- John R. Short (1982): An introduction to Political Geography Routledge, London.
- Moddie, A.E: Geography Behind Politics Hutchinson, London, Latest edition.
- Prescott. J.R.V.: The Geography of Frontiers and Boundaries Aldine, Chicago.
- Deshpande C.D (1992): India-A-Regional Interpretation Northern Book Centre, New Delhi.
- Saxena, H.M. Political Geography in Hindi

Year – IV
B.A. in Research Geography- Semester-VIII
M. A. Geography
Semester II/Year-I
Course XV
Practical

Programme Class: Certificate/ MA	Year: First	Semester: Second
Subject: Geography		
Compulsory Courses	Course Code: 0218080	Course Title: **Advanced Cartography (Practical)**
Course Learning Outcomes: •		
Credits: 4	Core Compulsory	
Max. Marks: 100	Min. Passing Marks: 40	
Total No. of Lectures- 12 Per Unit **Note:- No Internal Exam in Practical**		

Unit	Topics	No. of Lectures
Unit- I:	Definition, Scope and Development of Modern Cartography. Classification of Map. Map as a Data Model. Tools of Map Making. Lettering and Symbolization of Maps. Techniques of Map making. Computer Assisted Cartography.	12
Unit- II:	Graphical Presentation of Statistical Data: Graphs and Diagrams, Construction of Climograph, Ergograph, Hythergraph, Wind Rose.	12
Unit-III :	Compound Pyramid Diagram, Circle and Spherical Diagram, Dispersion and Scatter Diagrams.	12
Unit-IV :	Distribution Maps: Types and Methods of drawing thematic maps, Choroschematic, Chorochromatic, Choropleth, Isopleth.	12
Unit-V:	Map Projections: Properties, classification and choice of map projections. Mathematical construction of Sinusoidal, Mollweide, International and Gall's Projections.	12
Note:	For written test in all 10 questions shall be given selecting 02 questions from each Unit from I to V. The students shall be attempting five questions selecting one question from each unit. Each question shall be carrying 15marks.	

For Examination Break-Up of Marks-	Written Test (3Hrs.):	75marks
	Record Work :	15marks
	Viva-voce:	10marks

Suggested Readings:

- Cromely, Robert G.(1992):Digital Cartography Englewood Cliffs, New Jersey, Prentice- Hall, Inc.
- Dent, B.(1985): Principles of Thematic Map Design, Reading, Massachusetts, Addision- Wesley Publishing Company.
- Dorling, D. and Fairborn, D. (1997): Mapping, Ways of Representing the World, Longman, Harlow.

Year – V
B.A. in Research Geography- Semester-IX
M. A. Geography
Semester III/Year-II
Course XVII
Theory

Programme Class: Certificate/ MA	**Year: Second**	**Semester: Third**
Subject: Geography		
Compulsory Courses	Course Code: 0318001	Course Title: **Recent Issues in Geography**
Outcomes: Students will be able to understand • Recent conceptual development in Geography • Methodological and technical development and uses • New techniques like Remote sensing, GIS, GPS • Scientific Research Methods • Recent issues in Geography		
Credits: 4	Core Compulsory	
Max. Marks: 25+75	Min. Passing Marks: 40	
Total No. of Lectures- 12 Periods Per Unit (Theory Exam-75 Internal Assessment-25)		
Objectives: To acquaint with the latest developments in Geography subject.		

Unit	**Topics**	**No. of Lectures**
Unit- I :	Recent Conceptual Development in Geography: Philosophical Issue - Positivism, Behaviouralism, Probabilism, Phenomenology, Idealsim, Existentialism and Humanistic Geography, Spatial Justice, Radicalism & Postmodernism.	12
Unit- II:	Recent Methodological Development in Geography: Quantitative Revolution and use of Statistical Techniques. Use of Hardware and Software Technologies in data analysis and mapping, use of models and paradigms in geography.	12
Unit-III:	Use of Technologies in Geography: Remote Sensing technique and Geographical Information System (GIS) and Global Positioning System (GPS).	12
Unit-IV :	Scientific Methods in Geographical Research: Hypothesis Testing, Problem Solving approach in Geography, Project Formulation and Project Evaluation Techniques.	12

Unit-V :	Recent Issues in Indian Geography: Post Colonialism and Indian Geography, Trends of Geographical Researches in India, Prospects of Professional Opportunities in Geography, Future of Indian Geography, Problems, Perspectives and Prospects.	12

Suggested Readings:

- Adams, P, Steven, H. and Karel, T.(eds.)(2001): Texture of Place. Exploring Humanistic Geographies. University of Minnesota Press, Minneapolis.
- Anderson, K., Domosh, M., Pile, S. and Thrift, N. (eds.) (2003): Handbook of Cultural Geography. Sage Publications, London.
- Barnes, T. and Gregory, D.(eds.)(1997): Readings in Human Geography: The Poetics and Politics of Inquiry. Arnold, London.
- Bunkše, E. V. (2004): Geography and the Art of Life. John Hopkins University Press, Baltimore.
- Buttimer, A. (1971): Society and Milieu in the French Geographic Tradition. Rand McNally, Chicago.
- Daniels, P., Bradshaw, M., Shaw, D. and Sidaway, J. (2000): An Introduction to Human Geography. Issues for the 21st Century. Prentice Hall, London.

Year – V
B.A. in Research Geography- Semester-IX
M. A. Geography
Semester III/Year-II
Course XVIII
Theory

Programme Class: Certificate/ MA	Year: Second	Semester: Third
Subject: Geography		
Compulsory Courses	Course Code: 0318002	Course Title: **Interdisciplinary Research Methods and Techniques**

Outcomes: Students will be able to understand
- Research concept and components
- Techniques and methods of research
- Research field techniques and process
- Analysis of various facts as observed
- To prepare the research report

Credits: 4	Core Compulsory
Max. Marks: 25+75	Min. Passing Marks: 40

Total No. of Lectures- 12 Periods Per Unit (Theory Exam-75 Internal Assessment-25)

Objectives: To acquaint with the importance and various facts related to research.

Unit	Topics	No. of Lectures
Unit- I :	Conceptual Foundation of Research: Meaning and types of research, Objectives and motivation of research, Concepts of pure and applied research, Scientific approach to geographic research, Basic components of research, Defining a research problem, Construction of research design, Hypothesis formulation.	12
Unit-II :	Sampling Techniques and Selection of Geographic variables: Aims of Sampling, Basic components of sampling methods, Nature of Geographic data, Continuous and discrete data. Level of measurements: Various scales, Data transformation; its process and methods.	12
Unit-III:	Data Collection: Methods of field observation, Role of field methods in geographic studies, Techniques for primary data collection, Preparation of questionnaires. Data collection from secondary sources. Tabulation and Data analysis.	12

Unit-IV :	Cartographic analysis of data. Techniques of data representation by quantitative maps. Hypothesis testing. Basic principles and procedures of Correlation, significance of statistical analysis and interpretation of data.	12
Unit-V:	Drafting of the research report, Quantitative & Qualitative interpretations, Writing manuals (Arranging themes, maintaining coherence, cross comparison concluding, referencing noting etc.). Proof marks & marked proof, Size scale and Types of report, Organization and Designing of report, Evaluating a report.	12

Suggested Readings:

- Ahuja, R.(2001): Research Methods, Rawat Publications, Jaipur and New Delhi.
- Bhattacharyya, D.K.(2005) :Research Methodology, Excel Books, New Delhi
- Blackburn, J .and Holland, J. (eds.) (1998): Who Changes? Institutionalizing Participation in Development. IT Publications, London.
- Blaxter, L., Hughes, C. and Tight, M. (1996): How to Research. Open University Press, Buckingham.
- Mishra, R.P. Research Methodology: A Handbook, Concept Publishing Company Pvt. Limited, New Delhi.
- Crang, Mike (1999): Cultural Geography. Routledge, London.
- Daniels, P., Bradshaw, M., et al. (2000): Human Geography: Issues for the 21st Century. Prentice Hall, London and Pearson Publishers, Singapore. Indian reprint, 2003.

Year – V
B.A. in Research Geography- Semester-IX
M. A. Geography
Semester III/Year-II
Course XIX
Theory

0911 124

Programme Class: Certificate/ MA	Year: Second	Semester: Third
Subject: Geography		
Optional	Course Code: 0318004	Course Title: **Advanced Geography of Uttar Pradesh**

Out comes: Students will be able to understand

- Research concept and components
- Techniques and methods of research
- Research field techniques and process
- Analysis of various facts as observed
- To prepare the research report

Credits: 4	Core Compulsory
Max. Marks: 25+75	Min. Passing Marks: 40

Total No. of Lectures- 12 Periods Per Unit (Theory Exam-75 Internal Assessment-25)

Objectives: To acquaint with the importance and various facts related to research.

Unit	Topics	No. of Lectures
Unit-I :	Locational Set-up of Uttar Pradesh in India and its changing map. Physiography and Physical Divisions, Structure, Drainage, Ground Water Resource, Soils and their types, Climate and Climatic regions and vegetative cover.	12
Unit-II :	Problems Related to Over Utilization of Natural Resources in Uttar Pradesh: Usar and Sodic soils formation and soil erosion, Under ground water scarcity, Depletion of forest cover and wild life, Surface Water Resource Utilities, Drinking Water and Power Shortage, Flood and drought affected parts.	12
Unit-III :	Spatio- Temporal Trends of Agricultural production, Development of Irrigational facilities including canals and dams, Agricultural Productivity and Crop-Combination regions, Power Generation and its distribution in different sectors of economy, Agro-Processing industry and their problems with special reference to sugar industry.	12

Unit-IV :	Human Resource Development in Uttar Pradesh: Demographic and Religious composition (Density, Rural-Urban distribution of Population, Sex-ratio,S/C/ S/T population, Literacy and trend of urbanization), occupational Structure and Poverty Eradication programmes initiated. Accessibility and Transport infrastructural gaps. Express Highways- Layout and Regional Set-up.	12
Unit-V:	Planning for Balanced Development: Planning for sustainable development including health, education, drinking water, Emerging Political Issues and Voting Behaviour in General elections and Policy of the State Government for Balanced regional development.	12

Suggested Readings:

- Despande C.D. (1992): India-A Regional Inter-Pretation ICSSR, Northern Book Centre, New Delhi.
- Gautam, A. (2005): Geography of India,(In Hindi & English) Rastogi Publishing House, Meerut.
- Kundu A., Raza Moonis (1982): Indian Economy: The Regional Dimension, Spectrum Publishers, New Delhi.
- Mamoria, C.B.(1980): Advanced Geography of India, Sahitya Bhawan, Agra.
- Singh, S.,(2019): Geography of Uttar Pradesh, Sahitya Bhawan, Agra.
- Bansal, S.C. (2018): Geography of Uttar Pradesh, Meenakshi Prakashan, Meerut

Year – V
B.A. in Research Geography- Semester-IX
M. A. Geography
Semester III/Year-II
Course XX
Theory

09/11/23

Programme Class: Certificate/ MA	Year: Second	Semester: Third
Subject: Geography		
~~Compulsory Courses~~ Optional	Course Code: 0318003	Course Title: **Ecology and Environment**
Outcomes: Students will be able to understand • Environment- Components and meaning • Ecosystem and major cycles of environment • Natural hazards and their impact • Pollution- Concept and types • Environmental management		
Credits: 4	Core Compulsory	
Max. Marks: 25+75	Min. Passing Marks: 40	
Total No. of Lectures- 12 Periods Per Unit (Theory Exam-75 Internal Assessment-25)		
Objectives: To acquaint with the importance, impact and various features of environment.		

Unit	Topics	No. of Lectures
Unit- I :	Ecology and Environment, Geography as Human Ecology Conceptual background. The Environment meaning, structure and types, Man Environment Relationship, Perception of Environment.	12
Unit-II :	Ecology: meaning and its relation with Geography, Ecosystem: Kinds and functions, food chains, food structure webs, Structure and trophic levels, Energy flow and nutrient cycles, Major Biomes of the World.	12
Unit-III :	Geographical aspects of major environmental problems: Natural hazards- floods, drought, landslides, Earthquakes and Cyclones, Man-induced hazards Rapid urbanization, transport development, Agricultural development, Big dams.	12
Unit-IV :	Environmental Pollution concept and types of pollution, Ecological impact of pollution, its environmental concerns, the green house effects, Global warming and ozone depletion,	12

	Environmental Policy and Legislation.	
Unit-V:	Ecological basis of environmental Management - Concept, need and approaches, Indian and International efforts for environmental conservation and management: Environmental problems and programmes in India. Environmental Impact Assessment (ETA) of River Valley Projects like Tehri Hydro and Narmada Valley (Sardar Sarovar) Projects, National Parks.	12

Suggested Readings:

- Anjuneyulu, Y. (2004): Introduction to Environmental Science. B. S. Publications, Hyderabad.
- Athavale, R. N. (2003): Water Harvesting and Sustainable Supply in India. Rawat Publications, Jaipur.
- Blaikie, P., Cannon, T. and Davis, I. (eds.) (2004): At Risk: Natural Hazards, Peoples Vulnerability and Disasters. Routledge, London.
- Bodkin, E. (1982): Environmental Studies, Charles E. Merril Pub. Co., Columbus, Ohio.
- Chandna, R.C.(1998): Environmental Awareness, Kalyani Publishers, New Delhi.
- Eyre, S.R. and Jones, G.R.J. (eds.) (1966): Geography as Human Ecology, Edward Arnold, London.
- Gautam, A. (2007): Environmental Geography, Sharda Pustak Bhawan, Allahabad.
- Pathak, Ganesh (2022): Environment, Disaster Management and Climatic change, (Hindi) Rajesh Publications, New Delhi.
- Saxena, H.M. & Others: (2020) Environmental Geography, Rawat Publications, Jaipur.

Year – V
B.A. in Research Geography- Semester-IX
M. A. Geography
Semester III/Year-II
Course XXI
Theory

Programme Class: Certificate/ MA	**Year: Second**	**Semester: Third**
Subject: Geography		
Optional	Course Code: 0318005	Course Title: **Cultural Geography**
Out comes: Students will be able to understand • Cultural geography- Concept and its structure • Evolution of socio-cultural regions • Cultural element, perception • Tribal studies and groups • Various pattern of livelihood		
Credits: 4	Core Compulsory	
Max. Marks: 25+75	Min. Passing Marks: 40	
Total No. of Lectures- 12 Periods Per Unit (Theory Exam-75 Internal Assessment-25)		
Objectives: To acquaint with cultural pattern of the people in various areas.		

Unit	**Topics**	**No. of Lectures**
Unit-I:	Nature and development of cultural geography: Philosophical bases of cultural geography, cultural geography in the realm of social sciences. Understanding and its structure and process: geographical bases of social formations: contribution of cultural geography to social theory power relations and space. Globalisation and liberalization	12
Unit-II:	Evolution of socio-cultural regions of India: bases of social region formation: role of race, caste, ethnicity; religion and languages: social transformation and change in India. Cultural diversity and regionalization in India. Concepts of social well-being, physical quality of life, human development cultural diversity.	12
Unit-III:	Introduction: Definition and Scope of cultural geography: Cultural element and components of culture; convergence and divergence processes; cultural changes; perception, behaviouralism and cultural relativism.	12

Unit-IV:	Geography of ethnic groups and tribal groups. Re ligion and its diffusion; diffusion of ethnic traits in world as well as India ethnic landscape and economy of the area, Diffusion in folk geography: Cultural landscape and cultural ecology in folk geography.	12
Unit-V:	Patterns of livelihood: various economic activities & cultural adaptations; agriculture, industrialization and modernizion, technological changes and their geographic implications, pattern of different societies. Socio-cultural planning in India.	12

Suggested Readings:

- Ahmad, Aijazuddin (1999): Social Geography, Rawat Publication, New Delhi.
- Broek, J.C. and Webb, J.W. (1978): A Geography of Mankind, McGraw Hill, New York.
- Crang, Mike (1998): Cultural Geography, Routledge publications, London.
- De Blij, H.D.: Human Geography, John Wiley and Sons, New York.
- Dreze Jean, Amartya Sen (1996): Economic Development and Social opportunity, Oxford University Press, New Delhi.
- Dubey, S.C. (1991): Indian Society, National book Trust, New Delhi.
- Gregory, D. and J. Larry (eds.) (1985): Social relations and spatial structures, McMillan.
- Harmandorf, (1989): Tribes of India: The Struggle for survival, Oxford University Press, Delhi.

Year – V
B.A. in Research Geography- Semester-IX
M. A. Geography
Semester III/Year-II
Course XXII
Theory

Programme Class: Certificate/ MA	Year: Second	Semester: Third
Subject: Geography		
Optional	Course Code: 0318006	Course Title: **Administrative Geography**
Out comes: Students will be able to understand • Administrative Geography- concept and importance • Administrative areas types and attributes • Spatial set up of Administration in various countries • Multilevel planning in administration • Administration and environment impact		
Credits: 4	Core Compulsory	
Max. Marks: 25+75	Min. Passing Marks: 40	
Total No. of Lectures- 12 Periods Per Unit (Theory Exam-75 Internal Assessment-25)		
Objectives: To acquaint with the role of geography in administration.		

Unit	Topics	No. of Lectures
Unit-I:	Administrative Geography: definition, subject matter, and significance- Administrative Geography as the study of administrative areas and area administration; Geography and Public Administration; Administrative Geography and Modern Political Geography.	12
Unit-II:	Administrative Areas: evolution, change and periodic reforms, types administrative areas - general purpose, special purpose.	12
	Structural attributes of administrative areas-hierarchy, size, shape and headquarters.	
	Area Administration: Geography of Public policy - formulation, implementation revenue, expenditure and balance; and impact; Geography of public finance - Administrative system - the world pattern.	

Unit-III:	Spatial Organisation of Administration and the Development Process: Measures of spatial quality of administrative areas; measures of development level; relationship between spatial quality and development level of administrative areas. Administrative Geography of select Countries: India, U.S.A. Russia and United Kingdom.	12
Unit-IV:	Concept of Multi-level planning in India - Top down and bottom-up approach/ Decentralised planning; Panchayati Raj role and relationship of Zila Parishad, Panchayat Samithi and Village Panchayat, Relationship with the administrative framework. Case study from selected States in India	12
Unit-V:	The administrative framework and the environment: Inter relationship and impact assessment.	12

Suggested Readings:

- Alderfer, H.F. (1964): Local Government in Developing Countries, McGraw-Hill, New York.
- Bennett. R.J. (1980): Geography of Public Finance, Methuen, New York.
- Coppack, J.T. and J.R.D. Sewell (eds.) (1976): Spatial Dimension in Public Policy, Pergamon. Press, Oxford.
- Deshpande C.D. (1992): India-A Regional Interpretation ICSSR, Northern Book Centre, New Delhi.
- Fesler, J.W. (1949): Area and Administration, University of Alabama Press, Alabama.
- Government of India, Planning Commission, New Delhi (1984): Report of the Working Group on District Planning 2 volumes, New Delhi.
- Suryakant (1988), Administrative Geography of India, Rawat Publication, Jaipur.

Year – V
B.A. in Research Geography- Semester-VIII
M. A. Geography
Semester III/Year-II
Course XXIII
Practical

Programme Class: Certificate/ MA	**Year: Second**	**Semester: Third**
Subject: Geography		
Compulsory Courses	Course Code: 0318080	Course Title: **Advanced Surveying (Practical)**
Course Learning Outcomes: •		
Credits: 4	Core Compulsory	
Max. Marks: 100	Min. Passing Marks: 40	
Total No. of Lectures- 12 Per Unit **Note:- No Internal Exam in Practical**		

Unit	**Topics**	**No. of Lectures**
Unit -I:	Prismatic Compass Surveying (Mathematical Techniques for Closed Traversing), Interpolation of Contours by Indian Clinometers, Sextant measurement (Vertical and Horizontal), Telescopic Alidade, Dumpy Level (Simple & Differential Levelling, Rise and Fall Methods) Theodolite.	12
Unit –II:	Air Photos and Photogrammetry: Elements of Photographic System; types, scales, Calculation and Measurement of scale and height on Air photo. Numbering of Photographs Air Photo interpretation: shape, size pattern, tone, texture, shadows etc. Photo Mosaics and their comparison with topographical maps.	12
Unit-III:	Scope of Remote sensing, Development of Remote sensing, stages in remote sensing data acquisition, electromagnetic radiation and electromagnetic spectrum, Interaction of EMR with Earth's surface features, and atmosphere .Types and characteristics of platforms, Sensors, Sensors resolutions and application, remote sensing data products, Indenting of remote sensing data in India.	12
Note:	A Geographical Survey Camp of not less than 10 days duration in different area other than of college premises will be arranged to acquaint students with the advanced surveying techniques and the spot study of aerial photographs & satellite imageries. Students are required to submit survey camp report containing not more	

than 10 pages and supported by 5 maps prepared during survey camp. There will be one teacher and one supporting staff on every 10 students group of guiding the students. T.A. & D.A. will be paid by the college concerned to the teaching and supporting staff members accompanying the students during survey camp.

For purpose of examination two surveying exercises from Unit-I will be given to each group of not more than 2 students. These exercises will be of 3 hours duration.

There will be a written test of 3 hours duration for rest of units-II & III. Students will have to attempt 3 questions out of 6 questions (2 from each Unit).

The distribution of marks shall be follows :-

(1)	Two surveying exercises	:	30 Marks
(2)	Written Test	:	30 Marks
(3)	Survey Camp Report	:	20 Marks
(4)	Sessional Record and Viva Voce Test	:	10+10= 20Marks

(Note: Students who do not attend the survey camp, their evaluation will be done in practical from 80 Marks).

Suggested Readings:

- Barrett, E.C. and Curtis L.F.: Fundamentals of Remote Sensing and Air Photo Interpretation.
- Campbell, J.: Introduction to Remote Sensing.
- Luder, D.: Aerial Photography Interpretation: Principles and Application.
- Star, J. and J. Estes: Geographic Information Systems: An Introduction.
- Fraser Taylor D.R.: Geographic Information Systems.
- Burrough, P.A.: Principles of Geographic Information Systems for Land Resources Assessment.
- Campbell, J. B. (2002): Introduction to Remote Sensing. 5th edition. Taylor and Francis, London.
- Cracknell, A. and Hayes, L. (1990): Remote Sensing Year Book, Taylor and Francis, London.
- Curran, P.J. (1985): Principles of Remote Sensing, Longman, London.
- Deekshatulu, B.L. and Rajan, Y.S. (ed.) (1984): Remote Sensing. Indian Academy of Science, Bangalore.
- Floyd, F. and Sabins, Jr. (1986): Remote Sensing: Principles and Interpretation, W.H. Freeman, New York.
- Guham, P. K. (2003): Remote Sensing for Beginners. Affiliated East-West Press Private Ltd., New Delhi.

Year – V
B.A. in Research Geography- Semester-X
M. A. Geography
Semester IV/Year-II
Course XXV
Theory

Programme Class: Certificate/ MA	Year: Second	Semester: Fourth
Subject: Geography		
Compulsory Courses	Course Code: 0418001	Course Title: **Population Geography**
Out comes: Students will be able to understand • Population Geography- Concept and development • Population distribution and factors • Population structure • Population growth factors • Population potentials and socio-economic development.		
Credits: 4	Core Compulsory	
Max. Marks: 25+75	Min. Passing Marks: 40	
Total No. of Lectures- 12 Periods Per Unit (Theory Exam-75 Internal Assessment-25)		
Objectives: To acquaint with the population potentials and demographic aspects.		

Unit	Topics	No. of Lectures
Unit- I:	Population Geography: Scope and Objectives, development of Population Geography as a field of specialization- Population Geography and Demography- sources of population data, their level of reliability, and problems of mapping of population data.	12
Unit-II :	Population distribution: density and growth - theoretical issues, Classical and modern theories in population distribution and growth, World patterns and their determinants, India, population distribution, density and growth profile, Concepts of under population and over population.	12
Unit-III :	Population composition: age and sex, family and households, literacy and education, religion, caste and tribes, rural and urban, urbanization, occupational structure, population composition of India.	12

Unit-IV :	Population dynamics: Measurements of fertility and mortality, migration, national and international patterns, India's population dynamics, Demographic Research Methods.	12
Unit-V:	Population and development: population- resource regions and levels of population and socio-economic development, population policies in developed and less developed countries, Human Development Index and its components, India's population policies, population and environment, implications for the future.	12

Suggested Readings:

- Bilasborrow, Richard E and Daniel Hogan (1999): Population and Deforestation in the Humid Tropics, International Union for the Scientific Study of Population, Belgium.
- Bogue, D.J. (1969): Principles in Demography, John Wiley, New York.
- Bose, Ashish et.al. (1974): Population in India's Development (1947-2000): Vikas Publishing House, New Delhi.
- Chandna, R.C. (2000): Geography of Population, Concept, Determinants and Patterns, Kalyani Publishers, New Delhi.
- Bansal, S.C. (2019): Population Geography (in Hindi), Meenakshi Prakashan, Meerut.
- Clarke, John I. (1973): Population Geography, Pergamon Press, Oxford.
- Crook, Nigel (1997): Principles of Population and Development, Pergmon Press, New York.

Year – V
B.A. in Research Geography- Semester-X
M. A. Geography
Semester IV/Year-II
Course XXVI
Theory

Programme Class: Certificate/ MA	**Year: Second**	**Semester: Fourth**
Subject: Geography		
Compulsory Courses	Course Code: 0418002	Course Title: **Agricultural Geography**
Out comes: Students will be able to understand • Agricultural geography concept • Agricultural system factors • Agricultural locational development • Pattern of agricultural development revolutions • Contemporary issues in agricultural pursuits		
Credits: 4	Core Compulsory	
Max. Marks: 25+75	Min. Passing Marks: 40	
Total No. of Lectures- 12 Periods Per Unit (Theory Exam-75 Internal Assessment-25)		
Objectives: To acquaint with the various factors of agricultural geography.		

Unit	**Topics**	**No. of Lectures**
Unit-I:	Nature, scope, significance and development of agricultural geography. Approaches to the study of agricultural geography: Sources of agricultural data.	12
Unit-II:	Determinants of agricultural land use-Physical, cultural. Land holding and land tenure systems. Selected agricultural concepts and their measurements; cropping pattern, crop concentration, intensity of cropping, degree of commercialization, diversification and specialization, efficiency and productivity, crop combination regions and agricultural development. Zero Budget Natural Farming, Organic Farming, Cellular Agriculture: Definition, History, Methods, Benefits'. Green Revolution- its impact and consequences.	12
Unit-III:	Theories of agricultural location based on several multi-dimensioned factors: Von Thunen's theory of agricultural location and its recent modifications; Whittlesey's classification of	12

	agricultural regions; landuse and land capability.	
Unit-IV:	Agriculture in India- Land use and shifting cropping pattern. Regional pattern of productivity in India. Green Revolution, White Revolution, Food deficit and food surplus regions; nutritional index. Specific problems in Indian agriculture and their management and planning. Agricultural Policy in India.	12
Unit-V:	Contemporary issues; Food, nutrition and hunger, food security, drought and food security, food aid programmes; environmental degradation, role of irrigation, fertilizers, insecticides and pesticides, technological know-how. Employment in the agricultural sector: landless laborers, women, children, occupational health and agricultural activities. Land reforms, land use policy and planning.	12

Suggested Readings:

- Bayliss Smith, T.P. (1987): The Ecology of Agricultural Systems. Cambridge University Press, London.
- Berry, B.J.L. et. Al. (1976): The Geography of Economic Systems. Prentice Hall, New York.
- Brown, L.R. (1990): The Changing World Food Prospects- The Nineties and Beyond. World Watch Institute, Washington D.C.
- Dyson, T. (1996): Population and Food-Global Trends and Future Prospects. Routledge, London.
- Gregor, H.P.(1970): Geography of Agriculture. Prentice Hall, New York.

Year – V
B.A. in Research Geography- Semester-X
M. A. Geography
Semester IV/Year-II
Course XXVII
Theory

Programme Class: Certificate/ MA	Year: Second	Semester: Fourth
Subject: Geography		
~~Compulsory Courses~~ optional.	Course Code: 0418003	Course Title: **Urban Geography**

Out comes: Students will be able to understand

- Urban geography- Concept and development
- Urban classifications, functional structure
- Urban infrastructure and urban areas
- Urban contemporary issues
- Urban policies and planning

Credits: 4	Core Compulsory
Max. Marks: 25+75	Min. Passing Marks: 40

Total No. of Lectures- 12 Periods Per Unit (Theory Exam-75 Internal Assessment-25)

Objectives: To acquaint with the urban process and development.

Unit	Topics	No. of Lectures
Unit- I:	Nature and scope of urban geography, different approaches and recent trends in urban geography, attributes of urban places during ancient, medieval and modern period, Bases and process of urbanization and development, Urban growth and theories. Central Place Theory of Christaller and Losch. Theories of Perroux and Boudeville.	12
Unit-II:	Urban economic base: Basic and non-basic functions, concept of dualism, colonial and postcolonial structure, metropolitan city and changing urban function; role of informal sector in urban economy. Classification of urban settlements on the basis of size and function and its methods.	12
Unit-III:	Organization of urban space: urban morphology and landuse structure, city core, commercial, industrial and residential area; core-country variations; city-region relations, urban expansion, umland and periphery, Urban Primacy, Rank Size Rule.	12

Unit-IV:	Contemporary urban issues: urban poverty, urban renewal, urban sprawl, slums; transportation, housing, urban infrastructure; environmental pollution; air, water, noise solid waste; urban crime.	12
Unit-V:	Urban policy and planning, development of small and medium sized towns, city planning, green belts, garden cities, urban policy, contemporary issues in urban planning globalization and urban planning.	12

Suggested Readings:

- Alam, S.M. (1964): Hyderabad - Secunderabad Twin Cities Asia Publishing House, Bombay.
- Berry, B.J.L. and Horton, F.F. (1970): Geographic Perspectives on Urban Systems, Prentice Hall, Englewood Chiffs, New Jersey.
- Bansal, S.C. (2020): Urban Geography (in Hindi and English), Meenakshi Prakashan, Meerut.
- Carter(1972): The Study of Urban Geography, Edward Arnold Publishers, London.
- Chorley, R.J.O HaggettP.(ed.)(1966): Models in Geography, Methuen, London.
- Dickinson, R.E. (1964): City and Region, Routledge, London.
- Dwyer, D.J. (ed.) (1971): The City as a Centre of Change in Asia, University of Hong Kong Press, Hongkong.
- Gibbs, J.P. (1961): Urban Research Methods, D. Van Nostrand Co. Inc. Princeton, New Jersey.

Year – V
B.A. in Research Geography- Semester-X
M. A. Geography
Semester IV/Year-II
Course XXVIII
Theory

Programme Class: Certificate/ MA	Year: Second	Semester: Fourth
Subject: Geography		
Optional	Course Code: 0418004	Course Title: **Geography of Tourism**
Out comes: Students will be able to understand • Tourism- basics and concepts • Tourism- spatial dimension and types • Attraction in Indian Tourism • Tourism infrastructure development • Impact of tourism various factors		
Credits: 4	Core Compulsory	
Max. Marks: 25+75	Min. Passing Marks: 40	
Total No. of Lectures- 12 Periods Per Unit (Theory Exam-75 Internal Assessment-25)		
Objectives: To know the importance and various opportunities in Tourism.		

Unit	Topics	No. of Lectures
Unit-I:	Basics of tourism:, Definition of tourism; Factors influencing tourism: historical, natural, socio-cultural and economic; motivation factors for pilgrimages: leisure, recreation; elements of tourism, tourism as an industry.	12
Unit-II:	Geography of tourism:- its spatial affinity; areal and locational dimensions comprising physical, cultural, historical and economic; Tourism types: cultural, eco- ethnocoastal and adventure tourism, national and international tourism.	12
Unit-III:	Indian Tourism: regional dimensions of tourist attraction; evolution of tourism, promotion of tourism.	12
Unit-IV:	Infrastructure and support system - accommodation and supplementary accommodation; other facilities and amenities; Tourism circuits-short and longer detraction - Agencies and intermediacies - Indian hotel industry.	12

Unit-V:	Impacts of tourism: physical, economic and social and perceptional positive Current trends, and negative impacts; Environmental laws and tourism spatial patterns and recent changes; Role of foreign capital & impact of globalization on tourism.	12
	Project report on relevant topics such as impact of eco-tourism, Cultural tourism and Historical tourism.	12

Suggested Readings:

- Bhatia A.K. (1996): Tourism Development: Principles and Practices. Sterling Publishers, New Delhi.
- Inskeep. E(1991): Tourism Planning: An Integrated and Sustainable Development Apporach, Van Nostrand and Reinhold, New York.
- Kaul R.K.(1985): Dynamics of Tourism & Recreation. Inter-India, New Delhi.
- Kaur J.(1985): Himalayan Pilgrimages & New Tourism Himalayan Books, New Delhi.
- Lea J.(1988): Tourism and Development I the Third World, Routledge, London.
- Milton D.(1993): Geography of World Tourism Prentice. Hall, New York.
- Peace D.G.(1987): Tourism To-day: A Geographical Analysis, Harlwo, Longman.
- Robinson, H.A(1996): A Geography of Tourism. Macdonald and Evans, London.
- Sharma J.K.(ed.)(2000): Tourism Planning and Development- A new perspective, Kanishka Publishers, New Delhi.

Year – V
B.A. in Research Geography- Semester-X
M. A. Geography
Semester IV/Year-II
Course XXIX
Theory

Programme Class: Certificate/ MA	Year: Second	Semester: Fourth
Subject: Geography		
Optional	Course Code: 0418005	Course Title: **Gender Geography**

Out comes: Students will be able to understand

- Gender Geography need and development
- Gender based demographic structure
- Gender based participation
- Gender based Regional inequalities
- Women empowerment

Credits: 4	Core Compulsory
Max. Marks: 25+75	Min. Passing Marks: 40

Total No. of Lectures- 12 Periods Per Unit (Theory Exam-75 Internal Assessment-25)

Objectives: To acquaint with the pattern of women potential.

Unit	Topics	No. of Lectures
Unit-I:	Growth and evolution of this discipline; its connotation; traditional concept of interdependence between men and women; Regional Patterns of Sex Ratio & Determinants.	12
Unit-II:	Gender based demographic structure; infant mortality rates between boys and girls; maternal mortality rate; female infanticide; Gender and Longevity Gap. Regional Profile of gender based Structure.	12
Unit-III	Participation ratio in Economic and Social Activities; multiple role of women in land, water and forest resource management; involvement of women in household works, agriculture, mining, construction, industry, service and informal sectors; health-care deliverer.	12
Unit-IV:	Regional inequality in Socio economic development. Gender Gaps in Social and Public Life: Education, wage differentials in economic activities, health care and nutrition, participation in	12

	politics and enfranchisement. Patterns of health care: a Regional Profile.	
Unit-V:	Empowerment of women at various levels Village to Parliament with education, economic opportunities, access to reproductive health services, involvement in decision making processes in the arenas of development and environmental management.	12

Suggested Readings:

- Boserup, E. (1989): Women's Role in Economic Development, Earthscan, London.
- Dankelman, I. & Davidson, J. (1989): Women and Environment in the Third World, Earthscan, London.
- Deblig, H.J. (1996): Human Geography-Culture, Society and Space (5th ed.), John Wiley, New York.
- Haraway, D. (1991): Simians, Cyborgs and Women-The Reinvention of Nature, Routledge, New York.
- Koblinsky, M. et. al. (eds.) (1993): The Health of Women- A Global Respective, Westview Press, Boulder.
- Lee, D. (1988): Women in Geography-A Comprehensive Bibliography, Boca Raton, Florida.
- Lewis, R. (1995): Race, Feminity and Representation, Routledge, New York.
- Momsen, J.H. & Townsend, J. (eds.) (1987): Geography of Gender in the Third World, Albany, New York.
- Montagu, A. (1964): Man's Most Dangerous Myth-the Fallacy of Race, Cleveland.

Year – V
B.A. in Research Geography- Semester-X
M. A. Geography
Semester IV/Year-II
Course XXX
Theory

Programme Class: Certificate/ MA	Year: Second	Semester: Fourth
Subject: Geography		
Optional	Course Code: 0418006	Course Title: **Geography of Health**

Out comes: Students will be able to understand

- Health Geography concept
- Health geography various affecting factors
- Diseases- classification and pattern
- Entialogy of diseases
- Health care planning

Credits: 4	Core Compulsory
Max. Marks: 25+75	Min. Passing Marks: 40

Total No. of Lectures- 12 Periods Per Unit (Theory Exam-75 Internal Assessment-25)

Objectives: To acquaint with the health factors.

Unit	Topics	No. of Lectures
Unit-I:	Nature, scope and significance of geography of health Development of this area of specialization; its distinction from medical science.	12
Unit-II:	Geographical factors affecting human health and diseases arising from them, viz	12
	(i) Physical factors-relief, climate, soils and vegetation.	
	(ii) Social factors-population density, literacy, social customs and poverty.	
	(iii) Economic factors-food and nutrition occupation and standard of living	
	(iv) Environmental factors- urbanization and congestion, water, air and noise pollution and solid waste.	

Unit-III:	Classification of diseases: genetic, communicable and non-communicable, occupational and deficiency diseases. WHO classification of diseases, Pattern of World distribution of major diseases.	12
Unit-IV:	Ecology, etiology and transmission of major diseases: cholera, malaria, tuberculosis hepatitis, leprosy, cardiovascular, cancer, AIDS and STDS. Diffusion of diseases and causes for the same. Deficiency disorders and problems of mal-nutrition in India.	12
	(i) International level-WHO, UNICEF, Red Cross	
	(ii) National level-Government and NGOs,	
Unit-V:	Health Care Planning and Policies; availability, accessibility and utilization of health care services; Primary health care; Inequalities in health care services in India; family welfare, immunization, national disease eradication, and Health for All Programmes.	12

Suggested Readings:

- Banerjee, B. and Hazra J. (1980): Go-Ecology of Cholera in West Bengal, University of Calcutta, Calcutta.
- Cliff, A. and Haggett, P. (1989): Atlas of Disease Distribution. Basil Blackwell, Oxford.
- Digby, A. and Stewart, L. (eds.) (1996): Gender, Health and Welfare. Routledge, New York.
- Hazra, J. (ed.) (1997): Health Care Planning in Developing Countries. University of Calcutts, Calcutta.
- Learmonth A.T.A. (1978): Patterns of Disease and Hunger. A Study in Medical Geography. David & Charles, Victoria.
- May, J.M. (1961): Studies in Disease Ecology, Hafner Pub., New York.
- May, J.M. (1959): Ecology of Human Disease, M.D. Pub., New York.
- May, J.M. (1970): The World Atlas of Diseases, Nat. Book Trust, New Delhi.

Year – V
B.A. in Research Geography- Semester-VIII
M. A. Geography
Semester IV/Year-II
Course XXXI
Practical

Programme Class: Certificate/ MA	Year: Second	Semester: Fourth
Subject: Geography		
Compulsory Courses	Course Code: 0418080	Course Title: **Remote Sensing, GPS and GIS Based Surveys & Mapping**
Course Learning Outcomes: •		
Credits: 4	Core Compulsory	
Max. Marks: 100	Min. Passing Marks: 40	
Total No. of Lectures- 12 Per Unit **Note:- No Internal Exam in Practical**		

Unit	Topics	No. of Lectures
Unit-I:	Remote Sensing: Definition, Type, Scope and Historical Development. Electro-magnetic radiation: Characteristics, spectral regions and bands. Stages of Process of Remote Sensing.	12
Unit-II:	Remote sensing satellites: Platform and sensors. Resolution: Spatial, Spectral, Temporal, Radiometric Resolution. Types and their characteristics of aerial photographs. Basic of image interpretation and it\s application.	12
Unit-III:	Definition and development of GIS, computer environment for GIS, Spatial Data : Elements of spatial data; raster and vector data structures, Database Management Systems; GIS Application: GIS in Land Information System, Urban Management, Environmental Management. Use of GPS in data generation and mapping.	12
Unit-IV:	Global Positioning System, Introduction and definition of Global Positioning Systems: GPS satellite and constellations; GPS segments-Space Segments, Control Segments, User Segments, GPS signals and codes.	12
Note:	A Geographical Survey Camp of not less than 10 days duration in different area other than of college premises will be arranged to acquaint students with the advanced surveying techniques and the spot study of aerial photographs and satellite imageries. Students are required to submit survey camp report containing	

not more than 10 pages and supported by 05 maps prepared during survey camp. There will be one teacher and one supporting staff on every 10 students to guide the students. T. A. & D.A. will be paid by the college concerned to the teaching and supporting staff members accompanying the students during survey camp. There will be a written test of 03 hours duration for rest of units-I, II & III. Students will have to attempt 03 question out of 06 question (02 from each Unit). The distribution of marks shall be follows:-

(1)	Written Test	:	60 Marks
(2)	Camp Report	:	20 Marks
(3)	Sessional Record and VIVA VOCE Test 10+10	:	20 Marks