B.A (Programme) Geography Discipline --- LOCF

Introduction:

The Choice-based credit system (CBCS) offers flexibility of programme structure while ensuring that the student gets a strong foundation in the subject and gains in-depth knowledge of all aspects of the field. The Learning outcomes-based curriculum framework is designed around the CBCS and is intended to suit the present day needs of the student in terms of securing their path towards higher studies or employment.

Program Duration:

The B.A (programme) Geography will be of three years duration. Each year will be called an academic year and will be divided into two semesters. Thus, there will be a total of six semesters. Each semester will consist of sixteen weeks.

Design of Program:

- The teaching-learning will involve theory classes (Lectures) of one hour duration. The curriculum will be delivered through various methods including chalk and talk, PowerPoint presentations, audio, video tools, E-learning/E-content, field trips, seminars (talks by experts), workshops, projects,, Quiz, models and class discussions.

- The assessment broadly will comprise of Internal Assessment (Continuous Evaluation) and End Semester Examination. Each theory paper will be of 100 marks with 25% marks for Internal Assessment and 75% for End Semester examination. The internal assessment will be based on assignment, oral presentation, project, attendance, mid semester examination.

Programme Structure:

- The programme will consist of both six-credit courses and four-credit courses. All six credit courses (throry) will comprise of theory classes (five credits) and tutorial (one credit). Four credit courses will comprise of theory classes (four credits)

- For theory classes one credit indicates one hour lecture per week. The programme includes Core Courses (CC) and elective courses. The core courses are all compulsory courses. There are three kinds of elective courses: Discipline-Specific Elective (DSE), Generic Elective (GE) and Skill Enhancement Course (SEC). In addition there are two compulsory Ability Enhancement Courses (AEC).

- To acquire a degree in B.A (Prog) a student must study one more discipline course, along with Geography (four Core Courses and two Discipline Specific Elective courses in each discipline). Besides, the student has to study two Generic Electives, two Skill Enhancement Courses and two compulsory Ability Enhancement Courses. Geography Department offers four different Skill Enhancement Courses which are offered in last four (III, IV, V and VI

semesters) semesters. The Department also offers two different Generic Elective papers which are offered in last two (V and VI semesters) semesters. The Core Courses, Discipline-Specific Electives and Generic Electives are six-credit courses. The Skill Enhancement Courses are of four-credit courses while the Ability Enhancement Courses are of zero credit-courses. A student has to earn a minimum of…… credits to get a degree in B.A (Prog) Geography.

STRUCTURE OF B.A. & B.Sc (Programme) IN GEOGRAPHY

Note: *For the structure of* **B.A. & B.Sc (Programme)** *in Geography, the Committee has followed the number of credits per course as suggested in the CBCS document, that is, six credits per Core Course.*

A. Core: (**4Geography**),(**4DSC- 2**)and (**4English/MIL**) (12x6= **72 Credits)**
B. Ability Enhancement Compulsory Course (AECC) **(2**x4= **8Credits)**
C. Skill Enhancement Course (SEC) (**4**) (4x4=**16Credits)**
D. Discipline Specific Elective (DSE) (**2Geography**)& (**2DSE- 2**) (4x6= **24Credits**)
E. Generic Elective(**2**)(2x6=**12Credits)**

GRAND TOTAL (A+B+C+D+E): Total Courses:**24**
Total Credits: (72+8+16+24+12=132**)**

A. CORE COURSE (4) Geography

Serial No	Title of the Course	Credits: 6 credits per course. Total 24 (credits distribution to be decided by institutions as per UGC/CBCS guidelines).	L+T
1.	Physical Geography	6	5+1= 6
2	Human Geography	6	5+1= 6
3	General Cartography	6	5+1= 6
4	Environmental Geography	6	5+1= 6

B. Ability Enhancement Compulsory Course (AECC)			
	Course Title	Credits **4** cr (credit distribution to be decided by institutions as per CBCS guidelines).	Distribution of Credit Hours **4** [Note: There can be different options depending upon the pedagogical and assessment weightage distribution]
1	Art of Communication/ MIL	4	4x1 = 4
2	Environmental Studies	4	4x1 = 4

6. C. Skill Enhancement Course (SEC)(2)			
	Course Title	Credits 4 (2x2) 2 credit per course. (Credit) distribution to be decided by institutions as per CBCS guidelines).	Distribution of Credit Hours
1	Regional Planning and Sustainable	4	4x1 = 4
	Development		
2	Fundamentals of Remote Sensing and GPS/GNSS	4	4x1 = 4

3	Field Techniques and Surveying Methods	4	4x1 =4
4	Introduction to GIScience	4	4x1 = 4

7. D. Discipline Specific Elective DSE(2)			
	Course Title	Credits 12 (2x6)	Credit Hours L T O [To be devised by the institutions]
1	8. Geography of India 9. or World Economic Geography	6	5+1 =6
2	10. Disaster Risk Reduction or Geography of Tourism	6	5+1= 6
E. Generic Elective (2)			
	Course Title	Credits 12 (2x6)	Credit Hours L T O
1	Disaster Management	6	5+1 = 6
2	Climate Change Vulnerability and Mitigation	6	5+1= 6
Note: 1. *Universities/Institutions/Departments may wish to add more courses against categories marked C, D and E, depending upon the availability of specialists*			

and other required resources.
2. Any major deviation from category A is likely to impact the very philosophy of LOCF in Geography.

Choice Based Credit System B.A. / B.BSc(Programme) Geography

11.	**Core Course (12) (6 credits per course)**	**Ability Enhancement Compulsory Course (AECC) (2)**	**Skill Enhancement Course (SEC)(2)**	**Discipline Specific Elective (DSE)(2)**	**Generic Elective (GE) (2)**
I	English/MIL-1 PhysicalGeography DSC-2A	(English/ MIL Communication) / Environmental Science			
II	English/MIL-1 Human Geography DSC- 2 B	Environmental Science/ (English/MIL Communication)			
II	English/MIL-2 General Cartography DSC- 2 C		Regional Planning and Sustainable Development		
IV	English/MIL Environmental Geography DSC- 2 D		Fundamentals of Remote Sensing and GPS/GNSS	.	

V			Field Techniques and Surveying Methods	Geography of India or World Economic Geography DSE-2 A	Disaster Management
V I			Introduction to GIScience	Disaster Risk Reduction OR Geography of Tourism DSE-2 B	Climate Change Vulnerability And Mitigation

Graduate Attributes

1. Disciplinary Knowledge – Students will know about patterns and processes of Man-environment relationship in the context of places. It will also help to understand cause and effect factors of this relationship for the mutual benefit of humanity and the natural environment.
2. Communication Siklls – It will enhance the communication skill through mapping in the form of paper and digital images, display and analyse the information about people and environment. Geographical study will enhance the oral communication through presentation and to written communication through report writing of geographical phenomena.
3. Critical Thinking – Students will analyse the facts, organising the Phenomena, evaluating the arguments and making the decision that can help to solve and understand critically the problem of society and environment.
4. Problem solving – Students will develop problem solving skills through geographical knowledge which will help in decision making process. Choosing the best alternative of particular phenomena.

5. Anlytical Reasoning – The study of geography gives opportunity to see the relationship relationally and apply the geographical knowledge to evaluate outcome and design the possible solution.
6. Research Related Skills – During the field work study, student will learn data collection, organising and analysing date, interpretation and draw generalisation and inferences of geographical study.
7. Cooperation / Team Work – Students are involved in collecting, analysing, evaluating, applying information to solve the issues which will generate cooperation and team work among students which will create constructive work by sharing each other's view points and reaching consensus.
8. Scientific Reasoning – Geography students are able to develop scientific reasoning through mapping skills, Google map, Google earth as well as ordinance survey maps and integrate such skills into the learning of geographical issues in the curriculum.
9. Reflective Thinking – Geographical knowledge provides the ability to students to reflect critically about the images of people, place and environment using ICT tools.
10. Information and Digital Literacy – Geography is one curricular area that has gained from digital literacy which will contribute to develop the ICT capabilities in regard to data handling, data processing and data interpretation.
11. Self Directed Learning – Geography encompasses diverse concern of society by including wide range of contents drawn from other disciplines of social sciences which will enhance the reflective thinking about the various components of social science on their own awareness.
12. Multicultured competence – Geography Students will have a cluster of related abilities including power of analysis and synthesis which will help in decision support system in a specific spatial contest.
13. Moral and Ethical Awareness – Geography Students heave moral and ethical awareness to the problem/issues which the world is facing today ex. Global warming, food security, various disasters. And they understand the judicious utilisation of resources as well as the need for conservation of natural environment.
14. Leadership Readiness/Quality – Filed work in Geography have important contribution to develop a leadership quality because every Geography students is entitled to have a exposure to fieldwork experience.

15. Lifelong Learning – Learning process in geography sharpen their observation and identification of an issues in a specific area, collect and present data analysis and finally identify possible solution and strategies. Thus the Geographer has important contribution to make Geography real.

Programme Learning Outcome:

After completion of undergraduate programs in geography, students will be able to :

- Ability to interpret and analyze various concepts and theories.
- Analyze the earth as an integrated human- environment system by examining changing interactions at different spatial and temporal scales.
- To understand the subject matter of various branches of physical and human geography.
- To analyze geographical data and interpret its significance within the context of human-environment relations.
- Communicate geographical concepts and data effectively using oral, written and visual forms.
- Contribute effectively to pursue innovative solutions to human – environment problems.
- Investigate complex real world challenges using appropriate concepts, methods, and tools from one or more geographical sub-disciplines.
- Explain Societal relevance of geographical knowledge and and apply it to real world human – environmental issues.
- Development of strong oral and written communication skills using the concepts and knowledge acquired.
- Demonstration of the ability to work independently or as part of a team.
- Students of the B.A (prog) Geography will learn to use scientific logic as they explore a wide range of contemporary subjects spanning various aspects of Physical, Human, Regional, Environmental, economic, cartographic aspects of Geography.
- Students will appreciate the Geographical diversity of events, phenomenon, resources, and development and be able to describe/explain the processes involved.
- Students will gain knowledge of various interactions taking place in the environment along with the major issues.
- Graduates of the B.A (programme) Geography will be informed citizens who can understand and evaluate the impact of new research discoveries in Geographical subfields and will be able to pursue a wide range of careers, including teacher cartographer, technical assistant, GIS Analyst, demographer, travel & tourism Planner, statistical analyst, product sale executive, Town planner, regional planning, community development Scientist, GIS Expert, Teaching/research and civil services.

Teaching-Learning Process:

- The B.A (Programme) Geography aims to make the student proficient in Geography and its sub- fields through the transfer of knowledge in the classroom as well as in the field. In the classroom this will be done through blackboard and chalk lectures, charts, PowerPoint presentations, and the use of audio-visual resources that are available on the internet.
- An interactive mode of teaching will be used. The student will be encouraged to participate in discussions.

- Emphasis on application of the concepts is particularly important keeping in mind the practical nature of the subject.
- The problem- solving approach will be adopted whenever suitable.
- The students will participate in local field trips that will facilitate his/her understanding to gain applied and practical aspects of the programme.

Assessment Methods:

The students will be assessed over the duration of the programme by different methods. This includes assignments, projects, presentations, written examinations and, records of problem – solving exercises and preparation of field – reports. The wide range of assessment methods will help to assess skills and knowledge of different individual learner and we will be able to achieve above teaching – learning outcomes of programme.

B.A./B.Sc (Programme) Geography

Core Course (4 Compulsory courses)

Semester I

1. Physical Geography

Semester II

2. Human Geography

Semester III

3. General Cartography

Semester IV

4. Environmental Geography

8.

Skill Enhancement Course (2 Compulsory courses)

Semester III

1. Regional Planning and Sustainable Development

Semester IV

2. Fundamentals of Remote Sensing and GPS/GNSS

Semester V

3. Field Techniques and Surveying Methods

Semester VI

4. Introduction to GI Science

9.

Discipline Specific Elective Papers (2 Compulsory courses)

Semester V

1. Geography of India
2. World Economic Geography

Semester VI

3. Disaster Risk Reduction
4. Geography of Tourism

10.

Generic Elective (2)

Semester V

1. Disaster Management

Semester VI

2. Climate Change Vulnerability and Mitigation

B.A. /B.Sc (Programme) Geography Core Course (4 Compulsory Courses)

1. Physical Geography

Course Objectives:

1) This course shall introduce definition and scope of physical geography.
2) This paper shall elucidate the characteristics of atmosphere, lithosphere, and the fluvial cycle of erosion.
3) This course shall provide detailed understanding related to hydrosphere and its related processes.

Learning Outcomes:

1) This paper shall enable the students to understand the basic concepts, definition and scope of physical geography.
2) This course shall enable the students to comprehend the dynamics of atmosphere, lithosphere and fluvial erosion cycle.
3) Students shall be well-versed with hydrological processes, ocean bottom relief, tides and currents.

Course Contents:

1. Physical Geography – Definition and Scope, Components of Earth System.
2. Atmosphere – Heat Balance, Global Circulation Pattern, Tropical Cyclones, Monsoon-Theory of Origin (Thermal and Dynamic), Rainfall pattern of Indian Monsoon, Climatic Classification (Koppen).
3. Lithosphere – Internal Structure of Earth based on Seismic Evidence, Plate Tectonics-Concept, Types of plate boundaries and its Associated Features.
4. Erosion and Weathering– Fluvial Cycle of Erosion given by W.M Davis and associated landforms, Weahering-Definition and Types.
5. Hydrosphere – Hydrological Cycle-Component and Processes, Ocean Bottom Relief Features, Tides-Types and Origin and Currents-Types and factors of their formation.

References:

Essential:

1. Conserva H. T. (2004). *Illustrated Dictionary of Physical Geography*. USA: Author House.
2. Garrett N. (2000). *Advanced Geography*. USA: Oxford University Press.
3. Goudie, A. (1984). *The Nature of the Environment: An Advanced Physical Geography*.Oxford, UK: Basil Blackwell Publishers.
4. Hamblin, W. K. (1995). *Earth's Dynamic System*. New Jersey, USA: Prentice Hall.
5. Strahler A. N. and Strahler A. H. (2008). *Modern Physical Geograph.* New York, USA:

John Wiley& Sons.

Suggestive:

1. Gabler R. E., Petersen J. F. and Trapasso, L. M. (2007). *Essentials of Physical Geography* (8th Edition). USA: Thompson, Brooks/Cole.
2. Gupta S.L, Bhu-Akriti Vigyan, Directorate of Hindi Medium Implientation, Delhi 1992
3. Husain M. (2002). *Fundamentals of Physical Geography.* Jaipur, India: Rawat Publications.
4. Monkhouse, F. J. (2009). *Principles of Physical Geography*. Kolkata, India: Platinum Publishers.
5. Singh, S. (2019). *Bhotik Bhugol* (10th Edition). Allahabad, India: Prayag Pustak Bhawan,

Teaching Learning Plan

Week 1: Unit I

Week 2: Unit I

Week 3: Unit II

Week 4: Unit II

Week 5: Unit III

Week 6 : Mid-Semester Examinations

Week 7: Mid-Semester Break

Week 8**:** Unit III

Week 9: Unit IV

Week 10: Unit IV

Week 11: Unit V

Week 12: Unit V

Assessment Methods:

Unit No.	**Course Learning Outcomes**	**Teaching and Learning Activity**	**Assessment Tasks**
1	Physical Geography – Definition and Scope, Components of Earth System	Classroom lectures and tutorials	Assignments, PPT, classroom test.

2	Atmosphere – Heat Balance, Global Circulation Pattern, Tropical Cyclones, Monsoon, Climatic Classification (Koppen).	Classroom lectures and tutorials	Assignments, PPT, classroom test.
3	Lithosphere – Internal Structure of Earth based on Seismic Evidence, Plate Tectonics and its Associated Features.	Classroom lectures and tutorials	Assignments, PPT, classroom test.
4	Fluvial Cycle of Erosion – Davis and Penck.	Classroom lectures and tutorials	Assignments, PPT, classroom test.
5	Hydrosphere – Hydrological Cycle, Ocean Bottom Relief	Classroom lectures and tutorials	Assignments, classroom test, end
	Features, Tides and Currents.		semester examination.

Keywords: Physical geography, atmosphere, lithosphere, cycle of erosion, hydrosphere, ocean relief, tides, currents.

2. Human Geography

Course Objectives:

1. This course shall introduce definition, nature, major subfields and relevance of human geography.
2. This paper shall elucidate about space and society, cultural regions, race, religion and language.
3. This course shall provide detailed understanding related to world population growth, population theory and settlement patterns.

Learning Outcomes:

1) This paper shall enable the students to understand the basic concepts, nature and relevance of human geography.
2) This course shall enable the students to appreciate the interrelationships between space and society, characteristics of cultural regions, race, religion and language.
3) Students shall be well-versed with the world population growth patterns, demographic transition theory, settlement patterns and urbanization process.

Course Contents:

1. Definition, Nature, Major Subfields, Contemporary Relevance.
2. Space and Society: Cultural Regions; Race; Religion and Language
3. Population: Population Growth and Demographic Transition Theory.
4. World Population Distribution and Composition (Age, Gender and Literacy).
5. Settlements: Types and Patterns of Rural Settlements; Classification of Urban Settlements; Trends and Patterns of World Urbanization

References:

Essential:

2. Chandna, R.C. (2010). *Population Geography*. India: Kalyani Publisher.
3. Daniel, P.A. and Hopkinson, M.F. (1989). *The Geography of Settlement*. London, UK: Oliver & Boyd.
4. Johnston R; Gregory D, Pratt G. et al. (2008). *The Dictionary of Human Geography*. New Jersey, USA: Blackwell Publication.
5. Jordan-Bychkov et al. (2006) The Human Mosaic: A Thematic Introduction to Cultural Geography. W. H. Freeman and Company, New York.
6. Kaushik, S.D. (2010). *Manav Bhugol.*Meerut, India: Rastogi Publication.

Suggestive:

1. Ghosh, S. (2015). *Introduction to settlement geography*. Kolkata, India: Orient Black Swan Private Ltd.
2. Hussain, M. (2012). *Manav Bhugol*. Jaipur, India: Rawat Publications.
3. Maurya, S.D. (2012). *Manav Bhugol*. Allahabad, India: Sharda Pustak Bhawan.

Teaching Learning Plan

Week 1: Unit I

Week 2: Unit I

Week 3: Unit II

Week 4: Unit II

Week 5: Unit III

Week 6: Mid-Semester Examinations

Week 7: Mid-Semester Break

Week 8**:** Unit III

Week 9: Unit IV

Week 10: Unit IV

Week 11: Unit V

Week 12: Unit V

Assessment Methods:

Unit No.	**Course Learning Outcomes**	**Teaching and Learning Activity**	**Assessment Tasks**
1	Definition, Nature, Major Subfields, Contemporary Relevance.	Classroom lectures and tutorials	Assignments, PPT, classroom test.
2	Space and Society: Cultural Regions; Race; Religion and Language	Classroom lectures and tutorials	Assignments, PPT, classroom test.
3	Population: Population Growth and Demographic Transition Theory.	Classroom lectures and tutorials	Assignments, PPT, classroom test.
4	World Population Distribution and Composition (Age, Gender and Literacy).	Classroom lectures and tutorials	Assignments, PPT, classroom test.

5	Settlements: Types and Patterns of Rural Settlements; Classification of Urban Settlements; Trends and Patterns of World Urbanization	Classroom lectures and tutorials	Assignments, classroom test, end semester examination.

Keywords: Human geography, cultural regions, religion, language, race, demographic transition theory, settlement patterns, urbanization.

3. General Cartography

Course Objectives:

1. Create professional and aesthetically pleasing maps through thoughtful application of Cartographic conventions;
2. Develop an understanding of the concepts regarding scale, map projections to suit map purposes;
3. Better understand the techniques of interpretation of topographical and weather maps

Learning Outcome:

This is a practical, hands-on course; when you have completed it, you will be able to:

4. Explain how maps work, conceptually and technically and will be able to understand science and art of cartography

5. Recognize the benefits and limitations of some common map projections and their use.

6. Understand and perform interpretation of topographical maps and weather maps.

Course Content:

6. Cartography – Nature and Scope; Scales – Concept and application; Graphical Construction of Plain, Comparative and Diagonal Scales.
7. Map Projections – Classification, Properties and Uses; Merits and Demerits of Polar Zenithal, Stereographic, Bonne's and Mercator's Projections.
8. Profiles-Introduction to Cross and Longitudinal Profiles.
9. Topographical Maps- Interpretation and Slope Analysis (Wentworth's method).
10. Interpretation of Weather Maps

Practical Record:

A Project File in pencil comprising one exercise *each*, on scale, map projection, interpretation of topographic sheet and weather maps.

References:

Essential:

1. Kraak, M.J. (2010). *Cartography: Visualization of Geospatial Data* (3rd edition). London, UK: Pearson Education Ltd.
2. Misra, R.P. (2014). *Fundamentals of Cartography (*Second Revised and Enlarged Edition). Delhi, India: Concept Publishing.
3. Monkhouse, F. J. and Wilkinson, H. R. (1973). *Maps and Diagrams*. London, UK: Methuen.
4. Rhind, D. W. and Taylor D. R. F., (eds.) (1989): *Cartography: Past, Present and Future*. Netherlands: Elsevier, International Cartographic Association.
5. Sarkar, A. (2015). *Practical geography: A systematic approach*. New Delhi, India: Orient Black Swan Private Ltd.
6. Singh,G. (1998). *Map Work and Practical Geography (4th Edition)*. Ahmedabad, India: Vikas Publishing House.

Suggestive:

1. Sharma, J. P., (2010). *PrayogicBhugol(Hindi)*. Meerut, India: Rastogi Publishers.
2. Singh, R.L. &Dutta, P.K., (2012). *Prayogatmak Bhugol (Hindi)*. Allahabad, India: Central Book Depot
3. Singh, R.L. and Singh R.P.B. (1999). *Elements of Practical Geography*. New Delhi, India: Kalyani Publishers.
4. Singh, R.L., and Singh, R.P.B. (1991). *Prayogtmak Bhugolke Mool Tatva (Hindi)*. New Delhi, India: Kalyani Publishers.

Teaching Learning Plan

Week 1: Unit I

Week 2: Unit I

Week 3: Unit II

Week 4: Unit II

Week 5: Unit III

Week 6: Mid-Semester Examinations

Week 7: Mid-Semester Break

Week 8**:** Unit III

Week 9: Unit IV

Week 10: Unit IV

Week 11: Unit V

Week 12: Unit V

Assessment Methods:

Unit No.	Course Learning Outcomes	Teaching and Learning Activity	Assessment Tasks
1	Nature and Scope, Concept and application, Graphical Construction	Classroom Lectures, Practical demonstration	Assignments, Hans-on exercise, classroom test.
2	Map Projections – Classification, Properties and Uses; Merits and Demerits	Classroom Lectures, Practical demonstration	Assignments, Hans-on exercise, classroom test.
3	Profiles-Introduction to Cross and Longitudinal Profiles.	Classroom Lectures, Practical demonstration	Assignments, Hans-on exercise, midterm examination.
4	Topographical Maps-Interpretation and Slope Analysis	Classroom Lectures, Practical demonstration	Assignments, Hans-on exercise, classroom test.
5	Interpretation of Weather Map	Classroom Lectures, Practical demonstration	Assignments, Hans-on exercise, classroom test, end semester examination.

Keywords: Cartography, Map Projections, Profiles, Topographical Maps

4. Environmental Geography

Course Objectives:

1) This course shall introduce the basic concepts and approaches of environmental geography.
2) This paper shall elucidate about human-environmental relationship, environmental programs and their management.
3) This course shall provide detailed understanding related to environmental programmes and policies with specific reference to New Environmental Policy of India.

Learning Outcomes:

1) This paper shall enable the students to understand basic concepts and approaches related to environmental geography.
2) This course shall enable the students to comprehend about human-environment relationship, and different environmental problems and its management.
3) Students shall be well-versed with the analysing the environmental programmes and policies.

Course Contents:

1. Environmental Geography: Concepts and Approaches; Ecosystem – Concept and Structure; Ecosystem Functions.
2. Human-Environment Relationship in Equatorial, Desert, Mountain and Coastal Regions.
3. Environmental Problems and Management: Air Pollution; Biodiversity Loss; Solid and Liquid Waste.
4. Environmental Programmes and Policies: Developed Countries; Developing Countries.
5. New Environmental Policy of India; Government Initiatives.

References:

Essential:

1. Casper J.K. (2010). *Changing Ecosystems: Effects of Global Warming.* New York, USA: Infobase Pub.
2. Hudson, T. (2011). *Living with Earth: An Introduction to Environmental Geology*. Delhi, India: PHI Learning Private Limited.
3. Miller, G.T. (2007). *Living in the Environment: Principles, Connections, and Solutions*. Belmont, Australia: Brooks/ Cole Cengage Learning.
4. Singh, R.B. (1993) *Environmental Geography*. Delhi, India: Heritage Publishers.
5. UNEP. (2007). *Global Environment Outlook: GEO4: Environment For Development, United Nations Environment Programme*. UK: University Press, Cambridge.

Suggestive:

1. Singh, R.B. and Hietala, R. (Eds.) (2014). *Livelihood security in Northwestern*

Himalaya: Case studies from changing socio-economic environments in Himachal Pradesh, India. Advances in Geographical and Environmental Studies. Tokyo, Japan: Springer
2. Singh, Savindra 2001. *Paryavaran Bhugol.* Allahabad, India: Prayag Pustak Bhawan.
3. Wright R. T. and Boorse, D. F. (2010). *Toward a Sustainable Future*. Delhi, India: PHI Learning Pvt Ltd.

Teaching Learning Plan

Week 1: Unit I

Week 2: Unit I

Week 3: Unit II

Week 4: Unit II

Week 5: Unit III

Week 6: Mid-Semester Examinations

Week 7: Mid-Semester Break

Week 8**:** Unit III

Week 9: Unit IV

Week 10: Unit IV

Week 11: Unit V

Week 12: Unit V

Assessment Methods:

Unit No.	Course Learning Outcomes	Teaching and Learning Activity	Assessment Tasks
1	Environmental Geography: Concepts and Approaches; Ecosystem – Concept and Structure; Ecosystem Functions.	Classroom lectures and tutorials	Assignments, PPT, classroom test.
2	Human-Environment Relationship in Equatorial, Desert, Mountain and Coastal Regions.	Classroom lectures and tutorials	Assignments, PPT, classroom test.
3	Environmental Problems and Management: Air Pollution; Biodiversity Loss; Solid and Liquid Waste.	Classroom lectures and tutorials	Assignments, PPT, classroom test.
4	Environmental Programmes and Policies: Developed Countries; Developing Countries.	Classroom lectures and tutorials	Assignments, PPT, classroom test.
5	New Environmental Policy of India; Government Initiatives.	Classroom lectures and tutorials	Assignments, classroom test, end semester examination.

Keywords: Environmental Geography, Ecosystem functions, Environmental management, Environmental Policies.

Skill Enhancement Course (2 Compulsory Courses)

1. Regional Planning and Sustainable Development

Course Objectives:

1. This course shall introduce basic concepts, need and types of regional planning.
2. This paper shall introduce the characteristics and process of delineation of planning regions based on selected parameters.
3. This course shall provide theoretical perspective on the models of regional planning and selected case studies of regional planning models.

Learning Outcomes:

1) This paper shall enable the students to understand the basic concepts and types of regional planning.
2) This course shall enable the students to analyze various characteristics and parameters used for delineating the planning regions.
3) Students shall be well-versed with models of regional planning and appreciate the relevance of the case studies of regional planning.

Course Contents:

1. Concept, Need and Types of Regional Planning.
2. Characteristics and Delineation of Planning Region.
3. Regionalization of India for Planning (Agro Ecological Zones).
4. Models for Regional Planning: Growth Pole Theory; Core Periphery Model and Growth Foci Concept in Indian Context.
5. Backward Regions and Regional Plans- Special Area Development Plans in India; DVC- The Success Story and the Failures; NITI Aayog.

References:

Essential:

1. Blij H. J. De. (1971). *Geography: Regions and Concepts*. USA: John Wiley and Sons.
2. Claval P.l. (1998). *An Introduction to Regional Geography*. Oxford and Massachusetts. Blackwell Publishers,
3. Friedmann J. and Alonso W. (1975). *Regional Policy - Readings in Theory and Applications*. Massachusetts, USA: MIT Press.
4. Gore C. G. (1984). *Regions in Question: Space, Development Theory and Regional Policy*. London, UK: Methuen.
5. Gore C. G., Köhler G., Reich U-P. and Ziesemer T. (1996). *Questioning Development;*

Essays on the Theory, Policies and Practice of Development Intervention. Marburg, Germany: Metropolis- Verlag.

Suggestive:

1. Haynes J. (2008). *Development Studies*. USA: Polity Short Introduction Series.
2. Johnson E. A. J. (1970) *The Organization of Space in Developing Countries*. Massachusetts, USA: MIT Press.
3. Peet R. (1999). *Theories of Development*. New York, USA: The Guilford Press.
4. UNDP. (2001-04). *Human Development Report.* New York, USA: Oxford University Press.
5. World Bank. (2001-05). *World Development Report.* New York, USA: Oxford University Press.

Teaching Learning Plan

Week 1: Unit I

Week 2: Unit I

Week 3: Unit II

Week 4: Unit II

Week 5: Unit III

Week 6: Mid-Semester Examinations

Week 7: Mid-Semester Break

Week 8**:** Unit III

Week 9: Unit IV

Week 10: Unit IV

Week 11: Unit V

Week 12: Unit V

Assessment Methods:

Unit No.	Course Learning Outcomes	Teaching and Learning Activity	Assessment Tasks
1	Concept, Need and Types of Regional Planning	Classroom lectures and tutorials	Assignments, PPT, classroom test.
2	Characteristics and Delineation of Planning Region	Classroom lectures and tutorials	Assignments, PPT, classroom test.
3	Regionalization of India for Planning (Agro Ecological Zones)	Classroom lectures and tutorials	Assignments, PPT, classroom test.
4	Models for Regional Planning	Classroom lectures and tutorials	Assignments, PPT, classroom test.
5	Backward Regions and Regional Plans- Special Area Development Plans in India	Classroom lectures and tutorials	Assignments, classroom test, end semester examination.

Keywords: Regional Planning, Regionalization, Growth Pole, Core-Periphery Model, Growth Foci, Backward Regions and Regional Plans.

2. Fundamentals of Remote Sensing and GPS/GNSS

Course Objectives:

1) This course shall introduce the basic concepts of remote sensing.
2) This paper shall elucidate about aerial photography, its basic principles and types, satellite remote sensing.
3) This course shall provide detailed understanding related to interpretation and application of remote sensing, GPS/GNSS.

Learning Outcomes:

1) This paper shall enable the students to understand fundamental issues related to remote sensing, its development and types.
2) This course shall enable the students to comprehend about aerial photography, satellite remote sensing, EMR and sensors
3) Students shall be well-versed with the interpretation and applications of remote sensing, and GPS/GNSS.

Course Contents:

1. Remote Sensing: Definition, Development, Platforms and Types.
2. Aerial Photography: Principles, Types and Geometry.
3. Satellite Remote Sensing: Principles, EMR Interaction with Atmosphere and Earth Surface; Satellites (Landsat and IRS) and Sensors.
4. Interpretation and Application of Remote Sensing: Land use/ Land Cover.
5. Global Positioning System (GPS) – Principles and Uses

References:

Essential:

1. Campbell J. B. (2007). *Introduction to Remote Sensing*, Guildford Press.
2. Jensen J. R. (2004) *Introductory Digital Image Processing: A Remote Sensing Perspective*, Prentice Hall.
3. Joseph, G. (2005). *Fundamentals of Remote Sensing*. Delhi, India: United Press India.
4. Lillesand T. M., Kiefer R. W. and Chipman J. W. (2004). *Remote Sensing and Image Interpretation*, Wiley. (Wiley Student Edition).
5. Nag P. and Kudra, M., 1998: *Digital Remote Sensing*, Concept, New Delhi.

Suggestive:

1. Rees W. G., 2001: *Physical Principles of Remote Sensing*, Cambridge University Press.
2. Singh R. B. and Murai S., 1998: *Space-informatics for Sustainable Development*, Oxford and IBH Pub.
3. Wolf P. R. and Dewitt B. A., 2000: *Elements of Photogrammetry: With Applications in GIS*, McGraw-Hill.

Teaching Learning Plan

Week 1: Unit I

Week 2: Unit I

Week 3: Unit II

Week 4: Unit II

Week 5: Unit III

Week 6: Mid-Semester Examinations

Week 7: Mid-Semester Break

Week 8**:** Unit III

Week 9: Unit IV

Week 10: Unit IV

Week 11: Unit V

Week 12: Unit V

Assessment Methods:

Unit No.	**Course Learning Outcomes**	**Teaching and Learning Activity**	**Assessment Tasks**
1	Remote Sensing: Definition, Development, Platforms and Types.	Classroom lectures and tutorials	Assignments, PPT, classroom test.
2	Aerial Photography: Principles, Types and Geometry.	Classroom lectures and tutorials	Assignments, PPT, classroom test.
3	Satellite Remote Sensing: Principles, EMR Interaction with Atmosphere and Earth Surface; Satellites (Landsat and IRS) and Sensors.	Classroom lectures and tutorials	Assignments, PPT, classroom test.
4	Interpretation and Application of Remote Sensing: Land use/ Land Cover.	Classroom lectures and tutorials	Assignments, PPT, classroom test.

5	Global Positioning System (GPS) – Principles and Uses	Classroom lectures and tutorials	Assignments, classroom test, end semester examination.

Keywords: Remote sensing, Aerial Photography, EMR, Sensors, GPS, GNSS.

3. Field Techniques and Surveying Methods

Course Objectives:

1) This course shall introduce the basic concepts in field work in geographical studies.
2) This paper shall elucidate about defining the field and identifying the case studies, field techniques.
3) This course shall provide detailed understanding related to questionnaire development and preparation of the field report.

Learning Outcomes:

1) This paper shall enable the students to understand fundamental concepts and issues related to field work in geographical studies.
2) This course shall enable the students to comprehend about field work and field techniques.
3) Students shall be well-versed with the development of questionnaire and writing the field report.

Course Contents:

1. Field Work in Geographical Studies – Role, Value and Ethics of Field-Work.
2. Defining the Field and Identifying the Case Study – Rural / Urban / Physical / Human / Environmental.
3. Field Techniques – Merits, Demerits and Selection of the Appropriate Technique; Observation (Participant / Non Participant).
4. Questionnaires (Open/ Closed / Structured / Non-Structured); Interview with Special Focus on Focused Group Discussions; Space Survey (Transects and Quadrants, Constructing a Sketch).
5. Designing the Field Report – Aims and Objectives, Methodology, Analysis, Interpretation and Writing the Report.

References:

Essential:

1. Creswell J. (1994). *Research Design: Qualitative and Quantitative Aproaches.* California, USA: Sage Publications.
2. Dikshit, R. D. (2003). *The Art and Science of Geography: Integrated Readings*. Delhi, India: Prentice-Hall of India.
3. Evans M. (1988) Participant Observation: The Researcher as Research Tool. In *Qualitative Methods in Human Geography*, (eds). J. Eyles and D. Smith, Polity. Mukherjee, Neela 1993. Participatory Rural Appraisal: Methodology and Application. New Delhi, India: Concept Publs. Co.
4. Mukherjee, N. (2002). *Participatory Learning and Action: with 100 Field Methods*. Delhi, India: Concept Publs. Co.
5. Robinson A. (1998). Thinking Straight and Writing That Way. In *Writing Empirical Research Reports: A Basic Guide for Students of the Social and Behavioural Sciences*, eds. by F. Pryczak and R. Bruce Pryczak, Publishing: Los Angeles.

Suggestive:

1. Special Issue on "Doing Fieldwork" *The Geographical Review* 91:1-2 (2001).
2. Stoddard R. H. (1982). *Field Techniques and Research Methods in Geography*. USA: Kendall/Hunt.
3. Wolcott, H. (1995). *The Art of Fieldwork.*CA, USA: Alta Mira Press.

Teaching Learning Plan

Week 1: Unit I

Week 2: Unit I

Week 3: Unit II

Week 4: Unit II

Week 5: Unit III

Week 6: Mid-Semester Examinations

Week 7: Mid-Semester Break

Week 8**:** Unit III

Week 9: Unit IV

Week 10: Unit IV

Week 11: Unit V

Week 12: Unit V

Assessment Methods:

Unit No.	**Course Learning Outcomes**	**Teaching and Learning Activity**	**Assessme nt Tasks**
1	Field Work in Geographical Studies – Role, Value and Ethics of Field-Work.	Classroom lectures and utorials	Assignments, PPT, classroom test.
2	Defining the Field and Identifying the Case Study – Rural / Urban / Physical / Human / Environmental.	Classroom lectures and utorials	Assignments, PPT, classroom test.
3	Field Techniques – Merits, Demerits and Selection of the Appropriate Technique; Observation (Participant / Non Participant).	Classroom lectures and utorials	Assignments, PPT, classroom test.

4	Questionnaires (Open/ Closed / Structured / Non-Structured); Interview with Special Focus on Focused Group Discussions; Space Survey (Transects and Quadrants, Constructing a Sketch).	Classroom lectures and utorials	Assignments, PPT, classroom test.
5	Designing the Field Report – Aims and Objectives, Methodology, Analysis, Interpretation and Writing the Report.	Classroom lectures and utorials	Assignments, classroom test, end semester examination.

Keywords: Field Work, Field Techniques, Questionnaire, Report writing, Geographical Studies.

4. Introduction to GIScience

Course Objectives:

1. The course aim is to give basic understanding of concept of GIScience, its definitions and principles;
2. To gain working experience collecting data, preparing and handling geographical data;
3. To do analysis and application of geographical data resource management and land use land cover study.

Learning Outcome:

This is a practical, hands-on course; when you have completed it, you will be able to:

1. Develop basic understanding of GIScience and roles of various intuitions in data sharing ;
2. Perform preparing different maps integrating spatial and no-spatial data;
3. Learn and use GIS for natural resource management, urban and land use land cover study;

Course Content:

1. Geographical Information System (GIS): Definition, Components and Principles.
2. GIS Data Structures: Types (Spatial and Non-spatial), Raster and Vector Data Structure.
3. GIS Data Analysis: Input; Geo-Referencing; Editing and Output; Overlays.
4. Application of GIS in Natural Resource Management.
5. Application of GIS in Urban Sprawl, Land use/Land-cover.

Practical Record: A project file consisting of 5 exercises on using any GIS Software (free software like QGIS, AGIS etc.) on above mentioned themes.

References:
Essential:

1. Bhatta, B. (2010) Analysis of Urban Growth and Sprawl from Remote Sensing, Springer, Berlin Heidelberg.
2. Burrough, P.A., and McDonnell, R.A. (2000) Principles of Geographical Information

System-Spatial Information System and Geo-statistics, Oxford University Press, Oxford.

3. Chauniyal, D.D. (2010) SudurSamvedanevamBhogolikSuchanaPranali, ShardaPustakBhawan, Allahabad.
4. Heywoods, I., Cornelius, S and Carver, S. (2006) An Introduction to Geographical Information system. Prentice Hall, New Jersey.
5. Singh, R.B. and Murai, S. (1998). *Space Informatics for Sustainable Development*. Delhi, India: Oxford and IBH.

Suggestive:

1 Nag, P. (2008). *Introduction to GIS*. Delhi, India: Concept India.

2 Sarkar, A. (2015). *Practical Geography: A Systematic Approach.* Delhi, India: Orient Black Swan Private Ltd.

3 Jha, M.M. and Singh, R.B. (2008). *Land Use: Reflection on Spatial Informatics Agriculture and Development*. Delhi, India: Vedams eBooks (P) Ltd.

Teaching Learning Plan

Week 1: Unit I

Week 2: Unit I

Week 3: Unit II

Week 4: Unit II

Week 5: Unit III

Week 6: Mid-Semester Examinations

Week 7: Mid-Semester Break

Week 8**:** Unit III

Week 9: Unit IV

Week 10: Unit IV

Week 11: Unit V

Week 12: Unit V

Assessment Methods:

Unit No.	Course Learning Outcomes	Teaching and Learning Activity	Assessment Tasks
1	Geographical Information System (GIS): Definition, Components and Principles	Classroom Lectures, Practical demonstration	Assignments, classroom test.
2	GIS Data Structures: Types (Spatial and Non- spatial), Raster and Vector Data Structure.	Classroom Lectures, Practical demonstration of using GIS Softwares	Assignments, Hans-on exercise in GIS environment, practical lesson
3	GIS Data Analysis: Input; Geo-Referencing; Editing and Output; Overlays	Classroom Lectures, Practical demonstration using GIS softwares	Assignments, Hans-on exercise, midterm examination.
4	Application of GIS in Natural Resource Management	Classroom Lectures, Lectures on case study of different applications	Assignments, classroom test.
5	Application of GIS in Urban Sprawl, Land use/Land-cover	Classroom Lectures, Lectures on case study of different applications	Assignments, classroom test, end semester examination.

Keywords: GIScience, GIS Data Structures, Application of GIS

Discipline Specific Elective Papers (2 Compulsory Courses)

1. Geography of India

Course Objectives:

1) This course shall introduce the physical geography of India.
2) This paper shall elucidate about population trends and composition, and settlement system in India
3) This course shall provide detailed understanding related to resource base and economic systems in India.

Learning Outcomes:

1) This paper shall enable the students to understand the physical geography of India.
2) This course shall enable the students to comprehend the trends and composition of population change in India.
3) Students shall be well-versed with the existing resource base and the economic systems in India.

Course Contents:

1. Physical Setting – Location, Structure and Relief, Drainage, Climate.
2. Population – Size and Growth since 1901, Population Distribution, Literacy, Sex Ratio.
3. Settlement System - Rural Settlement Types and Patterns, Urban Pattern.
4. Resource Base – Livestock (cattle and fisheries), Power (coal, and hydroelectricity), Minerals (iron ore and bauxite).
5. Economy – Agriculture (Rice, Wheat, Sugarcane, Groundnut, Cotton); Industries (Cotton Textile, Iron-Steel, Automobile), Transportation Modes (Road and Rail).

References:

Essential:

1. Hussain M. (1992). G*eography of India.* New Delhi, India: Tata McGraw Hill Education.
2. Mamoria C. B. (1980). *Economic and Commercial* G*eography of India*. India: Shiva Lal Agarwala.
3. Miller F. P., Vandome A. F. and McBrewster J. (2009). *Geography of India: Indo-Gangetic Plain, Thar Desert, Major Rivers of India, Climate of India, Geology of India*. USA: Alphascript Publishing.
4. Nag P. and Sengupta S. (1992). G*eography of India*. New Delhi, India: Concept Publishing.
5. Pichamuthu C. S. (1967). *Physical Geography of India*. New Delhi, India: National Book Trust.

Suggestive:

1. Sharma T. C. and Coutinho O. (1997) *Economic and Commercial Geography of India*. India: Vikas Publishing.
2. Singh Gopal. (1976). *A Geography of India*. India: Atma Ram.
3. Singh, S. and Saroha, J. (2018). *Geography of India (Second Edition)*. Delhi, India: G K Publications (C.L Educate)
4. Spate O. H. K. and Learmonth A. T. A. (1967). *India and Pakistan: A General and Regional Geography*. London, UK: Methuen.
5. Rana, T.S. (2015). *Diversity of India*. Delhi, India: R.K. Books, Delhi.

Teaching Learning Plan

Week 1: Unit I

Week 2: Unit I

Week 3: Unit II

Week 4: Unit II

Week 5: Unit III

Week 6: Mid-Semester Examinations

Week 7: Mid-Semester Break

Week 8**:** Unit III

Week 9: Unit IV

Week 10: Unit IV

Week 11: Unit V

Week 12: Unit V

Assessment Methods:

Unit No.	**Course Learning Outcomes**	**Teaching and Learning Activity**	**Assessment Tasks**
1	Physical Setting – Location, Structure and Relief, Drainage, Climate.	Classroom lectures and tutorials	Assignments, PPT, classroom test.

2	Population – Size and Growth since 1901, Population Distribution, Literacy, Sex Ratio.	Classroom lectures and tutorials	Assignments, PPT, classroom test.
3	Settlement System - Rural Settlement Types and Patterns, Urban Pattern.	Classroom lectures and tutorials	Assignments, PPT, classroom test.
4	Resource Base – Livestock (cattle and fisheries), Power (coal, and hydroelectricity), Minerals (iron ore and bauxite).	Classroom lectures and tutorials	Assignments, PPT, classroom test.
5	Economy – Agriculture (Rice, Wheat, Sugarcane, Groundnut, Cotton); Industries (Cotton Textile, Iron-Steel, Automobile), Transportation Modes (Road and Rail).	Classroom lectures and tutorials	Assignments, classroom test, end semester examination.

Keywords: Geological structure, Relief, Climate, Population Growth, Population Composition, Settlement Systems, Resource Base, Agriculture, Industries, India.

2. World Economic Geography

Course Objectives:

1) This course shall introduce basic concepts and approaches related to economic geography.
2) This paper shall introduce the fundamental locational theories, postulates, and their relevance in the contemporary period.
3) This course shall provide a detailed understanding about different forms of economic activities and its geographical patterning.

Learning Outcomes:

1) This paper shall enable the students to understand the basic concepts and approaches of doing the economic geography.
2) This course shall enable the students to appreciate the spatial perspective on the locational theories of economic activities in general.
3) Students shall be acquainted with different forms of economic activities and its geographical dimensions in detail.

Course Contents:

1. Definition, Approaches and Fundamental Concepts of Economic Geography; Patterns of Development.
2. Locational Theories – Agriculture (Von Thunen) and Industrial (Weber).
3. Primary Activities – Intensive Subsistence Farming, Commercial Grain Farming, Plantation, Commercial Dairy Farming, Commercial Fishing, and Mining (ironore, coal and petroleum).
4. Secondary Activities – Cotton Textile Industry, Petro-Chemical Industry, Major Manufacturing Regions.
5. Tertiary and Quaternary Activities – Modes of Transportation, Patterns of International Trade, and Information and Communication Technology Industry.

References:

Essential:

1. Alexander J. W. (1963). *Economic Geography*. New Jersey, USA: Prentice-Hall Inc.
2. Bagchi-Sen S. and Smith H. L. (2006). *Economic Geography: Past, Present and Future*. UK: Taylor and Francis.
3. Coe N. M., Kelly P. F. and Yeung H. W. (2007). *Economic Geography: A Contemporary Introduction*, USA: Wiley-Blackwell.
4. Combes P., Mayer T. and Thisse J. F. (2008). *Economic Geography: The Integration of Regions and Nations*. USA: Princeton University Press.
5. Durand L. (1961). *Economic Geography*. USA: Crowell.

Suggestive:

1. Hodder B. W. and Lee R. (1974). *Economic Geography*. UK: Taylor and Francis.
2. Wheeler J. O., 1998: *Economic Geography*. USA: Wiley.
3. Willington D. E., 2008: *Economic Geography*. UK: Husband Press.

Teaching Learning Plan

Week 1: Unit I

Week 2: Unit I

Week 3: Unit II

Week 4: Unit II

Week 5: Unit III

Week 6: Mid-Semester Examinations

Week 7: Mid-Semester Break

Week 8**:** Unit III

Week 9: Unit IV

Week 10: Unit IV

Week 11: Unit V

Week 12: Unit V

Assessment Methods:

Unit No.	**Course Learning Outcomes**	**Teaching and Learning Activity**	**Assessment Tasks**
1	Definition, Approaches and Fundamental Concepts of Economic Geography; Patterns of Development.	Classroom lectures and tutorials	Assignments, PPT, classroom test.
2	Locational Theories – Agriculture (Von Thunen) and Industrial (Weber)	Classroom lectures and tutorials	Assignments, PPT, classroom test.
3	Primary Activities	Classroom lectures and tutorials	Assignments, PPT, classroom test.
4	Secondary Activities	Classroom lectures and tutorials	Assignments, PPT, classroom test.

5	Tertiary and Quaternary Activities	Classroom lectures and tutorials	Assignments, classroom test, end semester examination.

Keywords: Economic Geography, Locational Theories, Primary Activities, Secondary Activities, Tertiary and Quaternary Activities

3. Disaster Risk Reduction

Course Objectives:

1) This course shall introduce the basic concepts related to disaster risk reduction.
2) This paper shall elucidate about disasters in India.
3) This course shall provide detailed understanding related to human induced disasters, and disaster risk reduction programmes and initiatives.

Learning Outcomes:

1) This paper shall enable the students to understand basic concepts and issues related to disaster risk reduction.
2) This course shall enable the students to comprehend about causes, impact, distribution and mapping of disasters in India.
3) Students shall be well-versed with the analysing the programmes and policies related to disaster risk reductions.

Course Contents:

1. Disaster; Hazards, Risk, Vulnerability and Disasters: Definition and Concepts.
2. Disasters in India: (a) Causes Impact, Distribution and Mapping: Flood and Drought.
3. Disasters in India: (b) Causes, Impact, Distribution and Mapping: Earthquake and Cyclone.
4. Human induced disasters: Causes, Impact, Distribution and Mapping.
5. Disaster Risk Reduction: Mitigation and Preparedness, NDMA and NIDM; Community-Based Disaster Management; Do's and Don'ts During Disasters

References:

Essential:

1. Government of India. (1997). *Vulnerability Atlas of India. New Delhi, Building Materials & Technology Promotion Council,* Ministry of Urban Development, Government of India.

2. Kapur, A. (2010).*Vulnerable India: A Geographical Study of Disasters*. Delhi, India: Sage Publication.

3. Modh, S. (2010). *Managing Natural Disaster: Hydrological, Marine and Geological Disaster*s. Delhi: Macmillan.

4. Singh, R.B. (2005). *Risk Assessment and Vulnerability Analysis*. IGNOU, New Delhi. Chapter 1, 2 and 3

5. Singh, R. B. (ed.), (2006). *Natural Hazards and Disaster Management: Vulnerability and Mitigatio.* Delhi, India: Rawat Publications

Suggestive:

1 Sinha, A. (2001). *Disaster Management: Lessons Drawn and Strategies for Future*. New United Press, New Delhi.

2 Stoltman, J.P. et al. (2004) International Perspectives on Natural Disasters, Kluwer Academic Publications. Dordrecht.

3 Singh, J. (2007) Disaster Management Future Challenges and Oppurtunities. New Delhi, India: I.K. International Pvt. Ltd. S-25.

Teaching Learning Plan

Week 1: Unit I

Week 2: Unit I

Week 3: Unit II

Week 4: Unit II

Week 5: Unit III

Week 6: Mid-Semester Examinations

Week 7: Mid-Semester Break

Week 8**:** Unit III

Week 9: Unit IV

Week 10: Unit IV

Week 11: Unit V

Week 12: Unit V

Assessment Methods:

Unit No.	**Course Learning Outcomes**	**Teaching and Learning Activity**	**Assessme nt Tasks**
1	Disaster; Hazards, Risk, Vulnerability and Disasters: Definition and Concepts.	Classroom lectures and utorials	Assignments, PPT, classroom test.

2	Disasters in India: (a) Causes Impact, Distribution and Mapping: Flood and Drought.	Classroom lectures and utorials	Assignments, PPT, classroom test.
3	Disasters in India: (b) Causes, Impact, Distribution and Mapping: Earthquake and Cyclone.	Classroom lectures and utorials	Assignments, PPT, classroom test.
4	Human induced disasters: Causes, Impact, Distribution and Mapping.	Classroom lectures and utorials	Assignments, PPT, classroom test.
5	Disaster Risk Reduction: Mitigation and Preparedness, NDMA and NIDM; Community-Based Disaster Management; Do's and Don'ts During Disasters	Classroom lectures and utorials	Assignments, classroom test, end semester examination.

Keywords: Disaster Risk Reduction, Hazard, Risk, Vulnerability, Human induced disasters, Mitigation and Preparedness, NDMA, NIDM.

4. Geography of Tourism

Course Objectives:

1) This course shall introduce basic concepts, nature, and scope of geography of tourism.
2) This paper shall elucidate about types of tourism and recent trends of tourism.
3) This course shall provide detailed understanding related to impact of tourism in general, and tourism experiences and prospects in particular.

Learning Outcomes:

1) This paper shall enable the students to understand the basic concepts, nature and relevance of geography of tourism.
2) This course shall enable the students to comprehend the types of tourism and emerging trends of tourism.
3) Students shall be well-versed with the impact of tourism on economy, society and environment and its experiences in the Indian context.

Course Contents:

1. Concepts, Nature and Scope; Inter-Relationships of Tourism, Recreation and Leisure; Geographical Parameters of Tourism by Robinson.
2. Type of Tourism: Nature Tourism, Cultural Tourism, Medical Tourism, Pilgrimage
3. Recent Trends of Tourism: International and Regional; Domestic (India); Eco-Tourism, Sustainable Tourism, Meetings, Incentives, Conventions and Exhibitions (MICE)

4. Impact of Tourism: Economy; Environment; Society
5. Tourism in India: Tourism Infrastructure; Case Studies of Himalaya, Desert and Coastal and Heritage; National Tourism Policy

References:
Essential:

1. Dhar, P.N. (2006). *International Tourism: Emerging Challenges and Future Prospects*. Delhi: Kanishka.
2. Hall, M. and Stephen, P. (2006). *Geography of Tourism and Recreation – Environment, Place and Space*. London, UK: Routledge.
3. Kamra, K. K. and Chand, M. (2007) Basics of Tourism: Theory, Operation and Practise, Kanishka Publishers, Pune.
4. Page, S. J. (2011). *Tourism Management: An Introduction*. USA Butterworth-Heinemann. Chapter 2.
5. Raj, R. and Nigel, D. (2007). *Morpeth Religious Tourism and Pilgrimage Festivals Management: An International perspective* . USA: CABI, Cambridge, www.cabi.org.

Suggestive:

1 Singh, J. (2014). *Eco-Tourism*. Delhi: I.K. International Pvt. Ltd.
2 Tourism Recreation and Research Journal, Center for Tourism Research and Development, Lucknow

Teaching Learning Plan

Week 1: Unit I

Week 2: Unit I

Week 3: Unit II

Week 4: Unit II

Week 5: Unit III

Week 6: Mid-Semester Examinations

Week 7: Mid-Semester Break

Week 8**:** Unit III

Week 9: Unit IV

Week 10: Unit IV

Week 11: Unit V

Week 12: Unit V

Assessment Methods:

Unit No.	Course Learning Outcomes	Teaching and Learning Activity	Assessment Tasks
1	Concepts, Nature and Scope; Inter-Relationships of Tourism, Recreation and Leisure; Geographical Parameters of Tourism by Robinson.	Classroom lectures and tutorials	Assignments, PPT, classroom test.
2	Type of Tourism: Nature Tourism, Cultural Tourism, Medical Tourism, Pilgrimage	Classroom lectures and tutorials	Assignments, PPT, classroom test.
3	Recent Trends of Tourism: International and Regional; Domestic (India); Eco- Tourism, Sustainable Tourism, Meetings, Incentives, Conventions and Exhibitions (MICE)	Classroom lectures and tutorials	Assignments, PPT, classroom test.
4	Impact of Tourism: Economy; Environment; Society	Classroom lectures and tutorials	Assignments, PPT, classroom test.
5	Tourism in India: Tourism Infrastructure; Case Studies of Himalaya, Desert and Coastal and Heritage; National Tourism Policy	Classroom lectures and tutorials	Assignments, classroom test, end semester examination.

Keywords: Geography of Tourism, Nature Tourism, Cultural Tourism, Medical Tourism, Pilgrimage, National Tourism Policy.

Generic Elective (GE)

1. Disaster Management

Course Objectives:

1) This course shall introduce the basic concepts related to disaster management.
2) This paper shall elucidate about disasters in India.
3) This course shall provide detailed understanding related to human induced disasters, and response and mitigation of disasters.

Learning Outcomes:

1. This paper shall enable the students to understand basic concepts and issues related to disaster management.
2. This course shall enable the students to comprehend about causes, impact, distribution and mapping of disasters in India.
3. Students shall be well-versed with the analysing the response and mitigation of disasters.

Course Contents:

4. Hazards, Risk, Vulnerability and Disasters: Definition and Concepts.
5. Disasters in India: (a) Causes, Impact, Distribution and Mapping: Flood, Landslide, Drought.
6. Disasters in India: (b) Causes, Impact, Distribution and Mapping: Earthquake, Tsunami and Cyclone.
7. Human induced disasters: Causes, Impact, Distribution and Mapping.
8. Response and Mitigation to Disasters: Mitigation and Preparedness, NDMA and NIDM; Indigenous Knowledge and Community-Based Disaster Management; Do's and Don'ts During Disasters

References:

Essential:

1. Government of India. (1997). *Vulnerability Atlas of India*. New Delhi, Building Materials & Technology Promotion Council, Ministry of Urban Development, Government of India.
2. Kapur, A. (2010). *Vulnerable India: A Geographical Study of Disasters*. Delhi, India: Sage Publication.
3. Modh, S. (2010) Managing Natural Disaster: Hydrological, Marine and Geological Disasters, Macmillan, Delhi.
4. Singh, R. B. (ed.). (2006). *Natural Hazards and Disaster Management: Vulnerability and Mitigation*. India: Rawat Publications.
5. Singh, R.B. (2005) *Risk Assessment and Vulnerability Analysis*. Delhi, India: IGNOU. Chapter 1, 2 and 3

Suggestive:

1. Sinha, A. (2001). *Disaster Management: Lessons Drawn and Strategies for Future*. Delhi, India: New United Press.
2. Stoltman, J.P. et al. (2004*). International Perspectives on Natural Disasters.* Dordrecht, The Netherlands: Kluwer Academic Publications.
3. Singh, J. (2007). *Disaster Management Future Challenges and Oppurtunities.* New Delhi, India : I.K. International Pvt. Ltd.

Teaching Learning Plan

Week 1: Unit I

Week 2: Unit I

Week 3: Unit II

Week 4: Unit II

Week 5: Unit III

Week 6: Mid-Semester Examinations

Week 7: Mid-Semester Break

Week 8**:** Unit III

Week 9: Unit IV

Week 10: Unit IV

Week 11: Unit V

Week 12: Unit V

Assessment Methods:

Unit No.	**Course Learning Outcomes**	**Teaching and Learning Activity**	**Assessme nt Tasks**
1	Hazards, Risk, Vulnerability and Disasters: Definition and Concepts.	Classroom lectures and utorials	Assignments, PPT, classroom test.
2	Disasters in India: (a) Causes, Impact, Distribution and Mapping: Flood, Landslide, Drought.	Classroom lectures and utorials	Assignments, PPT, classroom test.

3	Disasters in India: (b) Causes, Impact, Distribution and Mapping: Earthquake, Tsunami and Cyclone.	Classroom lectures and utorials	Assignments, PPT, classroom test.
4	Human induced disasters: Causes, Impact, Distribution and Mapping.	Classroom lectures and utorials	Assignments, PPT, classroom test.
5	Response and Mitigation to Disasters: Mitigation and Preparedness, NDMA and NIDM; Indigenous Knowledge and	Classroom lectures and utorials	Assignments, classroom test, end semester
	Community-Based Disaster Management; Do's and Don'ts During Disasters		examination.

Keywords: Disaster Management, Hazard, Risk, Vulnerability, Human induced disasters, Disaster Mitigation and Preparedness, NDMA, NIDM.

2. Climate Change Vulnerability and Mitigation

Course Objectives:

1. The course aim is to give basic understanding of concept Science of Climate Change;
2. It will also help in developing understanding about various Impacts of Climate Change on Agriculture and Water; Flora and Fauna; Human Health ;
3. This course is also oriented to deliver knowledge on Adaptation and Mitigation of climate impacts and to know institutional role.

Learning Outcome:

This is a practical, hands-on course; when you have completed it, you will be able to:

9. Understand basics of Science of Climate Change ;
10. Understand different types of vulnerability ;
11. Dwell upon the issues of adaptation and mitigation;

Course Content:

1. Science of Climate Change: Understanding Climate Change; Green House Gases and Global Warming; Global Climatic Assessment - IPCC
2. Climate Change and Vulnerability: Physical Vulnerability; Economic Vulnerability; Social Vulnerability
3. Impacts of Climate Change: Agriculture and Water; Flora and Fauna; Human Health
4. Adaptation and Mitigation: Global Initiatives with Particular Reference to South Asia.
5. National Action Plan on Climate Change; Local Institutions (Urban Local Bodies, Panchayats)

References:

Essential:

1. IPCC. (2007). *Climate Change 2007: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge, UK: Cambridge University Press.

2. IPCC. (2014). *Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part B: Regional Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge, UK: Cambridge University Press.
3. Malhotra, Nitasha andSen, Shyamoli, 2018: Climatology, R.K. Books, New Delhi.
4. Sen Roy, S. and Singh, R.B. (2002). *Climate Variability, Extreme Events and Agricultural Productivity in Mountain Regions*. New Delhi, India: Oxford & IBH Pub.
5. Singh, M., Singh, R.B. and Hassan, M.I. (Eds.) (2014). *Climate change and biodiversity: Proceedings of IGU Rohtak Conference, Volume 1. Advances in Geographical and Environmental Studies.* Basel: Springer

Suggestive:

1 OECD. (2008). *Climate Change Mitigation: What Do we Do?* Organisation and Economic Co-operation and Development (www.oecd.org/env/cc).
2 Palutik, J. P., Vander Linden, P. J. and Hanson, C. E. (eds.), Cambridge University Press, Cambridge.
3 UNEP. (2007). *Global Environment Outlook: GEO4: Environment for Development.* Nairobi, Kenya: United Nations Environment Programme.

Teaching Learning Plan

Week 1: Unit I

Week 2: Unit I

Week 3: Unit II

Week 4: Unit II

Week 5: Unit III

Week 6: Mid-Semester Examinations

Week 7: Mid-Semester Break

Week 8**:** Unit III

Week 9: Unit IV

Week 10: Unit IV

Week 11: Unit V

Week 12: Unit V

Assessment Methods:

Unit No.	Course Learning Outcomes	Teaching and Learning Activity	Assessment Tasks
1	Science of Climate Change.	Classroom lectures and utorials	Assignments, PPT, classroom test.
2	Climate Change and Vulnerability.	Classroom lectures and utorials	Assignments, PPT, classroom test.
3	Impacts of Climate Change.	Classroom lectures and utorials	Assignments, PPT, classroom test.
4	Adaptation and Mitigation	Classroom lectures and utorials	Assignments, PPT, classroom test.
5	National Action Plan on Climate Change	Classroom lectures and utorials	Assignments, classroom test, end semester examination.

Keywords: Science of Climate Change, Vulnerability, Adaptation and Mitigation, National Action Plan on Climate Change