

**National Education Policy (NEP) 2020 and
Learning Outcome-Based Curriculum Framework (LOCF)
For**

Scheme UG A2:

Undergraduate Program (UG) B.A.: Single Major

BA GEOGRAPHY (SINGLE MAJOR)



(To be effective from the Academic Session 2026-27)

**GURUGRAM UNIVERSITY, GURUGRAM (HARYANA)
(A State University established by Govt. of Haryana Act No.17 of 2017)**

BASED ON THE SCHEME FOR THE UNDER GRADUATE PROGRAMME

Scheme of Programme

**Scheme UG A2: Undergraduate Program: Single Major
(Geography Subject)**

Semester- 1

Course Code	Course Title	Course ID	L	T	P	L	T	P	Total Credits	MARKS				
			(Hrs)			Credits				TI	TE	PI	PE	Total
Core Course(s)														
CC-A1	Geography of India (Theory)		3	1	0	3	1	0	4	30	70	-	-	100
CC-A2	Geography of Environment (Theory)		3	1	0	3	1	0	4	30	70	-	-	100
CC-A3	General Cartography (Practical)		0	0	8	0	0	4	4	-	-	30	70	100
Minor/ Vocational Course(s)														
MIC-01	Bio-Geography		1	1	-	1	1	-	2	15	35	-	-	50
Multidisciplinary Course(s)														
MDC-01	Introduction to Geography		2	1	-	2	1	-	3	25	50	-	-	75
Ability Enhancement Course(s)														
AEC-01	One from Pool								2					50

Skill Enhancement Course(s)														
SEC-01	Surveying Methods in Geography (Theory and Practical)		2	-	2	2	-	1	3	15	35	05	20	75
Value-added Course(s)														
VAC-01	Human Values and Ethics OR Environmental Studies								2					50
Total Credits									24					600

Semester- 2

Course Code	Course Title	Course ID	L	T	P	L	T	P	Credits	MARKS				
			(Hrs)			Credits				TI	TE	PI	PE	Total
Core Course(s)														
CC-A4	Geomorphology (Theory)		3	1	0	3	1	0	4	30	70	-	-	100
CC-A5	Fundamentals of Human Geography (Theory)		3	1	0	3	1	0	4	30	70	-	-	100

CC-A6	Representation of Physical Features (Practical)		0	0	8	0	0	4	4	-	-	30	70	100
Minor/ Vocational Course(s)														
MIC-02	Urbanization in India		1	1	-	1	1	-	2	15	35	-	-	50
Multidisciplinary Course(s)														
MDC-02	Bio-Geography		1	1	-	1	1	-	2	15	35	-	-	50
Ability Enhancement Course(s)														
AEC-02	One from Pool								2					50
Skill Enhancement Course(s)														
SEC-02	Geographical Data collection Techniques (Theory and Practical)		2	-	2	2	-	1	3	15	35	05	20	75
Value-added Course(s)														
VAC-02	Human Values and Ethics OR Environmental Studies								2					50
Total Credits									24					600

Semester 3

Course Code	Course Title	Course ID	L	T	P	L	T	P	Credits	MARKS				
			(Hrs)			Credits				TI	TE	PI	PE	Total
Core Course(s)														
CC-A7	Oceanography (Theory)		3	1	0	3	1	0	4	30	70	-	-	100
CC-A8	Introduction to Philosophy of Geography (Theory)		3	1	0	3	1	0	4	30	70	-	-	100
CC-A9	Principles of Land Surveying (Practical)		0	0	8	0	0	4	4	-	-	30	70	100
Minor/ Vocational Course(s)														
MIC-03	Socio-Cultural Geography		3	1	-	3	1	-	4	30	70	-	-	100
Multidisciplinary Course(s)														
MDC-03	General Geography of World		2	1	-	2	1	-	3	25	50	-	-	75
Ability Enhancement Course(s)														
AEC-03	One from Pool								2					50
Total Credits									21					525



Semester 4

Course Code	Course Title	Course ID	L	T	P	L	T	P	Credits	MARKS				
			(Hrs)			Credits				TI	TE	PI	PE	Total
Core Course(s)														
CC-A10	Introductory Climatology (Theory)		3	1	0	3	1	0	4	30	70	-	-	100
CC-A11	Statistical Methods in Geography (Theory)		3	1	0	3	1	0	4	30	70	-	-	100
CC-A12	Statistical Methods in Geography (Practical)		0	0	8	0	0	4	4	-	-	30	70	100
Minor/ Vocational Course(s)														
MIC-04 / (VOC)-01	Geography of Trade and Transport		3	1	-	3	1	-	4	30	70	-	-	100
MIC-04 / (VOC)-01	Map Reading and its Interpretation (Theory and Practical)		2	-	4	2	-	2	4	15	35	15	35	100
Ability Enhancement Course(s)														



AEC-04	One from Pool								2					50
Value-added Course(s)														
VAC-03	Field Survey and Report Writing on Environmental Issues (Theory and Practical)		1	-	2	1	-	1	2	5	20	5	20	50
Total Credits									20					500

Note: Internship (4 Credit=100 Marks) is to be done during summer break after 4th Semester; Marks will be added in 5th Semester.

Semester- 5

Course Code	Course Title	Course ID	L	T	P	L	T	P	Credits	MARKS				
			(Hrs)			Credits				TI	TE	PI	PE	Total
Core Course(s)														
CC-A13	Economic and Resource Geography (Theory)		3	1	0	3	1	0	4	30	70	-	-	100
CC-A14	Regional Geography of Asia (Theory)		3	1	0	3	1	0	4	30	70	-	-	100

CC-A15	Map Projections and Contemporary Techniques of Cartography (Practical)		0	0	8	0	0	4	4	-	-	30	70	100
Minor/ Vocational Course(s)														
MIC-05/ (VOC)-02	Geography of Tourism		3	1	-	3	1	-	4	30	70	-	-	100
MIC-05/ (VOC)-02	Weather Instruments and Geo-Spatial instruments in Geography (Theory and Practical)		2	-	4	2	-	2	4	15	35	15	35	100
Skill Enhancement Course(s)														
Internship	Internship								4					100
Total Credits									20					500



Semester- 6

Course Code	Course Title	Course ID	L	T	P	L	T	P	Credits	MARKS				
			(Hrs)			Credits				TI	TE	PI	PE	Total
Core Course(s)														
CC-A16	Introduction to Geo-spatial Technology (Theory)		3	1	0	3	1	0	4	30	70	-	-	100
CC-A17	Elements of Population Geography (Theory)		3	1	0	3	1	0	4	30	70	-	-	100
CC-A18	Aerial Photographs and Field Work (Practical)		0	0	8	0	0	4	4	-	-	30	70	100
Minor/ Vocational Course(s)														
MIC-06	Statistical Methods in Geography		3	1	-	3	1	-	4	30	70	-	-	100
MIC-07	Climate Change and Disaster Management		3	1	-	3	1	-	4	30	70	-	-	100
VOC-03	Application of Economic and Population data in Geography (Theory and Practical)		2	-	4	2	-	2	4	15	35	15	35	100



Skill Enhancement Course(s)														
SEC-03	Environmental Techniques in Geography (Theory and Practical)		2	-	2	2	-	1	3	15	35	05	20	75
Total Credits									22					550

The curriculum of semester 7 and 8 will be provided in due course of time.



Based on the scheme for the undergraduate program-Single Major (GEOGRAPHY)

This Learning Outcome based Curriculum Framework (LOCF) is designed to emphasize the teaching and learning process at the undergraduate (B.A.) program-Single Major (**Geography**) from teacher centric to student centric by strengthening the quality of teaching and learning in the present-day real-life scenario of global, regional and local level. It is considered learning as an activity of creativity of innovations and analyzing geographical phenomena. The purpose is to enhance the capability of the students in perceiving, creating and analyzing sound geographical bases and concepts.

Geography has been broadly accepted as a bridge discipline between human and physical sciences. In the beginning, geography focused on the physical aspects of the earth but the modern geography is an all-encompassing discipline that seeks to understand the earth and all of its human and natural processes as integrating elements. Geography has emerged through time as a Trans- disciplinary subject integrating the regional diversity with the concepts of the timing of space and the spacing of time. It provides broad, human and place-centered perspectives on the transformation of rural ecology to globalized urban landscape at different levels, from the local/regional/national to global.

Geography is transformed through: -

- Journey from Village Ecology to Urban Regional Studies
- Qualitative Techniques to Spatial Information Technology
- Global to Micro-level Community Perception Approach

It is essential to focus on the current socio-spatial problems, issues and challenges to make the students aware of the application of geography to sort out the societal upcoming problems. It is essential to rejuvenate the ancestral geographical knowledge to address the current local and global problems. Geography curriculum is also essential to revision incorporates dynamic processes including fundamental and modern techniques, contemporary paradigms such as global initiatives like Sustainable Development Goals (SDGs), Disaster Risk Reduction (DRR), Climate Action and national initiatives like smart cities, Securities of food, water, energy, human health and livelihood, biodiversity, and disaster management. The approaches are to make geography more scientific and societal-need oriented that could be the panacea of India's developmental challenges. Geography uses scientific knowledge with the current focus that includes spatio-temporal analysis, skill development, Geoscience, sustainable development and human security.



The following objectives would be achieved from the Single Major-Geography Course framework:-

- To orient the students towards identification and analysis of various facets of geographical features and processes.
- To develop an overall idea about the natural, social and cultural environment over the surface.
- To facilitate the students to learn skills of map making.
- To develop students' aptitude for acquiring basic skills of carrying out field work.
- To guide students to learn the science and art of collecting, processing and interpreting the data.
- To expose the students to the use of the updated technologies of remote sensing, IRNSS (Indian Regional Navigation Satellite System), GNSS (Global Navigation Satellite System), Geographical Information System (GIS) and Geoscience (Geographic Information Science).

Program Outcomes (POs): -

- ❖ To achieve a holistic understanding of the subject, putting equal weightage to the core content and techniques used in Geography.
- ❖ To impart basic knowledge on Geography as a spatial science and train the undergraduates to secure employment in the sectors of geospatial analysis, development and planning, mapping, and surveying.
- ❖ To secure a job at the end of the undergraduate programme. Keeping this in mind and in tune with the changing nature of Geography, adequate emphasis is rendered on applied aspects of the subject such as emerging techniques of mapping and field-based data generation, especially in the single major course.
- ❖ To achieve an overall idea about the natural, social and cultural environment developed over the surface.
- ❖ To get the idea of daily weather and climate system, consequences of climate change and most of all the causes and consequences of global warming which are the burning topic/problems of the present times.
- ❖ To learn the idea of making suitable questionnaire, data collection, tabulation and analysis and to make correlation of the physical and socio-economic features of any area by visiting and surveying the area.
- ❖ To correlate the theoretical knowledge with practical curricula to develop a holistic idea on various landforms in the light of their evolution.
- ❖ To get an idea about the first-hand feel of independent research activities which is done after surveying an area as per the rules of the curriculum. This acts as a foundation for their future research activities.



- ❖ To develop the soft skill of the students by introducing the computer and software-oriented courses (GIS) which is now an essential requisite for the scholars who intend to pursue higher studies and research.
- ❖ To cultivate ability to evaluate critically the wider chain of network of spatial aspects from global to local level on various time scales as well.
- ❖ Recognize the skill development in Geographical studies programme as part of popular career avenues in various fields like academics (teacher/lecturer/professor), researcher in organizations, administrator, cartographers, Environmental consultant, urban planner, tourism officer, GIS specialist, demographer, hydrologist etc.

Program Specific Outcomes (PSOs): -

Five distinct and new learning outcomes have been incorporated from each course such as to:

- Understand the relevance of geographical knowledge to everyday life.
- Getting the ability to communicate geographic information by utilizing both lecture and practical exercises.
- Inculcate the ability to evaluate and solve geographical problems effectively.
- Based on the field knowledge and advanced technologies, the students should be able to understand the on-going geographical problems in different regions and levels with appropriate pragmatic solutions.
- Exhibit the skill in using geographical research tools including spatial statistics, general cartography & advanced cartography, RS, GIS, IRNSS and Geoscience.

Outline of Undergraduate (Single Major-Geography) Syllabus based on NEP: -

1. Core Course (CC): A course which should compulsorily be studied by a candidate as a core requirement is termed as a CC.

2. Multidisciplinary Course (MDC): Generally, a course which can be chosen from a pool of courses and which may be very specific or specialized or advanced or supportive to the discipline/subject of study or which provides an extended scope or which enables an exposure to some other discipline/ subject/ domain or nurtures the candidate's proficiency/skill is called an MDC.

3. Minor/Vocational Course (MIC): An elective course chosen generally from an unrelated discipline/subject, with an intention to seek exposure is called a Minor.

A core course offered in a discipline/subject maybe treated as an elective by other discipline/subject and vice versa and such electives may also be referred to as Minor/Vocational.

4. Skill Enhancement Course (SEC): Skill Enhancement Course means a course designed to provide value-based or skill-based knowledge and should contain both theory and lab/hands-on/training/fieldwork. The main purpose of these courses is to provide students with life-skills in the hands-on mode to increase their employability.

5. Value-added Course (VAC): Value-added courses are conducted by the faculty members of the department or interfacing with the industry to bridge the gap between the curriculum and the



requirements of the industry.

6. Educational Tours – The visit to major industries, resources places, different cultural and social places in Haryana and visit also to a local polluted site-Urban/Rural/Industrial/Agricultural will provide the students with a firsthand experience of the topics of study and emphasize their importance and significance to the present world.

7. Field Work/Study – Taking up a small project on a related topic that could include collection of data through surveys or interviews could enhance communication skills of the students and enable them to propose a study subject and produce a report based on the data collected. This will form a vital part of the skill acquisition to undertake further research.

8. Writing Assignments- Since international relations studies would also entail extensive writing ability, practical training in writing essays, reports and favoring or opposing an argument or thesis, students must continuously be subjected to assignment writing so that they are well versed with the nuances of writing for a variety of purposes.

9. Seminar Presentation – Conducting seminars where student choose specific topics on which they research and present to an audience forms a vital part of developing skills of communication as well as organizing thought in a logical and cohesive manner.

10. Project work- Project work is considered as a special course involving application of knowledge in solving/analyzing/exploring a real-life situation/difficult problem. A Project work may be given in lieu of a discipline specific elective paper.

Gurugram University, Gurugram, Haryana (India)

B.A. Geography (Single Major) (Semester-I) Syllabus

(as per NEP 2020 w.e.f. session 2024-25)

GEOGRAPHY OF INDIA

Course Code: CC-A1 (Theory: Core Paper)

Programme/Class: B.A. Single Major Year: 1 Semester: I Credit: 04 (3+1+0) L+T+P Hrs/Week	Total Marks:	100
Examination Time: 3 Hours	End Semester Exam:	70 Marks
Course Outcome: - CO1: They can know about their own countries land formation, climate and natural vegetation. CO2: They understand the economic resources of India. CO3: They understand the social distribution of population of their country. CO4: Develop an idea about regionalisation of India.	Internal Assessment: Attendance Assignment Sessional Exam	30 Marks 5 5 20

Note:

The question Paper will have five units.

The first unit having question no. 1 shall be compulsory and shall contain seven (7) short answer type/ MCQ questions (having two (2) marks of each question) covering the entire syllabus.

The remaining four units of question paper shall contain two essay type questions (having Fourteen (14) marks of each question) from each unit of the syllabus. Candidate(s) are required to attempt one question from each unit. All questions carry equal marks.

UNIT -I

India: Location setting and Extent; Physiographic divisions of India; Extra peninsular drainage: Indus, Ganga and Brahmaputra River systems; Peninsular drainage: east flowing rivers and west flowing river; difference in peninsular and extra-peninsular drainage; Unity in diversity in India.

UNIT -II

Soils and Vegetation: Characteristics and distribution of soil in India, Major type of vegetation found in India; Climate system in India: Indian monsoon- Classical and Modern theory; Koppen's Classification of climatic regions of India.

UNIT -III

Population: Factors, Distribution, Density and Growth; Population composition: ethnic and socio-cultural attributes (castes and tribes); Population explosion and food security.

UNIT -IV

Agriculture: Distribution and Production of major agricultural crops; Green Revolution; Minerals: Distribution and production of iron, coal and petroleum; Transportation network.



Suggested Reading:

- Bindra, S.S. (1989). *India and her neighbors*. New Delhi: Deep and Deep Publications.
- Chandna, R.C. (1998). *Geography of Population*. New Delhi: Kalyani Publishers.
- Chatterjee, Rupali. (2015). *Geography of India*. New Delhi: Global Academic Publishers.
- Deshpande, C.D (1992). *India- A regional interpretation*. New Delhi: Northern Book Centre.
- Gautam A. (2009). *Advanced Geography of India*. Allahabad: Sharda Pustak Bhawan.
- Gopal Krishan (2017). *The vitality of India: A regional perspective*. Jaipur: Rawat Publication.
- Johnson, B.L.C. (1980). *India: resources and development*. London: Arnold-Hinemann.
- Khullar, D.R. (2000). *India: A comprehensive Geography*. New Delhi: Kalyani Publishers.
- Mamoria, C. B. and Mishra, J. P. (2021). *Bharat ka Bhugol*. (in Hindi). Agra: Sahitya Bhawan Publication.
- Majid, H. (2020). *Geography of India*. McGraw Hill Education (India) Private Ltd.
- Singh, G. (1995). *A Geography of India*. New Delhi: Atma Ram & Sons.
- Singh, R.L. (1971). *India: A regional Geography*. Varanasi: National Geographical Society of India.
- Tirtha, R. (2004). *Geography of India*. Jaipur: Rawat Publications.
- Tiwari, R.C. (2010). *Geography of India*. Allahabad: Prayag Pustak Bhawan.



Gurugram University, Gurugram, Haryana (India)

B.A. Geography (Single Major) (Semester-I) Syllabus

(as per NEP 2020 w.e.f. session 2024-25)

GEOGRAPHY OF ENVIRONMENT

Course Code: CC-A2 (Theory: Core Paper)

Programme/Class: B.A. Single Major Year: 1 Semester: I Credit: 04 (3+1+0) L+T+P Hrs/Week	Total Marks:	100
Examination Time: 3 Hours	End Semester Exam:	70 Marks
Course Outcome: - CO1: Gain knowledge about concept, scope of environmental geography and components of environment. CO2: Develop an idea about major ecosystem and human-environment relationships. CO3: Know about environmental pollution, programmes and policies. CO4: Build an idea about ecosystem and biodiversity.	Internal Assessment: Attendance Assignment Sessional Exam	30 Marks 5 5 20

Note:

The question Paper will have five units.

The first unit having question no. 1 shall be compulsory and shall contain seven (7) short answer type/ MCQ questions (having two (2) marks of each question) covering the entire syllabus. The remaining four units of question paper shall contain two essay type questions (having Fourteen (14) marks of each question) from each unit of the syllabus. Candidate(s) are required to attempt one question from each unit. All questions carry equal marks.

UNIT –I

Ecology and Ecosystem: Structure and Function of Ecosystem, Ecological Pyramids; Energy flow in ecosystem, ecotone, food chain, food web and ecological succession; Major Ecosystems: Desert ecosystem, Forest ecosystem, Grassland ecosystem, Aquatic ecosystem.

UNIT -II

Biogeographic zones of India; Biodiversity patterns and global biodiversity hot spots; Threats to Biodiversity: habitat loss, poaching of wildlife, in-situ and ex-situ; Conservation of Biodiversity.

UNIT -III

Ecosystem and biodiversity services: ecological, economic, social, ethical, aesthetic and informational value, biome; Classification of Biome.

UNIT –IV

Environmental pollution: types, causes, effects and controls; Air, water, soil, chemical and noise pollution; Climate change, global warming, ozone layer depletion, acid rain; Impacts on human communities and agriculture; Sustainable development.



Suggested Reading:

- Bodkin, E. (1982). *Environmental studies*. Columbus (Ohio): Charles E. Merrill Pub Co.
- Chandna, R.C. (1998). *Environmental awareness*. New Delhi: Kalyani Publishers.
- Gautam, Alka (2010). *Environmental Geography*. (In Hindi/Eng). Allahabad: Sharda Pustak Bhawan.
- Mishra, S.P. and Pandey, S.N. (2016). *Essential environmental studies*. New Delhi: Ane publications.
- Nobel and Wright (1996). *Environmental science*. New York: Prentice Hall.
- Parshad, Gayatri and Nautiyal, R. (2021). *Environmental Geography*. Paryagraj: Sharda Pustak Bhawan.
- Sharma, H.S. (2000). *Ranthambhore sanctuary-dilemma of eco-development*. New Delhi: Concept.
- Simmons, I.G. (1981). *Ecology of Natural Resources*. London: Edward Arnold.
- Singh, S. (2020). *Environmental Geography*. (In Hindi/Eng). Prayagraj: Pravalika Publications.
- Smith, R.L. (1992). *Man, and his Environment: An Ecosystem Approach*. London: Harper & Row.
- Thomas, W.L. (1974). *Man's Role in Changing the Face of the Earth*. The University of Chicago Press.



Gurugram University, Gurugram, Haryana (India)

B.A. Geography (Single Major) (Semester-I) Syllabus

(as per NEP 2020 w.e.f. session 2024-25)

GENERAL CARTOGRAPHY

Course Code: CC-A3 (Practical: Core Paper)

Programme/Class: B.A. Single Major Year: 1 Semester: I Credit: 04 (0+0+8) L+T+P Hrs/Week		Total Marks	100
Time: 4 Hours	PE	End Semester Practical Exam:	70 Marks
Course Outcome: - CO1: Develop an idea about scale and draw different types of scale like linear and diagonal. CO2: Understand and prepare different kinds of maps. CO3: Recognize basic themes of map making. CO4: Acquire knowledge different types of diagram.	PI	Internal Assessment: Attendance: Practical assignment:	30 Marks 5 25
Note: The question paper would be set from the syllabus covering the full content. The question paper for the written examination (4 hours duration) shall be made by the external examiner in assistance with the internal examiner. The answer books would be evaluated by the external examiner on the day of examination. The question paper in this course will be divided into two parts. Part-I will consist of 8 short answer type questions carrying 1 mark each. Part-II will consist of 8 Choice based descriptive (long answer type) questions/exercises from the entire syllabus and carrying 8 marks each. Students will have to answer any 4 questions/exercises.			

- Basic Concepts of Cartography: Meaning, nature and subject matter of Cartography;
- Calculation of R.F. from arcs of meridians and parallels,
- Map: Definition, Significance, Classification, Usefulness and Principles of Map Design.
- Map Scales: -
 - Methods of expressing a scale
 - Conversion of Statement of Scale into R.F. and R.F. to statement of scale.
 - Plain Scale (Km and mile)
 - Comparative Scale
 - Diagonal Scale
- Measurement of distances and areas on Maps;
- enlargement and reduction of Maps;
- Latitude and Longitude;
- Global Time: Indian standard time, World time-zones, international date-line.
- Representation of population distribution by Uniform and Multiple Dots.,
- Representation of urban Population by spheres, proportional circles, cubes and Pyramid diagram.



Distribution of Marks: In Practical Paper, the marks would be divided as follows:

		Type	Marks and no. of questions	Marks	Marks	Total Marks
(a).	Written Examination	Part-I	1 Marks 8 questions	8	40	70
		Part-II	8 marks 4 questions	32		
		Viva-Voce				
	File Record				20	
(b).	Internal Assessment	Practical Assignment			25	30
		Attendance			5	
Total Marks =						100

Suggested Reading:

- Khullar, D.R. (2015). *Practical Geography*. Ludhiana: Kalyani Publishers.
- Mishra, R.N. and Sharma, P.K. (2020). *Prayogik Bhoogol*. (in Hindi). Jaipur: Rawat Publications.
- Monkhouse, F.J. and Wilkinson, H.R. (1971). *Maps and Diagrams*. London: Methuen.
- Robinson A. H. (2009). *Elements of Cartography*. New York: John Wiley and Sons.
- Sarkar, A. (2015). *Practical Geography: A systematic approach*. New Delhi: Orient Black Swan Private Ltd.
- Sharma, J. P. (2020). *Prayogtmak Bhugol ki Rooprekha*. (in Hindi). Meerut: Rastogi Publications.
- Singh, R. L. and P. K. Dutta, (2012). *Prayogatmak Bhugol*. (in Hindi). Allahabad: Central Book Depot.
- Singh R. L. and Rana P. B. Singh (1999). *Elements of Practical Geography*. (in Hindi). New Delhi: Kalyani Publishers.
- Taylor, D.R.F. (1985). *Education and training in contemporary Cartography*. John Willey.



Gurugram University, Gurugram, Haryana (India)

B.A. Geography (Single Major) (Semester-II) Syllabus

(as per NEP 2020 w.e.f. session 2024-25)

GEOMORPHOLOGY

Course Code: CC-A4 (Theory: Core Paper)

Programme/Class: B.A. Single Major Year: 1 Semester: II Credit: 04 (3+1+0) L+T+P Hrs/Week	Total Marks:	100
Examination Time: 3 Hours	End Semester Exam:	70 Marks
Course Outcome: - CO1: Understand the theories and fundamental concepts of Geomorphology. CO2: Understand earth's tectonic and structural evolution. Gain knowledge about earth's interior. Develop an idea about concept of plate tectonics, and resultant landforms. CO3: Acquire knowledge about types of folds and faults and earthquakes, volcanoes and associated landforms. CO4: Understanding crustal mobility and tectonics; with special emphasis on their role in landform development.	Internal Assessment: Attendance Assignment Sessional Exam	30 Marks 5 5 20

Note:

The question Paper will have five units.

The first unit having question no. 1 shall be compulsory and shall contain seven (7) short answer type/ MCQ questions (having two (2) marks of each question) covering the entire syllabus.

The remaining four units of question paper shall contain two essay type questions (having Fourteen (14) marks of each question) from each unit of the syllabus. Candidate(s) are required to attempt one question from each unit. All questions carry equal marks.

UNIT –I

Introduction to Geomorphology: Meaning, Nature and Scope; Geological Time Scale; Interior of the earth; Theory of Isostasy, Continental Drift Theory, Plate Tectonic Theory.

UNIT -II

Earth movements, Major Landforms (Mountains, Plateaus, Plains); Earthquakes and Volcanoes--Origin, Types, Distribution, Structure and Landforms- Folded and Faulted.

UNIT -III

Weathering (Mechanical, Chemical, Organic); Mass Movement; Erosion (Cycle of Erosion-Penck-Davis, Rejuvenation); Geomorphic Process and resulted Landforms: Rivers, Wind, Glacier, Coastal.

UNIT –IV

Time and Space in Geomorphology; Concept of Equilibrium and Threshold, Systems and feedback in Geomorphology; Cyclic and non-cyclic approaches in Geomorphology; Applied Geomorphology.



Suggested Readings:

- Bloom, A.L. (1992). *Geomorphology*. New Delhi: Prentice Hall of India.
- Bhutani, Smita, (2000). *Our Atmosphere*. New Delhi: Kalyanai Publishers.
- Chorley, R. J., Schumm, S. A. and Sugden, D. E. (1984). *Geomorphology*. London: Methuen.
- Dayal, P. (2019). *Geomorphology*. (in Hindi/Eng). New Delhi: Rajesh Publications.
- Husain, Majid (2002). *Fundamentals of physical Geography*. Jaipur: Rawat Publications.
- Kale, V. and Gupta, A. (2001). *Introduction to Geomorphology*. Kolkata: Orient Longman.
- King, C.A. M. (1966). *Techniques in Geomorphology*. London: Edward Arnold.
- Singh Savindra (2020). *Geomorphology*, (in Hindi/Eng). Allahabad: Pravalika Publications.
- Strahler, A.N. and Strahler, A.H. (1996). *Introducing Physical Geography*. New York: John Willey and Sons.
- Thornbury, W.D. (1991). *Principles of Geomorphology*. New Delhi: John Wiley.
- Wooldridge, S. W and Morgan, R.S. (1991). *An Outline of Geomorphology*. Calcutta: Orient Longmans.



Gurugram University, Gurugram, Haryana (India)

B.A. Geography (Single Major) (Semester-II) Syllabus

(as per NEP 2020 w.e.f. session 2024-25)

FUNDAMENTALS OF HUMAN GEOGRAPHY

Course Code: CC-A5 (Theory: Core Paper)

Programme/Class: B.A. Single Major Year: 1 Semester: II Credit: 04 (3+1+0) L+T+P Hrs/Week	Total Marks:	100
Examination Time: 3 Hours	End Semester Exam:	70 Marks
Course Outcome: - CO1: Gain knowledge about major themes of human Geography. CO2: Acquire knowledge on the history and evolution of humans. CO3: Understand the approaches and processes of Human Geography as well as the diverse patterns of habitat and adaptations. CO4: Develop an idea about nation and state.	Internal Assessment: Attendance Assignment Sessional Exam	30 Marks 5 5 20

Note:

The question Paper will have five units.

The first unit having question no. 1 shall be compulsory and shall contain seven (7) short answer type/ MCQ questions (having two (2) marks of each question) covering the entire syllabus.

The remaining four units of question paper shall contain two essay type questions (having Fourteen (14) marks of each question) from each unit of the syllabus. Candidate(s) are required to attempt one question from each unit. All questions carry equal marks.

UNIT –I

Human Geography: Concept, Nature and Scope, Development of Human Geography; Major Contributors; Concepts of Man and Environment relationship - Determinism, Possibilism, and Neo-determinism.

UNIT -II

Economic Activities: Types- Primary, Secondary and Tertiary; Location of economic activities: Agricultural location Theory by Von Thunen; Industrial Location: Theory of Alfred Weber.

UNIT -III

Distribution and Characteristics of Race, Religion and Language; Distribution of indigenous people and major tribes throughout the World and in India.

UNIT –IV

Concept of Nation and State; Attributes of State- Frontiers, Boundaries, Shape, Size, Territory and Sovereignty.

Suggested Reading:

- De Blij, H.J. (1996). *Human Geography: Culture, Society and Space*. New York: John Wiley and Sons,
- Haggett, P. (2004). *Geography: A Modern Synthesis*. New York: Harper and Row, New York.
- Husain, M. (2024). *Human Geography*. (In Hindi/Eng). Jaipur: Rawat Publications.
- Kaushik, S.D. and Sharma, A.K. (1996). *Principles of Human Geography*. (in Hindi). Meerut: Rastogi Publication.
- Michael, C.M. (1997). *Process and Change in Human Geography*. London: Nelson.
- Norton, W. (2008). *Human Geography*. New York: Oxford University Press.
- Singh, R. L. (2005). *Fundamentals of Human Geography*. Allahabad: Sharda Pustak Bhawan.



Gurugram University, Gurugram, Haryana (India)

B.A. Geography (Single Major) (Semester-II) Syllabus

(as per NEP 2020 w.e.f. session 2024-25)

REPRESENTATION OF PHYSICAL FEATURES

Course Code: CC-A6 (Practical: Core Paper)

Programme/Class: B.A. Single Major Year: 1 Semester: II Credit: 04 (0+0+8) L+T+P Hrs/Week		Total Marks	100
Time: 4 Hours	PE	End Semester Practical Exam:	70 Marks
Course Outcome: - CO1: Will be able to represent the topographical maps. CO2: Will be able to represent relief features through superimposed / composite / serial or projected profiles. CO3: Will become able to express components of weather map. CO4: Will be able to draw height diagrams, hypsometric curve etc.	PI	Internal Assessment: Attendance: Practical Assignment:	30 Marks 5 25
Note: The question paper would be set from the syllabus covering the full content. The question paper for the written examination (4 hours duration) shall be made by the external examiner in assistance with the internal examiner. The answer books would be evaluated by the external examiner on the day of examination. The question paper in this course will be divided into two parts. Part-I will consist of 8 short answer type questions carrying 1 mark each. Part-II will consist of 8 Choice based descriptive (long answer type) questions/exercises from the entire syllabus and carrying 8 marks each. Students will have to answer any 4 questions/exercises.			

- Topographical Maps.
- Conventional Signs.
- Weather Symbols.
- Fundamentals of Topographical Maps.
- Interpretation of Toposheets: Physical landscape and cultural landscape characteristics and components.
- Interpretation of Indian Daily Weather Map/Report of India: Pre-Monsoon, Monsoon and Post- Monsoon.
- Intervisibility: determination methods;
- Interpolation of Contours.
- Profiles: types of profiles, drawing of profiles and cross sections;
- Representation of relief methods.
- Representation of different landforms with the help of profiles and cross sections;
- Area and height diagrams, hypsometric curve and altimetric frequency histogram.



Distribution of Marks: In Practical Paper, the marks would be divided as follows:

		Type	Marks and no. of questions	Marks	Marks	Total Marks
(a).	Written Examination	Part-I	1 Marks 8 questions	8	40	70
		Part-II	8 marks 4 questions	32		
		Viva-Voce				
	File Record				20	
(b).	Internal Assessment	Practical Assignment			25	30
		Attendance			5	
Total Marks =						100

Suggested Reading:

- Khullar, D.R. (2015). *Practical Geography*. Ludhiana: Kalyani Publishers.
- Mishra, R.N. and Sharma, P.K. (2020). *Prayogik Bhoogol*. (in Hindi). Jaipur: Rawat Publications.
- Monkhouse, F.J. and Wilkinson, H.R. (1971). *Maps and Diagrams*. London: Methuen.
- Robinson A. H. (2009). *Elements of Cartography*. New York: John Wiley and Sons.
- Sarkar, A. (2015). *Practical Geography: A systematic approach*. New Delhi: Orient Black Swan Private Ltd.
- Sharma, J. P. (2020). *Prayogtmak Bhugol ki Rooprekha*. (in Hindi). Meerut: Rastogi Publications.
- Singh, R. L. and P. K. Dutta, (2012). *Prayogatmak Bhugol*. (in Hindi). Allahabad: Central Book Depot.
- Singh R. L. and Rana P. B. Singh (1999). *Elements of Practical Geography*. (in Hindi). New Delhi: Kalyani Publishers.
- Taylor, D.R.F. (1985). *Education and training in contemporary Cartography*. John Willey.

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B.A. Geography (Single Major) (Semester-III) Syllabus

(as per NEP 2020 w.e.f. session 2024-25)

OCEANOGRAPHY

Course Code: CC-A7 (Theory: Core Paper)

Programme/Class: B.A. Single Major Year: 2 Semester: III Credit: 04 (3+1+0) L+T+P Hrs/Week	Total Marks:	100
Examination Time: 3 Hours	End Semester Exam:	70 Marks
Course Outcome: - CO1: Gain Knowledge of What and Why and Skills relate to the Physical, Chemical and Biological Components and Phenomena for a better understanding of oceanography. CO2: Understand the Salinity and Temperature distribution of Ocean Water. CO3: Understand the relationship between Marine Organisms and their Environment. CO4: Develop an idea about the Problems and Policies for Sustainable Oceans and SDG 14.	Internal Assessment: Attendance Assignment Sessional Exam	30 Marks 5 5 20

Note:

The question Paper will have five units.

The first unit having question no. 1 shall be compulsory and shall contain seven (7) short answer type/ MCQ questions (having two (2) marks of each question) covering the entire syllabus.

The remaining four units of question paper shall contain two essay type questions (having Fourteen (14) marks of each question) from each unit of the syllabus. Candidate(s) are required to attempt one question from each unit. All questions carry equal marks.

UNIT-I

Oceanography: Definition, Nature and Scope; Origin of the Ocean; Sea level changes, Reliefs of the Ocean Basins: Pacific, Atlantic and Indian Ocean.

UNIT-II

Properties of Oceanic Water: Salinity and Temperature (Horizontal and Vertical Distribution); Oceanic water circulation: Ocean Currents: Origin, Types and dynamics, Current of Pacific, Atlantic and Indian Ocean; Tides.

UNIT-III

Marine Ecosystems and Challenges: Coral Reefs, Mangroves; Ocean Deposits; Marine Resources: Utilization and Conservation.

UNIT-IV

Marine Management: Marine Policies, Marine Spatial Planning (MSP), Sustainable Fisheries, The Blue Economy, Marine Protected Areas (MPAs, Green Ports, Integrated Coastal Zone Management with reference to India and SDG 14.



Suggested Readings:

- Basu S.K. (2003). *Hand Book of Oceanography*. Delhi: Global Vision.
- Bloom, A.L. (1992). *Geomorphology*. New Delhi: Prentice Hall of India.
- Bhatt, J.J. (1978). *Oceanography- exploring the planet ocean*. New York: D. van Nostrand Company.
- Dayal, P. (2019). *Geomorphology*. (in Hindi/Eng). New Delhi: Rajesh Publications.
- Garrison, T., (2001). *Oceanography-An invitation to marine science*. Belmont: Wadsworth Publishing Company.
- Kennel, J.P. (1982). *Marine Geology*. New Jersey: Prentice Hall, Englewood Cliff.
- Lal, D.S. (2017). *Oceanography*. Allahabad: Sharda Pustak Bhawan.
- Singh Savindra (2020). *Geomorphology*, (in Hindi/Eng). Allahabad: Pravalika Publications.
- Sharma, R.C. (1985). *The Oceans*. New Delhi: Rajesh Publications.
- Strahler, A.N. and Strahler, A.H. (1996). *Introducing Physical Geography*. New York: John Willey and Sons.
- Thornbury, W.D. (1991). *Principles of Geomorphology*. New Delhi: John Wiley.

Gurugram University, Gurugram, Haryana (India)
B.A. Geography (Single Major) (Semester-III) Syllabus
 (as per NEP 2020 w.e.f. session 2024-25)
INTRODUCTION TO PHILOSOPHY OF GEOGRAPHY
 Course Code: CC-A8 (Theory: Core Paper)

Programme/Class: B.A. Single Major Year: 2 Semester: III Credit: 04 (3+1+0) L+T+P Hrs/Week	Total Marks:	100
Examination Time: 3 Hours	End Semester Exam:	70 Marks
Course Outcome: - CO1: Perceive the Evolution of the Philosophy of Geography. CO2: Discussing the Evolution of Geographical Thought from Ancient to Modern Times. CO3: Appreciate the Contribution of the Thinkers in Geography. CO4: Analyzing Modern and Contemporary Principles of Empiricism, Positivism, Structuralism, Human and Behavioral Approaches in Geography.	Internal Assessment: Attendance Assignment Sessional Exam	30 Marks 5 5 20

Note:

The question Paper will have five units.

The first unit having question no. 1 shall be compulsory and shall contain seven (7) short answer type/ MCQ questions (having two (2) marks of each question) covering the entire syllabus.

The remaining four units of question paper shall contain two essay type questions (having Fourteen (14) marks of each question) from each unit of the syllabus. Candidate(s) are required to attempt one question from each unit. All questions carry equal marks.

UNIT-I

Pre-Modern: Early origins of Geographical Thinking with reference to the Classical and Medieval Philosophies.

UNIT-II

Modern: Evolution of Geographical Thinking and Disciplinary Trends in Germany, France, Britain, United States of America.

UNIT-III

Dualism: Physical and Human, Systematic and Regional, Determinism and Possibilism, Ideographic and Nomothetic; Paradigms in Geography.

UNIT-IV

Approaches: Quantitative, Behavioral, Systems, Positivist, Radicalism; Evolution and Development of the Concept of Space in Geography, Emerging and Future Trends in Geography.

Suggested Readings:

- Adhikari, S. (2015). *Fundamentals of Geographical thought*. New Delhi: Orient Blackswan.
- Dickinson, R.E. (1969). *Makers of modern Geography*. London: Routledge and Kegan Paul.
- Dikshit, R. D. (2018). *Geographical thought: A contextual history of ideas*. New Delhi: Prentice Hall of India.

- Gosal, Singh, Gurdev (2015). *History of Geographic thought*. Chandigarh: Panjab University.
- Holt-Jensen, A. (2009). *Geography: history and concepts- A student's guide*. London: Sage.
- Hussain, M. (2015). *Evolution of geographical thought*. Jaipur: Rawat Pub.
- Jha, A.K. (2021). *Bhaugolik chintan ke vividh aayam*. (in Hindi). Patna: Bihar Hindi Granth Academy,
- Johnston, R.J. (2005). *Geography & Geographers: Anglo-American Human Geography since 1945*. London: Arnold
- Misra, R.P. (1983). *Contributions to Indian Geography Concepts and Approaches*. New Delhi: Heritage Publication.
- Peet, Richard (1998). *Modern geographical thought*. London: Blackwell.
- Stoddart, D.R. (1981). *Geography, science and social concern*. Oxford: Blackwell.
- Taylor, G. (1953). *Geography in the 20th Century*. London: Methuen.
- Tripathi, M.P (1969). *Development of Geographic Knowledge in Ancient India*. Varanasi: Bharatiya Vidya Prakashan.

Gurugram University, Gurugram, Haryana (India)

B.A. Geography (Single Major) (Semester-III) Syllabus

(as per NEP 2020 w.e.f. session 2024-25)

PRINCIPLES OF LAND SURVEYING

Course Code:CC-A9 (Practical: Core Paper)

Programme/Class: B.A. Single Major Year: 2 Semester: III Credit: 04 (0+0+8) L+T+P Hrs/Week		Total Marks	100
Time: 4 Hours	PE	End Semester Practical Exam:	70 Marks
Course Outcome: CO1: Comprehend the Concept of Land Survey. CO2: Learn the usages of Survey Instruments. CO3: Brings Direct interaction of different Types of Surveying Instruments like Clinometers. CO4: Develop an idea about different types of Survey Mapping Techniques.	PI	Internal Assessment: Attendance Practical assignment	30 Marks 5 25

Note: The question paper would be set from the syllabus covering the full content. The question paper for the written examination (4 hours duration) shall be made by the external examiner in assistance with the internal examiner. The answer books would be evaluated by the external examiner on the day of examination. The question paper in this course will be divided into two parts.

Part-I will consist of 8 short answer type questions carrying 1 mark each.

Part-II will consist of 8 Choice based descriptive (long answer type) questions/exercises from the entire syllabus and carrying 8 marks each. Students will have to answer any 4 questions/exercises.

- Surveying: Definition, Importance
- Different types of Surveying: Plain and Geodetic Surveying.
- Chain and Tape Survey:
 - Radiation Method,
 - Intersection Method,
 - Traverse Method: Open and Closed Traverse
 - Triangulation.
- Plane Table Survey:
 - Radiation Method,
 - Intersection Method,
 - Traverse Method: Open and Closed Traverse
- Prismatic Compass Survey:
 - Radiation Method,
 - Intersection Method,
 - Traverse Method: Open and Closed Traverse;
- Measurement of Height and Contouring: Height with Clinometers.



Distribution of Marks: In Practical Paper, the marks would be divided as follows:

		Type	Marks and no. of questions	Marks	Marks	Total Marks
(a).	Written Examination	Part-I	1 Marks 8 questions	8	40	70
		Part-II	8 marks 4 questions	32		
		Viva-Voce				
	File Record				20	
(b).	Internal Assessment	Practical Assignment			25	30
		Attendance			5	
Total Marks =						100

Suggested Readings:

- Khullar, D.R. (2015). *Practical Geography*. Ludhiana: Kalyani Publishers.
- Mishra, R.N. and Sharma, P.K. (2020). *Prayogik Bhoogol*. (in Hindi). Jaipur: Rawat Publications.
- Monkhouse, F.J. and Wilkinson, H.R. (1971). *Maps and Diagrams*. London: Methuen.
- Robinson A. H. (2009). *Elements of Cartography*. New York: John Wiley and Sons.
- Sarkar, A. (2015). *Practical Geography: A systematic approach*. New Delhi: Orient Black Swan Private Ltd.
- Sharma, J. P. (2020). *Prayogtmak Bhugol ki Rooprekha*. (in Hindi). Meerut: Rastogi Publications.
- Singh, R. L. and P. K. Dutta, (2012). *Prayogatmak Bhugol*. (in Hindi). Allahabad: Central Book Depot.
- Singh R. L. and Rana P. B. Singh (1999). *Elements of Practical Geography*. (in Hindi). New Delhi: Kalyani Publishers.
- Taylor, D.R.F. (1985). *Education and training in contemporary Cartography*. John Willey.



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B.A. Geography (Single Major) (Semester-IV) Syllabus

(as per NEP 2020 w.e.f. session 2024-25)

INTRODUCTORY CLIMATOLOGY

Course Code: CC-A10 (Theory: Core Paper)

Programme/Class: B.A. Single Major Year: 2 Semester: IV Credit: 04 (3+1+0) L+T+P Hrs/Week	Total Marks:	100
Examination Time: 3 Hours	End Semester Exam:	70 Marks
Course Outcome: - CO1: Understand the Elements of Climate, different Atmospheric Phenomena and Climate Change. CO2: Learn the interaction between the Atmosphere and the Earth's Surface. Understand the importance of the Atmospheric Pressure and Winds. CO3: To analyze the Dynamics of the Earth's Atmosphere and Global Climate. Assessing the Role of Man in Global Climate Change. CO4: Learn to associate Climate with other Environmental and Human Issues. Approaches to Climate Classification.	Internal Assessment: Attendance Assignment Sessional Exam	30 Marks 5 5 20
Note: The question Paper will have five units. The first unit having question no. 1 shall be compulsory and shall contain seven (7) short answer type/ MCQ questions (having two (2) marks of each question) covering the entire syllabus. The remaining four units of question paper shall contain two essay type questions (having Fourteen (14) marks of each question) from each unit of the syllabus. Candidate(s) are required to attempt one question from each unit. All questions carry equal marks.		

UNIT-I

Weather and Climate: Elements and Control Type; Atmospheric Composition and Structure: Insolation and Temperature: Variation with Altitude, Latitude and Season, Factors and Distribution, Heat Budget, Temperature Inversion.

UNIT-II

Atmospheric Pressure and Winds: Pressure- Measurement, Horizontal and Vertical distribution, Shifting of Pressure Belt; Winds: Planetary, Seasonal and Local Winds, Mechanism of Monsoon, Jet Streams, El-nino, La-nina.

UNIT-III

Atmospheric Disturbances: Evaporation; Humidity, Forms of Condensation: Fog and Clouds; Precipitation; Fronts and Air Masses: Concept and Classification; Tropical and Extra Tropical Cyclones and Anticyclones.

UNIT-IV

Climatic Classification and Issues: Classification of Koppen and Thornthwaite; Climatic Issues: Climate Changes, Global Warming, Green House Effect, Heat Waves and Urban Heat Island.



Suggested Readings:

- Barry, R.G. and Chorely, R.J. (Ed.). *Atmosphere, weather and climate*. London: Methuen & Co. Ltd.
- Collins, J.M. (2014). *Climatology*. Oxford Press.
- Critchfield, H.J. (Rp.2010). *Climatology*. New Delhi: Prentice Hall of India.
- Critchfield, H.J. (1987). *Samanya Jalvayu Vigyan* (Translated in Hindi by Yashwant Govind Joshi). Bhopal: Madhya Pradesh Hindi Grantha Acadmy.
- Das, P.K. (1984). *The Monsoons*. New Delhi: National Book Trust.
- Lal, D.S. (2016). *Climatology* (in Hindi/Eng). Allahabad: Sharda Pustak Bhawan.
- Oliver, J. E. and Hidore, J. J. (2003). *Climatology: An atmospheric science*. Delhi: Pearson Education.
- Riehl, H. (1968). *Introduction to Atmosphere*. New York: McGraw Hill.
- Robinson, P.J. and Henderson, Sellers (1986). *Contemporary Climatology*. London: Longman.
- Singh, Savindra (2005). *Climatology*. Allahabad: Prayag Pustak Bhawan.
- Trewartha, G.T. (1980). *Introduction to Climate*. New York: McGraw Hill.



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B.A. Geography (Single Major) (Semester-IV) Syllabus

(as per NEP 2020 w.e.f. session 2024-25)

STATISTICAL METHODS IN GEOGRAPHY

Course Code: CC-A11 (Theory: Core Paper)

Programme/Class: B.A. Single Major Year: 2 Semester: IV Credit: 04 (3+1+0) L+T+P Hrs/Week	Total Marks:	100
Examination Time: 3 Hours	End Semester Exam:	70 Marks
Course Outcome: - CO1: Understand the Significance of Statistics in Geography. CO2: Recognize the Importance and Application of Statistics in Geography. CO3: Interpret Statistical Data for a Holistic understanding of Geographical Phenomena. CO4: Understand the Significance of Correlation and Regression.	Internal Assessment: Attendance Assignment Sessional Exam	30 Marks 5 5 20
Note: The question Paper will have five units. The first unit having question no. 1 shall be compulsory and shall contain seven (7) short answer type/ MCQ questions (having two (2) marks of each question) covering the entire syllabus. The remaining four units of question paper shall contain two essay type questions (having Fourteen (14) marks of each question) from each unit of the syllabus. Candidate(s) are required to attempt one question from each unit. All questions carry equal marks.		

UNIT-I

Statistics: Meaning, Significance in Geography, Data, Type, Organization, Tabulation, method of Classification, Frequency Distribution and Data Series, Graphical Representation (Histogram, Frequency Polygon and Ogive).

UNIT-II

Measures of Central Tendency: Mean, Median and Mode; Partition Values: Quartile, Decile and Percentile; Measures of Dispersion: Range, Mean deviation, Quartile deviation and Standard deviation; Coefficient of Variation.

UNIT-III

Types of Distribution: Normal Distribution and its Characterizes; Theory of Sampling: Types, Significance and Methods.

UNIT-IV

Bivariate Analysis: Scatter Diagram; Correlation: Karl Pearson's Correlation Coefficient and Spearman's Rank Correlation; Casual relationship, Regression and its Characteristics.

Suggested Readings:

- Ebdon, D. (1983). *Statistics in Geography: A Pratical Approach*. London: Blackewell.
- Gregory, S. (1978). *Statistical Methods and the Geographer*. London: Longman.
- Gupta, S.P. (2021). *Statistical Methods*. New Delhi: Sultan Chand and Sons.
- Mahmood, A. (2020). *Statistical Methods in Geographical Studies*. New Delhi: Rajesh Publications,
- Mathews, J.A. (1987). *Quantitative and Statistical Approaches to Geography*. Pergamon: Oxford.
- Pal, S.K. (1998). *Statistics for Geoscientists; Techniques and Applications*. New Delhi: Concept Publishing Company.
- Peter, J. Taylor (1977). *Quantitative Methods in Geography*. Boston: Houghton Mifflin Company.
- Robert, Hammond and Patrik, Mc., Cullagh (1974). *Quantitative Methods in Geography*. Clarendon Press Oxford.

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B.A. Geography (Single Major) (Semester-IV) Syllabus

(as per NEP 2020 w.e.f. session 2024-25)

STATISTICAL METHODS IN GEOGRAPHY

Course Code: CC-A12(Practical: Core Paper)

Programme/Class: B.A. Single Major Year: 2 Semester: IV Credit: 04 (0+0+8) L+T+P Hrs/Week		Total Marks	100
Time: 4 Hours	PE	End Semester Practical Exam:	70 Marks
Course Outcome: - CO1: Learn the importance of use of data in Geography. CO2: Know about different types of diagrams. CO3: Learn to use Tabulation of Data and Gain knowledge about Association and Correlation. CO4: Gain knowledge about Association and Correlation.	PI	Internal Assessment: Attendance Practical assignment	30 Marks 5 25
Note: The question paper would be set from the syllabus covering the full content. The question paper for the written examination (4 hours duration) shall be made by the external examiner in assistance with the internal examiner. The answer books would be evaluated by the external examiner on the day of examination. The question paper in this course will be divided into two parts. Part-I will consist of 8 short answer type questions carrying 1 mark each. Part-II will consist of 8 Choice based descriptive (long answer type) questions/exercises from the entire syllabus and carrying 8 marks each. Students will have to answer any 4 questions/exercises.			

- Sources of Data: Tally Bar,
- Construction of Frequency distribution Table,
- Data Series Inclusive and Exclusive:
- Graphical representation of Frequency Distribution Table:
 - Bar graph,
 - Line graph,
 - Histogram,
 - Frequency Polygon
 - Ogive.
- Centographic Techniques:
 - Mean Centre,
 - Median Centre
 - Standard distance;
- Measures of Inequality: Location Quotient,
- Concentration and Dispersion
(Nearest Neighbor Analysis; Sopher's index of Disparity, Dissimilarity Index)



Distribution of Marks: In Practical Paper, the marks would be divided as follows:

		Type	Marks and no. of questions	Marks	Marks	Total Marks
(a).	Written Examination	Part-I	1 Marks 8 questions	8	40	70
		Part-II	8 marks 4 questions	32		
		Viva-Voce				
	File Record				20	
(b).	Internal Assessment	Practical Assignment			25	30
		Attendance			5	
Total Marks =						100

Suggested Readings:

- Ebdon, D. (1983). *Statistics in Geography: A Practical Approach*. London: Blackwell.
- Gregory, S. (1978). *Statistical Methods and the Geographer*. London: Longman.
- Gupta, S.P. (2021). *Statistical Methods*. New Delhi: Sultan Chand and Sons.
- Mahmood, A. (2020). *Statistical Methods in Geographical Studies*. New Delhi: Rajesh Publications,
- Mathews, J.A. (1987). *Quantitative and Statistical Approaches to Geography*. Pergamon: Oxford.
- Pal, S.K. (1998). *Statistics for Geoscientists; Techniques and Applications*. New Delhi: Concept Publishing Company.
- Peter, J. Taylor (1977). *Quantitative Methods in Geography*. Boston: Houghton Mifflin Company.
- Robert, Hammond and Patrik, Mc., Cullagh (1974). *Quantitative Methods in Geography*. Clarendon Press Oxford.
- Yeates, Mauris (1974). *An Introduction to Quantitative Analysis in Human Geography*. New York: McGraw Hill.



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B.A. Geography (Single Major) (Semester-V) Syllabus

(as per NEP 2020 w.e.f. session 2024-25)

ECONOMIC AND RESOURCE GEOGRAPHY

Course Code: CC-A13 (Theory: Core Paper)

Programme/Class: B.A. Single Major Year: 3 Semester: V Credit: 04 (3+1+0) L+T+P Hrs/Week	Total Marks:	100
Examination Time: 3 Hours	End Semester Exam:	70 Marks
Course Outcome: CO1: To enable the learner to appreciate the role of geographical parameters in determining various economic activities. CO2: To understand the scope of economic geography, differentiating it from classification of economic activities. CO3: To enable the learner to develop the capability of analyzing transformation of economic activities with reference to space, time and diffusion of technology. CO4: To enable sensitized to concept and classification of resources and will learn conservation methods and techniques.	Internal Assessment: Attendance Assignment Sessional Exam	30 Marks 5 5 20
Note: The question Paper will have five units. The first unit having question no. 1 shall be compulsory and shall contain seven (7) short answer type/ MCQ question (having two (2) marks of each question) covering the entire syllabus. The remaining four units of question paper shall contain two essay type questions (having Fourteen (14) marks of each question) from each unit of the syllabus. Candidate(s) are required to attempt one question from each unit. All questions carry equal marks.		

UNIT-I

Introduction: Nature, scope, concepts and approaches to Economic Geography; Classification of Economic activities, Factors affecting location of economic activities in agriculture industry and services; August Losch's Theory, Weber's Theory of Industrial Location

UNIT-II

Natural Resources: Nature, Scope, Concept and Significance of Geography of Resource; Classification of Resources; Zimmermann's Primitive and Advance Models of Natural Resource Process; Conservation and Management of Natural Resources.

UNIT-III

Economic activities: Contemporary agriculture, Agro-based Industry, SEZ and Technology Parks; Pharmaceutical & Wellness Industry and IT enabled Services industry.

UNIT-IV

Globalization of Economic activities: Globalization, Liberalization, E-commerce, Gig economy (selected case studies).



Suggested Readings:

- Anderson, William P. (2012). *Economic Geography*. New York: Routledge.
- Broadford, M.G. and Kent, W.A. (1977). *Human Geography: Theories and their Application*. Oxford University Press.
- Gautam, A. (2010). *Advanced Economic Geography*. Allahabad: Sharda Pustak Bhawan.
- Gautam, Alka, (2010). *Aarthik Bhugol Ke Mool Tatav* (Hindi). Allahabad: Sharda Pustak Bhavan.
- Hamilton, I. (1992). *Resources and Industry*. New York: Oxford University Press.
- Haroon, M. (2005). *Economic Geography* (Hindi). Gorakhpur: Vasundhara Prakasan.
- Haroon, Mohamad (2007). *Geography of Resources*. (in Hindi). Gorakhpur: Vasundhara Parkashan.
- Hartshorne, T. A. and Alexander, J. W. (2001). *Economic Geography*. New Delhi: Prentice Hall of India.
- Hudson, R. (2005). *Economic Geography*. New Delhi: Sage Publication.
- Jones, C. F. and Darkenwald, G. G. (1965). *Economic Geography*. New York: The Macmillan and Company.
- Knox, P. (2003). *The Geography of World Economy*. London: Arnold.
- Losch, A. (1954). ***The Economics of Location***. London: Yale University Press.
- Misra. H.N. (2014). *Managing Natural Resources Focus on Land and Water*. New Delhi: Prentice Hall.
- Rostow, W.W. (1991). ***The Stages of Economic Growth: A Non-Communist Manifesto***. London: Cambridge University Press.
- Saxena, H.M. (2013). *Economic Geography*. Jaipur: Rawat Publications.
- Wheeler, J.O. and Muller, P.O. (1985). *Economic Geography*. New York: John Wiley and Sons.
- Zimmermann, E. W. (1951). *World Resources and Industries*. New Delhi: Harper and Brothers.

Gurugram University, Gurugram, Haryana (India)

B.A. Geography (Single Major) (Semester-V) Syllabus

(as per NEP 2020 w.e.f. session 2024-25)

REGIONAL GEOGRAPHY OF ASIA

Course Code: CC-A14 (Theory: Core Paper)

Programme/Class: B.A. Single Major Year: 3 Semester: V Credit: 04 (3+1+0) L+T+P Hrs/Week	Total Marks:	100
Examination Time: 3 Hours	End Semester Exam:	70 Marks
Course Outcome: CO1: Understand the concept of geographic realms and regions, and analyze major physical features such as relief, climate, drainage, vegetation, soil, and resources. CO2: Examine population characteristics including growth, distribution, density, and settlement types and patterns. CO3: Evaluate key economic activities such as agriculture, industries and their role in regional development. CO4: Evaluate key economic activities such as trade, transport, and ports and their role in regional development.	Internal Assessment:	30 Marks
		Attendance 5 Assignment 5 Sessional Exam 20
Note: The question Paper will have five units. The first unit having question no. 1 shall be compulsory and shall contain seven (7) short answer type/ MCQ questions (having two (2) marks of each question) covering the entire syllabus. The remaining four units of question paper shall contain two essay type questions (having Fourteen (14) marks of each question) from each unit of the syllabus. Candidate(s) are required to attempt one question from each unit. All questions carry equal marks.		

UNIT-I

Regional geography: Geographic realms and regions, criteria for realms and regions, world geographic realms.

UNIT-II

Physical aspect: Relief, Drainage, Climate, Natural Vegetation, Soil and Resources.

UNIT-III

Populations: Growth, Distribution & Density; Settlement: Types and Patterns.

UNIT-IV

Economy: Agriculture, Industries, Trades, Transports, Port. Regional backwardness: criteria, strategy and programs for backward area development.



Suggested Readings:

- Bear, Ileen (2021), Geography of Asia, Casper (Wyoming, US): Writat Publishing.
- Chandana, R.C. (2022). *Regional Planning and Development*. (in Hindi/Eng). New Delhi: Kalyani Publication
- Gautam, Alka (2024) Regional Geography of World (in Hindi/Eng.), Prayagraj (UP): Sharda Pustak Bhawan.
- Mamoria, C.B. and Joshi, R. (2022), Geography of Asia (in Hindi), Agra: Sahitya Bhawan Publications.
- Mamoria, C.B. and Sisodia, M.S. (2021), World Regional Geography (in Hindi), Agra: SBPD Publishing House.
- Maurya, S.D. (2021) World Regional geography (in Hindi), Prayagraj (UP): Pravalika Publications.
- Mishra, Niranjana (1987) Regional Geography (in Hindi), Jaipur: Rajsthan Hindi Grantha Academy, open access book, www.archive.org.
- Rai, Gayatri (2016) Regional Geography of World (in Hindi), Kolkata: Wisdom Books.
- Saxena (2020) Regional Geography of World (in Hindi), Meerut (UP): Rastogi Publications.
- Sharma, Raj Kumar (2018) World Regional Geography (in Hindi), New Delhi: Himanshu Publications.
- Stamp, Dudley (2018), Asia- A Regional and Economic Geography, Delhi: AITBS Publishers.
- Tirtha, R. (2001), Geography of Asia, Jaipur: Rawat Publications.
- Tiwari, P.N. (2011), Geography of Asia, New Delhi: Vital Publications.
- Wheeler, Jesse H. Et. al. (1976) Regional Geography of the World, Mexico City: Thomas Learning, Open access book, www.archive.org.

Gurugram University, Gurugram, Haryana (India)
B.A. Geography (Single Major) (Semester-V) Syllabus
 (as per NEP 2020 w.e.f. session 2024-25)
MAP PROJECTIONS AND CONTEMPORARY TECHNIQUES
OF CARTOGRAPHY
 Course Code: CC-A15 (Practical: Core Paper)

Programme/Class: B.A. Single Major Year: 3 Semester: V Credit: 04 (0+0+8) L+T+P Hrs/Week		Total Marks	100
Time: 4 Hours	PE	End Semester Practical Exam:	70 Marks
Course Outcome: CO1: Understand the principles and types of map projections (zenithal, conical, cylindrical, and conventional) and analyze their applications and limitations. CO2: Gain knowledge of the fundamentals of cartography, including representation of drainage features. CO3: Gain knowledge of the climatic data using techniques like isotherms, isobars and isohyets. CO4: Interpret climatic graphs (climographs, hythergraphs, wind roses) and analyze weather charts of India for different seasons	PI	Internal Assessment: Attendance Practical assignment	30 Marks 5 25
Note: The question paper would be set from the syllabus covering the full content. The question paper for the written examination (4 hours duration) shall be made by the external examiner in assistance with the internal examiner. The answer books would be evaluated by the external examiner on the day of examination. The question paper in this course will be divided into two parts. Part-I will consist of 8 short answer type questions carrying 1 mark each. Part-II will consist of 8 Choice based descriptive (long answer type) questions/exercises from the entire syllabus and carrying 8 marks each. Students will have to answer any 4 questions/exercises.			

- Map projections:
 - Cylindrical: Simple Cylindrical, Equal Area & Mercator's;
 - Conical: One Standard Parallel, Two Standard Parallels & Bonne's;
 - Zenithal: Gnomonic, Stereographic, Equidistant & Equal Area;
 - Conventional: Sinusoidal and Mollweide.
- Fundamentals of Cartography: Definition and Scope of Cartography;
- Representation of Drainage:
 - Stream order,
 - Drainage density,
 - Drainage texture,
 - Drainage basin;
- Representation of climatic data using isotherms, isobars and isohyets;
- Climographs and hythergraphs;
- Interpretation of Weather Charts of India for January and July.

Distribution of Marks: In Practical Paper, the marks would be divided as follows:

		Type	Marks and no. of questions	Marks	Marks	Total Marks
(a).	Written Examination	Part-I	1 Marks 8 questions	8	40	70
		Part-II	8 marks 4 questions	32		
		Viva-Voce				
	File Record				20	
(b).	Internal Assessment	Practical Assignment			25	30
		Attendance			5	
Total Marks =						100

Suggested Readings:

- Khullar, D.R. (2015). *Practical Geography*. Ludhiana: Kalyani Publishers.
- Mishra, R.N. and Sharma, P.K. (2020). *Prayogik Bhoogol*. (in Hindi). Jaipur: Rawat Publications.
- Monkhouse, F.J. and Wilkinson, H.R. (1971). *Maps and Diagrams*. London: Methuen.
- Robinson A. H. (2009). *Elements of Cartography*. New York: John Wiley and Sons.
- Sarkar, A. (2015). *Practical Geography: A systematic approach*. New Delhi: Orient Black Swan Private Ltd.
- Sharma, J. P. (2020). *Prayogtmak Bhugol ki Rooprekha*. (in Hindi). Meerut: Rastogi Publications.
- Singh, R. L. and P. K. Dutta, (2012). *Prayogatmak Bhugol*. (in Hindi). Allahabad: Central Book Depot.
- Singh R. L. and Rana P. B. Singh (1999). *Elements of Practical Geography*. (in Hindi). New Delhi: Kalyani Publishers.
- Taylor, D.R.F. (1985). *Education and training in contemporary Cartography*. John Willey.

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B.A. Geography (Single Major) (Semester-VI) Syllabus

(as per NEP 2020 w.e.f. session 2024-25)

INTRODUCTION TO GEO-SPATIAL TECHNOLOGY

Course Code: CC-A16 (Theory: Core Paper)

Programme/Class: B.A. Single Major Year: 3 Semester: VI Credit: 04 (3+1+0) L+T+P Hrs/Week	Total Marks:	100
Examination Time: 3 Hours	End Semester Exam:	70 Marks
Course Outcome: CO1: Understand the concepts of photogrammetry and remote sensing, including aerial photographs, electromagnetic radiation, and image interpretation techniques. CO2: Explain the principles and applications of GPS & coordinate systems. CO3: Explain the satellite constellations, and their significance in geographical studies. CO4: Apply the fundamentals of GIS, including data types, data formats (raster and vector), and perform basic analysis and interpretation for geographical applications.	Internal Assessment: Attendance Assignment Sessional Exam	30 Marks 5 5 20
Note: The question Paper will have five units. The first unit having question no. 1 shall be compulsory and shall contain seven (7) short answer type/ MCQ questions (having two (2) marks of each question) covering the entire syllabus. The remaining four units of question paper shall contain two essay type questions (having Fourteen (14) marks of each question) from each unit of the syllabus. Candidate(s) are required to attempt one question from each unit. All questions carry equal marks.		

UNIT - I

Photogrammetry: History and development, Definition and meaning; Aerial photographs-types, characteristics, Ground coverage and overlapping; stereoscopes and stereoscopic vision; Elements of image interpretation.

UNIT - II

Remote Sensing technique: Meaning, basic principles, relevance in Geography; Electromagnetic radiation; Electromagnetic spectrum; interaction of EMR with atmosphere and Earth's surface features; Remote sensing data; Remote sensing applications in different fields.

UNIT - III

GPS: Introduction to Global Positioning System, Coordinate Systems, GPS Satellite Constellations, GPS Segments; IRNSS location system; Application and Significance of GPS; Satellite: Swath, Orbits- Sun Synchronous and Geostationary.

UNIT - IV

Geographic Information System (GIS): concepts, Components, Functions in GIS - data input, storage, maintenance, manipulation, analysis and output; GIS data: spatial and non-spatial data; Data formats - raster and vector; Digital Image; Integration of Remote Sensing, GPS and GIS; Applications of GIS in Geographical studies.



Suggested Readings:

- Bhatta, B. (2021). *Remote Sensing and GIS*. New Delhi: Oxford University Press.
- Chauhan, T.S. (2024). *Geospatial Technology fundamentals and applications*. New Delhi: Scientific Publishers.
- Chaunial, D.D. (2021). *Principles of Remote Sensing and Geographical Information System*. (Hindi). Allahabad: Sharda Pustak Bhawan.
- Doberstein, Dan (2011). *Fundamentals of GPS Receivers: A Hardware Approach*. New York: Springer.
- Fazal, Shahab (2008). *GIS Basics*. New Delhi: New Age International Publishers.
- Ganesh, A. (2006). *Applications of Geospatial Technology*. Delhi: Satish Serial Publishing House.
- Guha, Pardeep (2013). *Remote Sensing for the Beginner*. New Delhi: East West Press.
- Joseph, George (2018). *Fundamental of Remote Sensing*. Hyderabad: University's Press (India) Pvt. Ltd.
- Nar, Dharna and Kotecha, R. (2024). *Drone Technology for Beginners*. New Delhi: Ane Books Pvt. Ltd. And Drone School India.
- Panda, B.C. (2008). *Remote Sensing: Principles and Applications*. New Delhi: Viva Books Pvt. Ltd.
- Pritvish Nag, and M. Kudrat (1998). *Digital Remote Sensing*. New Delhi: Concept Publishing Company.
- Rampal, K.K. (1999). *Handbook of Aerial Photography and Interpretation*. New Delhi: Concept Publishing Co.
- Reddy, Anji, M. (2012). *Textbook of Remote Sensing and Geographical Information Systems*. Hyderabad: BSP B.S. Publications.
- Sharma, R.K.(2010). *Air Photos Interpretation, Remote Sensing and Geographical Information System*. Udaipur: Himanshu Publications.
- Siddiqui, M.A. (2011). *Introduction to Geographical Information Systems*. Allahabad: Sharda Pustak Bhawan.

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B.A. Geography (Single Major) (Semester-VI) Syllabus

(as per NEP 2020 w.e.f. session 2024-25)

ELEMENTS OF POPULATION GEOGRAPHY

Course Code: CC-A17 (Theory: Core Paper)

Programme/Class: B.A. Single Major Year: 3 Semester: VI Credit: 04 (3+1+0) L+T+P Hrs/Week	Total Marks:	100
Examination Time: 3 Hours	End Semester Exam:	70 Marks
Course Outcome: - CO1: Understand the concept, nature, and scope of population geography. CO2: Understand the sources of population data such as census, vital statistics, and surveys. CO3: Analyze population growth, distribution, and dynamics including fertility, mortality, migration, and evaluate major theories like Malthusian Theory and Demographic Transition. CO4: Assess population-related issues and policies, including gender issues, ageing, human trafficking, health concerns and India's population policy.	Internal Assessment: Attendance Assignment Sessional Exam	30 Marks 5 5 20
Note: The question Paper will have five units. The first unit having question no. 1 shall be compulsory and shall contain seven (7) short answer type/ MCQ questions (having two (2) marks of each question) covering the entire syllabus. The remaining four units of question paper shall contain two essay type questions (having Fourteen (14) marks of each question) from each unit of the syllabus. Candidate(s) are required to attempt one question from each unit. All questions carry equal marks.		

UNIT-I

Introduction to Population Geography: Nature, scope, concept and approaches of Population geography, Demography and population Geography; Sources of Population Data: Census, Vital Statistics and National Sample Survey, National Family Health Survey.

Unit-II

Population Growth: growth, causes and consequence, trends of population growth; factors affecting population distribution; Theories of Population growth: Malthusian theory, Theory of Demographic Transition.

Unit-III

Population Dynamics: Fertility, Mortality and Migration, Composition and Religion/Caste/ Race etc.

Unit-IV

Population Problems and Policies: Gender issues: Ageing, crime against women, Human trafficking, Child Abuse; HIV/AIDS; relationship between population and development, World's Population Policy with spatial references of India.



Suggested Readings:

- Bansal, S.C. (2010). *Urban Geography (Hindi/Eng)*. Meerut: Meenakshi Prakashan.
- Beall, Jo and Sean Fox. (2009). *Cities and Development*. London: Routledge.
- Chandana, R.C. (2015). *Geography of Population (Hindi/Eng)*. New Delhi: Kalyani Publishers.
- Ghosh, B.N. (1985). *Fundamentals of Population Geography*. New Delhi: Sterling Publishers Pvt. Ltd.
- Hall, Tim and Heather Barrett (2012). *Urban Geography*. London: Routledge.
- Hassan, M.I. (2007). *Population Geography*. Jaipur: Rawat Publication.
- Maurya, S.D. (2022). *Population Geography (Hindi)*. Allahabad: Sharda Pustak Bhawan.
- Misra, H.N. (1987). *Rural Geography: Contributions to Indian Geography*. New Delhi: Heritage Publishers.
- Panda, B.P. (2002). *Population Geography (Hindi)*. Bhopal: Hindi Granth Academy.
- Ramachandran, R. (1989). *Urbanisation and Urban Systems in India*. New Delhi: Oxford.
- Tripathi, R.D. (2005). *Population Geography*. Gorakhpur: Vasundhara Parkashan.



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B.A. Geography (Single Major) (Semester-VI) Syllabus

(as per NEP 2020 w.e.f. session 2024-25)

AERIAL PHOTOGRAPHS AND FIELD WORK

Course Code: CC-A18 (Practical: Core Paper)

Programme/Class: B.A. Single Major Year: 3 Semester: VI Credit: 04 (0+0+8) L+T+P Hrs/Week		Total Marks	100
Time: 4 Hours	PE	End Semester Practical Exam:	70 Marks
<u>Course Outcome:</u> - CO1: Understand the principles, types and geometry of aerial photographs and apply techniques such as scale determination, stereoscopic vision and height measurement for spatial analysis. CO2: Develop skills in preparation and interpretation of aerial photograph products including stereograms, stereo triplets, mosaics and index maps and identify natural and cultural features for mapping and urban studies. CO3: Apply fieldwork techniques by collecting primary and secondary data using observation, interviews, questionnaires and schedules, while maintaining ethical standards in geographical research. CO4: Design and execute research projects by identifying research problems, preparing research design, analyzing data and presenting findings through structured report writing.	PI	Internal Assessment: Attendance Practical assignment	30 Marks 5 25
<u>Note:</u> 1. The students have to prepare two Practical files: One Practical file from Part-A on Geographical Practical Sheets and the Second will be computer based comprehensive practical file from Part-B. 2. The question paper would be set from the syllabus covering the full content. The question paper for the written examination (4 hours duration) shall be made by the two external examiners in assistance with the internal examiner (who generally would be the course teacher). The answer books would be evaluated by the external and internal examiner on the day of examination. The question paper in this course will be divided into two parts. Part-I will consist of 8 (eight) short answer type questions carrying 1 (one) mark each. Part-II will consist of 8 (eight) Choice based descriptive (long answer type) questions/exercises from all units and carrying 8 (eight) marks each by selecting equal questions from each unit. Students will have to answer 4 (four) questions/exercises by selecting 1 (one) from each unit on mandatory basis.			

PART-A

Aerial Photographs: Types, Geometry, methods of determining scale, Stereo Vision Test: Orientation of Pocket & Mirror Stereoscope; Measurement of height of an object on single vertical aerial photograph; Preparation of Index map; Preparation of stereogram, stereo triplet and mosaic from aerial photographs; Interpretation of



Aerial photographs: Identification, mapping and interpretation of Natural and Cultural features, Urban studies on aerial photographs: Change detection, Residential area study.

PART-B

Field Work: Role, Value and Ethics in Geographical studies; Source of Data: Primary and Secondary; Collection of data: methods of primary data collection- Observation method, interview method, through questionnaire, through schedule; Processing and analysis of data.

Field Work and Report writing: Identification of research problem; data collection through field visit; Preparing research design- aims and objectives, methodology, analysis, interpretation and writing of report.

Guidelines of Field Work

1. At the Commencement of sixth Semester students are required to conduct a field survey on any Physical- Mountains, Glaciers, Plains, Plateau, Deserts and Coastal; Social-Economic & Cultural of his /her interest area in consultation with the teacher incharge to conduct Field Work Survey.
2. The students shall visit content & research objectives based out-campus field work survey of the study area/place and collect data for the comprehensive Geographical study under guidance and supervision of teacher in charge, along with supporting accompanying staff Viz. Lab Attendant etc.
3. There shall be a teacher in-charge on a group of 20 students. They shall be paid TA/ DA as per Govt. /university rules. Duration of the field work survey study will not be exceeding 10 days in normal circumstances.
4. The data collection may be through Observation, Interview and Questionnaire methods; Lab Testing etc. In the report writing the components will be as follows: Introduction, Statement of the Problem, aims and objectives, Significance of study, Study Area with key map, Data Collection and Methodology, Results (with graphs, diagrams, maps & images) and Analysis, Conclusion and Suggestions, Annexure and References/Bibliography (Harvard style) etc.
5. Submission: The students shall submit three typed copies (after the Plagiarism checking) of Teacher-in charge Field Survey Report (10,000 to 20,000 words) in dissertation format in the department after the signing of concerned supervisor and authorities.
6. Page size A-4, 1.5 spacing between lines, font- Times New Roman, font size 12 main body typing.

Distribution of Marks: In Practical Paper, the marks would be divided as follows:

		Type	Marks and no. of questions	Marks	Marks	Total Marks
(a).	Written Examination	Part-I	1 Marks 8 questions	8	40	70
		Part-II	8 marks x 4 Exercise/Questions	32		
	Viva-Voce				10	
	File Record	Practical File-I (from Unit-I) Practical File-II (from Unit-II)			10 10	
(b).	Internal Assessment	Practical Assignment			25	30
		Attendance			5	
Total Marks =						100

Suggested Readings:

- Ahuja, Ram (2003). *Social Survey and Research* (Hindi). Jaipur: Rawat Publications.
- Bhatta, B. (2021). *Remote Sensing and GIS*. New Delhi: Oxford University Press.
- Chaunial, D.D. (2021). *Principles of Remote Sensing and Geographical Information System*(Hindi). Allahabad: Sharda Pustak Bhawan.
- Gideon Sjoberg and Roger Nett (1992). *A Methodology for Social Research*. Jaipur: Rawat Publications.
- Harvey, David (1969). *Explanation in Geography*. London: Edward Arnold.
- Kothari, C.R. (2004). *Research Methodology: Methods and Techniques*. New Delhi: New Age International Publishers.
- Kumar, Ranjit (2005). *Research Methodology: Step by Step Guide for Beginners*. Pearson, Australia.
- Misra, H.N. and Singh, Vijai P. (2002). *Research Methodology in Geography: Social, Spatial and Policy Dimensions*. Jaipur: Rawat Publications.
- Misra, R.P. (2015). *Research Methodology: A handbook*. New Delhi: Concept Publishing Company.
- Nar, Dharna and Kotecha, R. (2024). *Drone Technology for Beginners*. New Delhi: Ane Books Pvt. Ltd. And Drone School India.
- Paul Oliver (2004). *Writing your Thesis*. New Delhi: Vistar Publication.
- Rampal, K.K. (1999). *Handbook of Aerial Photography and Interpretation*. New Delhi: Concept Publishing Co.
- Sharma, R.K.(2010). *Air Photos Interpretation, Remote Sensing and Geographical Information System*. Udaipur: Himanshu Publications.
- Stoddard, R. H. (1982). *Field Techniques and Research Methods in Geography*. Kendall/Hunt.
- Wolcott, H. (1995). *The Art of Fieldwork*. California: Alta Mira Press.
- Yeswanth, I.V.S. and Kumar, A.V.S.S. (2024). *Fundamentals of Drone Technology*. Bilaspur (CG): Authers Click Publishing.