

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

**Scheme UG A1:
Undergraduate Program (UG) B.A.: Multidisciplinary**

BA GEOGRAPHY (MULTIDISCIPLINARY)



(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

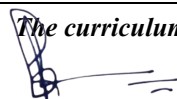
Scheme of Programme Scheme UG A1:

Undergraduate Program: Multidisciplinary (Geography Subject)

CORE COURSES

Semester	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)														
Semester-1	CC-A1	Fundamentals of Physical Geography (Theory)		3	-	-	3	-	-	4	25	50	-	-	75
		Maps and Scales (Practical)		-	-	2	-	-	1		-	-	5	20	25
Semester-2	CC-A2	Geography of India (Theory)		3	-	-	3	-	-	4	25	50	-	-	75
		Graphs and Diagrams (Practical)		-	-	2	-	-	1		-	-	5	20	25
Semester-3	CC-A3	Human Geography (Theory)		3	-	-	3	-	-	4	25	50	-	-	75
		Map Projection and its construction (Practical)		-	-	2	-	-	1		-	-	5	20	25
Semester-4	CC-A4	Principles of Economic Geography (Theory)		3	-	-	3	-	-	4	25	50	-	-	75
		Representation of Relief and Landforms (Practical)		-	-	2	-	-	1		-	-	5	20	25
Note: Internship (4 Credit=100 Marks) is to be done during summer break after 4 th Semester; Marks will be added in 5 th Semester.															
Semester-5	CC-A5	Introduction of Geo-Spatial Technology in Geography (Theory)		3	-	-	3	-	-	4	25	50	-	-	75
		Aerial Photograph and its interpretation (Practical)		-	-	2	-	-	1		-	-	5	20	25
Semester-6	CC-A6	Systematic and Regional Geography of Haryana (Theory)		3	-	-	3	-	-	4	25	50	-	-	75
		Field Survey and Report Writing (Practical)		-	-	2	-	-	1		-	-	5	20	25

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



MDC

Multidisciplinary Course from the department for pool of the Courses in the University (These courses are to be offered to students of different discipline/Subject)

Semester 1

Course Code	Course Title	Course ID	L	T	P	L	T	P	Credits	MARKS				
			(Hrs)			Credits				TI	TE	PI	PE	Total
MDC-1	Introduction to Geography		2	1	-	2	1	-	3	25	50	-	-	75

Semester 2

Course Code	Course Title	Course ID	L	T	P	L	T	P	Credits	MARKS				
			(Hrs)			Credits				TI	TE	PI	PE	Total
MDC-2	Man and Environment		2	1	-	2	1	-	3	25	50	-	-	75

Semester 3

Course Code	Course Title	Course ID	L	T	P	L	T	P	Credits	MARKS				
			(Hrs)			Credits				TI	TE	PI	PE	Total
MDC-3	General Geography of World		2	1	-	2	1	-	3	25	50	-	-	75



MIC

Minor Course from the department for pool of the Courses in the University

(These courses are offered by each department for students of other departments/same department to gain a broader understanding beyond the major discipline)

Semester 1

Course Code	Course Title	Course ID	L	T	P	L	T	P	Credits	MARKS				
			(Hrs)			Credits				TI	TE	PI	PE	Total
MIC-1	Bio-Geography		1	1	-	1	1	-	2	15	35	-	-	50

Semester 2

Course Code	Course Title	Course ID	L	T	P	L	T	P	Credits	MARKS				
			(Hrs)			Credits				TI	TE	PI	PE	Total
MIC-2	Urbanization in India		1	1	-	1	1	-	2	15	35	-	-	50

Semester 3

Course Code	Course Title	Course ID	L	T	P	L	T	P	Credits	MARKS				
			(Hrs)			Credits				TI	TE	PI	PE	Total
MIC-3	Socio-Cultural Geography		3	1	-	3	1	-	4	30	70	-	-	100

Semester 4

Course Code	Course Title	Course ID	L	T	P	L	T	P	Credits	MARKS				
			(Hrs)			Credits				TI	TE	PI	PE	Total
MIC-4	Geography of Trade and Transport		3	1	-	3	1	-	4	30	70	-	-	100

Semester 5

Course Code	Course Title	Course ID	L	T	P	L	T	P	Credits	MARKS				
			(Hrs)			Credits				TI	TE	PI	PE	Total
MIC-5	Geography of Tourism		3	1	-	3	1	-	4	30	70	-	-	100

Semester 6

Course Code	Course Title	Course ID	L	T	P	L	T	P	Credits	MARKS				
			(Hrs)			Credits				TI	TE	PI	PE	Total
MIC-6	Statistical Methods in Geography		3	1	-	3	1	-	4	30	70	-	-	100

Course Code	Course Title	Course ID	L	T	P	L	T	P	Credits	MARKS				
			(Hrs)			Credits				TI	TE	PI	PE	Total
MIC-7	Climate Change and Disaster Management		3	1	-	3	1	-	4	30	70	-	-	100



VOC

Vocation Course from the department for pool of the Courses in the University

(These courses are offered by each department for students of other departments/same department and is focused on practical work, preparing students for a particular skilled profession.)

Semester 4

Course Code	Course Title	Course ID	L	T	P	L	T	P	Credits	MARKS				
			(Hrs)			Credits					TI	TE	PI	PE
VOC-1	Map Reading and its Interpretation (Theory and Practical)		1	-	6	1	-	3	4	5	20	25	50	100

Semester 5

Course Code	Course Title	Course ID	L	T	P	L	T	P	Credits	MARKS				
			(Hrs)			Credits				TI	TE	PI	PE	Total
VOC-2	Weather Instruments and Geo-Spatial instruments in Geography (Theory and Practical)		1	-	6	1	-	3	4	5	20	25	50	100

Semester 6

Course Code	Course Title	Course ID	L	T	P	L	T	P	Credits	MARKS				
			(Hrs)			Credits				TI	TE	PI	PE	Total
VOC-3	Application of Economic and Population data in Geography (Theory and Practical)		1	-	6	1	-	3	4	5	20	25	50	100



SEC

Skill Enhancement Course from the department for pool of the Courses in the University

(These courses are offered by each department for students of other departments/same department and is designed to provide value-based and/or skill-based knowledge and should contain both theory and lab/hands-on/training/field work.)

Semester 1

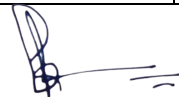
Course Code	Course Title	Course ID	L	T	P	L	T	P	Credits	MARKS				
			(Hrs)			Credits				TI	TE	PI	PE	Total
SEC-1	Surveying Methods in Geography (Theory and Practical)		2	-	2	2	-	1	3	15	35	05	20	75

Semester 2

Course Code	Course Title	Course ID	L	T	P	L	T	P	Credits	MARKS				
			(Hrs)			Credits				TI	TE	PI	PE	Total
SEC-2	Geographical Data collection Techniques (Theory and Practical)		2	-	2	2	-	1	3	15	35	05	20	75

Semester 6

Course Code	Course Title	Course ID	L	T	P	L	T	P	Credits	MARKS				
			(Hrs)			Credits				TI	TE	PI	PE	Total
SEC-3	Environmental Techniques in Geography (Theory and Practical)		2	-	2	2	-	1	3	15	35	05	20	75



Semester 8

Course Code	Course Title	Course ID	L	T	P	L	T	P	Credits	MARKS				
			(Hrs)			Credits				TI	TE	PI	PE	Total
SEC-4/ Field Training	Field Work and Report Writing (Practical)		-	-	8	-	-	4	4	-	-	30	70	100



AEC

Ability Enhancement Course from the department for pool of the Courses in the University

(These courses are offered by department of Indian and Foreign Languages for students of other departments/same department and leads to enhancement in the ability of learn Regional and foreign languages)

Semester 1

Course Code	Course Title	Course ID	L	T	P	L	T	P	Credits	MARKS				
			(Hrs)			Credits				TI	TE	PI	PE	Total
AEC-1	English Language and Communication: Level-1 OR हिंदीभाषाएव. सम्प्रेषण-1 OR संस्कृतभाषाएव. सम्प्रेषण-1								2					50

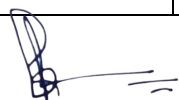
Semester 2

Course Code	Course Title	Course ID	L	T	P	L	T	P	Credits	MARKS				
			(Hrs)			Credits				TI	TE	PI	PE	Total
AEC-2	English Language and Communication: Level-2 OR हिंदीभाषाएव. सम्प्रेषण-2 OR संस्कृतभाषाएव. सम्प्रेषण-2								2					50

Semester 3

Course Code	Course Title	Course ID	L	T	P	L	T	P	Credits	MARKS				
			(Hrs)			Credits				TI	TE	PI	PE	Total
AEC-3	English Language and Communication: Level -3 OR हिंदीभाषाएव. सम्प्रेषण-3 OR संस्कृतभाषाएव. सम्प्रेषण-3								2					50

Semester 4



Course Code	Course Title	Course ID	L	T	P	L	T	P	Credits	MARKS				
			(Hrs)			Credits				TI	TE	PI	PE	Total
AEC-4	English Language and Communication: Level-4 OR हिंदीभाषाएव. सम्प्रेषण-4 OR संस्कृतभाषाएव. सम्प्रेषण-4								2					50



VAC

Value Added Course from the department for pool of the Courses in the University

(All the departments will offer value added course for semester 3 for the students of same or different departments. In the first year, students will study (i) Human Values and Ethics and (ii) Environmental Studies as value added course)

Semester 1

Course Code	Course Title	Course ID	L	T	P	L	T	P	Credits	MARKS				
			(Hrs)			Credits				TI	TE	PI	PE	Total
VAC-1	Human Values and Ethics OR Environmental Studies								2					50

Semester 2

Course Code	Course Title	Course ID	L	T	P	L	T	P	Credits	MARKS				
			(Hrs)			Credits				TI	TE	PI	PE	Total
VAC-2	Human Values and Ethics OR Environmental Studies								2					50

Semester 4

VAC-3

(Offered by the Department of Geography)

Course Code	Course Title	Course ID	L	T	P	L	T	P	Credits	MARKS				
			(Hrs)			Credits				TI	TE	PI	PE	Total
VAC-3	Field Survey and Report Writing on Environmental Issues (Theory and Practical)		1	-	2	1	-	1	2	5	20	5	20	50



INTERNSHIP

Internship: A student will inform and get approval from the Chairperson/Principal/Director of the Department/College/Institute before going for an internship. The internship will involve working with local industry (Government or Private organizations/Institutions), business establishments, artists, craft persons, or a professional (individual/organization). Student will submit a copy of the report (a hard copy and a soft copy in PDF) to the Department/College/Institute within 15 days after the completion of internship. A student has to submit a certificate of attendance and work done report from the organization/professional where at the internship was done. The evaluation of the internship shall be done by an internal examiner mainly on the basis of the report and viva-voce. Marks will be awarded by the internal examiner out of 100 marks. The internship will be governed by the prevailing rules of the University from time to time.

UG Ordinance Page no. 30

4.5 Summer Term: A summer term is for four to six weeks during summer break. Internship/apprenticeship/work-based vocational education and training can be carried out during the summer term.

UG Ordinance Page no. 2

4.6.5 Internship: A course requiring students to participate in professional employment- related activity or work experience or co-operative education activity with an entity external to the educational institution normally under the supervision of an employee of an organization or an individual professional. A key aspect of the internship is induction into actual, formal and organized work situations. Internship involves working with local industry (Government or Private Organizations), business establishments, artists, craft persons, etc. to provide opportunities for students to actively engage in on-site experiential learning.

#Four credits of internship earned by a student during summer internship after 2nd semester or 4th semester will be counted in 5th semester of a student who pursues 3 or 4 year UG Program without taking exit option.



Credit and Marking System as per UG Ordinance of GUG

Nature of Work	Course Credits	Contact hours per week	Contact hours per semester (15 weeks)
Lecture	01	01	15
Tutorial per paper	01	01	15
Practical, Seminar, Internship, field practice/project, or community engagement, etc.	01	02	30

Note: Tutorial batch size (UG programme: 20-25, PG Programme: 12-15)

The distribution of credits among the lectures/tutorial/practicum will be as follows:

Courses	Total Credits	L (Credits)	T (Credits)	P (Credits)	MARKS			
					TI	TE	PI	PE
Only Theory	4	3 (3 hrs)	1	-	30	70	-	-
	3	2 (2 hrs)	1	-	25	50	-	-
	2	1	1	-	15	35	-	-
Theory and Practicum	4	3 (3 hrs)	-	1 (2 hrs)	25	50	5	20
	4 (Where practical is dominant)	2 (2 hrs)	-	2 (4 hrs)	15	35	15	35
	3	2 (2 hrs)	-	1 (2 hrs)	15	35	5	20
	2	1	-	1 (2 hrs)	5	20	5	20
When Practicum is separate course	2	-	-	2 (4 hrs)	-	-	15	35
	3	-	-	3 (6 hrs)	-	-	25	50
	4	-	-	4 (8 hrs)	-	-	30	70
AEC/VAC	2	2 (2 hrs)			15	35	-	-
SEC	3	2 (2 hrs)		1 (2 hrs)	15	35	5	20
	2	1		1 (2 hrs)	5	20	5	20
DSEC	4	3 (3 hrs)		1 (2 hrs)	25	50	5	20
Minor/VOC	4	2 (2 hrs)		2 (4 hrs)	15	35	15	35
Internship	4	--	--	4 (8 hrs)			30	70

L= Lecture; T= Tutorial, P= Practicum; Ti= Theory Internal Assessment; TE= Theory End Semester Examination; PI= Practicum Internal; PE= Practicum End Semester examination



**Based on the scheme for the Under Graduate program:
Scheme UG A1: Undergraduate Program: Multidisciplinary
(Geography Subject)**

Conceptual: The goals of the Undergraduate programme: Multidisciplinary (Geography Subject) under the New Education Policy (NEP) 2020 are aligned with these programme outcomes and programme specific outcomes, which are anticipated to give students a broad assortment of skills and knowledge to succeed in the field of geography.

Program Outcomes (POs):

- i. Comprehensive Understanding: Students will demonstrate a systematic comprehension of the fundamental conception and techniques of geography across a range of geographic domains, such as field survey, map design, and representation of data by means of appropriate techniques.
- ii. Application of Geographical Concepts: Students will be able to make obvious the practical application of Geographical knowledge by applying Geographical concepts and supposition to real-world situations, such as field surveys and illustration of data by means of apposite modus operandi.
- iii. Enquiry aptitude: Assignments and survey components will make student to acquire palpable conceptualization & sophisticated aptitude for investigation and explanation.
- iv. Critical Thinking and Problem-Solving: Students will develop their decisive thoughts aptitude to observe convoluted geographical phenomena and put forth feasible answers, more than ever when it comes to resource conservation and climate change.
- v. Decent study monitoring: As accentuated by specialized studies, students will follow decent standard in environmental exploration, guaranteeing honesty and accountability in survey.

Program Specific Outcomes (PSOs):

- i. Students will show evidence of competency in field survey, assessment methods, and the decent and correct use of standardized tool to assess geographical information.
- ii. Students will gain acquaintance on how to carry out meticulous, in-depth field surveys, collect, assess and demonstrate data in a precise manner using the appropriate tools, such as maps, graphs, and diagrams. It will polish student's abilities to identify geographical features and appraise challenge to craft preservation strategy for the wellbeing and sustained progression of humankind.
- iii. In order to support rational view in the face of environmental concern, students will be prepared to handle the environmental effects of climate change, global warming, resource exhaustion, mapping the issues and application of potential of geographical tools.

First of all every curriculum at Higher Education Institute should aimed to prepare students for society at large. The Gurugram University Gurugram gives an unmarked point of view to all of its undergraduate courses since it views entire curriculum in the best wellbeing of students. Throughout the complete Undergraduate programme, it incorporates a Learning Outcome-based Curriculum Framework (LOCF). The LOCF process is anticipated to proffer a beleaguered, outcome-based curriculum with an agenda to systematize the teaching-learning experiences in a more student-centric way. In order to advance students' experiences while they contribute in the programme of their preference, the LOCF method has been used. Students enrolled in the Undergraduate Programme will be operational for both academic and career accomplishment. Every curriculum explains itself in great detail and outlines the goals that may be achieved by completing the courses. The programme also outlines the traits that graduates are expected to possess. The qualities of a graduate include social justice, emotional stability, critical thinking, and wellbeing ideals in addition to employment skills. To put it briefly, all of the programme educates students for sustainability and lifetime learning. The B.A. in geography curriculum offers the following goals:

- (i). To make acquainted the students with the identification and examination of many aspects of geographical processes and characteristics.



- (ii). To increase students' propensity for learning the fundamentals of conducting fieldwork.
- (iii). To aid in the student's achievement of map-making abilities.
- (iv). To assist students in learning the science and technique of gathering, analyzing, and interpreting data.
- (v). To introduce the students to the usage of modern geographic information systems and remote sensing technology.

The undergraduate programme has a consistent framework according to the Choice Based Credit System (CBCS). A variety of papers encompassing theoretical, practical, and applied areas of the field are available for selection in the B.A. degree in geography. It is intended to cover both classic and modern study frameworks, allowing students a lot of opportunity to apply what they have learned to real-world situations. The methods of teaching and learning have also changed, moving from a strict lecture format to tactics that demonstrate how to enable knowledge. The major goal is to cultivate a disposition for knowledge that is both content-rich and meets the needs of the modern workplace and society. The intellectual, practical, experiential, and skill-building components of the curriculum have all been thoughtfully incorporated. Every course has learning objectives, standard materials, and references that, where feasible, include a few Hindi novels.

a. Fundamentals: Understanding the basic and core branches of the field is another emphasis of this programme. These papers are specifically made to help students establish their foundations by teaching them the fundamentals of geography. It includes the subject's development from the perspectives and experiences of explorers and travelers about people, places, and things. Every essential geography topic has been covered by physical and human geography (basic branches) , in addition to the environmental studies interface branch.

b Practical: Technique-focused articles and a range of tools to improve the information-gathering process are now part of the curriculum. Digital and location-based learning are combined with the concepts of traditional mapping. There has been focus on the application of sophisticated data collection methods, data processing through in-depth fieldwork, basic statistics, and the use of geographic information systems. One advantage of mandatory fieldwork is that it helps students be ready for more research, which is an essential aspect of the social science method.

c. Application-Oriented: Additionally, an applied component for capacity growth and skill enhancement has been included to the curriculum. These publications make extensive use of project- and laboratory-based learning. Using a range of tools, equipment, and software, experiential education is an essential way to teach knowledge. There has been focus on student-centered education, which stresses learning outside of the classroom and mastery of an experimental technique.

d. Regional Approach: Through theoretical case studies and field trips, regional features are given to the majority of the articles. Geography of Haryana only addresses a regional and local understanding of the topics, but curriculum papers such as geography of India also address the global aspects of the subjects.

Learning outcome – Based approach to curriculum planning: The learning objective is to get students ready for a undergraduate programme (Geography) by helping them to comprehend the field's evolution and explore topics relevant to the demands of the modern world. It includes a broad range of papers with different subjects and keeps the structure consistent throughout the nation's colleges. Because geography is an interdisciplinary field, it incorporates knowledge from the social sciences and the practical and basic sciences.

1. Nature and Extent of Programme: The Learning Outcomes-based Curriculum Framework (LOCF) for the Under graduate programme (Geography –multidisciplinary) is intended to develop as per the requirements of the subject with emerging new domains of Geography. The framework allows for



flexibility in programme design and course content along with maintaining a basic uniformity in structure in comparison with other universities across the country. The Undergraduate programme (Geography – multidisciplinary) covers a wide range of fundamental and applied courses as well as courses of interdisciplinary nature. The core courses are designed to develop strong subject knowledge base in the student and apprise them with the applied aspects of this dynamic global discipline. The student can select from a large selection of optional courses offered by the curriculum. The curricula contain courses on skill development that get students ready for careers in academia or business.

2. Goals of the geography bachelor's degree programmes: The student is ready to pursue further study at any university of their choosing and apply the skills and information they have acquired to address pressing societal concerns in the real world. The student will also be equipped to join the workforce as a skilled worker.

3. Graduate Attributes: Some of the characteristic attributes of an under graduate (Geography – multidisciplinary) include:

i. Discipline Knowledge: Students comprehend both basic and applied geography concepts. Through core and discipline courses, they get education in the fundamental aspects of the subject. They can learn tools and techniques with the aid of technical and skill training during field survey and practicals.

2. Communication Skills: Students develop strong communication skills via oral presentations and group debates on the subject. Confidence in communication is fostered not just by conducting interviews but also by fieldwork, surveys, and contact with a diverse range of individuals in the public. Collecting, organizing, and interpreting field data and presenting it in report format helps to enhance written communication skills.

3. Critical Thinking: Studying geography develops one's ability to solve challenges via critical thinking and scientific reasoning. The course content is structured to elicit questions from students regarding who, what, where, when, and how field survey on geography, disaster management, resource management, and the global system, among other issues.

4. Problem Solving: When students have a deeper understanding of their surroundings, including life-threatening illnesses, the climate, the state of the water, etc., they are more driven to seek answers. The study of geography has an edge that connects to survival and everyday living, which sharpens problem-solving abilities.

5. Analytical Reasoning: A wide range of tools, techniques, and data processing are covered in the geography course to support the growth of analytical thinking for problem-solving. Actually, the whole point of instruction in all these courses is to assist students develop their ability to think analytically by having them generate inferences and interpretations based on data from observations, satellite images, and aerial photography.

6. Research Related Skills: The course material teaches students the foundations of study design, data collection techniques, and ethics in order to prepare them for doing research through fieldwork. Through the specially created course on research methodology and field work, they become acquainted with creating questionnaires, selecting sample plans, figuring out the right objectives, data collection techniques, field exposure, mental mapping, replicating observations, analysing data, and finally creating reports.

7. Cooperation/ Teamwork: This course may help students acquire the skill of working with students from diverse backgrounds, and group projects on the same subject can advance understanding. The group assignments and presentations are the main elements of the course design that will promote collaboration. Strong camaraderie is fostered by field trips as teams collaborate to complete tasks. They also learn how to work together with group members.



8. Scientific Reasoning: This course will involve a critical analysis of theories and models, along with generated hypotheses, testing methods, and critical questions about them. Many geography courses have a truly scientific bent, which encourages students to improve their capacity for both original thought and scientific reasoning.

9. Reflective Thinking: Students should be able to assess the knowledge they have acquired and apply it to their benefit on several levels after successfully completing a course. No teaching or learning process is over until the theoretical, practical, and applied knowledge of the subject is clearly reflected. Due to geography's interdisciplinary approach, which pushes students to think more widely, a degree in the subject has numerous applications in other academic subjects as well.

10. Information and Digital Library: It's often advised that Undergraduate (geography) students can increase their breadth of knowledge acquisition by investing time in studying and consulting many open-source libraries, in addition to having access to a vast array of reading resources. It's a subject that demands enough research and in-depth analysis to keep up with the world's ongoing development, as it doesn't only rely on standard textbook-oriented study. As a result, the World Wide Web has shown to be very beneficial for being educated and routinely refreshing one's knowledge base.

11. Self-Directed Learning: An undergraduate in geography has to be continuously engaged in an educational process that gives them a sense of direction. Anyone who wants to learn more must pursue self-learning because the curriculum is preset and set. When the teacher is keeping an eye on them, learning can go smoothly. The pupils will be able to meet the demands of the changing curriculum and take on assignments that they fully grasp as a consequence.

12. Multicultural Competence: There are no geographical limitations when it comes to the study of geography. Identification of a particular human activity based on its multi-locality occurrence is based on multi-plural, multi-cultural, and multi-sited ethnography. Since regional and cultural studies are the course's main focus, a deep understanding of many locales and viewpoints is required. It allows the student to learn about their own culture as well as the cultures of their distant classmates, in addition to acting as a disciplinarian. Their broad knowledge also helps them to respect their fellow people who follow diverse norms, traditions, and customs. Geographic majors have discovered that fieldwork is an excellent means of introducing intercultural competencies.

13. Moral and ethical awareness: In the age of swift technological progress and the constant quest for more comfort. In the contemporary age, other considerations include the traditional family, class, ethnicity, and the social order of the nation-state. In this instance, the geography curriculum seeks to make clear citizens' rights and responsibility towards the environment, resources, and labourers. The student will appreciate the appropriate relationships, personal space, and common/community space. Geography will influence the morals and values of people living in the world in the future.

14. Leadership Readiness/ Quality: A good leader needs to be informed, able to make wise judgments, and ready to act when called upon. Geography helps students improve their logical thinking skills, gives them alternative social, economic, and environmental futures to consider, and helps them get a descriptive and explanatory awareness of both their immediate environment and the wider globe. A geography student will therefore develop into a useful leader and make several contributions. The practice of continued education, whether formal or informal, from elementary school through graduate degrees, is known as lifelong learning. The main concept of geography is the interaction that exists between persons and their environment, which is significant throughout life. Thus, learning will be a lifetime process and the foundational knowledge and abilities that a geographer gains will be helpful to them in the future.



Qualification Description: The qualification description for Under Graduate (Geography-multidisciplinary) programme in Geography includes:

- (i) Exhibiting a thorough comprehension of the fundamental ideas in geography as well as knowledge of the field's developing fields.
- (ii). gaining a thorough grasp of multidisciplinary themes and the practical elements of geography in daily life.
- (iii). Enhancement of facilitating and critical thinking abilities.
- (iv). The practical solution of social issues through the use of geography information acquired in the classroom.
- (v). Development of intellectual capacity to pursue more discipline-specific research.
- (vi). Gaining expertise in the lab, designing studies methodically, and gathering data from experiments.
- (vii). Demonstration of proficiency in project report writing and quantitative analysis of the experimental data.
- (viii). Strong communication skills, both written and spoken, are developed, encouraging the sharing of ideas and a sense of teamwork.

Curriculum Structure: CBCS serves as the foundation for the Learning Outcome-based Curriculum framework, which aims to offer deeper understanding of the subject combined with increased opportunities and employability. Students will be prepared to deepen their interest in the topic by the time the curriculum is finished.

Outline of Undergraduate (Multidisciplinary -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, famous /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)

Scheme UG A1: Undergraduate Program: Multidisciplinary (Geography Subject)

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

FUNDAMENTALS OF PHYSICAL GEOGRAPHY

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

Programme/Class: B.A. Multidisciplinary Year: 1 Semester: I Credit: 04 (3+0+1) L+T+P Hrs/Week: (3+0+2) L+T+P	Total Marks: Theory Marks=75 Practical Marks=25	100 Marks
Time: 2 Hours	Theory End Semester Exam: (TE)	50 Marks
Course Outcomes: CO1: To be acquainted with Earth movement and motion to understand physical aspects around us. CO-2: To develop an improved philosophy and draw conclusion of major land forms with geographical perception. CO3: To understand how Weather and Climate influence different aspect our living on this earth. CO4: They will understand about the Oceans, their composition and circulation of oceanic water.	Theory Internal Assessment: (TI) Attendance: Assignment: Sessional Exam:	25 Marks 05 Marks 05 Marks 15 Marks
Note: The question Paper will have five units. The unit one shall be compulsory and shall contain ten questions (5 Marks Map work+5 Marks MCQ/short answer having one marks of each question) covering entire Syllabus. The remaining four units will contain two questions each. Candidate(s) are required to attempt one question from each unit. All questions carry equal marks (10 Marks each).		

UNIT-I

Geography: Definition, Physical Geography and Human Geography; Physical geography: Fundamentals (Lithosphere, Hydrosphere, Atmosphere and Biosphere); location on Earth: Globe; latitude; longitude; Heat zones of the earth and time zones; Interior of earth; Rock cycle; Endogenetic Forces- Volcanism and Earthquakes.

UNIT-II

Plate Tectonics theory; Exogenesis forces: Gradational process, Weathering and Erosion; Cycle of Erosion: W.M. Davis, Basic introduction to major landforms- River, Wind and Glaciers.

UNIT-III

Weather and climate: Components of weather and climate, affecting Factors and types; Composition and structure of Atmosphere; Atmospheric Pressure and Global winds; Introduction to Monsoon; La-Nina, El-Nino, Jet Stream.

UNIT-IV

Relief of ocean floor; Temperature and Salinity; circulation of oceanic water: sea waves, ocean currents and tides; Ocean as future store house of Resources.

Map work: World Map Physical: Major Landforms, Major Plates, Pressure Belts and winds; Ocean floor and Ocean Currents.

Suggested Readings:

- Dayal, P. (2019). *Bhuakriti Vigyan*. (in Hindi). New Delhi: Rajesh Publications.
- Getis, Arthur., Bjelland, Mark. and Getis Victoria (2014). *Introduction to Geography*. McGraw Hill Education.
- Hallam, A. (1973). *A Revolution in Earth Science from Continental Drift to Plate Tectonics*. London: Oxford University Press.



- Husain Majid (2002). *Fundamentals of Physical Geography*. Jaipur and New Delhi: Rawat Publications.
- Khullar, D.R. (2021): Bhautik Bhugol, (in Hindi). New Delhi: Kalyani Publishers.
- Leong Goh Cheng (2015). *Certificate Physical and Human Geography*. New Delhi: Oxford University Press.
- Singh, Savinder. (2021). *Physical Geography (Eng/Hindi)*. Allahabad: Pravalika Publications.
- Strahler, Alan. and Strahler, Aurther. (2005). *Introducing Physical Geography*. John Wiley & Sons, Inc.

MAPS AND SCALES

Course Code: **CC-A1 (Practical: Core Paper)**

Programme/Class: B.A. Multidisciplinary	Year: 1	Semester: I		Practical Marks:	25 Marks
Credit: (0+0+1) L+T+P					
Hrs/Week: (0+0+2) L+T+P	Time: 3 Hours				
Course Outcomes:			PI	Internal Attendance:	05 Marks
CO1: The essentials of maps, which are important for precise location and spatial comprehension, will be understood by the students.			PE	End Semester Exam:	20 Marks
				Exercise:	12 Marks
				Record File:	04 Marks
				Via-voce:	04 Marks
Note:					
At least twenty (20) exercises are to be prepared covering all the topics. The question paper shall contain six questions in all. Candidate(s) are required to attempt three questions in all. All questions carry equal marks (3 Question x 4 Marks= 12 Marks).					

- ❖ Map: Definition, Fundamentals, Historical development.
- ❖ Classification of Maps, Map Elements and significance of Map;
- ❖ Introduction of measuring units (Metric and Mile systems)
- ❖ Map Scale: Types and significance-
 - Methods of expressing a scale, Conversion of statement scale into R.F. and vice-versa.
 - Plain scale
 - Comparative Scale
 - Time scale
 - Revolution scale
 - Pace scale
 - Diagonal scale
- ❖ Measurement of distances and area on map; Enlargement and reduction of Map.

Suggested Readings: Mishra, R.N. and Sharma, P.K. (2020). *Prayogik Bhoogol* (Eng/Hindi). Jaipur: Rawat Publications.

- Monkhouse, F.J. and Wilkinson, H.R. (1972). *Maps and Diagrams*. London: Mothuen and Co. Ltd.
- Robinson, A. H. (2009). *Elements of Cartography*. New York: John Wiley and Sons.
- Singh, Gopal. (2004). *Map Work and Practical Geography*. New Delhi: Vikas Publication House.
- Sharma, J. P. (2020). *Prayogik Bhugol*. (in Hindi). Meerut: Rastogi Publishers.
- Singh, R. L., Singh, Rana and Singh, P.B. (1999). *Elements of Practical Geography* (Eng/Hindi). New Delhi: Kalyani Publishers.
- Singh, R.L. and Singh, Raghuvander. (1973). *Map Work and Practical Geography*. Allahabad: Central Book Depot.
- Singh, R.L. and Dutt, P.K. (2012). *Elements of Practical Geography* (Eng/Hindi). Allahabad: Students Friends.
- Sharma, J. P. (2010). *Prayogtmak Bhugol ki Rooprekha*. Meerut: Rastogi Publications.
- Sarkar, A. (2015). *Practical Geography: A Systematic Approach*. New Delhi: Orient Black Swan Private Ltd.



Gurugram University, Gurugram, Haryana (India)

Scheme UG A1: Undergraduate Program: Multidisciplinary (Geography Subject)

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

GEOGRAPHY OF INDIA

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

Programme/Class: B.A. Multidisciplinary Year: 1 Semester: II Credit: 04 (3+0+1) L+T+P Hrs/Week: (3+0+2) L+T+P	Total Marks: Theory Marks=75 Practical Marks=25	100 Marks
Time: 2 Hours	Theory End Semester Exam: (TE)	50 Marks
Course Outcomes: CO1: Students will be able to comprehend the geographical features of India that are necessary for a fundamental knowledge of Indian geography. CO2: Student will acquire knowledge pertaining to the population composition and its effect on various facet of life of India. CO3: Learn about major natural resources and industries and its impact on growth and development of the country. CO4: They will be able to understand about the trade and transport network of India.	Theory Internal Assessment: (TI) Attendance: Assignment: Sessional Exam:	25 Marks 05 Marks 05 Marks 15 Marks
Note: The question Paper will have five units. The unit one shall be compulsory and shall contain ten questions (5 Marks Map work+5 Marks MCQ/short answer having one marks of each question) covering entire Syllabus. The remaining four units will contain two questions each. Candidate(s) are required to attempt one question from each unit. All questions carry equal marks (10 Marks each).		

UNIT-I

India: Physiographic division and their Characteristics; Drainage systems; Climate: characteristics, Climatic Regions of India, Monsoon; Types of soils and natural vegetation.

UNIT-II

India: Growth, Distribution and Density of population, sex-ratio, literacy rate and work force; Population problems and policies; Migration and its type; Levels of urbanization; Human Development Index (HDI).

UNIT-III

Agriculture: Characteristic of Indian agriculture, Factors affecting Indian Agriculture; Green Revolution and its Characteristics; Major crops in India -Wheat, Rice, Sugarcane, Tea; Mineral and Energy resources: coal, petroleum, hydroelectricity and nuclear energy; Major Industries: iron and steel, cotton textile.

UNIT-IV

Trade and Transport: Modes of transportation- Railways, Roadways, Waterways, Airways; Trade: Domestic and international trade patterns; Disputes of river water sharing amongst states with reference to SYL; Inter-linking of rivers.

Map work (India): - Physical Features, Rivers, Soil Types, Forests, Major Crops, Major Mineral Mines and Major Industries of India.



Suggested Readings:

- 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.
- Gautam, A. (2009). *Advanced Geography of India*. Allahabad: Sharda Pustak bhawan.
- Gopal, Krishan (2017). *The Vitality of India: A Regional Perspective*. Jaipur: Rawat Publication.
- Khullar, D.R. (2000). *India: A Comprehensive Geography*. New Delhi: Kalyani Publishers.
- Majid, H. (2020). *Geography of India*. McGraw Hill Education (India) Private Ltd.
- Mamoria, C. B. and Mishra, J. P. (2021). *Bharat ka Bhugol*. Agra: Sahitya Bhawan Publication.
- Shafi, M. (2000). *Geography of South Asia*. Calcutta: McMillan and Company.
- Singh, Gopal (2006): *A Geography of India*. Atma Ram and Sons.
- Singh, Surender and Saroha, Jitender (2014). *Geography of India*. New Delhi: Access Publishing India Pvt. Ltd.
- Spate, O.H.K. and Learmonth (1967). *India and Pakistan: Land, People and Economy*. London: Methuen.
- Tirtha, R. (2004). *Geography of India*. Jaipur: Rawat Publications.

GRAPHS AND DIAGRAMS

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

Programme/Class: B.A. Multidisciplinary Year: 1 Semester: II Credit: (0+0+1) L+T+P Hrs/Week: (0+0+2) L+T+P Time: 3 Hours		Practical Marks:	25 Marks
Course Outcomes: CO1: Students will have a basic acquaintance of graphs and diagrams design and layout, which are imperative for successfully representing geographic information for enhanced conception.	PI PE	Internal Attendance: End Semester Exam: Exercise: Record File: Via-voce:	05 Marks 20 Marks 12 Marks 04 Marks 04 Marks
Note: At least twenty (20) exercises are to be prepared covering all the topics. The question paper shall contain six questions in all. Candidate(s) are required to attempt three questions in all. All questions carry equal marks (3 Question x 4 Marks= 12 Marks).			

- ❖ Graphs: Concept, Types, uses, advantages and disadvantages.
- ❖ Statistical diagram: Introduction,
- ❖ One-dimensional diagram: Line diagrams and Bar diagrams; Pyramid diagram; Wind Rose.
- ❖ Two-dimensional diagram: Square Block, Rectangular, Divided Rectangular and Pie diagram),
- ❖ Three-dimensional statistical diagram: Spherical, Cubes.
- ❖ Climograph, Hythergraph and Ergograph.
- ❖ Weather Symbols and maps: equipment, interpretation and Significance.
- ❖ Survey: Chain and tape survey: Open, Close, Traverse and Triangulation method.

Suggested Readings:

- Mishra, R.N. and Sharma, P.K. (2020). *Prayogik Bhoogol*. (Eng/Hindi). Jaipur: Rawat Publications.
- Mishra, R.P. and Ramesh, A. (1999). *Fundamentals of Cartography*, New Delhi: Concept Publishing Company.
- Monkhouse, F.J. and. Wilkinson, H.R. (1972). *Maps and Diagrams*. London: Mothuen and Co. Ltd.,

- Robinson, A. H. (2009). *Elements of Cartography*. New York: John Wiley and Sons.
- Singh, Gopal (2004). *Map Work and Practical Geography*. New Delhi: Vikas Publication House.
- Sharma, J. P. (2010). *Prayogic Bhugol*. Meerut: Rastogi Publishers.
- Singh, R. L. and Rana P.B. (1999), *Elements of Practical Geography* (Eng/Hindi). New Delhi: Kalyani Publishers.
- Singh, R.L. and Singh, Raghuvar (1973). *Map Work and Practical Geography*. Allahabad: Central Book Depot,
- Singh, R.L. and Dutt, P.K. (1968). *Elements of Practical Geography*. Allahabad: Students Friends.
- Sharma, J. P. (2010). *Prayogtmak Bhugol ki Rooprekha*. Meerut: Rastogi Publications.
- Singh, R. L. and Dutta, P. K. (2012). *Prayogatmak Bhugol*. Allahabad: Central Book Depot.
- Sarkar, A. (2015). *Practical Geography: A Systematic Approach*, New Delhi: Orient Black Swan Private Ltd.
- Sharma, J. P. (2020). *Prayogic Bhugol* (in Hindi). Meerut: Rastogi Publishers.



Gurugram University, Gurugram, Haryana (India)

Scheme UG A1: Undergraduate Program: Multidisciplinary (Geography Subject)

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

HUMAN GEOGRAPHY

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

Programme/Class: B.A. Multidisciplinary Year: 2 Semester: III Credit: 04 (3+0+1) L+T+P Hrs/Week: (3+0+2) L+T+P	Total Marks: Theory Marks=75 Practical Marks=25	100 Marks
Time: 2 Hours	Theory End Semester Exam: (TE)	50 Marks
Course Outcomes: CO1: To be acquainted with human activities and motion to understand the geographical effects around us. CO-2: To develop an improved philosophy and draw conclusion of major activities to within the geographical environment. CO-3: To understand how Geography influences different aspect our living on this earth. CO-4: They will be able to learn about the settlement systems, their issues and mitigation.	Theory Internal Assessment: (TI) Attendance: Assignment: Sessional Exam:	25 Marks 05 Marks 05 Marks 15 Marks
Note: The question Paper will have five units. The unit one shall be compulsory and shall contain ten questions (5 Marks Map work+5 Marks MCQ/short answer having one marks of each question) covering entire Syllabus. The remaining four units will contain two questions each. Candidate(s) are required to attempt one question from each unit. All questions carry equal marks (10 Marks each).		

UNIT-I

Human Geography: Meaning, Nature, scope, development and branches; Approaches to study Human Geography: Determinism, Possibilism, Neo-determinism.

UNIT-II

Human Race and Tribe: Meaning, classification, evolution and distribution; Environmental adaptation by Eskimo, Bushman, Semang, Red-Indian, Gonds, Bhils and Gujjar-Bakarwal.

UNIT-III

Population: Growth, Distribution and density, concept of over population and under population, Composition of population: Age & sex and occupation, Literacy; Migration.

UNIT-IV

Human Settlements: Meaning, origin and evolution, types, size and distribution; rural-urban fringe and interaction. Urban problems: housing, poverty, water supply, sanitation and mitigation.

Map work (World): Megacities, Major Agriculture Belts, Population (Growth rate, Density, Literacy), Major Mineral mines (Iron, Coal), Major Sea Routes of World; (in India Map): Major Tribes and Metropolitan Cities.

Suggested Readings:

- Alexander, John.W.(1988). *Economic Geography*. New Delhi: Prentice Hall of India Ltd.
- Bergwan, Edward E. (1985). *Human Geography: Culture Connections and Landscape*. New Jersey: Prentice-Hall.
- Carr, M. Patterns. (1987). *Process and Change in Human Geography*. London: McMillan Education.
- Carter, H. (1972). *The study of Urban Geography*. London: Edward Arnold.
- Chandna, R.C. (2016). *Geography of Population: Concepts, Determinants and Patterns*. New Delhi: Kalyani Publishers.
- De Blij, H. J. (1996). *Human Geography, Culture, Society and Space*, New York: John Wiley.
- Fellman, J.L. (1997). *Human Geography-Landscapes of Human Activities*. Brown and Benchman Pub. USA.

- Hassan, I. *Population Geography: A Systematic Exposition*. London: Routledge.
- Hussain, M. Human (2018) *Geography*. Jaipur: Rawat Publication.
- McBride, P.J. (1996). *Human Geography; Systems Patterns and Change*. Nelson: UK and Canada.
- Michael, C. (1996). *New Patterns: Process and Change in Human Geography*. Nelson: UK and Canada.
- Qazi, S.A. (2010). *Population Geography*. APH publishers.
- Ramachandra, R. (1992). *Urbanization and Urban System in India*, London: Oxford.
- Sharma, Y.K. (2017). *Human Geography*. Narain publishers.
- Singh, N. A. (2015). *Text Book of Human Geography*. Rajesh Publishing.

MAP PROJECTION AND ITS CONSTRUCTION

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

Programme/Class: B.A. Multidisciplinary Year: 2 Semester: III Credit: (0+0+1) L+T+P Hrs/Week: (0+0+2) L+T+P Time: 3 Hours		Practical Marks:	25 Marks
Course Outcomes: CO1: Students will have a basic acquaintance of Map Projection construction and uses, which are imperative for successfully representing geographic information on Map.	PI PE	Internal Attendance: End Semester Exam: Exercise: Record File: Via-voce:	05 Marks 20 Marks 12 Marks 04 Marks 04 Marks
Note: At least twenty (20) exercises are to be prepared covering all the topics. The question paper shall contain six questions in all. Candidate(s) are required to attempt three questions in all. All questions carry equal marks (3 Question x 4 Marks= 12 Marks).			

- ❖ Introduction to Map Projection: Meaning, Classification, Significance.
- ❖ Characteristics of latitudes and longitudes lines.
- ❖ Cylindrical projections: Meaning, Classification, Importance, Characteristics, applications and drawing; (i) Simple cylindrical projection. (ii) Cylindrical equal area projection. (iii) True shape or orthomorphic or Mercator's Projection.
- ❖ Conical Projections: Meaning, Classification, Importance, Characteristics, applications and drawing. (i) Simple conical projections with one standard parallel (ii) Simple conical projection with two standards parallel (iii) Bonne's Projection (iv) Polyclone projection.
- ❖ Polar Zenithal Projections: Meaning, Classification, Importance, Characteristics, applications and drawing. (i) Polar Zenithal Equidistant Projection. (ii) Polar Zenithal Equal Area Projection (iii) Polar Zenithal Gnomonic Projection (iv) Polar Zenithal Stereographic Projection. (v) Polar Zenithal Orthographic Projection.
- ❖ Sinusoidal Projections.
- ❖ Mollweide Projections.
- ❖ Plane Table Survey: Open, Close, Radiation and Intersection method.

Suggested Readings:

- Mishra, R.N. and Sharma, P.K. (2020). *Prayogik Bhoogol* (Eng/Hindi). Jaipur: Rawat Publications.
- Mishra, R.P. and Ramesh, A. (1999). *Fundamentals of Cartography*. New Delhi: Concept Publishing Company.
- Sharma, J. P. (2010). *Prayogic Bhugol*. Meerut: Rastogi Publishers.
- Singh, R. L., Rana and Singh P. B. (1999). *Elements of Practical Geography* (Eng/Hindi). New Delhi: Kalyani Publishers.
- Singh, R.L. and Singh, Raghuvander (1973). *Map Work and Practical Geography*. Allahabad: Central Book Depot.
- Sharma, J. P. (2010). *Prayogtmak Bhugol ki Rooprekha*. Meerut: Rastogi Publications.
- Sarkar, A. (2015). *Practical Geography: A Systematic Approach*. New Delhi: Orient Black Swan Private Ltd.
- Sharma, J. P. (2020). *Prayogic Bhugol* (in Hindi). Meerut: Rastogi Publishers.

Gurugram University, Gurugram, Haryana (India)

Scheme UG A1: Undergraduate Program: Multidisciplinary (Geography Subject)

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

PRINCIPLES OF ECONOMIC GEOGRAPHY

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

Programme/Class: B.A. Multidisciplinary Year: 2 Semester: IV Credit: 04 (3+0+1) L+T+P Hrs/Week: (3+0+2) L+T+P	Total Marks: Theory Marks=75 Practical Marks=25	100 Marks
Time: 2 Hours	Theory End Semester Exam: (TE)	50 Marks
Course Outcomes: CO1: To be acquainted with Economic Geography and Resources Prevalent to understand Economic activities around us. CO-2: To develop an improved philosophy and draw conclusion of major resources available with geographical perception. CO-3: To understand how Resources and means of transport influence different aspect our living on this earth. CO-4: They will understand the key characteristics of global trade and transportation.	Theory Internal Assessment: (TI) Attendance: Assignment: Sessional Exam:	25 Marks 05 Marks 05 Marks 15 Marks
Note: The question Paper will have five units. The unit one shall be compulsory and shall contain ten questions (5 Marks Map work+5 Marks MCQ/short answer having one marks of each question) covering entire Syllabus. The remaining four units will contain two questions each. Candidate(s) are required to attempt one question from each unit. All questions carry equal marks (10 Marks each).		

UNIT-I

Meaning, Nature and Scope of Economic Geography; Relationship of economic geography with other branches of social sciences; Stages of economic development; Different Type of economic activities, (Primary, secondary, tertiary, Quaternary and Quinary Activities).

UNIT-II

Resources: concept, classification; Natural resources: Soil and Forest; Agricultural crops: Rice, Wheat, Sugarcane, Cotton and Tea; Major mineral and power resources: Coal, Iron-ore, Petroleum, Nuclear and Hydroelectricity; Conservation of resources.

UNIT-III

Marine resources and Aquaculture: Major Fishing Areas, favorable conditions, their production and trade. Weber's theory of Industrial location; Major industries: iron and steel, Cotton Textiles, Petrochemical; Major global Industrial regions.

UNIT-IV

Trade and Transport: Geographical factors in their development; Major transport routes of the world: Land, water and air; Key Trends of International Trade; World Trade Organization (WTO) and Globalization. Impact of WTO on trade policies of developing countries of the world.

Map work (World): - World Agricultural Regions, Major Industrial Regions, Forest, Mineral and Power Resources, Major crops of World, Major Industrial cities.



Suggested Readings:

- Chisholm, M. *Modern World Development – A Geographical Perspective*.
- Hartshorne, T.N. and Alexander, J.W. (1988). *Economic Geography*. New Delhi: Prentice Hall.
- Jain, P. *Arthik Bhoogol ki Samiksha* (Hindi).
- Jones, C.F. and Darkenwald, G.G.(1975). *Economic Geography*. New York: McMillan Company.
- Robertson, D. (2001). *Globalization and Environment*. E. Elgas Co. U.K.
- Robinson, A.H., Jones, C.F. and Darkenwarld, G.G. *Principles of Economic Geography*.
- Singh, K.N., Singh, J. *Arthik Bhoogol ke Mool tatva* (Hindi)
- Srivastava, V.K., Rao, B.P. *Arthik Bhoogol*.
- Thomas, R.S. (1962). *The Geography of Economic Activities*. New York: McGraw Hill.
- Wheeler, J.O. Et al. (1995) *Economic Geography*. New York: John Wiley.
- Zimmerman, E.W. *Introduction of World Resources*.

REPRESENTATION OF RELIEF AND LANDFORMS

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

Programme/Class: B.A. Multidisciplinary Year: 2 Semester: IV Credit: (0+0+1) L+T+P Hrs/Week: (0+0+2) L+T+P Time: 3 Hours		Practical Marks:	25 Marks
Course Outcomes: CO1: Students will have a basic acquaintance of Geography Features and Land forms, which are imperative for successfully representing Geography Features and Land forms for enhanced conception.	PI PE	Internal Attendance: End Semester Exam: Exercise: Record File: Via-voce:	05 Marks 20 Marks 12 Marks 04 Marks 04 Marks
Note: At least twenty (20) exercises are to be prepared covering all the topics. The question paper shall contain six questions in all. Candidate(s) are required to attempt three questions in all. All questions carry equal marks (3 Question x 4 Marks= 12 Marks).			

- ❖ Topographical Sheets: India and adjacent countries, Degree, Half, Quarter, Million Sheet.
- ❖ Conventional Signs.
- ❖ Methods of Representing Relief: Hachure, Contours, Form lines, Spot heights, Bench marks, Trigonometrical Stations, Hill Shading, Layer Colouring,
- ❖ Profiles: Concept, Types and Characteristics.
- ❖ Contours: Concept and Characteristics.
- ❖ Representation of Topographical Features by Contours: Slopes, V-Shaped Valley, U-shaped Valley, Gorge, Spurs, Ridge, Conical Hill, Volcanic Hill, Plateau, Escarpment, Two adjacent hills, Waterfall, Sea Cliff, Overhanging Sea Cliff, Fiord coast.
- ❖ Prismatic Compass Survey: By Radiation and Intersection method.

Suggested Readings:

- Mishra, R.N. and Sharma, P.K. (2020). *Prayogik Bhoogol* (Eng/Hindi). Jaipur: Rawat Publications.
- Mishra, R.P. and Ramesh, A. (1999). *Fundamentals of Cartography*. New Delhi: Concept Publishing Company.
- Monkhouse, F.J. and Wilkinson H.R. (1972). *Maps and Diagrams*. London: Mothuen and Co. Ltd.
- Singh, R.L. and Singh, Raghuvander (1973). *Map Work and Practical Geography*. Allahabad: Central Book Depot.
- Singh, R.L. and Dutt, P.K. (2012). *Elements of Practical Geography* (Eng/Hindi). Allahabad: Students Friends.
- Sharma, J. P. (2010). *Prayogtmak Bhugol ki Rooprekha*. Meerut: Rastogi Publications.
- Sarkar, A. (2015). *Practical Geography: A Systematic Approach*. New Delhi Orient Black Swan Private Ltd.
- Sharma, J. P. (2020). *Prayogic Bhugol*, (Eng/Hindi). Meerut:Rastogi Publishers.



Gurugram University, Gurugram, Haryana (India)

Scheme UG A1: Undergraduate Program: Multidisciplinary (Geography Subject)

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

INTRODUCTION OF GEO-SPATIAL TECHNOLOGY IN GEOGRAPHY

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

Programme/Class: B.A. Multidisciplinary Year: 3 Semester: V Credit: 04 (3+0+1) L+T+P Hrs/Week: (3+0+2) L+T+P	Total Marks: Theory Marks=75 Practical Marks=25	100 Marks
Time: 2 Hours	Theory End Semester Exam: (TE)	50 Marks
Course Outcomes: CO1: To be acquainted with fundamentals of Photogrammetry and Aerial Photography. CO-2: To understand about basic concept and process of Remote Sensing. CO-3: To understand and learn and use of GPS that helps to understand interrelationship between various Remote Sensing aspects in spatial perspective and the functioning and types of the satellites. CO-4: To be acquainted with Geo-spatial Technology in Geography and Resources Prevalent to understand Geo-spatial activities around us.	Theory Internal Assessment: (TI) Attendance: Assignment: Sessional Exam:	25 Marks 05 Marks 05 Marks 15 Marks
Note: The question Paper will have five units. The unit one shall be compulsory and shall contain ten questions (5 Marks Map work+5 Marks MCQ/short answer having one marks of each question) covering entire Syllabus. The remaining four units will contain two questions each. Candidate(s) are required to attempt one question from each unit. All questions carry equal marks (10 Marks each).		

UNIT-I

Photogrammetry: Concept, Historic Development; Aerial Photography: Types, Ground Coverage and Overlapping; Aerial Photographs: Types, Characteristics, Geometry and Scale; Elements of Image interpretation.

UNIT-II

Remote Sensing: Concept, Process, Stages, Platforms and Sensors. Electromagnetic Radiation (EMR): Electromagnetic Spectrum; Scattering: Types and Significance; Integration of Remote Sensing and GIS.

UNIT-III

GPS: Meaning and Significance; GPS Satellite Constellations, GPS Segments; Application of GPS in various fields; **Satellite:** Swath, Orbits- Sun Synchronous and Geostationary; Major Satellite Series: India and World.

UNIT-IV

GIS: Concept, Component of GIS; GIS Data types: Spatial and Non-Spatial; Data Formats: Raster and Vector; Digital Satellite Image; Recent Trends in GIS; Application of GIS in different fields.

Map work (India): Space centers and ISRO units in India; States and UT's, Ports and Airports of India.

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.
- 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.
- Panda, B.C. (2008). *Remote Sensing: Principles and Applications*. New Delhi: Viva Books Pvt. Ltd.

- 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.

AERIAL PHOTOGRAPH AND ITS INTERPRETATION

Course Code: **CC-A5 (Practical: Core Paper)**

Programme/Class: B.A. Multidisciplinary Year: 3 Semester: V Credit: (0+0+1) L+T+P Hrs/Week: (0+0+2) L+T+P Time: 3 Hours		Practical Marks:	25 Marks
Course Outcomes: CO1: Students will have a basic acquaintance of Aerial Photographs and its features, which are imperative for successfully representing Geography Features and Land forms for enhanced conception.	PI PE	Internal Attendance: End Semester Exam: Exercise: Record File: Via-voce:	05 Marks 20 Marks 12 Marks 04 Marks 04 Marks
Note: At least twenty (20) exercises are to be prepared covering all the topics. The question paper shall contain six questions in all. Candidate(s) are required to attempt three questions in all. All questions carry equal marks (3 Question x 4 Marks= 12 Marks).			

- ❖ Aerial Photographs: Fundamentals, Types and Significance.
- ❖ Demarcation on Aerial Photographs: Identification of Fiducial marks, Principal point, Conjugate Principal Points /Area and Flight line and Flight Axis.
- ❖ Elements of Aerial Photo and Interpretation.
- ❖ Determination of scale of aerial photographs.
- ❖ Determination of height of objects on single vertical aerial photographs.
- ❖ Identification of Features: Five Physical and five Cultural Features on Aerial Photographs.
- ❖ Interpretation and preparation of land use/land cover from aerial photographs.
- ❖ Satellite Image (LISS-III, PAN): Visual interpretation of satellite image.
- ❖ Familiarization with Google Earth and Bhuvan/Bhoonidhi webportals.
- ❖ Familiarization with open-source GIS softwares: QGIS etc.

Suggested Readings:

- 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.
- John, R.Jensen. (2009). *Remote Sensing of the Environment; An Earth Resource Perspective*. New Delhi: Pearson Education.
- Kumar, Meenakshi (2001). *Remote Sensing*. New Delhi: NCERT.
- Lillesand and Kiefer R.W. (2005). *Remote Sensing and Image Interpretation*. John Wiley and Sons.
- Nar, Dharna and Kotecha, R. (2024). *Drone Technology for Beginners*. New Delhi: Ane Books Pvt. Ltd. And Drone School India.
- 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.
- Yeswanth, I.V.S. and Kumar, A.V.S.S. (2024). *Fundamentals of Drone Technology*. Bilaspur (CG): Authers Click Publishing.



Gurugram University, Gurugram, Haryana (India)

Scheme UG A1: Undergraduate Program: Multidisciplinary (Geography Subject)

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

SYSTEMATIC AND REGIONAL GEOGRAPHY OF HARYANA

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

Programme/Class: B.A. Multidisciplinary Year: 3 Semester: VI Credit: 04 (3+0+1) L+T+P Hrs/Week: (3+0+2) L+T+P	Total Marks: Theory Marks=75 Practical Marks=25	100 Marks
Time: 2 Hours	Theory End Semester Exam: (TE)	50 Marks
Course Outcomes: CO1: To be acquainted systematic and regional Geography of Haryana. CO-2: To develop understanding of importance of systematic and regional geography perspective. CO-3: To understand and learn to plan resources better in respect of regional perspective and also familiarize and to Know how systematic geography and regional geography coincide to each other in spatial perspective. CO-4: To familiarize with trade, transport and various issues of Haryana and their mitigation.	Theory Internal Assessment: (TI) Attendance: Assignment: Sessional Exam:	25 Marks 05 Marks 05 Marks 15 Marks
Note: The question Paper will have five units. The unit one shall be compulsory and shall contain ten questions (5 Marks Map work+5 Marks MCQ/short answer having one marks of each question) covering entire Syllabus. The remaining four units will contain two questions each. Candidate(s) are required to attempt one question from each unit. All questions carry equal marks (10 Marks each).		

UNIT-I

Haryana: Administrative setup, Location and Extent; Evolution of administrative map of Haryana since independence; Physiographic division of Haryana; Drainage systems; Climate; Rainfall Pattern; Soils and Natural Vegetation.

UNIT-II

Population: Distribution, Growth, Density; Population Composition: Sex-Ratio, Literacy rate and Work Force; Migration; Urbanization; Population policies in Haryana.

UNIT-III

Agriculture: Basic characteristics, Green Revolution in Haryana; Major Crops: Wheat, Rice, Cotton, Sugarcane, Bajra, Jowar, Mustard; Agricultural Region of Haryana; Energy and Mineral resources; Major Industries (Agro-Based, Automobile, IT).

UNIT-IV

Transportation: Modes of Transportation- Roadways and Railways; Patterns of Trade; Cultural Regions in Haryana; Major issues: Disputes of River water sharing, social tensions / problems of internal security; Population Growth and food security.

Map work (Haryana): Physical Divisions, Rivers, Soil Types, Canals, Lakes, Industrial Clusters, Population (Density, Sex Ratio, Literacy), Districts, Major Cities.

Suggested Readings:

- Deshpande, C.D (1992). *India- A Regional Interpretation*. New Delhi: Northern Book Centre.
- Hussain, Majid, (2020). *Geography of India*. McGraw Hill Education India Private Ltd.
- Kumar, Mukesh (2025). *Geography of Haryana*. (in Hindi). New Delhi: Kalyani Publishers.
- Kumar, Pawan (2026). *Geography of Haryana*. (in Hindi). New Delhi: Blue Rose Publishers Pvt. Ltd.
- Kumar, Sandeep (2021). *Haryana Ka Bhugol* (in Hindi). Varanasi: Kapila publication.

- Singh, R.L. (1971). *India: A Regional Geography*. Varanasi: National Geographical Society of India.
- Singh, Jagjeet (2013). *Haryana Digdarshan*. New Delhi: Arihant Publications Ltd.
- Singh, Jasbir (1976). *An Agricultural Geography of Haryana*. Kurukshetra: Vishal Publications.
- Singh, Mandeep and Kaur, Harvinder (2004). *Economic Development of Haryana*. Delhi: Deep and Deep Publication Pvt. Ltd.
- Thussa, J.L. (2006): *Geology of Haryana and Delhi*, Geological Society of India.

FIELD SURVEY AND REPORT WRITING

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

Programme/Class: B.A. Multidisciplinary Year: 3 Semester: VI Credit: (0+0+1) L+T+P Hrs/Week: (0+0+2) L+T+P Time: 3 Hours		Practical Marks:	25 Marks
Course Outcomes: CO1: Students will have a basic acquaintance of methods of field survey, which are imperative for successfully conducting field survey and develop a superior considerate of type of Geography field survey and its tools and their importance.	PI PE	Internal Attendance: End Semester Exam: Record File: Via-voce:	05 Marks 20 Marks 15 Marks 05 Marks
Note: Practical Record File: Each student will prepare an individual report based on primary data collected during field work Survey. Field Work Survey Guidelines: as the instructions mentioned under			

- ❖ Field work/Survey: Significance in Geographical study.
- ❖ Field Survey: Major steps- Introduction, statement of problem, Review of Literature, Objectives, Methodology Method of data collection, Sources of Data, Result and Analysis, Conclusion, references.
- ❖ Field Survey Data Types: Primary and Secondary Data.
- ❖ Primary Data collection techniques: Observation, Questionnaires and Interview.
- ❖ Data Tabulation and Graphic representation.
- ❖ Report Writing: Result and Analysis.
- ❖ Fundamentals of Reference styles

Guidelines of Field Work Survey

1. At the Commencement of sixth Semester students are required to conduct a field survey on any Physical-Mountains, Glaciers, Plains, Plateau, Deserts and Costal; Social-Economic & Cultural of his/her interest area in consultation with the teacher in-charge 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, along with mandatory Lady in-charge, if there are girls students. They shall be paid TA/ DA as per Govt. /university rules. Duration of the field work survey study will not be exceeding 7 days in normal circumstances.
4. The data collection may be through Observation, Interview and Questionnaire methods, Lab Testing etc.
5. In the report writing the components will be as follows: Introduction, Statement of the Problem, aims and objectives, Significance of study/Research questions, Study Area with key map, Data Collection



and Methodology, Results (with graphs, diagrams, maps & images) and Analysis, Conclusion and Suggestions, Annexure and References/Bibliography.

6. Submission: The students shall submit two typed copies of the Field Survey Report (10,000 to 20,000 words) in the department after the signing of concerned in-charge/s and authorities.

Suggested Readings:

- Creswell, J. (1994). *Research Design: Qualitative and Quantitative Approaches*. UK: Sage Publications.
- Gopal, S. (2004). *Map Work and Practical Geography*. New Delhi: Vikas Publication House.
- Monkhouse, F.J. and Wilkinson, H.R. (1972). *Maps and Diagrams*. London: Mothuen and Co. Ltd.
- Robinson, A. (1998). *Thinking Straight and Writing That Way*.
- Pryczak, F. and Bruce, R. P. *Writing Empirical Research Reports: A Basic Guide for Students of the Social and Behavioural Sciences*. Los Angeles: USA, Routledge.
- Singh, R.L, and Dutt, P.K. (1968). *Elements of Practical Geography*. Allahabad: Students Friends.
- Singh, R.L. and Singh, R. (1973). *Map Work and Practical Geography*. Allahabad: Central Book Depot.
- *Special Issue on "Doing Fieldwork" The Geographical Review* 91:1-2 (2001).



MULTIDISCIPLINARY COURSES / SINGLE MAJOR (MDC)
Gurugram University, Gurugram, Haryana (India)
Scheme UG A1: Undergraduate Program: Multidisciplinary (Geography Subject)
 (As per NEP 2020 w.e.f session 2024-25)
INTRODUCTION TO GEOGRAPHY
 Course Code: **MDC-1 (Theory)**

Programme/Class: Undergraduate Year: 1 Semester: I Credit: 03 (2+1+0) L+T+P Hrs/Week: (2+1+0) L+T+P	Total Marks:	75 Marks
Time: 2 Hours	Theory End Semester Exam: (TE)	50 Marks
Course Outcomes: CO1: To gain knowledge of earth and its major spheres. CO-2: To recognize the major features and minerals of the earth. CO-3: To make geography a more interdisciplinary and trans-disciplinary field of study to understand the geographic concepts that are important for long-term development and growth	Theory Internal Assessment: (TI) Attendance: Assignment: Sessional Exam:	25 Marks 05 Marks 05 Marks 15 Marks
Note: The question Paper will have four units. The unit one shall be compulsory and shall contain seven (7) questions (MCQ/short answer having two (2) marks of each question, total =14 Marks, covering the entire Syllabus. The remaining three units will contain two questions each. Candidate(s) are required to attempt one question from each unit. All questions carry equal marks (12x3=36 Marks).		

UNIT-I

Geography: Definition and Major Branches; Physical and Human Geography; Spheres of the Earth; The earth in Space, Lines on the Globe, Finding Direction and Locating Places, Movements of the Earth, The Shape, Size and Structure of the Earth.

UNIT-II

Continents and Oceans; Major Countries of the continents, Major Landforms of the Earth: Mountains, Plains and Plateaus; Rocks; Mineral classification; Volcano and earthquake.

UNIT-III

Water forms of the Earth; Weather and Climate; Natural Vegetation on Earth; Soil and Soil Erosion; Contemporary issues of the Earth: Deforestation, Ozone Layer Depletion, Global warming.

Suggested Readings:

- Dayal, P. (2019). *A Text Book of Geomorphology*. Patna: Shukla Book Depot.
- Dayal, P. (2019). *Bhuakriti Vigyan*, (in Hindi). New Delhi: Rajesh Publications.
- Getis, Arthur, Bjelland, Mark and Getis, Victoria. (2014). *Introduction to Geography*. McGraw Hill Education.
- Hallam, A. (1973). *A Revolution in Earth Science: From Continental Drift to Plate Tectonics*. London: Oxford University Press.
- Husain, Majid (2002). *Fundamentals of Physical Geography*. Jaipur and New Delhi: Rawat Publications.
- Kale, V. and Gupta, A. (2001). *Introduction to Geomorphology*. Kolkata: Orient Longman.
- Khullar, D.R. (2021). *Bhautik Bhugol* (in Hindi). New Delhi: Kalyani Publishers.
- Leong, Goh Cheng (2015). *Certificate Physical and Human Geography*. New Delhi: Oxford University Press.
- Singh, Savindra (2021). *Bhuakriti Vigyan* (in Hindi). Allahabad: Pravalika Publications.
- Singh, Savindra (2006). *Physical Geography* (Eng/Hindi). Allahabad: Prayag Pustak Bhawan.
- Strahler, Alan and Strahler, Aurther. (2005) *Introducing Physical Geography*. John Wiley & Sons, Inc.



Gurugram University, Gurugram, Haryana (India)

Scheme UG A1: Undergraduate Program: Multidisciplinary (Geography Subject)

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

MAN AND ENVIRONMENT

Course Code: MDC-2 (Theory)

Programme/Class: Undergraduate Year: 1 Semester: II Credit: 03 (2+1+0) L+T+P Hrs/Week: (2+1+0) L+T+P	Total Marks:	75 Marks
Time: 2 Hours	Theory End Semester Exam:	50 Marks
Course Outcomes: CO1: To gain knowledge of environment and related threats. CO-2: To understand various facets of man and environment inter-relation. CO-3: To understand the man and environment concepts that are important for long-term development and growth	Theory Internal Assessment: Attendance: Assignment: Sessional Exam.:	25 Marks 05 Marks 05 Marks 15 Marks
Note: The question Paper will have four units. The unit one shall be compulsory and shall contain seven (7) questions (MCQ/short answer having two (2) marks of each question, total =14 Marks, covering the entire Syllabus. The remaining three units will contain two questions each. Candidate(s) are required to attempt one question from each unit. All questions carry equal marks (12x3=36 Marks).		

UNIT-I

Environment: Concept, Nature and Scope of Environment, Approaches, Classification and Components of Environment; Human interaction with environment through ages.

UNIT-II

Population, Environment and quality of life; Environmental Pollution: Land Pollution, Water Pollution, Air Pollution, Nuclear Accidents.

UNIT-III

Sustainable Development; Geopolitics' War and environment; carbon footprint; Eco-Tourism; Solid Waste Management; Renewable Energy; Environment Education.

Suggested Readings:

- Agarwal, K.C. (2001). *Environmental Biology*. Bikaner: Nidi Pub. Ltd.
- Bharucha, Frach. *The Biodiversity of India*. Ahmedabad: Publishing Pvt. Ltd.
- Gleick, H.P. (1993). *Water in crisis*. Pacific Institute for Studies in Dev. London: Environment & Security Stockholm Env. Institute, Oxford Univ.
- Hawkins, R.E. *Encyclopedia of Indian Natural History*. Bombay: Natural History Society.
- Jadhav, H. and Bhosale, V.M. (1995). *Environmental Protection and Laws*. Delhi: Himalaya Pub. House.
- Mackinney, M.L. and Schoch, R.M. (1996). *Environmental Science systems & solutions*, Web enhanced edition. 639 p.
- Sharma, B.K. (2001). *Environmental Chemistry*. Meerut: Goal Publ. House.
- Trivedi, R.K. *Handbook of Environmental Laws, Rules, Guidelines, Compliances and Standards*, Vol. I and II Enviro Media (R).
- Wagner, K.D. (1998). *Environmental Management*, W.B. Saunders co. Philadelphia, USA 499p.



Gurugram University, Gurugram, Haryana (India)

Scheme UG A1: Undergraduate Program: Multidisciplinary (Geography Subject)

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

GENERAL GEOGRAPHY OF WORLD

Course Code: MDC-3 (Theory)

Programme/Class: Undergraduate Year: 2 Semester: III Credit: 03 (2+1+0) L+T+P Hrs/Week: (2+1+0) L+T+P	Total Marks:	75 Marks
Time: 2 Hours	Theory End Semester Exam:	50 Marks
Course Outcomes: CO1: To gain knowledge of General Geography of World and economic activities. CO-2: To understand various facets of General Geography of Agriculture in World. CO-3: To recognize major awareness approach for General Geography, Population and sustainable development.	Theory Internal Assessment: Attendance: Assignment: Sessional Exam.:	25 Marks 05 Marks 05 Marks 15 Marks
Note: The question Paper will have four units. The unit one shall be compulsory and shall contain seven (7) questions (MCQ/short answer having two (2) marks of each question, total =14 Marks, covering the entire Syllabus. The remaining three units will contain two questions each. Candidate(s) are required to attempt one question from each unit. All questions carry equal marks (12x3=36 Marks).		

UNIT-I

Major economic activities of world; World economy: characteristics of developed and developing economies; Major Forest and economic activities; Globalisation.

UNIT-II

Agriculture: Types, characteristics; Major crops: Wheat, Rice, Maize; Green revolution in world: Key components, Positive and Negative impacts; Major Agriculture Regions.

UNIT-III

Population: Distribution and Growth; Major Mineral regions; Major Industrial regions; World major religions and languages; Sustainable Development.

Suggested Readings:

- Hussain, Majid (2006). *World Geography*. New Delhi: Rawat Publishers.
- Mcdougal, Holt (2010). *World Geography*. HMH Publishing Co.
- Pandey, R. (2026). *World Geography*. (in Hindi). Parbhat Exam Publisher.
- Pounds and Taylor (1974). *World Geography*. Ohio: South Western Publishing Co.
- Prasad, R. (2012). *Visva ka Bhoogol*. (in Hindi). Jaipur: Paradise Publishers.



MINOR COURSES (MIC)

Gurugram University, Gurugram, Haryana (India)

Scheme UG A1: Undergraduate Program: Multidisciplinary (Geography Subject)

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

BIO-GEOGRAPHY

Course Code: **MIC-1 (Theory)**

Programme/Class: Undergraduate Year: 1 Semester: I Credit: 02 (1+1+0) L+T+P Hrs/Week: (1+1+0) L+T+P	Total Marks:	50 Marks
Time: 2 Hours	Theory End Semester Exam: (TE)	35 Marks
Course Outcomes: CO1: To gain knowledge of how bio-geography aids in comprehending the interactions between the human and physical elements that surround us. CO2: Recognize the ways in which bio-geography affects several facets of our existence on our planet.	Theory Internal Assessment: (TI)	15 Marks
	Attendance: Sessional Exam.:	05 Marks 10 Marks
Note: The question Paper will have three units. The unit one shall be compulsory and shall contain seven (7) questions (MCQ/short answer having one (1) marks of each question, total = 7 Marks, covering the entire Syllabus. The remaining two units will contain two questions each. Candidate(s) are required to attempt one question from each unit. All questions carry equal marks (14x2=28 Marks).		

UNIT-I

Bio-Geography: Meaning, Nature, Scope and significance; Basic ecological principles: Bio-energy cycle in territorial ecosystem; Energy budget of the earth; Trophic levels and food web; Origin of fauna and flora.

UNIT-II

Communities: Nature of communities and ecosystems: bio-diversities; Human induced communities change; Industrial effluent and its effect on fresh water and marine biology; Environmental hazards and its types.

Suggested Readings:

- Cox, C.D. and Moore, P.D. (1993). *Biogeography: An Ecological and Evolutionary Approach*, Blackwell.
- Huggett, R.J. (1998). *Fundamentals of Biogeography*. Routledge. U.S.A.
- Lillies, J. (1974). *Introduction of Zoogeography*. London: McMillan.
- Khushoo, T.N. and Sharma, M. (1991). *Indian Geosphere-Biosphere*. Delhi: Har-Anand Publication.
- Mathur, H.S. (1998). *Essentials of Biogeography*. Jaipur: Anuj Printers.
- Pears, N. (1985). *Basic Biogeography*. Longman, London.
- Simmon, I.G. (1974). *Biogeography, Natural and Cultural*. London: Longman.
- Tivy, J. (1992). *Biogeography: A study of Plants in Ecosphere*. Oliver and Boyd U.S.A.



Gurugram University, Gurugram, Haryana (India)

Scheme UG A1: Undergraduate Program: Multidisciplinary (Geography Subject)

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

URBANIZATION IN INDIA

Course Code: MIC-2 (Theory)

Programme/Class: Undergraduate Year: 1 Semester: II Credit: 02 (1+1+0) L+T+P Hrs/Week: (1+1+0) L+T+P	Total Marks:	50 Marks
Time: 2 Hours	Theory End Semester Exam: (TE)	35 Marks
Course Outcomes: CO1: To understanding about pattern and processes of urbanization. CO-2: To Acquaintance with contemporary urban infrastructure issues.	Theory Internal Assessment: (TI)	15 Marks
	Attendance:	05 Marks
	Sessional Exam.:	10 Marks
Note: The question Paper will have three units. The unit one shall be compulsory and shall contain seven (7) questions (MCQ/short answer having one (1) marks of each question, total =7 Marks, covering the entire Syllabus. The remaining two units will contain two questions each. Candidate(s) are required to attempt one question from each unit. All questions carry equal marks (14x2=28 Marks).		

UNIT-I

Urbanization: Meaning, components and key Concepts, Urbanization in India: History & Processes; Criteria of measurement, spatial patterns and levels of urbanization in India; Types of Urban settlements; Recent trends of urbanization in India; Urban regions of India.

UNIT-II

Role of urbanization in economic and social change; Urbanization issues and Mitigation: Dwelling crises, Unemployment, Slums, Sanitation & Solid waste management, Health crises, Pollution, Crime, Urban Heat Islands; Plans and policies;

Suggested Readings:

- Ahluwalia, I.J., Kanbur, R. and Mohanty, P.K. (2014). *Urbanization in India: Challenges, Opportunities and the Way Forward*. New Delhi: SAGE India.
- Alam, S.M. and Khan, W. (1972). *Metropolitan Hyderabad and its Region: A Strategy for Development*. Bombay: Asia Publishing House.
- Badcock, Blair. (2002). *Making Sense of Cities: A Geographical Survey*. London: Arnold.
- Bala, Raj. (1986). *Urbanization in India*. Jaipur: Rawat Publishers.
- Bansal, S.C. (2010). *Urban Geography* (Eng/Hindi). Meerut: Meenakshi Prakashan.
- Beall, Jo and Sean, Fox. (2009). *Cities and Development*. London.: Routledge.
- Carter, Harold (1995). *The Study of Urban Geography*. London: Arnold.
- Fyfe, N.R. and Kenny, J.T. (2005). *The Urban Geography Reader*. London: UK Routledge.
- Kaplan, D. H., Wheeler, J. O. and Holloway, S. R. (2008). *Urban Geography*. NY, USA: John Wiley.
- Kundu, A. (1992). *Urban Development and Urban Research in India*, Khanna Publication

- Nangia, S. (1976). *Delhi Metropolitan Region: A study in Settlement Geography*. Rajesh Publication.
- Ramachandran, R. (1989). *Urbanisation and Urban Systems in India*. Oxford, New Delhi.
- Sassen, S. (2001). *The Global City: New York, London and Tokyo*. USA: Princeton University Press.
- Sharma, A.K. and Mishra, B.D. (2018). *Urbanization in India: Issues and Challenges*. New Delhi: Ane Publication.
- Sharma, P. and Rajput, S. (2017). *Sustainable Smart Cities in India; Challenges and Future Perspectives*. Delhi: India Springer.



Gurugram University, Gurugram, Haryana (India)

Scheme UG A1: Undergraduate Program: Multidisciplinary (Geography Subject)

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

SOCIO-CULTURAL GEOGRAPHY

Course Code: MIC-3 (Theory)

Programme/Class: Undergraduate Year: 2 Semester: III Credit: 04 (3+1+0) L+T+P Hrs/Week: (3+1+0) L+T+P	Total Marks:	100 Marks
Time: 3 Hours	Theory End Semester Exam: (TE)	70 Marks
Course Outcomes: CO1: To understanding about pattern and processes of Socio-cultural progress. CO-2: To Acquaintance with contemporary socio-cultural infrastructure issues. CO-3: The Augmentation of knowledge about socio –cultural issues. CO-4: Awareness about socio cultural governance issues.	Theory Internal Assessment: (TI) Attendance: Assignment: Sessional Exam.:	30 Marks 05 Marks 05 Marks 20 Marks
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

Nature and scope of social geography, its development and place among social sciences, Sources and problems of data for study in social geography of India, concept of social space; Social differentiation and stratification; Social segregation and social morphology.

UNIT-II

Elements of Social Geography: Ethnicity, Tribe, Dialect, Language, Caste & Religion; Linguistic regions in India.

UNIT-III

Human Habitat and the origin of the civilization in the world: the Mesopotamia, the Nile Valley, the Indus Valley; Racial Elements in India's Population; Tribes of India (Santhal, Gond, Todda, Naga and Bhil).

UNIT-IV

Nature and scope of Cultural Geography: definition, elements and components; Origin and dispersal of various culture; Major Cultural realms of the World.



Suggested Readings:

- Jean, D. and Sen, A. (1996). *Economic Development and Social opportunity*. New Delhi: Oxford University Press.
- Magunder, D.N. (1973). *Races and Culture of India*. New Delhi: Asia Publishing House.
- Mukerjee, A.B. and Aijazuddin, A. (1985). *India: Culture, Society and Economy*. New Delhi: Inter-India Publications.
- Rao, S. (1958). *Personality of India*. Vadodara: M.S. University Baroda.
- Sen, A. and Jean, D. (1996). *Indian Development: Selected Regional Perspectives*. Oxford University Press.
- Spencer, J.E. and Thomas, W.L. (1973). *Introducing Cultural Geography*. New York: John Wiley and Sons.
- Taylor, G. (1971). *The Geography in the Twentieth Century*. New Delhi: Asia Publishing House.



Gurugram University, Gurugram, Haryana (India)

Scheme UG A1: Undergraduate Program: Multidisciplinary (Geography Subject)

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

GEOGRAPHY OF TRADE AND TRANSPORT

Course Code: MIC-4 (Theory)

Programme/Class: Undergraduate Year: 2 Semester: IV Credit: 04 (3+1+0) L+T+P Hrs/Week: (3+1+0) L+T+P	Total Marks:	100 Marks
Time: 3 Hours	Theory End Semester Exam: (TE)	70 Marks
Course Outcomes: CO1: To understanding about pattern and processes of trade and transport. CO-2: To Acquaintance with contemporary trade and transport practice & infrastructure issues. CO-3: Augmentation of knowledge about trade and transport issues. CO-4: Awareness about trade and transport governance issues.	Theory Internal Assessment: (TI) Attendance: Assignment: Sessional Exam.:	30 Marks 05 Marks 05 Marks 20 Marks
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

Trade and Transport Geography: Meaning, Nature, Scope, Significance and development; Geographic Relevance, World Trade Organization: Problems and Prospects of Inter and Intra Regional Cooperation and Trade.

UNIT-II

Modes of Transport: Introduction, Roads, Railways, Waterways and Airways; Factors associated with their growth and relative significance of different modes of transport.

UNIT-III

Transportation network and economic development, Transport and environmental degradation, Vehicular pollution and congestion. Alternative transport systems, Structural analysis of transport network, Problems and issues of transportation network.

UNIT-IV

International trade: Geographical factors influencing trade, various treaties at international level, Major Trade organizations and trade blocks COMECON, EFTA, ASEAN, NAFTA, OPEC – their objectives and trade relations, Problems and prospects of international trade

Suggested Readings:

- Bamford, C.G. and Robinson, H. (1978). *Geography of Transport*. London: Macdonald and Evans.
- Hoyle, Band and Knowles, R. (2000). *Modern Transport Geography*. New York: John Wiley and Sons.
- Mangat, H.S., Gill and Singh, Lakhvir (2015). *Haryana: Levels of Road Transportation*. Punchkula: Punjab Geographer.
- Raza, M. and Aggarwal, Y.P. (1985). *Transport Geography of India*. New Delhi: Concept Publishing Company.
- Saxena, H.M. (2010). *Transport Geography*. New Delhi: Rawat Publications.
- Subodh, Rani and Chamar, K.V. (2016). *Levels of Road Connectivity in Haryana*. Punchkula: Punjab Geographer.
- Taaffe, E.J. and Gauthier, H.L. (1973). *Geography of Transportation*. New Jersey: Prentice Hall Englewood Cliff.

Gurugram University, Gurugram, Haryana (India)

Scheme UG A1: Undergraduate Program: Multidisciplinary (Geography Subject)

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

GEOGRAPHY OF TOURISM

Course Code: MIC-5 (Theory)

Programme/Class: Undergraduate Year: 3 Semester: V Credit: 04 (3+1+0) L+T+P Hrs/Week: (3+1+0) L+T+P	Total Marks:	100 Marks
Time: 3 Hours	Theory End Semester Exam: (TE)	70 Marks
Course Outcomes: CO1: The students will be able to understand the basic concepts of tourism and its types. CO-02: They will have a closer insight to Tourism Products and associated infrastructure. CO-03: They will be able to aware about the effectiveness of Tourism on social and cultural phenomenon and develop skills to decode the role of Tourism in global integration. CO-04: To make geography a more interdisciplinary and trans-disciplinary field of study to understand the contemporary issues are important for long-term development and growth.	Theory Internal Assessment: (TI) Attendance: Assignment: Sessional Exam.:	30 Marks 05 Marks 05 Marks 20 Marks
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

Geography of Tourism: Definition, nature and scope; Geographical basis of Tourism; Motivating Factors of Tourism: Recreational, Religious, Historical and Environmental.

UNIT-II

Tourism Product and typology: Infrastructure: Transportation, Accommodation and supplementary accommodation; support system of tourism; Agencies and intermediaries.

UNIT-III

Impact of tourism: Physical, Economic and Social-Cultural (Positive and Negative);
Tourism paradigms: Ethnic, cultural tourism, heritage tourism, eco-tourism, sustainable tourism, Medico-Tourism and New trend of Tourism.

UNIT-IV

Regional dimensions of tourism in India: Himalayan region, Northern Plains and The Thar Desert, Deccan plateau, Coastal Plains and the islands.



Suggested Readings:

- Baghla, S. (2017). *Tourism Geography*. Jaipur: Book Enclave Publishers.
- Bansal, Suresh Chander (2011). *Tourism Geography and Travel Management*. Meerut: Minakshi Publication.
- Bhatia A.K. (2019). *Tourism Development: Principles and Practices*. New Delhi: Sterling Publishers.
- Carter, E and G. Lowman (1994). *Ecotourism*. New York: John Wiley and Sons.
- Chandra R.H. (1998). *Hill Tourism: Planning and Development*. New Delhi: Kanishka Publishers.
- Hunter, C. and Green, H. (1995). *Tourism and the Environment: A Sustainable Relationship*. London: Routledge.
- Kamra K.K. and Mohinder Chand (2007). *Basics of Tourism: Theory, Operation and Practice*. New Delhi: Kanishka Publishers.
- Kaur J. (1985). *Himalayan Pilgrimages & New Tourism*. New Delhi: Himalayan Books.
- Kapoor, Bimal Kumar (2012). *Tourism Geography*. New Delhi: Visavbharti Publication.
- Lea J. (1988). *Tourism and Development in the Third World*. London: Routledge.
- Maurya, S.D. and Kumar, P. (2022). *Paryatan Bhugol (Hindi)*. Paryagraj: Sharda Pustak Bhawan.
- Milton D. (1993). *Geography of World Tourism*. New York: Prentice. Hall.
- Parveen, Noshaba (2019). *Geography of Tourism Ek Adhayan (Hindi)*. New Delhi: RK Books.
- Sharma J.K. (2013). *Tourism Planning and Development - A New Perspective*. New Delhi: Kanishka Publishers.
- Sharma, S.K. (2021). *Geography in Tourism (Hindi)*. New Delhi: Takshshila Publication.
- Williams Stephen (1998). *Tourism Geography*. London: Routledge.



Gurugram University, Gurugram, Haryana (India)

Scheme UG A1: Undergraduate Program: Multidisciplinary (Geography Subject)

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

STATISTICAL METHODS IN GEOGRAPHY

Course Code: MIC-6 (Theory)

Programme/Class: Undergraduate Year: 3 Semester: VI Credit: 04 (3+1+0) L+T+P Hrs/Week: (3+1+0) L+T+P	Total Marks:	100 Marks
Time: 3 Hours	Theory End Semester Exam: (TE)	70 Marks
Course Outcomes: CO1: To understanding about pattern and processes of statistical methods. CO-2: To Acquaintance with contemporary statistical methods and their application. CO-3: Augmentation of knowledge about quantities methods. CO-4: Awareness about statistical methods and application issues.	Theory Internal Assessment: (TI) Attendance: Assignment: Sessional Exam.:	30 Marks 05 Marks 05 Marks 20 Marks
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: Concept, Statistical data classification, Tabulation and Data Series; Representation of statistical data: Line, Bar diagram, Pie, Histogram Ogives; Sampling; Significance of statistical techniques in Geography.

UNIT - II

Measures of Central Tendency: Mean, Median, Mode; Distribution of Data/Variable (Nominal, Ordinal Skewed), Type of Variables and correct use of Central Tendency.

UNIT – III

Measures of dispersion: Mean Deviation, Standard Deviation; Co-efficient of Variation; Lorenz's curve

UNIT- IV

Correlation: (Karl Pearson and Spearman); significance testing of correlation and co-efficient of determination; Regression.

Suggested Readings:

- Bart James, E. and Gerald, M. Barber. (1996). *Elementary Statistics for Geographers*. London. UK: The Guieford Press.
- Bhagwathi, V. and Pillai, R.S.N. (2003). *Practical Statistics*. New Delhi: Sultan Chand and Company.
- Cressie, N.A.C. (1991). *Statistics for Spatial Analysis*. New York USA: Wiley.

- Eldon, D. (1983). *Statistics in Geography: A Practical Approach*. UK London: Blackwell.
- Gregory, S. (1978). *Statistical Methods and the Geographer*. UK London: Longman.
- Gupta, S.P. (1998). *Advanced Practical Statistics*. New Delhi: Sultan Chand and Company.
- Haining, R.P. (1990). *Spatial Data Analysis in the Social 108 and Environmental Science*. Cambridge UK: Cambridge University Press.
- Hammond, R. and McCullagh, P.S. (1974). *Quantitative Techniques in Geography An Introduction*. UK: Oxford. Clarendon Press.
- Mahmood, A. (1986). *Statistical Methods in Geographical Studies*, New Delhi: Rajesh Publications.
- Mathews, J.A. (1987). *Quantitative and Statistical Approaches to Geography: A Practical Manual*. UK Pergamon: Oxford.
- Mc Grew, Jr. and Cahrles, B. M. (1993). *An Introduction to Statistical Problem Solving in Geography*. New Jersey. USA: W.C. Brocan Publishers.
- Rogerson, P. A. (2001). *Statistical Methods for Geography*. New Delhi: India. Sage Publications.
- Yeates, M. (1974). *An Introduction to Quantitative Analysis in Human Geography*. New York: USA. McGrawhill.
- Zamir, A. (2002). *Statistical Geography: Methods and Applications*. Jaipur: Rawat Publications.



Gurugram University, Gurugram, Haryana (India)

Scheme UG A1: Undergraduate Program: Multidisciplinary (Geography Subject)

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

CLIMATE CHANGE AND DISASTER MANAGEMENT

Course Code: MIC-7(Theory Paper)

Programme/Class: Undergraduate Year: 3 Semester: VI Credit: 04 (3+1+0) L+T+P Hrs/Week: (3+1+0) L+T+P	Total Marks:	100 Marks
Time: 3 Hours	Theory End Semester Exam: (TE)	70 Marks
Course Outcomes: CO1: The students will be able to understand the basic concepts of Climate Change and its different aspects. CO-2: They will be able to understand different aspects of Hazards and Disasters. CO-3: They can better assess the Disaster Management in various phases. CO-4: They will better understand the policies, applications of Geospatial technologies in Climate change and Disaster Management.	Theory Internal Assessment: (TI) Attendance: Assignment: Sessional Exam.:	30 Marks 05 Marks 05 Marks 20 Marks
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

Climate Change: Concept, Evidences, Causes, Impact assessment and Mitigation; Global Warming and Acid Rain; International Frameworks: IPCC reports, Paris Agreement.

UNIT – II

Hazards and Disaster: Concept, Risk Vulnerability; Classification of Disasters: Natural and Man-made.

UNIT – III

Disaster Management Cycle: Pre-Disaster Phase: (Prevention, Mitigation and Preparedness); During-Disaster Phase: (Response); Post-disaster phase: (Recovery and Reconstruction).

UNIT- IV

Plans and Policies: National and International Disaster Risk Management; Challenges and issues of Disaster Management in India; Role of Remote Sensing and GIS technology in Disaster Management and Climate Change.



Suggested Readings:

- Allan, S., Et al. (2000). *Environmental Risks and the Media*. London: Routledge.
- Blaikie, P., Et al. (1994). *At Risk: Natural Hazards, People's Vulnerability and Disasters*. London: Routledge.
- Hewitt, K., (1997). *Regions of Risk: A Geographical Introduction to Disasters*. London: Longman.
- Godschalk, D.R. et. al. (1999). *Natural hazard Mitigation Recasting Disaster Policy and Planning*, Washington, D.C.: Island Press.
- Kasperson, J.X., Kasperson, R.E. and Turner, B.L. (1995). *Regions at risk: Comparisons of threatened Environment*. Tokyo: United Nation University Press.
- Lal, D.S. (2016). *Climatology* (in Hindi/Eng). Allahabad: Sharda Pustak Bhawan.
- Paraswamam, S. and Umikrishnan, P.V. (2000). *India Disaster Report*. New Delhi: Oxford University Press.
- Prasad, Nupur and Singh, Raj (2019). *Natural Hazards and Disaster Management*. Jaipur: Book Enclave.
- Singh, Nishant (2008). *Disaster Management*. (in Hindi). Delhi: Radha Publications.
- Singh, R.B. (2006). *Natural Hazards and Disaster Management: Vulnerability and Mitigation*. Jaipur: Rawat Publication.
- Singh, Savindra (2005). *Climatology*. Allahabad: Prayag Pustak Bhawan.
- Schneid, T. and Collins, L. (1998). *Disaster Management and Preparedness*. Washington, D.C.: Lewis Publishers.
- Smith, Keith (1996). *Environmental Hazards: Assessing Risk and Reducing Disaster*. London. Routledge.



SKILL ENHANCEMENT COURSES (SEC)

Gurugram University, Gurugram, Haryana (India)

Scheme UG A1: Undergraduate Program: Multidisciplinary (Geography Subject)

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

SURVEYING METHOD IN GEOGRAPHY

Course Code: SEC-1 (Theory and Practical)

Programme/Class: Undergraduate Year: 1 Semester: I Credit: 03 (2+0+1) L+T+P Hrs/Week: (2+0+2) L+T+P	Total Marks: Theory Marks=50 Practical Marks=25	75 Marks
Time: 2 Hours (Theory) Time: 3 Hours (Practical)	Theory End Semester Exam: (TE)	35 Marks
Course Outcomes: CO1: Students will be able to select the appropriate surveying tool based on the terrain and required accuracy. CO2: To maintain a professional Field Book with accurate notations. CO3: To mathematically Transition from traditional paper-based maps to digital spatial data	Theory Internal (TI)	15 Marks
	Attendance:	05 Marks
	Sessional Exam.:	10 Marks
	Practical End Sem. Exam (PE)	20 Marks
	Exercise: Record File: Via-voce:	12 Marks 04 Marks 04 Marks
	Practical Internal: Attendance: (PI)	05 Marks
Theory Note: The question Paper will have three units. The unit one shall be compulsory and shall contain five (5) questions (MCQ/short answer having one marks of each question, total=05 Marks) covering entire Syllabus. The remaining three units will contain two essay type questions in each. Candidate(s) are required to attempt one question from each unit, having ten (10) marks each, total three questions (10 x 3 =30 marks). Practical Note: At least fifteen (15) exercises are to be prepared covering all the topics. The question paper shall contain six questions in all. Candidate(s) are required to attempt three questions in all. All questions carry equal marks (3 Question x 4 Marks= 12 Marks).		

UNIT-I

Cartography: Concepts, Historical Development, integration with surveying; Plain Surveying & Geodetic Surveying; Coordinate and map: magnetic and true north, polar and rectangular; Elements of Map: Title, North, Grid, Map Scale, Legends; Conventional Signs.

UNIT-II

Surveying: Concept, fundamentals, Types, Methods, instruments, steps; Chain and tape Surveying; Plain Table Surveying; Prismatic Compass Surveying.



UNIT-II

Advanced Surveying and Modern Geospatial Techniques: Basic introduction of GPS, Aerial Surveying, Satellite digital image etc.; Basic Concepts: Benchmark (BM), Reduced Level (RL), Mean Sea Level (MSL); Contouring and slope.

PRACTICAL SYLLABUS:

Course Outcomes:

CO1: To create a better understanding and draw conclusions based on survey technique.

1. Chain and Tape Survey

- ❖ Open Traverse Survey
- ❖ Closed Traverse Survey
- ❖ Triangulation and Offsets

2. Plane Table Survey

- ❖ Radiation Method
- ❖ Intersection Method

3. Prismatic Compass Survey

- ❖ Computation of Internal Angles
- ❖ Correction of Local Attraction

Suggested Readings:

- Khan, A.A. (1996). *Text Book of Practical Geography*. New Delhi: Concept.
- Lawrence, G.R.P.(1968). *Cartographic Methods*. London: Methuen.
- Mishra, R.P. and Ramesh, A. (1999). *Fundamentals of Cartography*. New Delhi: Concept Publishing Company.
- Monkhouse, F.J. and Wilkinson, H.R. (1994). *Maps and Diagrams*. London: Methuen.
- Robinson, A.H. et.al. (1995). *Elements of Cartography*. John Wiley & Sons .
- Singh, R.L. (1979). *Elements of Practical Geography*. New Delhi: Kalyani Publisher.
- Singh ,Gopal (1991). *Map Work and Practical Geography*. Nai Sarak Delhi: SBD Publishers. Distributors.4075.
- Sarkar, A.K. (1997). *Practical Geography-A Systematic Approach*. Calcutta: Orient Longman.
- Steers, J.B. (1992). *Map Projections*. London: University of London Press.



Gurugram University, Gurugram, Haryana (India)

Scheme UG A1: Undergraduate Program: Multidisciplinary (Geography Subject)

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

GEOGRAPHICAL DATA COLLECTION TECHNIQUES

Course Code: SEC-2 (Theory and Practical)

Programme/Class: Undergraduate Year: 1 Semester: II Credit: 03 (2+0+1) L+T+P Hrs/Week: (2+0+2) L+T+P	Total Marks: Theory Marks=50 Practical Marks=25	75 Marks
Time: 2 Hours (Theory) Time: 3 Hours (Practical)	Theory End Semester Exam: (TE)	35 Marks
Course Outcomes: CO1: Apply appropriate sampling methods to select representative field sites and populations. CO2: Design and conduct questionnaires and interviews to gather socio-economic information. CO3: Retrieve and validate secondary data from institutional sources for integrated mapping.	Theory Internal (TI)	15 Marks
	Attendance:	05 Marks
	Sessional Exam.:	10 Marks
	Practical End Sem. Exam (PE)	20 Marks
	Exercise: Record File: Via-voce:	12 Marks 04 Marks 04 Marks
Practical Internal: Attendance: (PI)		05 Marks
Theory Note: The question Paper will have three units. The unit one shall be compulsory and shall contain five (5) questions (MCQ/short answer having one marks of each question, total=05 Marks) covering entire Syllabus. The remaining three units will contain two essay type questions in each. Candidate(s) are required to attempt one question from each unit, having ten (10) marks each, total three questions (10 x 3 =30 marks). Practical Note: At least fifteen (15) exercises are to be prepared covering all the topics. The question paper shall contain six questions in all. Candidate(s) are required to attempt three questions in all. All questions carry equal marks (3 Question x 4 Marks= 12 Marks).		

UNIT-I

Introduction to Geographical Data: Meaning, Needs, Sources, Types of Data- Primary and Secondary; Sampling Techniques; Physical Data Collection: Geomorphic data, Hydrological data, Climate data; Land Use & Land Cover (LULC) Mapping: Ground Truthing.

UNIT-II

Primary Data Collection Techniques: Observation Method, Interview Techniques, Questionnaire & Schedule; Field Survey; Handling with Primary Data: Grouping, Tabulation, Organization, Graphic presentation.

UNIT-III

Sources of Secondary Data: Institutional Sources, Cartographic Sources; Digital Archives; Remote Sensing as a Data Source: Remote Sensing & Digital Acquisition; Digital Data Acquisition & GPS; Mobile Mapping; GNSS/GPS; Data Ethical Standards & Quality Control: Ethics and data validation.



PRACTICAL SYLLABUS:

Course Outcomes:

CO1: Learn the importance of use of geographical data in Geography.

- ❖ Heights and Slopes (Terrain Analysis)
- ❖ Drawing a Relief Profile
- ❖ People and Environment (Socio-Economic)
- ❖ Socio-Economic Household Survey: Age, Income
- ❖ Land Use Mapping (Visual Observation): Identifying different land-use patterns in an area
- ❖ Mobile GPS Surveying
- ❖ Secondary Data Visualization:
 - Bar graph,
 - Line graph,
 - Histogram,
 - Frequency Polygon
 - Ogive.
- ❖ Centographic Techniques:
 - Mean Centre,
 - Median Centre

Suggested Readings:

- Khan, A.A. (1996). *Text Book of Practical Geography*. New Delhi: Concept.
- Lawrence, G.R.P.(1968). *Cartographic Methods*. London: Methuen.
- Mishra, R.P. and Ramesh, A. (1999). *Fundamentals of Cartography*. New Delhi: Concept Publishing Company.
- Monkhouse, F.J. and Wilkinson, H.R. (1994). *Maps and Diagrams*. London: Methuen.
- Prasad, H. (1992). *Research Methods and Techniques in Geography*. Jaipur: Rawat Publishers.
- Robinson, A.H. et.al. (1995). *Elements of Cartography*. John Wiley & Sons.
- Sarkar, A.K. (1997). *Practical Geography-A Systematic Approach*. Calcutta: Orient Longman.
- Singh, R.L. (1979). *Elements of Practical Geography*. New Delhi Kalyani Publisher.:
- Singh, Gopal (1991). *Map Work and Practical Geography*. Nai Sarak Delhi: SBD Publishers. Distributors.4075.
- Steers, J.B. (1992). *Map Projections*. London: University of London Press.



Gurugram University, Gurugram, Haryana (India)

Scheme UG A1: Undergraduate Program: Multidisciplinary (Geography Subject)

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

ENVIRONMENTAL TECHNIQUE IN GEOGRAPHY

Course Code: SEC-3 (Theory and Practical)

Programme/Class: Undergraduate Year: 3 Semester: VI Credit: 03 (2+0+1) L+T+P Hrs/Week: (2+0+2) L+T+P	Total Marks: Theory Marks=50 Practical Marks=25	75 Marks
Time: 2 Hours (Theory) Time: 3 Hours (Practical)	Theory End Semester Exam: (TE)	35 Marks
Course Outcomes: CO1: To gain knowledge of how different tools helps in Environmental data collection. CO-2: To create a better understanding and draw conclusions based on data collected. CO-3: To recognize the ways in which appropriate method affects several facets of Environmental information.	Theory Internal (TI)	15 Marks
	Attendance:	05 Marks
	Sessional Exam.:	10 Marks
	Practical End Sem. Exam (PE)	20 Marks
	Exercise: Record File: Via-voce:	12 Marks 04 Marks 04 Marks
	Practical Internal: Attendance: (PI)	05 Marks
Theory Note: The question Paper will have three units. The unit one shall be compulsory and shall contain five (5) questions (MCQ/short answer having one marks of each question, total=05 Marks) covering entire Syllabus. The remaining three units will contain two essay type questions in each. Candidate(s) are required to attempt one question from each unit, having ten (10) marks each, total three questions (10 x 3 =30 marks). Practical Note: At least fifteen (15) exercises are to be prepared covering all the topics. The question paper shall contain six questions in all. Candidate(s) are required to attempt three questions in all. All questions carry equal marks (3 Question x 4 Marks= 12 Marks).		

UNIT-I

Environment: Meaning, Techniques, fundamentals of Ecosystem, Ecosystem services and ecological footprints; Needs of Natural Resource management in Environmental perspective: Basic Concept: Human Environment Relationships.

UNIT-II

Natural Resource: Concept, Classification, Utilization, Problems and Management of Land, Water, forest and energy resources; Conservation of Environment and Natural Resources: Resource- Reduce, Reuse, Recycle.

UNIT-III

Global environmental issues: Impacts on land, soil, water, climate and atmosphere, biodiversity loss and human health; Sustainable Resource Development; Environmental Programmes and Policies – Global, National and Local levels.



PRACTICAL SYLLABUS:

Course Outcomes:

CO1: Learn the importance of use of geographical data in Geography.

Procedure and Planning:

- ❖ Visit to a local area to document environmental assets river/forest/grassland/hill/mountain,
- ❖ Visit to a local polluted site-urban/Rural/ Industrial/ Agricultural.
- ❖ Study of common plants, insects, birds.
- ❖ Study of simple ecosystems- pond, River, Hill slopes, etc. e. Prepare a project report.

Suggested Readings:

- Agarwal, K.C. (2001). *Environmental Biology*. Bikaner: Nidi Pub. Ltd.
- Chandna, R.C. (2002). *Environmental Geography*. Ludhiana: India Kalyani.
- Cunningham, W.P. and Cunningham, M.A. (2004). *Principals of Environmental Science: Inquiry and Applications*. Delhi: Tata Macgraw Hill.
- Goudie, A. (2001). *The Nature of the Environment*. Blackwell: Oxford UK.
- Holechek, J. L.C., Richard, A., Fisher, J. T. and Valdez, R. (2003). *Natural Resources: Ecology, Economics and Policy*. New Jersey (USA): Prentice Hall.
- Mitchell, B. (1997). *Resource and Environmental Management*. England: Longman Harlow.
- Odum, E. P. Et al. (2005). *Fundamentals of Ecolog*. India: Ceneage Learning.
- Saxena, H.M. (2012). *Environmental Studies*. Jaipur India: Rawat Publications.
- Sharma, B.K. 2001. *Environmental Chemistry*. Meerut: Goal Publ. House.
- Singh, R.B., Prokop, Pawel (Eds.) (2016). *Environmental Geography of South Asia*. Tokyo: Japan Springer.
- Singh, Savindra (2001). *Paryavaran Bhugol*. (Hindi).Allahabad: India Prayag Pustak Bhawan.



VALUE ADDED COURSES (VAC)

Gurugram University Gurugram, Haryana (India)

Value Added Course from the department for pool of the Courses in the University

(All the departments will offer value added course for semester 4 for the students of same or different departments. In the 2nd year, students will study (i) Field Survey and Report Writing on Environmental Issues as value added course)

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

Gurugram University, Gurugram, Haryana (India)

Scheme UG A1: Undergraduate Program: Multidisciplinary (Geography Subject)

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

FIELD SURVEY AND REPORT WRITING ON ENVIRONMENTAL ISSUES

Course Code: VAC-3 (Theory and Practical)

Programme/Class: Undergraduate Year: 2 Semester: IV Credit: 02 (1+0+1) L+T+P Hrs/Week: (1+0+2) L+T+P	Total Marks: Theory Marks=25 Practical Marks=25	50 Marks
Time: 2 Hours (Theory) Time: 3 Hours (Practical)	Theory End Semester Exam: Internal Assessment: Attendance:	20 Marks 5 Marks
<u>Course Outcomes:</u> CO1: The course focuses on enhancing the potential of students to visualize the various environmental issues and their mitigation. CO2: It will create a better understanding of Field Survey research in a practical and theoretical way on the environmental issues.	Practical End Semester Exam: Field Survey Report: Via-voce: Internal Attendance:	20 Marks 15 Marks 05 Marks 05 Marks
Note: Theory Note: The question Paper will have three units. The unit one shall be compulsory and shall contain eight questions (MCQ/short answer having one marks of each question=08 Marks) covering entire Syllabus. The remaining two units will contain two essay type questions each. Candidate(s) are required to attempt one question from each unit. These two questions carry equal marks (06 Marks each). Practical Note: Practical Record: Each student will prepare an individual report based on primary data collected during field work. Field Survey: as the instructions mentioned under		

UNIT-I

Major Environmental Issues: Pollution, Biodiversity Loss, Deforestation, Waste Management.

UNIT-II

Field Survey: Concept, Steps, Significance; Data source: Primary and Secondary; Data Collection methods: Observation and Questionnaire, Tabulation and analysis; Ethics in Field survey.



PRACTICAL SYLLABUS:

Field Survey Report Writing on Environmental Issues caused by Human activities.

Guidelines: Field Visit Survey

1. At the Commencement of fourth Semester students are required to conduct a field survey on any Environmental issue of his/her interest area in consultation with the teacher in-charge to conduct Field Visit Survey.
2. The students shall visit content & objectives based out-campus of their interest or any institution-based Field survey and collect data for the comprehensive Environmental issues under guidance of the teacher in-charge, along with supporting accompanying staff Viz. Lab Attendant etc. There shall be a teacher in-charge on a group of 20 students. Duration of the field survey visit study will not be exceeding five (5) days in normal circumstances.
3. 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 etc.) and Analysis, Conclusion and Suggestions, Annexure and References/Bibliography.
4. Submission: The students shall submit hardcopy of Field survey report.

Recommended Readings:

- Ahuja, Ram (2023). *Social Survey and Research* (Hindi). Jaipur: Rawat Publications.
- Basotia, G. R. and Sharma, K. K. (2002). *Research Methodology*. Jaipur: Mangal Deep Publications.
- Kumar, Ranjit (2005). *Research Methodology: Step by Step Guide for Beginners*. Pearson, Australia.
- Misra, H.N. and Singh, Vijai P. (2017). *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.
- Paul Oliver (2004). *Writing your Thesis*. New Delhi: Vistar Publication.
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- Somekh, Bridget and Cathy Lewin (2005). *Research Methods in the Social Sciences*. New Delhi: Vistar Publications.
- Stoddard, R. H. (1982). *Field Techniques and Research Methods in Geography*. Kendall/Hunt.
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VOCATIONAL COURSES (VOC)

Gurugram University, Gurugram, Haryana (India)

Scheme UG A1: Undergraduate Program: Multidisciplinary (Geography Subject)

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

MAP READING AND ITS INTERPRETATION

Course Code: VOC-1 (Theory and Practical)

Programme/Class: Undergraduate Year: 2 Semester: IV Credit: 04 (2+0+2) L+T+P Hrs/Week: (2+0+4) L+T+P	Total Marks: Theory Marks=50 Practical Marks=50	100 Marks
Time: 2 Hours (Theory) Time: 3 Hours (Practical)	Theory End Semester Exam:	35 Marks
Course Outcomes: CO1: To gain knowledge of how different methods helps in map reading CO2: To create a better understanding and draw conclusions based on map interpretations. CO3: To recognize the ways in which appropriate method affects several facets of information in map reading and its interpretation. CO4: To become acquainted with map reading issues from a geographical perspective.	Theory Internal: Attendance: 05 Marks Sessional Exam.: 10 Marks Practical End Sem. Exam Exercise: 15 Marks Survey Record File: 10 Marks Via-voce: 10 Marks Practical Internal: Attendance: 05 Marks Sessional Exam: 10 Marks	15 Marks 05 Marks 10 Marks 35 Marks 15 Marks 10 Marks 10 Marks 15 Marks 05 Marks 10 Marks

Theory Note:

The question Paper will have five units. The unit one shall be compulsory and shall contain seven questions (MCQ/short answer having one marks of each question=07 Marks) covering entire Syllabus. The remaining four units will contain two essay type questions each. Candidate(s) are required to attempt one question from each unit. All questions carry equal marks (7 Marks each (7x4=28 Marks)).

Practical Note:

At least fifteen (15) exercises are to be prepared covering all the topics. The question paper shall contain six questions in all. Candidate(s) are required to attempt three questions in all. All questions carry equal marks (3 Question x 5 Marks= 15 Marks).

UNIT-I

Fundamentals of Cartography: introduction to cartography, Basics of Map: sources, types, scale; Elementary Geodesy: Coordinate systems and transformations. Spheroids and Geoids. Geocentric datum and map projections.

UNIT-II

Map Reading: Map Classification; Interpretation of Distribution Maps; Elements of map reading, Conventional Signs, Enlargement and Reduction of maps by square method.

UNIT-III

Topographical sheets: Fundamentals, types; symbology; Major Relief features and profiles; Interpretation of Toposheets; Slope Analysis.



UNIT-IV

Weather map: Fundamentals of weather Elements; Weather symbols; Isobaric Expressions; weather instruments and their use; Interpretation of Weather report (July-August and December-January months)

PRACTICAL SYLLABUS:

- ❖ **Fundamentals of Cartography:**
 - Scale Conversion
 - Grid Systems
 - Direction & Bearings
- ❖ **Topographical Map Symbols:**
 - Symbol Identification and Color Coding
- ❖ **Representation of Relief:**
 - Contour Patterns
 - Profiles & Sections
- ❖ **Interpretation of Physical Features:**
 - Drainage Analysis
 - Vegetation Cover
- ❖ **Interpretation of Cultural Features:**
 - Settlement Patterns
 - Transport Networks
 - Land Use Patterns

Suggested Readings:

- Khan, A.A. (1996). *Text Book of Practical Geography*. New Delhi: Concept.
- Mishra, R.P. and Ramesh, A. (1999). *Fundamentals of Cartography*. New Delhi: Concept Publishing Company.
- Monkhouse, F.J. and Wilkinson, H.R. (1994). *Maps and Diagrams*. London: Methuen.
- Robinson, A.H. et.al. (1995). *Elements of Cartography*. John Wiley & Sons.
- Singh, Gopal (1991). *Map Work and Practical Geography*. SBD Publishers. Nai Sarak, Delhi: Distributors.4075.
- Sarkar, A.K. (1997). *Practical Geography-A Systematic Approach*. Calcutta: Orient Longman.
- Steers, J.B. (1992). *Map Projections*. London: University of London Press.



Gurugram University, Gurugram, Haryana (India)

Scheme UG A1: Undergraduate Program: Multidisciplinary (Geography Subject)

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

WEATHER INSTRUMENTS AND GEO-SPATIAL INSTRUMENTS IN GEOGRAPHY

Course Code: VOC-2 (Theory and Practical)

Programme/Class: Undergraduate Year: 3 Semester: V Credit: 04 (2+0+2) L+T+P Hrs/Week: (2+0+4) L+T+P	Total Marks: Theory Marks=50 Practical Marks=50	100 Marks
Time: 2 Hours (Theory) Time: 3 Hours (Practical)	Theory End Semester Exam:	35 Marks
Course Outcomes: CO1: To recognize the diverse range of traditional weather instruments and modern Geo-Spatial tools. CO2: To demonstrate technical proficiency in the setup, calibration, and operation of instruments in field conditions. CO3: To analyze and interpret the raw data collected from both weather and geo-spatial instruments. CO4: To evaluate environmental conditions and geographical challenges by synthesizing data from multiple instruments.	Theory Internal: Attendance: 05 Marks Sessional Exam.: 10 Marks Practical End Sem. Exam Exercise: 15 Marks Survey Record File: 10 Marks Via-voce: 10 Marks Practical Internal: Attendance: 05 Marks Sessional Exam: 10 Marks	15 Marks 05 Marks 10 Marks 35 Marks 15 Marks 10 Marks 10 Marks 15 Marks 05 Marks 10 Marks
Theory Note: The question Paper will have five units. The unit one shall be compulsory and shall contain seven questions (MCQ/short answer having one marks of each question=07 Marks) covering entire Syllabus. The remaining four units will contain two essay type questions each. Candidate(s) are required to attempt one question from each unit. All questions carry equal marks (7 Marks each (7x4=28 Marks)). Practical Note: At least fifteen (15) exercises are to be prepared covering all the topics. The question paper shall contain six questions in all. Candidate(s) are required to attempt three questions in all. All questions carry equal marks (3 Question x 5 Marks= 15 Marks).		

UNIT-I

Weather and Climate; Elements, Types; Weather instruments and their functioning: for Temperature, Humidity, Precipitation, Atmospheric Pressure, Wind etc.

UNIT-I

Weather symbols (Pressure, Winds, Condition of Sky, Sea Condition, Temperature, Clouds, Precipitation),
Weather map reading: Interpretation of Weather Maps (July-August and December-January); Conventional
Signs.

UNIT-III

Aerial Photographs: Fundamentals, Types significance; elements of image interpretation; Stereoscope types and stereovision; Interpretation of Aerial Photographs: Physical and Cultural feature identification.

UNIT-IV

GPS and Location understanding: Prepare a route map with the help of GPS along with recording of various weather symbols; GIS: Basic Concept, Components; application of GIS in environmental studies; GIS softwares; Satellite Imageries: Interpretation of Satellite imageries: Physical and Cultural feature identification.

PRACTICAL SYLLABUS:

- ❖ **Thermometers:** Handling and reading Maximum-Minimum thermometers for diurnal range.
- ❖ **Barometers:** Using the Fortin's Barometer or Aneroid Barometer to measure air pressure (hPa/mb).
- ❖ **Wind Vane:** Measuring wind speed (knots/kmph) and determining wind direction.
- ❖ **Rain Gauge:** Installation and data collection techniques for Symon's Rain Gauge.
- ❖ **Mirror Stereoscope:** Viewing 3D relief from overlapping aerial photographs.
- ❖ **Pocket Stereoscope:** Field-based 3D visualization of landforms.
- ❖ **Weather Journaling:** Maintaining a "Daily Weather Diary" for 7 consecutive days using lab readings.
- ❖ **Climatological Graphs:** Constructing Climographs and Hythergraphs based on recorded data.
- ❖ **Wind Rose Diagram:** Plotting wind direction frequency on a circular star diagram.
- ❖ **Coordinate Plotting:** Transferring GPS way points onto a base map or Google Earth Pro.
- ❖ **Mobile Mapping:** Using smartphone-based GPS apps for field data collection and geotagging photos.

Suggested Readings:

- Khan, A.A. (1996). *Text Book of Practical Geography*. New Delhi: Concept.
- Mishra, R.P. and Ramesh, A. (1999). *Fundamentals of Cartography*. New Delhi: Concept Publishing Company.
- Monkhouse, F.J. and Wilkinson, H.R. (1994). *Maps and Diagrams*. London: Methuen.
- Robinson, A.H. et.al. (1995). *Elements of Cartography*. John Wiley & Sons.
- Singh, R.L. (1979). *Elements of Practical Geography*. New Delhi: Kalyani Publisher.
- Singh, Gopal (1991). *Map Work and Practical Geography*. SBD Publishers. Nai Sarak, Delhi: Distributors.4075.
- Sarkar, A.K. (1997). *Practical Geography-A Systematic Approach*. Calcutta: Orient Longman.



Gurugram University, Gurugram, Haryana (India)

Scheme UG A1: Undergraduate Program: Multidisciplinary (Geography Subject)

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

APPLICATION OF ECONOMIC AND POPULATION DATA IN GEOGRAPHY

Course Code: VOC-3 (Theory and Practical)

Programme/Class: Undergraduate Year: 3 Semester: VI Credit: 04 (2+0+2) L+T+P Hrs/Week: (2+0+4) L+T+P	Total Marks: Theory Marks=50 Practical Marks=50	100 Marks
Time: 2 Hours (Theory) Time: 3 Hours (Practical)	Theory End Semester Exam:	35 Marks
Course Outcomes: CO1: To gain knowledge of Economic and Population Data. CO2: To create a better understanding and draw conclusions based on Economic and Population Data. CO3: To recognize the ways in which appropriate method affects several facets of Economic and Population Data. CO4: To become acquainted with Economic and Population Data from a geographical perspective.	Theory Internal: Attendance: 05 Marks Sessional Exam.: 10 Marks Practical End Sem. Exam Exercise: 15 Marks Survey Record File: 10 Marks Via-voce: 10 Marks Practical Internal: Attendance: 05 Marks Sessional Exam: 10 Marks	15 Marks 05 Marks 10 Marks 35 Marks 15 Marks 10 Marks 10 Marks 15 Marks 05 Marks 10 Marks
Theory Note: The question Paper will have five units. The unit one shall be compulsory and shall contain seven questions (MCQ/short answer having one marks of each question=07 Marks) covering entire Syllabus. The remaining four units will contain two essay type questions each. Candidate(s) are required to attempt one question from each unit. All questions carry equal marks (7 Marks each (7x4=28 Marks)). Practical Note: At least fifteen (15) exercises are to be prepared covering all the topics. The question paper shall contain six questions in all. Candidate(s) are required to attempt three questions in all. All questions carry equal marks (3 Question x 5 Marks= 15 Marks).		

UNIT-I

Population data and Economic data: Census; Major source of population economic data, Characteristics of Population and economic data, Classification of data, importance and application of data.

UNIT-II

Census: History, Definition, Major characteristics, Approaches of counting Census data, Problems/ Challenges in Census taking, Essential features of a Census/ Requisites of a Census, Civil Registration System and main features and variables

UNIT-III

Geographic Data: Representation of data, Methods of data reorientation, Textual; Tabular; Graphical (Through Graphs, Diagram & Maps) Simple Line, Lin & Bar graph, Polygraph, Star Graph, Comparative Bar diagram, Pyramidal diagram, Flow, Pie, Square, cube traffic flow diagram.

UNIT-IV

Spatial Data representation: Dot, Isopleths and Major conventional sign used to represent Population and economic data.

PRACTICAL SYLLABUS:

- ❖ **Population Growth & Projections:** Calculating absolute growth, decadal growth rate and exponential growth models.
- ❖ **Age-Sex Pyramids:** Constructing and interpreting population pyramids for different stages of demographic transition.
- ❖ **Arithmetic Density:** Total Population / Total Area.
- ❖ **Dependency Ratio:** Calculating the ratio of the non-working population (0–14 and 65+) to the working-age population (15–64).
- ❖ **Sectoral Composition:** Analyzing the shift from primary (agriculture) to secondary (industry) and tertiary (services) sectors using **Ternary Diagrams (Triangular Graphs)**.
- ❖ **Lorenz Curve & Gini Coefficient:** Graphical representation of income or resource inequality within a region.
- ❖ **Human Development Index (HDI) Calculation:** Practicing the formula-based approach to determine a region's health, education, and income indices.
- ❖ **Choropleth Mapping:** Using shaded patterns to represent population density or literacy rates across administrative boundaries (Districts/States).
- ❖ **Dot Maps:** Representing the absolute distribution of population where one dot equals a specific number of people.
- ❖ **Proportional Circles & Spheres:** Representing economic data (like urban population or industrial output) where the size of the symbol is proportional to the value.
- ❖ **Isopleth Maps:** Drawing lines of equal value for continuous data like income per capita or cost of living.
- ❖ **Correlation (Pearson/Spearman):** Examining the relationship between two variables (e.g., Literacy Rate vs. Fertility Rate or Road Density vs. GDP).

Suggested Readings:

- Black James A and D.J. Champion (1976). *Methods and Issues in Social Research*. New York: John Wiley and Sons, Inc.
- Khan, A.A. (1996). *Text Book of Practical Geography*. New Delhi: Concept Publishing.
- Lawrence, GRP. (1968). *Cartographic Methods*. London: Methuen.
- Mishra R.P. and Ramesh A. (1999). *Fundamentals of Cartography*. New Delhi: Concept Publishing.
- Prasad, H. (1992). *Research Methods and Techniques in Geography*. Jaipur: Rawat Publishers.
- Robinson, A.H., Et al. (1995). *Elements of Cartography*. John Wiley & Sons.
- Singh, R.L., (1979). *Elements of Practical Geography*. New Delhi: Kalyani Publisher.
- Sarkar, A.K (1997). *Practical Geography-A Systematic Approach*. Calcutta: Orient Longman.

