National Education Policy-2020 (NEP)

&

Learning Outcome-based

Curriculum Framework (LOCF)

For

Under Graduate Program Bachelor of Arts

Scheme UG A1: Undergraduate Program: Multidisciplinary

(Geography Subject)

(To be effective from the Academic Session 2024-25)

Gurugram University, Gurugram

(A State University established by Govt. of Haryana Act No. 17 of 2017)

Scheme of Programme

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

Semester 1

ourse Code	Course Title	Course ID	L	T	P	L	T	P	Total Credits	MARKS				
			(Hrs)			Credits				TI	TE	PI	PE	Total
						Core Course(s)								
C-A1	Fundamentals of Physical Geography (Theory)	240/GEO/M/CC101	3	-	-	3	-	-	4	25	50	-	-	75
	Maps and Scales (Practical)	240/GEO/M/CC102	-	-	2	-	-	1		-	-	5	20	25

Semester 2

ourse Code	Course Title	Course ID	L	T	P	L	T	P	Credits	MARKS				
			(Hrs)			Credits				TI	TE	PI	PE	Total
						Core Course(s)								
C-A2	Geography of India (Theory)	240/GEO/M/CC201	3	-	-	3	-	-	4	25	50	-	-	75
	Graphs and Diagrams (Practical)	240/GEO/M/CC202	-	-	2	-	-	1		-	-	5	20	25

Semester 3

ourse Code	Course Title	Course ID	L	T	P	L	T	P	Credits	MARKS				
			(Hrs)			Credits				TI	TE	PI	PE	Total
						Core Course(s)								
C-A3	Human Geography (Theory)	240/GEO/M/CC301	3	-	-	3	-	-	4	25	50	-	-	75
	Map Projection and its construction (Practical)	240/GEO/M/CC302	-	-	2	-	-	1		-	-	5	20	25

Semester 4

ourse Code	Course Title	Course ID	L	T	P	L	T	P	Credits	MARKS				
			(Hrs)			Credits				TI	TE	PI	PE	Total
						Core Course(s)								
C-A4	Principles of Economic Geography (Theory)	240/GEO/M/CC401	3	-	-	3	-	-	4	25	50	-	-	75
	Representation of Relief and Landforms (Practical)	240/GEO/M/CC402	-	-	2	-	-	1		-	-	5	20	25

Semester 5

ourse Code	Course Title	Course ID	L	T	P	L	T	P	Credits	MARKS				
			(Hrs)			Credits				TI	TE	PI	PE	Total
Core Course(s)														
C-A5	Introduction of Geo-Spatial Technology in Geography	240/GEO/M/CC501	3	-	-	3	-	-	4	25	50	-	-	75
	Aerial Photograph and its interpretation (Practical)	240/GEO/M/CC502	-	-	2	-	-	1		-	-	5	20	25

nternship is to be done during summer break after 4th Semester; Marks will be added in 5th Semester.

Semester 6

ourse Code	Course Title	Course ID	L	T	P	L	T	P	Credits	MARKS				
			(Hrs)			Credits				TI	TE	PI	PE	Total
Core Course(s)														
C-A6	Systematic and Regional Geography of Haryana	240/GEO/M/CC601	3	-	-	3	-	-	4	25	50	-	-	75
	Field Survey and Report Writing (Practical)	240/GEO/M/CC602	-	-	2	-	-	1		-	-	5	20	25

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

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	240/GEO/ MDC101	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	240/GEO/ MDC201	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	240/GEO/ MDC301	2	1	-	2	1	-	3	25	50	-	-	75

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	240/GEO/ MIC101	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	240/GEO/ MIC201	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	240/GEO/ MIC301	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	240/GEO/ MIC401	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	240/GEO/ MIC501	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	240/GEO/ MIC601	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	240/GEO/ MIC701	3	1	-	3	1	-	4	30	70	-	-	100

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	Total
VOC-1	Map Reading and its Interpretation (Theory and Practical)	240/GEO/ VOC401	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)	240/GEO/ VOC501	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)	240/GEO/ VOC601	1	-	6	1	-	3	4	5	20	25	50	100

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)	240/GEO/SEC101	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)	240/GEO/SEC201	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)	240/GEO/SEC601	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)	240/GEO/SEC801	-	-	8	-	-	4	4	-	-	30	70	100

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								2					50

	हिंदीभाषाएव. सम्प्रेषण-4 OR संस्कृतभाषाएव. सम्प्रेषण-4													

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

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		1	-	2	1	-	1	2	5	20	5	20	50

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
nternship	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 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 programmes educate 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 students 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 want 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 siteUrban/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)

Under Graduate (UG) /B.A. Geography Syllabus- Multidisciplinary

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

Scheme UG A1: Undergraduate Program: Multidisciplinary (Geography Subject)-Semester-I

FUNDAMENTALS OF PHYSICAL GEOGRAPHY (Theory)

Paper Code: CC-A1 - Course Id: 240/GEO/M/CC101

Credit: 03 (3+0+0) L+T+P Hrs/Week	Total Marks	75 Marks
Time: 3 Hours	End Semester Exam:	50 Marks
Note: (i) The question one of paper is compulsory. It will encompass two parts: Part-A of the question one of paper will contain map work of five marks (Five data points of one mark each). Candidates will be required to attempt all five data point neatly and cleanly on the provided Map. Part-B of the question one of paper will contain Multiple Choice Questions (MCQ)/Objective type/Terms of Five marks (one mark each). (ii) The question paper will have four units. Two questions will contain from each unit of the syllabus. Candidates are required to attempt one question from each unit. These questions will be of Ten marks each.	Internal Assessment: Attendance Assignment/Seminar /presentation/class presentation Session Examination	25 Marks 05 Marks 05 Marks 15 Marks

Learning/Course Objectives: To comprehend geography as a fundamental idea with notions to solve human issues and pinpoint the factors dependable for human development in diverse environments. The fundamental ideas to be proverbial in geography will be covered in general in the introduction to Geography course. To learn more about ideas connected to geography & comprehend geographical phenomena and processes. To be familiar with grading agents of the earth.

Learning/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.CO-3: To understand how Weather and Climate influence different aspect our living on this earth. CO-4: To familiarize with geographical point of view store house of energy and future source of food .CO-5: Student will be able to comprehend the Geographical Concepts which are relevant for sustained Growth and development.

UNIT-I

Solar system: Solar and lunar eclipse; Earth shape & movements; formation of day/nights and seasons; location: Globe; latitude; longitude;, Heat zones of the earth and time zones.

UNIT-II

Interior of earth: Endogenetic & Exogenesis forces; Volcanism and Earthquakes; Plate tectonics; Gradational process, Weathering and Erosion; Cycle of Erosion: Davis and Penk; Basic introduction to major landforms; Landform of Water, Wind, Glacier, Karst & Ocean.

UNIT-III

Weather and climate: Components of weather and climate; Factors affecting; Composition and structure of atmosphere; atmospheric pressure and global winds; Introduction to Monsoon; Greenhouse effects or Green house Gases, Clean Energy.

UNIT-IV

Relief of oceans; Oceanic salinity; Circulation of oceanic water; Oceanic currents, Factors responsible for emergence of oceanic currents & its impact on surrounding environment; Ocean as store house of energy, Ocean as future source of food.

Recommended Readings:

- Dayal, P. (2019) Bhuakriti Vigyan, (in Hindi), Rajesh Publications, New Delhi.
- Getis Arthur and 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, Oxford University Press, London.
- Homes A. 1965: Principles of Physical Geology, 3rd Edition, ELBSS Edn.
- Husain Majid (2002), Fundamentals of Physical Geography, Second Edition, Rawat Publications, Jaipur and New Delhi.
- Khullar, D.R. (2021): Bhautik Bhugol, (in Hindi), Kalyani Publishers, New Delhi.
- Leong, Goh Cheng.,2015, Certificate Physical and Human Geography, Oxford University Press, New Delhi.
- Singh, Savinder., 2021, Physical Geography (Eng/Hindi), Pravalika Publications, Allahabad.
- Strahler Alan and Strahler Aurthur., 2005, Introducing Physical Geography, John Wiley & Sons, Inc.

Gurugram University Gurugram, Haryana (India)

Under Graduate (UG) /B.A. Geography Syllabus- Multidisciplinary

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

Scheme UG A1: Undergraduate Program: Multidisciplinary (Geography Subject)-Semester-I

MAPS AND SCALES (Practical)

Paper Code: CC-A1- Course Id: 240/GEO/M/CC102

Credit: 01 (0+0+2) L+T+P Hrs/Week	Total Marks	25 Marks
Time: 4 Hours	Internal Assessment based on Attendance	05 Marks
Note: (i) The question paper Exercise Part (3 Question x 4 Marks= 12 Marks) will comprise three question from entire syllabus. Candidates (s) are required to attempt three question / exercise. These questions will be of 04 marks each. Candidates will be required to attempt exercise neatly and cleanly on the provided geography sheet. (ii) Record file will be of Maximum Four Marks. (iii) Viva Voce will be of Maximum Four Marks	End Semester Exam: Exercise Record File Via-voce	20 Marks 12 Marks 04 Marks 04 Marks

Learning/Course Objectives: To understand Map and Scale's elementary conception. To pertain the geography discernment to the universal map & Scale concern. To establish the determinants that contributes to the scientific replication of scale and maps. The fundamental ideas of different sizes and types of maps will be covered in general in the course on maps and scale.

Learning/Course Outcomes: CO-1: The essentials of maps, which are important for precise location and spatial comprehension, will be understood by the students.CO-2: To extend an improved understanding of scales and maps to understand how scales affect various aspects of maps. CO-3: To know how scales help to understand interrelationship between scales and map aspects CO-4: To familiarize with the survey concepts – in a geographical perspective to strengthen geography as a multidisciplinary and interdisciplinary discipline

1. Map: History; Types; Elements and significance of Map; Introduction of measuring units. Metric and Mile system)
2. Map Scale: Types and significance-
   - (i). Methods of expressing a scale (01 Exercises)
   - (ii). Conversion of statement of scale into R.F. and vice-versa. (01 Exercises)
   - (iii). Plain scale (Kilometers and Miles) (01 Exercises)
   - (iv). Comparative Scale (02 Exercises)
   - (v). Time scale (01 Exercises)
   - (vi). Revolution scale (01 Exercises)
   - (vii). Pace scale (01 Exercises)
   - (viii). Diagonal scale (01 Exercises)
3. Measurement of distances and areas on maps, Enlargement and reduction of Maps (03 Exercise)
4. Survey: Chain and tape survey: Open; Close; Traverse and Triangulation method. (04 Exercises)

Recommended Readings:

- Mishra, R.N. and Sharma, P.K. (2020): Prayogik Bhoogol(Eng/Hindi), Rawat Publications, Jaipur.
- Monkhouse,F.J. and H.R. Wilkinson (1972) Maps and Diagrams, Mothuen and Co. Ltd., London.
- Robinson A. H. (2009): Elements of Cartography, John Wiley and Sons, New York.
- Singh Gopal (2004) 4th edition, Map Work and Practical Geography, Vikas Publication House, New Delhi.
- Sharma J. P. (2020): Prayogic Bhugol, (in Hindi) Rastogi Publishers, Meerut.
- Singh R. L. and Singh Rana P. B. Singh. (1999): Elements of Practical Geography(Eng/Hindi). Kalyani Publishers, New Delhi.
- Singh, R.L. and Raghuvander Singh (1973), Map Work and Practical Geography, Central Book Depot, Allahabad.
- Singh, R.L. and P.K. Dutt (2012), Elements of Practical Geography(Eng?Hindi), Students Friends, Allahabad
- Sharma, J. P. (2010): Prayogtmak Bhugol ki Rooprekha, Rastogi Publications, Meerut.
- Sarkar, A. (2015): Practical Geography: A Systematic Approach, Orient Black Swan Private Ltd., New Delhi.

Gurugram University Gurugram, Haryana (India)

Under Graduate (UG) /B.A. Geography Syllabus- Multidisciplinary

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

Scheme UG A 2: Undergraduate Program: Multidisciplinary (Geography Subject)-Semester-II

GEOGRAPHY OF INDIA (Theory)

Paper Code: **CC-A 2** - Course Id: 240/GEO/M/CC201

Credit: 03 (3+0+0) L+T+P Hrs/Week	Total Marks	75 Marks
Time: 3 Hours	End Semester Exam:	50 Marks
Note:(i) The question one of paper is compulsory. It will encompass two parts: Part-A of the question one of paper will contain Map work of 05 marks (Five data points of one mark each). Candidates will be required to attempt all five data point neatly and cleanly on the provided Map. Part-B, of the question one of paper will contain Multiple Choice Questions (MCQ)/Objective type/Terms of Five marks (one mark each). (ii) The question paper will have four units. Two questions will contain from each unit of the syllabus. Candidates are required to attempt one question from each unit. These questions will be of Ten marks each.	Internal Assessment: Attendance Assignment/Seminar /presentation/class presentation Session Examination	25 Marks 05 Marks 05 Marks 15 Marks

Learning/Course Objectives: To comprehend India's geography as a fundamentally idea to comprehend the India apprehension towards the Indian Subcontinent and to pinpoint the practical solutions for resolving the most pressing environmental crises. The fundamentals of geography will be covered in great detail in the course on Indian geography.

Learning/Course Outcomes:CO1: Students will be able to comprehend the geographical features of India that are necessary for a fundamental knowledge of Indian geography.CO-2: Student will acquire knowledge pertaining to the population composition and its effect on various facet of life of India.CO-3:Learn about major natural resources and industries and its impact on growth and development of the country.CO-4: Recognize how India's trade and transport have greater impact on Indian economy .CO-5: Strengthen Geographical knowledge of India,

UNIT-I

India: Physical setting ;extent and location, Division of India and their characteristics; Drainage systems; Climate and its characteristics; Climatic regions of India, Monsoon (Mechanism of Indian Monsoons and Characteristics), Jet streams and Himalayan Cryosphere ; Types of soils and natural vegetation and Natural disasters in India (Earthquake, Drought, Flood, Cyclone, Tsunami, Himalayan Highland Hazards and Disasters.)

UNIT-II

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

UNIT-III

India: Land resources, Irrigation, Cropping pattern, Characteristic of Indian agriculture and its development; Factors affecting Indian Agriculture; Green Revolution and its Characteristics, Geographical conditions and distribution of major crops in India (Food grains, Cash Crops and Plantation Crops),Energy and Mineral resources: coal, petroleum, hydroelectricity and nuclear energy, iron ore, manganese and mica. Major Industries: iron and steel, cotton textile, sugar and petrochemical industries.

UNIT-IV

Trade and Transport: Modes of transportation (railways, roadways, waterways, airways and pipelines), Domestic and international trade patterns. Contemporary reflections of Geography of India :Evolution of administrative map ; Disputes of river water sharing amongst states with reference to SYL; Inter-linking of rivers; Population explosion and food security. Globalization and its impact on the Indian Economy

Recommended Readings:

- Bindra, S.S. (1989): India and Her Neighbors, Deep and Deep Publications, New Delhi.
- Chandna, R.C.(1998): Geography of Population, Kalyani Publishers. 4779, 23, Ansari Road, Daryaganj, New Delhi, Delhi, 110002
- Chatterjee, Rupali. (2015): "Geography of India", Global Academic Publishers, New Delhi.
- Deshpande, C.D (1992): India- A Regional Interpretation, Northern Book Centre, New Delhi.
- Gautam A. (2009): Advanced Geography of India, Sharda Pustak bhawan, Allahabad.
- Gopal Krishan (2017). The Vitality of India: A Regional Perspective. Rawat Publication, Jaipur.
- Johnson, B.L.C. (1980), India: Resources and Development, Arnord-Hinemann, London.
- Khullar, D.R. (2000), India: A Comprehensive Geography, Kalyani Publishers, New Delhi.
- Majid, H. (2020). Geography of India. McGraw Hill Education (India) Private Ltd.

- Mamoria, C. B. and Mishra, J. P. (2021). Bharat ka Bhugol. Sahitya Bhawan Publication, Agra.
- Shafi, M (2000): Geography of South Asia, McMillan and Company, Calcutta, .
- Sharma,T.C. and Coutinho, O (1988): Economical and commercial Geography of India,Vikas publishing house Pvt. Ltd. New Delhi.
- Singh, Gopal (2006): A Geography of India, Atma Ram and Sons, 2006.
- Singh, R.L. (1971), India: A Regional Geography, National Geographical Society of India, Varanasi.
- Singh, Surender and Saroha, Jitender (2014): Geography of India, Access Publishing India Pvt. Ltd., New Delhi, .
- Spate, O.H.K. and A.T.A. learmonth (1967): Geography of India and Pakistan, Methuen London (first Indian Edition, 1984, Munshiram Manoharlal, New Delhi).
- Spate, O.H.K. & Learmonth,(1967) India and Pakistan: Land, People and Economy, Methuen, London.
- Tirtha, R. & Gopal Krishan (2006), Emerging India, Conpub Ann Arbour Publishers, Michigan.
- Tirtha, R. (2004) Geography of India. Rawat Publications, Jaipur

Gurugram University Gurugram, Haryana (India)

Under Graduate (UG) /B.A. Geography Syllabus- Multidisciplinary

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

Scheme UG A2: Undergraduate Program: Multidisciplinary (Geography Subject)-Semester-II

GRAPHS AND DIAGRAMS (Practical)

Paper Code: CC-A2- Course Id: 240/GEO/M/CC202

Credit: 01 (0+0+2) L+T+P Hrs/Week	Total Marks	25 Marks
Time: 4 Hours	Internal Assessment based on Attendance	05 Marks
Note: (i) The question paper Exercise Part (3 Question x 4 Marks= 12 Marks) will comprise three question/exercise from entire syllabus. Candidates (s) are required to attempt three question / exercise. These questions will be of 04 marks each. Candidates will be required to attempt question/exercise neatly and cleanly on the provided geography sheet. (ii) Record file will be of Maximum Four Marks. (iii) Viva Voce will be of Maximum Four Marks.	End Semester Exam: Exercise Record File Via-voce	20 Marks 12 Marks 04 Marks 04 Marks

Learning/Course Objectives: To understand Map elementary conception. To pertain the geography discernment to the universal map concern. To establish the determinants that contributes to the scientific replication of maps. The fundamental ideas of different sizes and types of maps will be covered in general in the course on maps and scale.

Learning/Course Outcomes: CO1: Students will have a basic acquaintance of map design and layout, which are imperative for successfully representing geographic information for enhanced conception.CO-2: Develop a superior considerate of type of map and their importance .CO-3: Recognize the ways in which variety of data may be presented in an effective manner through suitable map.CO-4: Recognize the ways in which an area may be surveyed and presented scientifically. (CO-5)Enhance geography as an interdisciplinary and diverse field of study.

1. Graphs: Introduction, uses, advantage and kind of graphs: Simple line graph, Polygraph, Compound Line Graph, Ergograph, Clomograph, Hythergraph, Combined line graph and bar diagram. (05 Exercises)
2. Statistical diagram: Introduction, One dimensional bar diagram (Simple bar, Comparative/Multiple bar, Compound/Subdivided bar and Percentage bar diagram),Two dimensional diagram :(Divided rectangles, Proportional square, Proportional circles/ Graduated circle & Pie diagram) ,Three dimensional statistical diagram: (Cubes, Proportional/Graduated spheres) . (08 Exercises)
3. Significance of weather maps, equipment, its uses and interpretation. (01 Exercise)
4. Survey: Prismatic Compass Survey –Radiation and Intersection Method. (02 Exercises)

Recommended Readings:

- Mishra, R.N. and Sharma, P.K. (2020): Prayogik Bhoogol, (Eng/Hindi), Rawat Publications, Jaipur
- Mishra RP and Ramesh A. (1999). Fundamentals of Cartography, Concept Publishing Company, New Delhi.
- Monkhouse,F.J. and H.R. Wilkinson (1972) Maps and Diagrams, Mothuen and Co. Ltd., London.
- Robinson A. H. (2009): Elements of Cartography, John Wiley and Sons, New York.
- Singh Gopal (2004) 4th edition, Map Work and Practical Geography, Vikas Publication House, New Delhi.
- Sharma J. P. (2010): Prayogic Bhugol, Rastogi Publishers, Meerut.
- Singh R. L. and Rana P. B. (1999): Elements of Practical Geography(Eng/Hindi). Kalyani Publishers, New Delhi.
- Singh, R.L. and Raghuvander Singh (1973), Map Work and Practical Geography, Central Book Depot, Allahabad.
- Singh,R.L. and P.K. Dutt (1968), Elements of Practical Geography, Students Friends, Allahabad
- Sharma, J. P. (2010): Prayogtmak Bhugol ki Rooprekha, Rastogi Publications, Meerut.
- Singh, R. L. and P. K. Dutta, (2012): Prayogatmak Bhugol, Central Book Depot, Allahabad.
- Sarkar, A. (2015): Practical Geography: A Systematic Approach, Orient Black Swan Private Ltd., New Delhi.
- Sharma J. P. (2020): Prayogic Bhugol, (in Hindi) Rastogi Publishers, Meerut.

Gurugram University Gurugram, Haryana (India)

Under Graduate (UG) /B.A. Geography Syllabus- Multidisciplinary

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

Scheme UG A3: Undergraduate Program: Multidisciplinary (Geography Subject)-Semester-3

HUMAN GEOGRAPHY (Theory)

Paper Code: CC-A 3- Course Id: 240/GEO/M/CC301

Credit: 03 (3+0+0) L+T+P Hrs/Week	Total Marks	75 Marks
Time: 3 Hours	End Semester Exam:	50 Marks
Note: (i) The Question one of paper is compulsory. It will encompass two parts: Part-A, of question one of paper will contain Map work of 05 marks (Five data points of one mark each). Candidates will be required to mark on all five data point neatly and cleanly on the provided Map. Part –B, of question one of paper will contain Multiple Choice Questions (MCQ)/Objective type/Terms of Five marks (one mark each). (ii) The question paper will have four units. Two questions will contain from each unit of the syllabus. Candidates are required to attempt one question from each unit. These questions will be of Ten marks each.	Internal Assessment: Attendance Assignment/Seminar /presentation/class presentation Session Examination	25 Marks 05 Marks 05 Marks 15 Marks

Learning/Course Objectives: To comprehend Geography as a primary thought with philosophy to solve human issues and identify the factors responsible for human development in dissimilar environments. The fundamental ideas to be recognizable in geography will be covered in general in the introduction to Human Geography course. To learn more about ideas connected to Human Geography & comprehend geographical in respect to human intervention. To be familiar with cultural aspects to understand the interrelation and the resultant effects.

Learning/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 influence different aspect our living on this earth. CO-4: Tc familiarize with geographical point of view the major global issues in future and a challenge for the civilization .CO-5: Student will be able to comprehend the Geographical Concepts which are relevant for sustained Growth and development.

UNIT-I

Human Geography: Meaning; nature; scope; development and branches. Approaches to the study of Human Geography: Determinism, Possibilism, Neo-determinism, Human development and environment relationship, Type of human activities (Primary, secondary, territory, quaternary, and quinary activities)

UNIT-II

Human Race and Tribe: Meaning; classification, evolution and distribution. Environmental adaptation by Eskimo, Bushman, Gonds, Bhils and Gujjars. Religion and Language: Meaning, classification and global distribution.

UNIT-III

Population: Concepts of population, Growth, Distribution and Density, Concept of optimum population, Over-population and under-population. Population composition: Age & Sex pyramid; Working population and labor- force; Occupational structure and literacy.

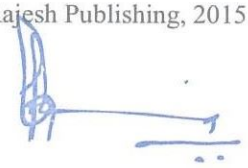
UNIT-IV

Human Settlements: Meaning, Origin, Characteristics, Types, Size and Distribution Patterns. Population Pressure: Use of Resources; environment degradation & sustainable development.

Recommended Readings:

- Aggarwal, A et al: The Citizen's Fifth Citizen's Report, Centre for Science & Environment, New Delhi, 1999.
- Alexander, John. W.: Economic Geography, Prentice Hall of India Ltd., New Delhi, 1983.
- Bergwan, Edward E: Human Geography: Culture Connections and Landscape, Prentice-Hall, New Jersey, 1985. 4. Carr, M. Patterns: Process and Change in Human Geography, McMillan Education, London. 1987.
- Carter, H.: The study of Urban Geography, Edward Arnold, London, 1972.
- Chandna, R.C.: Geography of Population: Concepts, Determinants and Patterns, Kalyani Publishers, New Delhi, 2016.
- De Blij, H. J.: Human Geography, Culture, Society and Space, John Wiley, New York, 1996.
- Fellman, J.L.: Human Geography-Landscapes of Human Activities, Brown and Benchman Pub., USA, 1997.
- Hassan, I.: Population Geography: A Systematic Exposition, Routledge, London.
- Hussain, M. Human Geography, Rawat, Publication, Jaipur, 2018.
- McBride, P.J.: Human Geography; Systems Patterns and Change, Nelson, UK and Canaca, 1996.

- Michael, C.: New Patterns: Process and Change in Human Geography, Nelson, 1996.
- Qazi, S.A.: Population Geography, APH publishers, 2010.
- Ramachandra, R.: Urbanization and Urban System in India, Oxford, London, 1992.
- Sharma, Y.K. Human Geography, Narain publishers, 2017.
- Singh, N. A Text Book of Human Geography, Rajesh Publishing, 2015.



Gurugram University Gurugram, Haryana (India)

Under Graduate (UG) /B.A. Geography Syllabus- Multidisciplinary
(As per NEP 2020 w.e.f session 2024-25)
Scheme UG A3: Undergraduate Program: Multidisciplinary (Geography Subject)-Semester-III

MAP PROJECTION AND ITS CONSTRUCTION (Practical)

Paper Code: CC-A3 - Course Id: 240/GEO/M/CC302

Credit: 01 (0+0+2) L+T+P Hrs/Week	Total Marks	25 Marks
Time: 4 Hours	Internal Assessment based on Attendance	05 Marks
Note:(i) The question paper Exercise Part (3 Question x 4 Marks= 12 Marks) will comprise three question/exercise from entire syllabus. Candidates (s) are required to attempt three question / exercise. These questions will be of 04 marks each. Candidates will be required to attempt question/exercise neatly and cleanly on the provided geography sheet. (ii) Record file will be of Maximum Four Marks. (iii) Viva Voce will be of Maximum Four Marks.	End Semester Exam: Exercise Record File Via-voce	20 Marks 12 Marks 04 Marks 04 Marks

Learning/Course Objectives: To understand Map Projection elementary conception. To pertain the geography discernment to the universal map concern. To establish the determinants that contributes to the scientific replication of maps. The fundamental ideas of different sizes and types of maps will be covered in general in the course on maps and scale.
Learning/Course Outcomes: CO1: Students will have a basic acquaintance of map design and layout, which are imperative for successfully representing geographic information for enhanced conception.CO-2: Develop a superior considerate of type of map and their importance .CO-3: Recognize the ways in which variety of data may be presented in an effective manner through suitable map.CO-4: Recognize the ways in which an area may be surveyed and presented scientifically. (CO-5)Enhance geography as an interdisciplinary and diverse field of study.

UNIT-I

(1) (a) Introduction to Map Projection: Meaning, Classification, significance (b) Cylindrical projections: Meaning and Characteristics; significance and type; Construction, application; and limitation; (i) Simple cylindrical projection. (ii) Cylindrical equal area projection.(iii) True shape or orthomorphic or Mercator's Projection.(iv) Comparison of Cylindrical Projection. International Map Projection: Meaning, Classification, Importance, Characteristics, applications and drawing. (07 Exercises)

UNIT-II

(2) Conical Projections: Meaning and Characteristics; significance and type; Construction, application and limitation (i) Simple conical projections with one standard parallel (ii) Simple conical projection with two standard parallel (iii) Bonne's Projection (iv) Polyclone projection. (04 Exercises)

UNIT-III

(3) Polar Zenithal Projections: Meaning and Characteristics; significance and type; Construction, application and limitation (i) Equidistant Projection.(ii) Equal Area Projection (iii) Gnomonic Projection (iv) Stereographic Projection. (v) Orthographic Projection. Meaning and Characteristics; significance and type; Construction, application and limitation of Sinusoidal and Mollweide Projections. (05 Exercises)

UNIT-IV

Plane Table Survey: Traverse Method: Open and Close, Radiation and Intersection method.
(04 Exercises)

Suggested Readings:-

- Goyal K.K.1981.. Practical Geography, Manthan Publication, Rohtak
- Gregory S. 1963. Statistical Methods and the Geography, Longman, London
- Khan, A.A. 1996. Text Book of Practical Geography, Concept, New Delhi,.
- Mishra, R.N. and Sharma, P.K. (2020): Prayogik Bhoogol, (Eng/Hindi), Rawat Publications, Jaipur
- Mishra RP and Ramesh A. (1999). Fundamentals of Cartography, Concept Publishing Company, New Delhi.
- Monkhouse, F.J. and H.R. Wilkinson (1972) Maps and Diagrams, Mothuen and Co. Ltd., London.
- Pal. S.K. 1998: Statistics for Geoscientist- Techniques and Applications, Concept Publication, New Delhi,.
- Robinson A. H. (2009): Elements of Cartography, John Wiley and Sons, New York.
- Singh Gopal (2004) 4th edition, Map Work and Practical Geography, Vikas Publication House, New Delhi.
- Sharma J. P. (2010): Prayogic Bhugol, Rastogi Publishers, Meerut.

- Singh R. L. and Rana P. B. Singh. (1999): Elements of Practical Geography(Eng/Hindi). Kalyani Publishers, New Delhi.
- Singh, R.L. and Raghuvander Singh (1973), Map Work and Practical Geography, Central Book Depot, Allahabad.
- Singh,R.L. and P.K. Dutt (2012), Elements of Practical Geography(Eng/Hindi). Central Book Depot, Allahabad
- Sharma, J. P. (2010): Prayogtmak Bhugol ki Rooprekha, Rastogi Publications, Meerut.
- Sarkar, A. (2015): Practical Geography: A Systematic Approach, Orient Black Swan Private Ltd., New Delhi.
- Sharma J. P. (2020): Prayogic Bhugol, (in Hindi) Rastogi Publishers, Meerut.
- Steers, J.B. Map Projections; University of London Press, London

Gurugram University Gurugram, Haryana (India)

Under Graduate (UG) /B.A. Geography Syllabus- Multidisciplinary

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

Scheme UG A4: Undergraduate Program: Multidisciplinary (Geography Subject)-Semester-4

PRINCIPLES OF ECONOMIC GEOGRAPHY (Theory)

Paper Code: CC-A4-Course Id: 240/GEO/M/CC401

Credit: 03 (3+0+0) L+T+P Hrs/Week	Total Marks	75 Marks
Time: 3 Hours	End Semester Exam:	50 Marks
Note: (i) The Question one of paper is compulsory. It will encompass two parts: Part-A, of question one of paper will contain Map work of 05 marks (Five data points of one mark each). Candidates will be required to mark on all five data point neatly and cleanly on the provided Map. Part –B, of question one of paper will contain Multiple Choice Questions (MCQ)/Objective type/Terms of Five marks (one mark each). (ii) The question paper will have four units. Two questions will contain from each unit of the syllabus. Candidates are required to attempt one question from each unit. These questions will be of Ten marks each.	Internal Assessment: Attendance Assignment/Seminar /presentation/class presentation Session Examination	25 Marks 05 Marks 05 Marks 15 Marks

Learning/Course Objectives: To comprehend geography as a fundamental idea with notions to solve Economic Activity and pinpoint the factors dependable for Economic development in diverse environments. The fundamental ideas to be proverbial in geography will be covered in general in the introduction to Economic Geography course. To learn more about ideas connected to Economic Geography & comprehend geographical phenomena and processes. To be familiar with Economic activities and process prevalent.

Learning/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 rescurces available with geographical perception. CO-3: To understand how Resources and means of transport influence different aspect our living on this earth. CO-4: To familiarize with geographical point of view of present resources and future perspective .CO-5: Student will be able to comprehend the Geographical Concepts which are relevant for Economic Geography and economic Growth and development.

UNIT-I

Economic Geography: Meaning ,Definition, Nature, Scope, and development of, Approaches to study Economic Geography, relationship of economic geography with economics and other branches of social sciences, Different Type of economic activities: Stages and their Characteristics (Primary, secondary, tertiary, Quaternary and Quinary Activities), Distribution pattern of Economic activities and their impact on environment.

UNIT-II

Natural Resources: concept, classification and distribution; Mineral ;(Iron ore ,Mica,Copper); Energy;(Coal ;Petroleum, Hydro electricity) and Human Resources

UNIT-III

Agriculture : Types of Crops Rice ,Wheat , Sugarcane, Cotton and Tea. Industries: Type of Industries; Iron and Steel ,Cotton Textile, Sugar cane.

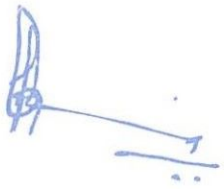
UNIT-IV

Trade and Transportation: Means of Transportation ,Roads ,railways ,Airways and Waterways and Trade (National and International), Means of Communication: radio, television, mobile phone, newspaper, computer .

Recommended Readings:

- Allexander, J.W., Economic Geography.
- Boesh, Hans, A Geography of World Economy.
- Bengston and Reyen, Fundamentals of Economic Geography.
- Chisholm, M., Modern World Development – A Geographical Perspective.
- Hartshorne TN and Alexander JW. 1988. Economic Geography, Prentice Hall, New Delhi.
- Jain, P.: Arthik Bhoogol ki Samiksha (Hindi)

- Jones CF and Darkenwald GG. 1975. Economic Geography. McMillan Company, New York
- Robertson, D. (ed.) Globalization and Environment, E. Elgas Co. U.K., 2001.
- 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, RS. 1962. The Geography of Economic Activities. McGraw Hill, New York
- Wheeler, J.O. et. al.; Economic Geography, John Wiley, New York, 1995.
- Zimmerman, E.W , Introduction of World Resources.



Gurugram University Gurugram, Haryana (India)

Under Graduate (UG) /B.A. Geography Syllabus- Multidisciplinary
(As per NEP 2020 w.e.f session 2024-25)
Scheme UG A4: Undergraduate Program: Multidisciplinary (Geography Subject)-Semester-IV

REPRESENTATION OF RELIEF AND LANDFORMS (Practical)

Paper Code: CC-A4- Course Id: 240/GEO/M/CC402

Credit: 01 (0+0+2) L+T+P Hrs/Week	Total Marks	25 Marks
Time: 4 Hours	Internal Assessment based on Attendance	05 Marks
Note: (i) The question paper Exercise Part (3 Question x 4 Marks= 12 Marks) will comprise three question/exercise from entire syllabus. Candidates (s) are required to attempt three question / exercise. These questions will be of 04 marks each. Candidates will be required to attempt question/exercise neatly and cleanly on the provided geography sheet. (ii) Record file will be of Maximum Four Marks. (iii) Viva Voce will be of Maximum Four Marks.	End Semester Exam: Exercise Record File Via-voce	20 Marks 12 Marks 04 Marks 04 Marks

Learning/Course Objectives: To understand Geography Features and Land forms elementary conception. To pertain the geography discernment to the universal Geography Features and Land forms concern. To establish the determinants that contributes to the scientific replication of Geography Features and Land forms. The fundamental ideas of different sizes and types of Geography Features will be covered in general in the course Geography Features and Land forms.
Learning/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.CO-2: Develop a superior considerate of type of Geography Features and Land forms and their importance .CO-3: Recognize the ways in which variety of Geography Features and Land forms may be presented in an effective manner through suitable methods .CO-4: Recognize the ways in which a landform /feature may be recognized and presented scientifically. (CO-5)Enhance geography as an interdisciplinary and diverse field of study.

UNIT-I

Introduction to Topographical Sheets India and adjacent countries: Degree, Half , Quarter ,Million Sheet Conventional Signs. (03 Exercises)

UNIT-II

Methods of representing relief: Hachure's, Contours, Form lines, Spot heights, Bench marks, Trigonometrically Stations, Hill Shading, Layer Colouring, Profiles : Characteristics and Types.

(03 Exercises)

UNIT-III

Representation of Topographical features by contours: Slopes (Gentle, Steep, Concave, Convex, and Irregular or Undulating) V-Shaped, U-shaped, Gorge, Spurs, Conical Hill, Volcanic Hill, Plateau, Escarpment, Two adjacent hills, waterfall, sea cliff, overhanging cliff, Fiord coast;. (10 Exercises)

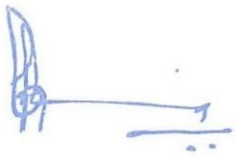
UNIT-IV

Prismatic Compass Survey: By Radiation and Intersection method. (02 Exercises)

Recommended Readings:

- Mishra, R.N. and Sharma, P.K. (2020): Prayogik Bhoogol, (Eng/Hindi), Rawat Publications, Jaipur
- Mishra RP and Ramesh A. (1999). Fundamentals of Cartography, Concept Publishing Company, New Delhi.
- Monkhouse,F.J. and H.R. Wilkinson (1972) Maps and Diagrams, Mothuen and Co. Ltd., London.
- Robinson A. H. (2009): Elements of Cartography, John Wiley and Sons, New York.
- Singh Gopal (2004) 4th edition, Map Work and Practical Geography, Vikas Publication House, New Delhi.
- Singh R. L. and Rana P. B. Singh. (1999): Elements of Practical Geography(Eng/Hindi). Kalyani Publishers, New Delhi.

- Singh, R.L. and Raghuvander Singh (1973), Map Work and Practical Geography, Central Book Depot, Allahabad.
- Singh,R.L. and P.K. Dutt (2012), Elements of Practical Geography(Eng/Hindi). Students Friends, Allahabad
- Sharma, J. P. (2010): Prayogtmak Bhugol ki Rooprekha, Rastogi Publications, Meerut.
- Sarkar, A. (2015): Practical Geography: A Systematic Approach, Orient Black Swan Private Ltd., New Delhi.
- Sharma J. P. (2020): Prayogic Bhugol, (Eng/Hindi) Rastogi Publishers, Meerut.



Gurugram University Gurugram, Haryana (India)

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)

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

INTRODUCTION TO GEOGRAPHY (Theory Paper)

Paper Code: **MDC-1**- Course Id: 240/GEO/ MDC101

Credit: 03 (2+1+0) L+T+P Hrs/Week	Total Marks	75 Marks
Time: 3 Hours	End Semester Exam:	50 Marks
Note: (i) The Question one of paper is compulsory. It will encompass two parts: Part-A, of question one of paper will contain Map work of five marks (Five data points of one mark each). Candidates will be required to mark on all five data point neatly and cleanly on the provided Map. Part –B, of question one of paper will contain Multiple Choice Questions (MCQ)/Objective type/Terms of Five marks (one mark each). (ii) The question paper will have four units. Two questions will contain from each unit of the syllabus. Candidates are required to attempt one question from each unit. These questions will be of Ten marks each.	Internal Assessment: Attendance Assignment/Seminar /presentation/class presentation Session Examination	25 Marks 05 Marks 05 Marks 15 Marks

Learning/Course Objectives: To comprehend geography as a introductory notion to relate & recognize the accountable factors for human being growth in an assortment of surroundings. The introductory geography course will cover the essential concepts of geography in general to familiarize oneself with geography in a tangible environment. It will enrich geography knowledge to understand geographic processes and events to be acquainted with every grading agent on earth.

Learning/Course Outcomes:CO1: To gain knowledge of earth and its major spheres.CO-2: To understand movement of the earth and drifting and moving land masses.CO-3: To recognize the major features and minerals of the earth.CO-4: To become acquainted with major spheres, climate and issues of the earth.CO-5: 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

UNIT-I

What is Geography, The earth in Space, Graphic Representation of the Earth, Lines on the Globe, The Hemisphere?

UNIT-II

Finding Direction and Locating Places, Movement of the Erath, The Shape, Size and Structure of the Earth, Drifting and Moving Landmasses,

UNIT-III

Continents and Countries of the World, Sculpturing the Earth's Surface, Landforms of the Earth, Rocks, Minerals,

UNIT-IV

Lithosphere, Hydrosphere, Atmosphere and Biosphere. Soil and Soil Erosion, Water forms of the Earth, Weather and Climate, Vegetation of the Earth, Contemporary issues of the Earth,

Recommended Readings:

- Dayal, P. (2019) A Text Book of Geomorphology, Shukla Book Depot, Patna.
- Dayal, P. (2019) Bhuakriti Vigyan, (in Hindi), Rajesh Publications, New Delhi.
- Getis Arthur and 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, Oxford University Press, London.
- Homes A. (1965): Principles of Physical Geology, 3rd Edition, ELBSS Edn.
- Husain Majid (2002), Fundamentals of Physical Geography, Second Edition, Rawat Publications. Jaipur and New Delhi.
- Kale, V. and Gupta, A. (2001): Introduction to Geomorphology, Orient Longman, Kolkata.
- Khullar, D.R. (2021): Bhautik Bhugol, (in Hindi), Kalyani Publishers, New Delhi.
- Leong, Goh Cheng., (2015), Certificate Physical and Human Geography, Oxford University Press, New Delhi
- Singh Savindra (2021), Bhuakriti Vigyan, (in Hindi), Pravalika Publications, Allahabad.
- Singh Savindra (2006), Physical Geography(Eng/Hindi), Prayag Pustak Bhawan, Allahabad.
- Strahler Alan and Strahler Aurthur., 2005, Introducing Physical Geography, John Wiley & Sons, Inc.

Gurugram University Gurugram, Haryana (India)

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

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(As per NEP 2020 w.e.f session 2024-25) -Semester-2

MAN AND ENVIRONMENT (Theory Paper)

Paper Code: **MDC-2-Course Id:** 240/GEO/ MDC201

Credit: 03 (2+1+0) L+T+P Hrs/Week	Total Marks	75 Marks
Time: 3 Hours	End Semester Exam:	50 Marks
Note: (i) The Question one of paper is compulsory. It will encompass two parts: Part-A, of question one of paper will contain Map work of five marks (Five data points of one mark each). Candidates will be required to mark on all five data point neatly and cleanly on the provided Map. Part –B, of question one of paper will contain Multiple Choice Questions (MCQ)/Objective type/Terms of Five marks (one mark each). (ii) The question paper will have four units. Two questions will contain from each unit of the syllabus. Candidates are required to attempt one question from each unit. These questions will be of Ten marks each.	Internal Assessment: Attendance Assignment/Seminar /presentation/class presentation Session Examination	25 Marks 05 Marks 05 Marks 15 Marks

Learning/Course Objectives: To comprehend the fundamental idea of Man and Environment and related elements that contributes to human development in diverse environments. The fundamental ideas of the link between humans and their environment will be covered in the introductory Man and Environment course. To become acquainted with people and their surroundings in a physical setting. To learn more about ideas related to the environment and humans. To comprehend geographical occurrences and processes. To understand how humans behave in their surroundings.

Learning/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 recognize major awareness mode for environment and sustainable development.CO-4: To become acquainted with environmental issues to make geography interdisciplinary and trans-disciplinary.CO-5: To understand the man and environment concepts that are important for long-term development and growth

UNIT-I

Meaning of Environment, Definitions of Environment, Classification and Components of Environment, The Environmental Crisis, Major Global Environmental Threats, Approaches to the study of man-environment relationship.

UNIT-II

Population, Environment and Quality of life, Psychological factors of man-environment relationship, . The general pattern of motivational components, Environmental Education, Concept of Environmental Education.

UNIT-III

Environment Education, Environment and Sustainable Development, Goals of Environmental Education, Historical perspectives of Environmental Education, Caring for the earth: A Strategy for Sustainable Living, United Nation Conference on Environment and Development.

UNIT-IV

Principles of Environmental Education, Psychological basis of Environmental Education, Philosophical basis of Environmental Education, Goals for Curriculum Development in Environmental Education-The Ecological Foundations Level, The Conceptual Awareness Level.

Recommended Readings:

- Agarwal, K.C. (2001) Environmental Biology, Nidi Pub. Ltd. Bikaner.
- Bharucha, Frach, The Biodiversity of India, MApin Publishing Pvt. Ltd. Ahmedabad-380013, India, E-mail:mapin@icenet.net (R).
- Brunner R.C. (1989), Hazardous Waste Incineration,Mc. Graw Hill Inc. 480p.
- Cunningham,W.P.Cooper,T.H.Gorhani, E & Hepworth,M.T.(2001), Environmental Encyclopedia, Jaico Pub. House,Mumbai 1196 p.
- Down to Earth, Centre for Science and Environment,New Delhi
- Gleick, H.P., (1993). Water in crisis, Pacific Institute for Studies in Dev. Environment & Security Stockholm Env. Institute, Oxford Univ. Press, 473p.
- Hawkins R.E. Encyclopedia of Indian Natural History, Bombay Natural History Society, Bombay(R).
- Heywood, V.H. & Watson, R.T. (1995). Global Biodiversity Assessment, Cambridge Uni. Press 1140p.
- Jadhav, H & Bhosale, V.M. (1995). Environmental Protection and Laws. Himalaya Pub. House, Delhi284p.

- Mackinney, M.L. & Schoch, RM (1996), Environmental Science systems & solutions, Web enhanced edition. 639p.
- Odum, E.P. (1971), Fundamentals of Ecology.W.B. Saunders Co.USA, 574p.
- Rao M.N.& Datta,A.K. (1987) Waste Water Treatment. Oxford &TBH Publ. Co. Pvt. Ltd. 345p.
- Sharma, B.K. (2001), Environmental Chemistry, Goal Publ. House, Meerut.
- Trivedi R.K., Handbook of Environmental Laws, Rules, Guidelines, Compliances and Standards, Vol. I and II Enviro Media (R).
- TrideviR.K.andP.K.Goal, Introduction to air pollution, Techno Science Publications (TR).
- Wagner K.D., (1998), Environmental Management, W.B. Saunders co. Philadelphia,USA499p.

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

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(As per NEP 2020 w.e.f session 2024-25) -Semester-3

GENERAL GEOGRAPHY OF WORLD (Theory Paper)

Paper Code: **MDC-3-Course Id:** 240/GEO/ MDC301

Credit: 03 (2+1+0) L+T+P Hrs/Week	Total Marks	75 Marks
Time: 3 Hours	End Semester Exam:	50 Marks
Note: (i) The Question one of paper is compulsory. It will encompass two parts: Part-A, of question one of paper will contain Map work of five marks (Five data points of one mark each). Candidates will be required to mark on all five data point neatly and cleanly on the provided Map. Part –B, of question one of paper will contain Multiple Choice Questions (MCQ)/Objective type/Terms of Five marks (one mark each). (ii) The question paper will have four units. Two questions will contain from each unit of the syllabus. Candidates are required to attempt one question from each unit. These questions will be of Ten marks each.	Internal Assessment: Attendance Assignment/Seminar /presentation/class presentation Session Examination	25 Marks 05 Marks 05 Marks 15 Marks

Learning/Course Objectives: To comprehend the fundamental idea of General Geography of world and related elements that contributes to human development in diverse environments. The fundamental ideas of the link between humans and their environment will be covered in the introductory General Geography of World course. To become acquainted with people and their surroundings in a physical setting. To learn more about ideas related to the General Geography and humans. To comprehend geographical occurrences and processes. To understand how humans behave in their General surroundings.

Learning/Course Outcomes: CO1: To gain knowledge of General Geography of World and related concern. CO-2: To understand various facets of General Geography, Man and environment inter-relation.CO-3: To recognize major awareness approach for General Geography ,environment and sustainable development.CO-4: To become acquainted with environmental issues to make geography interdisciplinary and trans-disciplinary.CO-5: To understand the man and environment concepts that are important for long-term development and growth

UNIT-I

Continents and oceans: their location, expansion and geographical characteristics.World's major physiographic units: mountain, plains and plateaus.

UNIT-II

World climates and major climatic regions.Major soil types and natural vegetations of the world.

UNIT-III

World Distribution of races and tribe.World major religions and languages.

UNIT-IV

World distribution of Population and growth.World economy: characteristics of developed and developing economies.

Recommended Readings:

- Hussain, Majid (2006) World Geography, Rawat Publishers, New Delhi.
- Mcdougal, Holt (2010) World Geography, HMH Publishing Co.
- Pounds and Taylor (1974) World Geography, South Western Publishing Co., Ohio.

Gurugram University Gurugram, Haryana (India)

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

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(As per NEP 2020 w.e.f session 2024-25) **Semester-1**

BIO-GEOGRAPHY (Theory Paper)

Paper Code: **MIC-1- Course Title:** 240/GEO/ MIC101

Credit: 02 (1+1+0) L+T+P Hrs/Week	Total Marks	50 Marks
Time: 3 Hours	End Semester Exam:	35 Marks
Note: (i) The Question one of paper is compulsory. Question one of paper will contain Multiple Choice Questions (MCQ)/Objective type/Terms of seven marks (Seven MCQ/ Objective type/Terms of one mark each). (ii) The question paper will have four units. Two questions will contain from each unit of the syllabus. Candidates are required to attempt one question from each unit. These questions will be of Seven marks each.	Internal Assessment: Attendance Sessional Examination	15 Marks 05 Marks 10 Marks

Learning/Course Objectives: Understanding about basic ecological aspects & Enrichment about distribution of plants and animals' life on the earth. To create awareness about conservation of biotic resources and effects of industrial effluents on ecosystems. Acquaintance with environmental hazards and enactment of forest and wild life policy in India.

Learning/Course Outcomes: CO1: To gain knowledge of how bio-geography aids in comprehending the interactions between the human and physical elements that surround us. CO-2: Create a better understanding about the distribution bio-agents on the earth.CO-3: Recognize the ways in which bio-geography affects several facets of our existence on our planet.CO-4: To become acquainted with environmental Hazards in a geographical perspective. CO-5: Make environment a more interdisciplinary and trans-disciplinary field of study to understand the biogeography issues and concepts that are important for long-term development and growth.

UNIT-I

Nature, scope and significance of bio-geography, 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

Distribution of plant life on the earth and its relation to soil, climate and human activities. Geographical distribution of animal life on the earth and its relation to vegetation types, climate and human activities.

UNIT-III

Communities: nature of communities and ecosystems: bio-diversities; human induced communities change; habitat decay and conservation of biotic resources. Industrial effluent and its effect on fresh water and marine biology

UNIT-IV

Environmental hazards: Ecological consequences, human perception and adjustment with respect to flood, drought and earthquake. Bio-Reserves in India. National forest and wild life policy of India.

Recommended 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.
- Lllies, J.(1974) : Introduction of Zoogeography, McMillan. London.
- Khushoo, T.N. and Sharma, M.(1991) : Indian Geosphere-Biosphere Har-Anand Publication, Delhi .
- Mathur, H.S.(1998) : Essentials of Biogeography, Anuj Printers, Jaipur.
- Pears, N.(1985) : Basic Biogeography, Longman, London.
- Simmon, I.G.(1974): Biogeography, Natural and Cultural, Longman, London .
- Tivy, J.(1992) : Biogeography: A study of Plants in Ecosphere, Oliver and Boyd, U.S.A.

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

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(As per NEP 2020 w.e.f session 2024-25) **-Semester-2**

URBANIZATION IN INDIA (Theory Paper)

Paper Code: **MIC-2-Course Id:** 240/GEO/ MIC201

Credit: 02 (1+1+0) L+T+P Hrs/Week	Total Marks	50 Marks
Time: 3 Hours	End Semester Exam:	35 Marks
Note: (i) Question one of paper will contain Multiple Choice Questions (MCQ)/Objective type/Terms of seven marks (even MCQ/ Objective type/Terms of one mark each). . (ii) The question paper will have four units. Two questions will contain from each unit of the syllabus. Candidates are required to attempt one question from each unit. These questions will be of Seven marks each.	Internal Assessment: Attendance Sessional Examination	15 Marks 05 Marks 10 Marks

Learning/Course Objectives: To understand the underlying concept of modern problems & apply environmental concepts to resolve human problems. The foundational concepts of the relationship between humans and their surroundings will be addressed in the course on basic current topics. To get greater knowledge about concepts pertaining to people and the environment & understand processes and events that occurs in a certain region to comprehend people reaction in their environment.

Learning/Course Outcomes: CO1: To understanding about pattern and processes of urbanization. CO-2: To Acquaintance with contemporary urban infrastructure issues .CO-3: To Augmentation of knowledge about urban social issues .CO-4: Awareness about urban governance issues .CO-5: 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.

UNIT-I

Urbanization in India: History & Processes of urbanization: Socio-cultural, political, economic and geographical processes. Patterns of urbanization: level of urbanization, criteria of measurement and spatial patterns of urbanization in India, Recent trends of urbanization in India.

UNIT-II

Urban housing, Urban transport, Urban crime and delinquency, Water crisis and water management, Urban sanitation & Solid waste management, Urban Forest.

UNIT-III

Urban poverty: measures of poverty, status, causes and policies. Slums: current status, causes and policies. Marginalization of poor in urban space. Squeezing of urban social space.

UNIT-IV

Role of urbanization in economic and social change. National urbanization policy. Urban regions of India: case studies of metropolitan regions of Delhi, Mumbai, Kolkata, Chennai. Bangalore and Hyderabad.

Recommended Readings:

- Ahluwalia, I.J., Kanbur, R. and Mohanty, P.K. (2014)Urbanization in India: Challenges, Opportunities and the Way Forward, SAGE India, New Delhi.
- Alam, SM and Khan, W. (1972) Metropolitan Hyderabad and its Region: A Strategy for Development, Asia Publishing House, Bombay.
- Badcock, Blair. 2002. Making Sense of Cities: A Geographical Survey. Arnold, London,
- Bala, Raj. 1986. Urbanisation in India, Rawat Publishers, Jaipur.
- Bansal, S.C. 2010. Urban Geography (Eng/Hindi), Meenakshi Prakashan, Meerut
- Beall, Jc and Sean Fox. 2009. Cities and Development. Routledge, London.
- Carter, Harold (1995), The Study of Urban Geography. 4th edn, Arnold, London
- Fyfe, N. R. and Kenny, J. T. (2005). The Urban Geography Reader. London, UK: Routledge.
- Knox, P. L., and McCarthy, L. (2005). Urbanization: An Introduction to Urban Geography. New York, USA: Pearson Prentice Hall.
- Pacione, M. (2009). Urban Geography: A Global Perspective. UK Taylor and Francis.

- Ramachandran, R., (1989). Urbanisation and Urban Systems of India. New delhi, India: Oxford University Press.
- Singh, R.B., (Ed.) (2015). Urban development, challenges, risks andresilience in Asian megacitie. Japan: Advances in Geographical and Environmental Studies, Springer
- Kaplan, D. H., Wheeler, J. O. and Holloway, S. R. (2008). Urban Geography. NY, USA: John Wiley.
- Knox, P. L., and Pinch, S. (2006). Urban Social Geography: An Introduction, NY, USA: Prentice-Hall.
- 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.
- Singh, K. and F. Steinberg. eds. 1987. Urban India in Crisis. New Age International, 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, Ane Publication, New Delhi.
- Sharma, Springer. V.R. and Chadrakanta. (2019). Making Cities Resilient. Delhi, India:
- Sharma, P. and Rajput, S. (Eds.) (2017). Sustainable Smart Cities in India; Challenges and Future Perspectives. Delhi, India: Springer.

Gurugram University Gurugram, Haryana (India)

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

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(As per NEP 2020 w.e.f session 2024-25) **-Semester-3**

SOCIO-CULTURAL GEOGRAPHY (Theory Paper)

Paper Code: **MIC-3- Course Id:** 240/GEO/ MIC301

Credit: 03 (3+1+0) L+T+P Hrs/Week	Total Marks	100 Marks
	End Semester Exam:	70 Marks
Time: 3 Hours	Internal Assessment:	30 Marks
Note: (i) Question one of paper will contain Multiple Choice Questions (MCQ)/Objective type/Terms of Fourteen marks (each MCQ/ Objective type/Terms question will be of one mark each). . (ii) The question paper will have four units. Two questions will contain from each unit of the syllabus. Candidates are required to attempt one question from each unit. These questions will be of Fourteen marks each.	Attendance Assignment/Seminar /presentation/class Session Examination	05 Marks 05 Marks 20 Marks

Learning/Course Objectives: To understand the underlying concept of modern problems & apply Socio-cultural concepts to resolve human problems. The foundational concepts of the relationship between humans and their socio cultural surroundings will be addressed in the course on basic current topics. To get greater knowledge about Socio Cultural concepts pertaining to people and the environment & understand processes and events that occurs in a certain region to comprehend people reaction in their environment.

Learning/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 .CO-5: 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.

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:

- Ahmad, A. Social Geography, Rawat Publication, New Delhi, 1999.
- Jean, D. and Sen, A. Economic Development and Social opportunity, Oxford University Press, New Delhi, 1996.
- Dubey, S.C. Indian Society, National Book Trust, New Delhi, 1991.
- Schwartzberg J. An Historical Atlas of South Asia, University of Chicago Press, Chicago, 1978.
- Sen, A and Jean, D. Indian Development: Selected Regional Perspectives, Oxford University Press, 1996.
- Smith, D. Geography: A Welfare Approach, Edward Arnold, London, 1977.
- Sopher, D. An Exploration of India, Cornell University Press, 1980.
- Rao, S. Personality of India, M.S. University Baroda, Vadodara, 1958.
- Craig, Mike (1998)Cultural Geography, Routledge Publications, London.
- De Blij, Harm J. (1977) Human Geography, Cultural Society and Space, John Wiley and Sons, New York.

- Dickens, S.N. (1970) Introduction to Cultural Geography, Xerox College Publishing House, Waltham, Massachusetts.
- Magunder, D.N. (1973)Races and Culture of India, Asia Publishing House, New Delhi.
- Mukerjee, A.B. and Aijazuddin A. (1985) India: Culture, Society and Economy, Inter-India Publications, New Delhi.
- Spencer, J.E. and Thomas, W.L. (1973) Introducing Cultural Geography, John Wiley and Sons, New York.
- Taylor G. (1971) The Geography in the Twentieth Century, Asia Publishing House, New Delhi.
- Wagner, P.L. and Mikesell, M. (1962) Readings in Cultural Geography, The University of Chicago Press, Chicago.

Gurugram University Gurugram, Haryana (India)

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)

(As per NEP 2020 w.e.f session 2024-25) -**Semester-4**

GEOGRAPHY OF TRADE AND TRANSPORT (Theory Paper)

Paper Code: **MIC-4-Course Id:** 240/GEO/ MIC401

Credit: 03 (3+1+0) L+T+P Hrs/Week	Total Marks	100 Marks
Time: 3 Hours	End Semester Exam:	70 Marks
Note: (i) Question one of paper will contain Multiple Choice Questions (MCQ)/Objective type/Terms of Fourteen marks (each MCQ/ Objective type/Terms question will be of one mark each). . (ii) The question paper will have four units. Two questions will contain from each unit of the syllabus. Candidates are required to attempt one question from each unit. These questions will be of Fourteen marks each.	Internal Assessment: Attendance Assignment/Seminar /presentation/class Session Examination	30 Marks 05 Marks 05 Marks 20 Marks

Learning/Course Objectives: To understand the underlying concept of trade and transport problems & apply environmental concepts to resolve such problems. The foundational concepts of the relationship between trade and transport and their surroundings will be addressed in the course on basic current topics. To get greater knowledge about concepts pertaining to Trade and Transport and the environment & understand processes and events that occurs in a certain region to comprehend people reaction in their environment.

Learning/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 issues .CO-4: Awareness about trade and transport governance issues .CO-5: 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.

Unit- 1

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.

Recommended Readings:

- Bamford, C.G. and Robinson, H. (1978), Geography of Transport, Macdonald and Evans, London.
- Bhaduri S. (1992), Transport and Regional Development, Concept Publishing Company, New Delhi.
- Eliot Hurst, M.E. (1972), A Geography of Economic Behaviour: An Introduction, Duxbury Press, California.
- Hammond, R. and Mc Cullagh, P.S. (1989), Quantitative Techniques in Geography; An Introduction, Clarendon Press, Oxford.
- Hoyle, Band and Knowles, R. (2000), Modern Transport Geography, John Wiley and Sons, New York.
- Mangat, H.S. and Gill, Lakhvir Singh. (2015), Haryana: Levels of Road Transportation, Punjab Geographer, Vol. 11, October, Punchkula, pp.87-102.
- Raza, M. and Aggarwal, Y.P. (1985), Transport Geography of India, Concept Publishing Company, New Delhi.
- Saxena, H.M. (2010), Transport Geography, Rawat Publications, New Delhi.

- Subodh Rani and Chamar, K.V. (2016), Levels of Road Connectivity in Haryana, Punjab Geographer, Vol. 12, October, Punchkula.
- Taaffe, E.J. and Gauthier, H.L. (1973) Geography of Transportation, Prentice Hall Englewood Cliff, New Jersey.
- Vaidya, B.C. (1998), Reading's in Transport Geography, Devika Publications, Delhi.

Gurugram University Gurugram, Haryana (India)

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.)

(As per NEP 2020 w.e.f session 2024-25) **-Semester-1**

SURVEYING METHOD IN GEOGRAPHY (Theory and Practical Paper)

Paper Code: **SEC-1-Course Id:** 240/GEO/SEC101

Credit: 03 (2+0+2) L+T+P Hrs/Week	Total Marks	75 Marks
Time: 3 Hours (Theory) Time: 4 Hours (Practical)	End Semester Exam: Internal Assessment (Attendance)*	35 Marks 15 Marks
Note: Theory Exam: as the instructions mentioned under **Practical Exam:** as the instructions mentioned under Practical Exam Time: 4 Hours	Practical Exam Internal Assessment (Practical)**	20 Marks 05 Marks

Learning/Course Objectives: Understanding about basic survey method aspects. To create awareness about survey method and its importance in map making. Acquaintance with nature and significance of survey system.

Learning/Course Outcomes: CO1: To gain knowledge of how surveying aids helps in map making.CO-2: To create a better understanding and draw conclusions based on survey technique.CO-3: To recognize the ways in which survey method affects several facets of our existence on our planet.CO-4: To become acquainted with survey issues from a geographical perspective.

CO-5: Students will be able to understand the survey issues and concepts that are important for long-term development and growth.

UNIT-I

Basic concepts of surveying, Plain Surveying & Geodetic Surveying, survey equipment's coordinate system and map: magnetic and true north, polar and rectangular.

UNIT-II

Plane Table Survey. Setting up a plain table- centering, leveling, orientation, Principal of surveying with plain table, Radiation, Intersection &Traversing-open and close, Sources of error in plain table survey . (04 Exercise)

UNIT-III

Brief introduction of Chain& Tape Survey, Principals of surveying by chain, Open Traverse and Close Traverse survey, Methods of recording measurements in the field book, Duties and responsibilities during chain and tape survey, Plotting the survey, Merits and demerits of survey . (02 Exercise)

UNIT-IV

Prismatic Compass Survey : sources of error in prismatic compass survey, Radiation method, sketch method, Traverse method-open and close ,merits and demerits of prismatic compass survey, methods of correcting bearing , Role of Prismatic compass in Point to point march. 04 Exercise)

Note:

Theory Exam

(i) The Question one of paper is compulsory. Question one of paper will contain Multiple Choice Questions (MCQ)/Objective type/Terms of seven marks (seven MCQ/ Objective type/Terms of one mark each). (iii) The question paper will have four units. Two questions will contain from each unit of the syllabus. Candidates are required to attempt one question from each unit. These questions will be of Seven marks each. *Internal Assessment of 15 marks will be 05 marks of attendance + 10 marks of Practical assignment /file/sessional (Theory Part)

Practical Exam

(ii) The question paper Practical part out of unit two, three and four will comprise Exercise Part. (3 Question x 4 Marks= 12 Marks). Each unit of comprising exercise part of question paper will comprise one question from each unit of the syllabus .Candidates (s) are required to attempt three question / exercise from the units. These questions will be of 04 marks each. Candidates will be required to attempt exercise neatly and cleanly on the provided geography sheet.(a) Record file will be of Maximum four Marks.(b)Exercise will be of maximum twelve Marks.(c) Viva Voce will be of Maximum four Marks. ** Internal Assessment of 05 marks will be based on attendance (Practical Part)

Recommended Readings:

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

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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.)

(As per NEP 2020 w.e.f session 2024-25) **-Semester-2**

GEOGRAPHICAL DATA COLLECTION TECHNIQUES

(Theory and Practical Paper)

Paper Code: **SEC-2-Course Id:** 240/GEO/SEC201

Credit: 03 (2+0+2) L+T+P Hrs/Week	**Total Marks**	**75 Marks**
Time: 3 Hours (Theory) Time: 4 Hours (Practical)	End Semester Exam: Internal Assessment (Attendance)*	35 Marks 15 Marks
Note: Theory Exam: as the instructions mentioned under **Practical Exam:** as the instructions mentioned under Practical Exam Time: 4 Hours	Practical Exam Internal Assessment (Practical)**	20 Marks 05 Marks

Learning/Course Objectives: Understanding about basic technique of data collection. To create awareness about method of data collection and its importance. Acquaintance with nature and significance of information.

Learning/Course Outcomes: CO1: To gain knowledge of how different tools helps in 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 information .CO-4: To become acquainted with data collection issues from a geographical perspective. CO-5: Students will be able to understand the data collection concepts which are important for long-term development and growth.

UNIT-I

Types and sources of data: characteristics of primary and secondary data, Types of questionnaires and their formulation, Sample design for collection of socio-economic data, Collection of demographic and socio-economic data from the field.

UNIT-II

Data Collection & projections, (Semi average method, least square method, Exponential population growth), construction of life Tables, population density and concentration index. Dependency ratio, calculation of human development Index. (05 Exercise)

UNIT-III

Method of data analysis, Representation of data in individual, discreet and continuous series, measures of Central tendency, (Mean, Median, Mode), measures of dispersion & coefficient of variation. (05 Exercise)

UNIT-IV

Methods of representation of data Pie chart, Age and sex pyramid and types, Trilinear chart, Flow diagram, Choropleth, Proportional circles, divided proportional circles, level of urbanization. (05 Exercise)

Note:

Theory Exam

(i) The Question one of paper is compulsory. Question one of paper will contain Multiple Choice Questions (MCQ)/Objective type/Terms of seven marks (seven MCQ/ Objective type/Terms of one mark each). (iii) The question paper will have four units. Two questions will contain from each unit of the syllabus. Candidates are required to attempt one question from each unit. These questions will be of Seven marks each. *Internal Assessment of 15 marks will be 05 marks of attendance + 10 marks of Practical assignment /file/sessional (Theory Part)

Practical Exam

(ii) The question paper Practical part out of unit two, three and four will comprise Exercise Part. (3 Question x 4 Marks= 12 Marks). Each unit of comprising exercise part of question paper will comprise one question from each unit of the syllabus .Candidates (s) are required to attempt three question / exercise from the units. These questions will be of 04 marks each. Candidates will be required to attempt exercise neatly and cleanly on the provided geography sheet.(a) Record file will be of Maximum four Marks.(b)Exercise will be of maximum twelve Marks.(c) Viva Voce will be of Maximum four Marks. ** Internal Assessment of 05 marks will be based on attendance (Practical Part)

Recommended Readings:

- Khan, A.A. (1996). Text Book of Practical Geography, Concept, New Delhi.
- Lawrence, GRP.(1968). Cartographic Methods, Methuen, London.
- Mishra R.P. and Ramesh A. (1999). Fundamentals of Cartography, Concept Publishing Company, New Delhi.
- Monkhouse, F.J. and Wilkinson, H.R. (1994). Maps and Diagrams, Methuen, London.
- Robinson, A.H. et.al. (1995) Elements of Cartography, John Wiley & Sons, .
- Singh, R.L., (1979). Elements of Practical Geography, Kalyani Publisher, New Delhi.
- Singh ,Gopal (1991),Map Work and Practical Geography,SBD Publishers, Distributors,4075,Nai Sarak,Delhi
- Sarkar, A.K (1997): Practical Geography-A Systematic Approach, Orient Longman, Calcutta.
- Steers, J.B. (1992) Map Projections; University of London Press, London.
- Black James A and D.J. Champion (1976): Methods and Issues in Social Research, New York, John Wiley and Sons, Inc.
- Goode and Hatt, Research Methodology in Social Sciences, Oxford University Press, New Delhi.
- Gomez B and John Paul Jones. 2010. Research Methods in Geography-A Critical Introduction. Wiley Blackwell Publications, Singapore.
- Prasad,H (1992)Research Methods and Techniques in Geography, Rawat Publishers, Jaipur.
- Kundu A. (2005)Measurement of Urban Processes: A Study of Regionalization, Popular Prakashan, Mumbai.
- Mishra, H.N. and Singh V.P.(1998)Research Methodology: Social, Spatial and Policy Dimensions, Rawat Publishers, Jaipur.

Gurugram University Gurugram, Haryana (India)

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)

(As per NEP 2020 w.e.f session 2024-25) **-Semester-4**

MAP READING AND ITS INTERPRETATION (Theory and Practical Paper)

Paper Code: **VOC -1- Course Id:** 240/GEO/ VOC401

Credit: 04 (1+0+6) L+T+P Hrs/Week	Total Marks	100 Marks
Time: 1.30 Hours (Theory) Time: 4 Hours (Practical)	End Semester Exam: Internal Assessment (Attendance)*	20 Marks 05 Marks
Note: Theory Exam: as the instructions mentioned under **Practical Exam:** as the instructions mentioned under Practical Exam Time: 4 Hours	Practical Exam Internal Assessment (Practical)**	50 Marks 25 Marks

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Learning/Course Objectives: Understanding about basic technique of Map reading and its interpretation technique . To create awareness about method of map reading and its importance. Acquaintance with nature and significance of map reading and its interpretation technique to imbibe information.

Learning/Course Outcomes: CO1: To gain knowledge of how different methods helps in map reading .CO-2: To create a better understanding and draw conclusions based on map interpretations .CO-3: To recognize the ways in which appropriate method affects several facets of information in map reading and its interpretation .CO-4: To become acquainted with map reading issues from a geographical perspective. CO-5: Students will be able to understand the map reading concept and its interpretation concepts which are important for long-term development and growth.

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: Elements of map reading, Interpretation of Topographical sheets, Conventional Signs, Major Relief features and profiles, Enlargement and Reduction of maps by Square method.

(05 Exercise)

UNIT-III

Interpretation of Weather map: Element of Weather and various atmospheric symbols (Pressure, Winds, Condition of Sky, Sea Condition, Temperature, Clouds, Precipitation), weather instruments and its use.

(05 Exercise)

UNIT-IV

Aerial Photographs: Types and elements, Interpretation (Pocket and mirror stereoscope), Map Setting: Compass, Forward Bearing, Backward Bearing, Own Position, Object Position, and Preparation of rout chart with the help of prismatic compass.

(05 Exercise)

Note:

Theory Exam

(i) The Question one of paper is compulsory. Question one of paper will contain Multiple Choice Questions (MCQ)/Objective type/Terms of seven marks (seven MCQ/ Objective type/Terms of one mark each). (iii) The question paper will have four units. Two questions will contain from each unit of the syllabus. Candidates are required to attempt one question from each unit. These questions will be of four marks each. *Internal Assessment of 05 marks will be 05 marks of attendance* (Theory Part)

Practical Exam

(ii) The question paper Practical part out of unit two, three and four will comprise Exercise Part. (3 Question x 10 Marks= 30 Marks). Each unit of comprising exercise part of question paper will comprise one question from each unit of the syllabus .Candidates (s) are required to attempt three question / exercise from the units. These questions will be of 15 marks each. Candidates will be required to attempt exercise neatly and cleanly on the provided geography sheet .(a) Record file will be of Maximum 10 Marks.(b)Exercise will be of maximum 30 Marks.(c) Viva Voce will be of Maximum 10 Marks. ** Internal Assessment of 25 marks will be based on attendance 05 marks + Practical Assignments/ Practical File/Practical Sessional 20 marks (Practical Part)

Recommended Readings:

- Khan, A.A. (1996). Text Book of Practical Geography, Concept, New Delhi.
- Lawrence, GRP.(1968). Cartographic Methods, Methuen, London.
- Mishra R.P. and Ramesh A. (1999). Fundamentals of Cartography, Concept Publishing Company, New Delhi.
- Monkhouse, F.J. and Wilkinson, H.R. (1994). Maps and Diagrams, Methuen, London.
- Robinson, A.H. et.al. (1995) Elements of Cartography, John Wiley & Sons, .
- Singh, R.L., (1979). Elements of Practical Geography, Kalyani Publisher, New Delhi.
- Singh ,Gopal (1991),Map Work and Practical Geography,SBD Publishers, Distributors,4075,Nai Sarak,Delhi
- Sarkar, A.K (1997): Practical Geography-A Systematic Approach, Orient Longman, Calcutta.
- Steers, J.B. (1992) Map Projections; University of London Press, London.
- Black James A and D.J. Champion (1976): Methods and Issues in Social Research, New York, John Wiley and Sons, Inc.
- Goode and Hatt, Research Methodology in Social Sciences, Oxford University Press, New Delhi.
- Gomez B and John Paul Jones. 2010. Research Methods in Geography-A Critical Introduction. Wiley Blackwell Publications, Singapore.
- Prasad,H (1992)Research Methods and Techniques in Geography, Rawat Publishers, Jaipur.
- Kundu A. (2005)Measurement of Urban Processes: A Study of Regionalization, Popular Prakashan, Mumbai.
- Mishra, H.N. and Singh V.P.(1998)Research Methodology: Social, Spatial and Policy Dimensions, Rawat Publishers, Jaipur.

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Semester-III

Oceanography

CourseCode:**CC-A7(Theory: Core Paper)**

CourseId:**240/GEO/CC301**

Programme/ Class: B.A. Year:2 Semester: III Credit:04(3+1−0)L+T+P Hrs/Week	Total Marks:	100
ExaminationTime:3Hours	End Semester Exam:	70 Marks
Course Outcome:- 1. Gain Knowledge of What and Why and Skills related to the Physical, Chemical and Biological Components and Phenomena for a better understanding of Oceanography. 2. Understand the Salinity and Temperature distribution of Ocean Water. 3. Understand the relationship between Marine Organisms and their Environment. 4. Develop an idea about the Problems and Policies for Sustainable Oceans and SDG 14.	Internal Assessment: Attendance Assignment Sessional Exam	30 Marks 5 5 20
Instructions for Paper- Setter:-Question 1 is compulsory comprising Seven sub-parts spread over the entire syllabus(two marks for each sub-part),to be answered in15-20words.There will be eight long questions, two from each unit. The candidate has to answer four long questions, at least one question from each unit. All questions carry equal marks.		

UNIT–I

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

UNIT-II

Properties of Ocean Water and Ocean Circulation: Salinity and Temperature (Horizontal and Vertical Distribution); Circulation of Oceanic Water: Tides and Currents.

UNIT-III

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

UNIT–IV

Marine Management: Marine Policies, Integrated Coastal Zone Management with reference to India and SDG 14.

Suggested Reading:

- Basu S.K. (2003),"Hand Book of Oceanography", Global Vision, Delhi.
- Chisholm,M.(2nd Ed1985),"Human Geography",Penguin Books, London.
- Davis, R. J.A. (1996), "Oceanography: An Introduction to the Marine Environment", Wm, C. Brown, Lowa.
- Garrison Tom (2012),"Geography: An Invitation to Marrine Science", Brooks/Cole, New York.
- Garrison, T. (2016),"Oceanography: An Invitation to Marine Science", 9th ed, Cengage Learning, Boston.
- Hussain, Majid. 2010. Fundamentals of Physical Geography, New Delhi.
- Lal, D.S. (in Hindi, 1999), "Samundar Vigyan", Sharda Pustak Bhawan, Allahabad.

- Lake, P. (2002), "Physical Geography (Indian Edition)", Mohit Publications, New Delhi.
- Lal. D.S. (2003),"Oceanography", Sharada Pustak Bhavan, Allahabad.
- Pinet, P.R. (2014),"Invitation to Oceanography", 7th ed, Jones and Barlett Publishers, Burlington.
- Sverdrup K. A. and Armrest, E. V. (2008),"An Introduction to the World Ocean", McGraw Hill, Boston. Readings(Hindi).
- Siddhartha, K. (2013),"Oceanography: A Brief Introduction", Kisalaya Pub., New Delhi 19.
- Singh, S. (2015), "Oceanography" Pravalika Publication, Allahabad.
- Singh, S. (2015),"Samudra Vigyan", Pravalika Publication, Allahabad.
- Sharma, R. C. and Vatal, M. (2018),"Oceanography for Geographer", Surjeet Publications, Delhi.

Semester-III

Introduction to Philosophy of Geography

CourseCode:**CC-A8(Theory: Core Paper)**

CourseId: **240/GEO/CC302**

Programme/Class:B.A. Year:2 Semester: III Credit:04(3+1−0)L+T+PHrs/Week	Total Marks:	100
ExaminationTime:3Hours	End Semester Exam:	70 Marks
Course Outcome:- 1. Perceive the Evolution of the Philosophy of Geography. • 2. Appreciate the Contribution of the Thinkers in Geography. • 3. Discussing the Evolution of Geographical Thought from Ancient to Modern Times. 4. Analyzing Modern and Contemporary Principles of Empiricism, Positivism, Structuralism, Human and Behavioral Approaches in Geography.	Internal Assessment: Attendance Assignment Sessional Exam	30 Marks 5 5 20
Instructions for Paper- Setter:-Question 1 is compulsory comprising seven sub-parts spread over the entire syllabus (two marks for each sub-part),to be answered in15-20words.There will be eight longquestions,twofromeachunit.Thecandidatehastoanswerfourlongquestions, at least one question from each unit. All questions carry equal marks.		

UNIT–I

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

UNIT-II

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

UNIT-III

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

UNIT–IV

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

SuggestedReading:

- Dikshit,R.D.(1994),"Bhugolik Chintan ka Vikas", Prentice Hall of India, New Delhi.
- Dikshit, R.D. (1997), "Geographical Thought: A Contextual History of Ideas", Prentice-Hall of IndiaPvt Ltd. New Delhi.
- Holt-Jensen A. (2011),"Geography: History and Its Concepts: A Students Guide", SAGE.
- Johnston R. J. (Ed.),"Dictionary of Human Geography", Routledge.
- Johnston R. J. (1997),"Geography and Geographers, Anglo-American Human Geography since 1945", Arnold, London.
- Kaushik, S.D. (2007), "Prichyatmak Bhugol", Rastogi Publications, Meerut.
- Kapur A., (2001),"Indian Geography Voice of Concern", Concept Publications, New Delhi.
- Martin Geoffrey J., (2005),"All Possible Worlds: A History of Geographical Ideas", Oxford.
- Prasad, D. (in Hindi), "Bhugolik Chintan Ki Samiksha", Sharda Pustak Bhawan,Allahabad.
- Rana, L. (2008), "Geographical Thought: A Systematic Record of evolution", Concept Publishing Company, New Delhi.
- Soja, Edward (1989),"Post-modern Geographies", Verso, London. Reprinted 1997: Rawat Publ., Jaipur and New Delhi.

Semester-III

Principal of Land Surveying

CourseCode:**CC-A9(Practical: CorePaper)**

CourseId:**240/GEO/CC303**

Programme / Class: B.A. Year:2 Semester: III Credit:04(0+0+8) L+T+P Hrs/Week	Total Marks:	100
ExaminationTime:4Hours	End Semester Practical Practical Written Exam: Viva-voce	70Marks 50 Marks 20 Marks
Course Outcome:- 1. Comprehend the Concept of Land Survey. 2. Learn the usages of Survey Instruments. 3. Brings Direct interaction of different Types of Surveying Instruments like Clinometers. 4. Develop an idea about different types of Survey Mapping Techniques.	Internal Assessment: Attendance Practical Assignment/ Practical File/record	30Marks 5 25
Note & Instructions for Paper-Setter:- At least **twenty exercises** are to be prepared covering all the topics. The question paper will be set from the content of entire syllabus. The external examiners shall conduct the Practical Examination. The answer copies of the students will be checked by external and internal examiners on the day of examination. In the end semester practical examination, **Part-I the lab test** will consist of 5 MCQ type questions carrying 2 marks each (5questionx2marks=10marks).**Part-II** the lab test shall comprise of eight questions in all with at least two questions from each unit (4 question x 10 marks= 40 marks.		

UNIT–I

Surveying: Definition, Importance and different types of Surveying. Plain and Geodetic Surveying; Chain and Tape Survey: Radiation Method, Intersection Method, Traverse Method: Open and Closed Traverse, Triangulation. Plane Table Survey: Radiation Method, Intersection Method, Traverse Method: Open and Closed Traverse

UNIT-II

Prismatic Compass Survey: Radiation Method, Intersection Method, Traverse Method: Open and Closed Traverse; Measurement of Height and Contouring: Height with Clinometers.

SuggestedReading:

- AnsonR.and OrmellingF.J. (1994),"International Cartographic Association: BasicCartographic", Vol.Pregmen Press.
- D.R.Khullar(2022),"PracticalGeography",KalyaniPublisher,NewDelhi.
- D.R.Khullar(2024),"PhysicalGeographyandPracticalGeography",KalyaniPublisher, New Delhi.
- GuptaK.K.andTyagi,V.C.(1992),"Working with Map, Survey of India", DST, New Delhi.
- MishraR.P.andRamesh,A.(1989),"FundamentalsofCartography",Concept,NewDelhi.
- Monkhouse,F.,"GeneralCartography",John Wiley and Sons,NewYork, 5th edition.
- Rhind D.W. and Taylor D. R. F., (eds.) (1989), "Cartography: Past, Presentand Future", Elsevier, International Cartographic Association.
- RobinsonA.H.(2009),"ElementsofCartography",JohnWileyandSons,NewYork.
- Sarkar,A.(2015),"Practical geography: A systematic approach",Orient Black Swan

Private Ltd., New Delhi.
- SinghRL& RanaPBSingh(1991),"Prayogtmak Bhugol ke MoolTatva",Kalyani Publishers, New Delhi.
- Singh,R.L.and Singh,RanaP.B.(1993),"Elements of Practical Geography",(Hindiand English editions). Kalyani Publishers, New Delhi.
- Singh R. L. and Singh R. P. B. (1999), "Elements of Practical Geography", KalyaniPublishers.
- Singh,R.L.(2006),"FundamentalsofPracticalGeography",ShardaPustakBhawan, Allahabad.
- SharmaJ.P.(2010),"Prayogic Bhugol", Rastogi Publishers, Meerut.
- Singh,RL&Dutta,PK(2012),"Prayogatmak Bhugol",Central Book Depot, Allahabad.

Semester-IV

Introductory Climatology

CourseCode:**CC-A10(Theory:CorePaper)**

CourseId:**240/GEO/CC401**

Programme/ Class:B.A. Year:2 Semester: IV Credit:04(3+1+0)L+T+PHrs/Week	Total Marks:	100
ExaminationTime:3Hours	End Semester Exam:	70 Marks
Course Outcome:- 1. Understand the Elements of Climate, different Atmospheric Phenomena and Climate Change. 2. Learn the interaction between the Atmosphere and the Earth's Surface. Understand the importance of the Atmospheric Pressure and Winds. 3. To analyze the Dynamics of the Earth's Atmosphere and Global Climate. Assessing the Role of Man in Global Climate Change. 4. Learn to associate Climate with other Environmental and Human Issues. Approaches to Climate Classification.	Internal Assessment: Attendance Assignment Sessional Exam	30 Marks 5 5 20
Instructions for Paper-Setter:-Question 1 is compulsory comprising seven sub-parts spread overtheentiresyllabus(twomarksforeachsub-part),tobeansweredin15-20words.There will be eight longquestions,twofromeachunit.Thecandidatehastoanswerfourlongquestions, at least one question from each unit. All questions carry equal marks.		

UNIT–I

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

UNIT-II

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

UNIT-III

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

UNIT–IV

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

Suggested Reading:

- Barry R. G. and Carleton A. M., (2001),"Synoptic and Dynamic Climatology", Routledge, UK.
- Barry R. G. and Corley R. J., (1998),"Atmosphere, Weather and Climate", Routledge, New York.
- Critchfield H. J., (1987),"General Climatology", Prentice-Hall of India, New Delhi.
- Gupta L S(2000),"Jalvayu Vigyan, Hindi Madhyam Karyanvay Nidishalya", Delhi Vishwa Vidhyalaya, Delhi
- Lal, D S (2006),"Jalvayu Vigyan", Prayag Pustak Bhavan, Allahabad.
- Lutgens F. K., Tarbuck E. J. and Tasa D., (2009),"The Atmosphere: An Introduction to Meteorology", Prentice-Hall, Englewood Cliffs, New Jersey.

- Oliver J. E. and Hidore J. J., (2002), "Climatology: An Atmospheric Science", Pearson Education, New Delhi.
- Singh, S (2009),"Jalvayu Vigyan", Prayag Pustak Bhawan, Allahabad.
- Trewartha G. T. and Horne L. H., 1980: An Introduction to Climate, McGraw-Hill.
- Vatal, M (1986): Bhautik Bhugol, Central Book Depot, Allahabad.

Semester-IV
Statistical Methods in Geography
CourseCode:**CC-A11(Theory: Core Paper)**
CourseId:**240/GEO/CC402**

Programme / Class: B.A. Year:2 Semester: IV Credit:04(3+1+0)L+T+PHrs/Week	Total Marks:	100
ExaminationTime:3Hours	End Semester Exam:	70 Marks
Course Outcome:- 1. Understand the Significance of Statistics in Geography. 2. Recognize the Importance and Application of Statistics in Geography. 3. Interpret Statistical Data for a Holistic understanding of Geographical Phenomena. 4. Understand the Significance of Correlation and Regression.	Internal Assessment: Attendance Assignment Sessional Exam	30 Marks 5 5 20
Instructions for Paper-Setter:-Question 1 is compulsory comprising seven sub-parts spread over the entire syllabus (two marks for each sub-part),to be answered in15-20words.Thereill be eight long questions, two from each unit. The candidate has to answer four long questions, at least one question from each unit. All questions carry equal marks.		

UNIT–I

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

UNIT-II

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

UNIT-III

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

UNIT–IV

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

SuggestedReading:

- Aslam, Mahmood (2004), "Statistical Methods in Geographical Studies", Rajesh Publications, New Delhi.
- Bart James E and Gerld M.Barber, (1996),"Elementary Statistics for Geographers, The Guieford Press, London.
- Eldon, D., (1983),"Statistics in Geography: A Practical Approach", Blackwell, London.
- Cressie, N.A.C., (1991),"Statistics for Spatial Analysis", Wiley, New York.
- Gregory, S., (1978),"Statistical Methods and the Geographer (4th Edition)", Longman, London.
- Haining, R.P., (1990),"Spatial Data Analysis in the Social and Environmental Science", Cambridge University Press, Cambridge.
- Limb, Melanie and Claire Dwyer (2001), "Qualitative Methodologies for Geographers", Oxford University Press Inc. New York.
- Mc Grew, Jr. and Cahrles, B. M., (1993),"An Introduction to Statistical Problem Solving in Geography", W.C. Brocan Publishers, New Jersey. 7.

- Mathews, J.A., (1987),"Quantitative and Statistical Approaches to Geography: A Practical Manual Pergamon", Oxford.
- Pal, S.K., (1998),"Statistics for Geo-scientists : Techniques and Applications", Concept Publishing Company, New Delhi.
- Singh, Kultar (2009), "Quantitative Social Research Methods", Sage Publications, New Delhi.

Semester-IV

Statistical Methods in Geography

CourseCode:**CC-A12(Practical: Core Paper)**

CourseId:**240/GEO/CC403**

Programme/ Class:B.A. Year:2 Semester: III Credit:04(0+0+8)L+T+PHrs/Week	Total Marks:	100
ExaminationTime:4Hours	End Semester Pract. Pract. Written Exam: Viva-voce	70Marks 50 Marks 20 Marks
Course Outcome:- 1. Learn the importance of use of data in Geography. 2. Know about different types of diagram. 3. Learn to use Tabulation of Data. 4. Gain knowledge about Association and Correlation.	Internal Assessment: Attendance Pract.Assign./Pract. File/record	30Marks 5 25
Note & Instructions for Paper-Setter:- At least **twenty exercises** are to be prepared covering all the topics. The question paper will be set from the content of entire syllabus. A board of two external examiners shall conduct the Practical Examination. The answer copies of the students will be checked by external and internal examiners on the day of examination. In the end semester practical examination, **Part-I the lab test** will consist of 5 MCQ type questions carrying 2marks each (5questionx2marks=10marks).**Part-II** the lab test shall comprise of eight questions in all with at least two questions from each unit (4 question x 10 marks= 40 marks.		

UNIT–I

Sources of Data: Tally Bar, Construction of Frequency distribution Table, Data Series Inclusive and Exclusive: Graphical representation of Frequency Distribution Table: Bar graph, Line graph, Histogram, Frequency Polygon and Ogive.

UNIT-II

Centrographic Techniques: Mean Centre, Median Centre and Standard distance; Measures of Inequality: Location Quotient, Concentration and Dispersion (Nearest Neighbor Analysis; Sopher's index of Disparity, Dissimilarity Index

Suggested Reading:

- AnsonR.and Ormelling F.J. (1994),"International Cartographic Association: Basic Cartographic", Vol. Pregmen Press.
- Aslam, Mahmood (2004), "Statistical Methods in Geographical Studies", Rajesh Publications, New Delhi.
- Cressie, N.A.C., (1991),"Statistics for Spatial Analysis", Wiley, New York.
- D.R.Khullar(2022),"PracticalGeography",KalyaniPublisher,NewDelhi.
- Eldon, D., (1983),"Statistics in Geography: A Practical Approach", Blackwell, London.
- Gupta, Santosh (2008), "Research Methodology and Statistical Techniques", Deep & Deep Publications Pvt. Ltd. New Delhi.
- Gregory, S., (1978),"Statistical Methods and the Geographer (4th Edition)", Longman, London.
- Haining, R.P., (1990),"Spatial Data Analysis in the Social and Environmental Science", Cambridge University Press, Cambridge.
- Limb, Melanie and Claire Dwyer (2001), "Qualitative Methodologies for Geographers", Oxford University Press Inc. New York.
- Mc Grew, Jr. and Cahrles, B. M., (1993),"An Introduction to Statistical Problem Solving in Geography", W.C. Brocan Publishers, New Jersey.

- Mathews, J.A., (1987),"Quantitative and Statistical Approaches to Geography: A Practical Manual Pergamon", Oxford.
- Rhind D.W. and Taylor D. R. F., (eds.) (1989), "Cartography: Past, Present and Future", Elsevier, International Cartographic Association.
- RobinsonA.H.(2009),"ElementsofCartography",JohnWileyandSons,NewYork.
- Sarkar,A.(2015),"Practical geography: A systematic approach", Orient Black Swan Private Ltd., New Delhi.
- Singh,R.L. and Singh, RanaP.B.(1993),"Elements of Practical Geography",(Hindiand English editions). Kalyani Publishers, New Delhi.
- Singh,R.L.(2006),"FundamentalsofPracticalGeography",ShardaPustakBhawan, Allahabad.
- SharmaJ.P.(2010),"Prayogic Bhugol",Rastogi Publishers, Meerut.
- S.K., (1998),"Statistics for Geoscientists : Techniques and Applications", Concept Publishing Company, New Delhi.
- Singh, Kultar (2009), "Quantitative Social Research Methods", Sage Publications, New Delhi.