Maharaja Ganga Singh University

Bachelor of Arts (B.A.)/ Bachelor of Science (B.Sc.)

GEOGRAPHY

(Semester) 2024-25

Choice Based Credit System (CBCS)

Undergraduate Programme

(Effective from Academic Year 2024-25)

SYLLABUS

SCHEME OF EXAMINATION AND

COURSES OF STUDY

Submitted by:

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Maharaja Ganga Singh University, Bikaner

Preamble

Considering the curricular reforms as instrumental for desired learning outcomes, Maharaja Ganga Singh University made a rigorous attempt to revise the curriculum of postgraduate and undergraduate programmes in alignment with National Education Policy-2020 and UGC Quality Mandate for Higher Education Institutions. The process of revising the curriculum could be prompted with the adoption of "Comprehensive Roadmap for Implementation of NEP". The roadmap identified the key features of the Policy and elucidated the Action Plan with well-defined responsibilities and indicative timeline for major academic reforms. The University Grants Commission (UGC) has devised a series of regulations and directives over time with the intention of enhancing the higher education system's quality and enforcing minimum standards in Higher Educational Institutions (HEIs) throughout India. The recent academic reforms suggested by the UGC have contributed to an overarching enhancement of the higher education system.

With NEP-2020 in background, the revised curricula articulate the spirit of the Policy by emphasizing upon- integrated approach to learning; innovative pedagogies and assessment strategies; multidisciplinary and cross-disciplinary education; creative and critical thinking; ethical and constitutional values through value-based courses; 21st century capabilities across the range of disciplines through life skills, entrepreneurial and professional skills; community and constructive public engagement; social, moral and environmental awareness; exposure to Indian knowledge system, cultural traditions and classical literature through relevant courses offering 'Knowledge of India'; fine blend of modern pedagogies with indigenous and traditional ways of learning; flexibility in course choices; student-centric participatory learning; imaginative and flexible curricular structures to enable creative combination of disciplines for study; offering multiple entry and exit points, integration of extracurricular and curricular aspects; exploring internships with local industry, businesses, artists and crafts persons; closer collaborations between industry and higher education institutions for technical, vocational and science programmes; and formative assessment tools to be aligned with the learning outcomes, capabilities, and dispositions as specified for each course.

Choice Based Credit System (CBCS)

The Choice Based Credit System (CBCS), a part of academic reform process to enhance quality of education and facilitate transferability of students from one University/institution to another at the national and international level, provides substantive autonomy to teachers to formulate their own curricula and enable them to introduce innovations in teaching and learning process and upgrade overall quality of higher education. The CBCS provides scope for Comprehensive and Continuous Evaluation (CCE) of students and encourages them to learn. The CBCS provides a cafeteria type approach in which the students can take courses of their choice, learn at their own pace, undergo additional courses, acquire more than the required credits, and adopt an interdisciplinary approach to learning.

The grading system is widely regarded as an improvement over the traditional marks system, which is why leading institutions in India and abroad have adopted it. Thus, there's a strong rationale for establishing a consistent grading system. This would facilitate seamless student mobility among institutions within the country and abroad, while also allowing prospective employers to accurately assess students' performances. To achieve the desired standardization in the grading system and the method for calculating the Cumulative Grade Point Average (CGPA) based on students' examination results, the UGC has devised these comprehensive guidelines.

Outline of Choice Based Credit System

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

- **Discipline Specific Core Course Theory (DCCT)**
- **Discipline Specific Core Course Practical (DCCP)**

Elective Course: 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 Elective Course.

Discipline Specific Elective (DSE) Course: Elective courses may be offered by the main discipline/subject of study is referred to as Discipline Specific Elective. The University/Institute may also offer discipline related Elective courses of interdisciplinary nature (to be offered by main discipline/subject of study).

Dissertation/Project: An elective course designed to acquire special/advanced knowledge, such as supplement study/support study to a project work, and a candidate studies such a course on his own with an advisory support by a teacher/faculty member is called dissertation/project.

Generic Elective (GE) Course: An elective course chosen generally from an unrelated discipline/subject, with an intention to seek exposure is called a Generic Elective.

P.S.: A core course offered in a discipline/subject may be treated as an elective by other discipline/subject and vice versa and such electives may also be referred to as Generic Elective.

Ability Enhancement Courses (AEC): The Ability Enhancement (AE) Courses may be of two kinds: Ability Enhancement Compulsory Courses (AECC) and Skill Enhancement Courses (SEC). **AECC** courses are the courses based upon the content that leads to Knowledge enhancement; i. Environmental Science and ii. English/MIL Communication. These are mandatory for all disciplines. **SEC** courses are value-based and/or skill-based and are aimed at providing hands-on-training, competencies, skills, etc.

Ability Enhancement Compulsory Courses (AECC): Environmental Science, English Communication/MIL Communication.

Skill Enhancement Courses (SEC): These courses may be chosen from a pool of courses designed to provide value-based and/or skill-based knowledge.

Introducing Research Component in Under-Graduate Courses

Project work/Dissertation is considered as a special course involving application of knowledge in solving / analyzing /exploring a real-life situation / difficult problem. Project/Dissertation work would be of 6 credits. Project/Dissertation work may be given in lieu of a discipline specific elective paper.

B.A./ B.Sc. (Pass Course) Subject: Geography

Program Outcome

The B.A./ B.Sc. (Pass Course) Geography undergraduate program is designed to achieve the following outcomes-

1. To provide opportunities for the holistic development of the students and to enable them to make an effective contribution to the community, society, and nation.

2. To strive for scholastic excellence, instill moral values, create responsible citizens and to build global competencies.

3. To create a conducive environment for experiential learning.

4. To instill the core values of faith, integrity, accountability, and creativity.

5. To enable the students to contribute to building a more sustainable and equitable world.

6. To enhance historical, political, environmental, spiritual, moral, and ethical consciousness.

7. To develop analytical and critical thinking skills in the field of research.

8. To sensitize young minds through education towards social, cultural, psychological, and economic well-being and to reach out to the underprivileged.

9. To integrate and interlink knowledge, skills, values, and attitudes to action.

10. To provide a general understanding of the concepts and principles of selected areas of study thus enabling the students to decide upon specialized professional choices.

Program Specific Outcome

On successful completion of the Program the student shall be able to:

1. Demonstrate proficiency in knowledge of essential concepts of geography about man and environment; nature and society to exhibit their awareness and responsibility towards environment and society at large.

2. Identifying, interpret and analyze human and environmental issues from local to global scales by critically assessing their various perspectives to promote sustainable development of humanity.

3. Develop integrated geographical knowledge to avail yourself of a plethora of opportunities in the field of town planning, urban management, cartography, tourism, civil services, teaching, survey, wildlife, population studies, community development etc.

Structure of Program: B.A./ B.Sc. (Pass Course) Subject: Geography

Semester-I

Paper Code	Paper Name	Code	L	T	P	Total Credits	Maximum Marks			Minimum Passing Marks (%)	Hours in a week
							Internal Marks	External Marks	Total Marks		
GEO4.5DCCT12	Physical Geography	DCC	3	1	0	4	20	80	100	36	6
GEO4.5DCCP12	Practical	DCC	0	0	2	2	10	40	50	36	4
Total Credits						**6**					
Total Marks							**30**	**120**	**150**		

Semester-II

Paper Code	Paper Name	Code	L	T	P	Total Credits	Maximum Marks			Minimum Passing Marks (%)	Hours in a week
							Internal Marks	External Marks	Total Marks		
GEO4.5DCCT22	Geography of Resources and Environment	DCC	3	1	0	4	20	80	100	36	6
GEO4.5DCCP22	Practical	DCC	0	0	2	2	10	40	50	36	4
Total Credits						**6**					
Total Marks							**30**	**120**	**150**		

Semester-III

Paper Code	Paper Name	Code	L	T	P	Total Credits	Maximum Marks			Minimum Passing Marks (%)	Hours in a week
							Internal Marks	External Marks	Total Marks		
GEO4.5DCCT32	Human Geography	DCC	3	1	0	4	20	80	100	36	6
GEO4.5DCCP32	Practical	DCC	0	0	2	2	10	40	50	36	4
Total Credits						**6**					
Total Marks							**30**	**120**	**150**		

Semester-IV

Paper Code	Paper Name	Code	L	T	P	Total Credits	Maximum Marks			Minimum Passing Marks (%)	Hours in a week
							Internal Marks	External Marks	Total Marks		
GEO4.5DCCT42	Geography of Rajasthan	DCC	3	1	0	4	20	80	100	36	6
GEO4.5DCCP42	Practical	DCC	0	0	2	2	10	40	50	36	4
Total Credits						**6**					
Total Marks							**30**	**120**	**150**		

Semester-V

Paper Code	Paper Name	Code	L	T	P	Total Credits	Maximum Marks			Minimum Passing Marks (%)	Hours in a week
							Internal Marks	External Marks	Total Marks		
GEO4.5DCCT52	World Regional Geography	DCC	3	1	0	4	20	80	100	36	6
GEO4.5DCCP52	Practical	DCC	0	0	2	2	10	40	50	36	4
Total Credits						**6**					
Total Marks							**30**	**120**	**150**		

Semester-VI

Paper Code	Paper Name	Code	L	T	P	Total Credits	Maximum Marks			Minimum Passing Marks (%)	Hours in a week
							Internal Marks	External Marks	Total Marks		
GEO4.5DCCT62	Geography of India	DCC	3	1	0	4	20	80	100	36	6
GEO4.5DCCP62	Practical	DCC	0	0	2	2	10	40	50	36	4
Total Credits						**6**					
Total Marks							**30**	**120**	**150**		

***L= Lecture; T= Tutorial; P= Practical**

- A candidate shall be required to obtain 36% marks to pass in theory, practical and internals separately.
- The marks of Internal Evaluation – 30 Marks (20 Marks theory paper, 10 Marks practical paper) should be given based on seminar/assignments/presentations/class tests/logical thinking/application of knowledge and skills, other activities etc. based on syllabus.

Scheme of End Semester DCCT (Theory) Paper Examination

1. English/Hindi shall be the medium of instructions and examination.
2. There will be semester end examination.
3. The evaluation scheme shall comprise external evaluation and internal evaluation. The internal evaluation will carry 30 (20T+10P) marks. Each theory paper will carry 80 marks. Practical paper will carry 40 marks.
4. The duration of the written examination for the theory paper shall be three hours.
5. A course will contain 5 units.
6. The question paper shall contain three sections.

Maximum Marks : 80 **Duration:3 Hrs.**

Section A

(10 x 1 = 10 marks)

Section A (10 marks) shall contain 10 questions, two from each Unit. Each question shall be of 1 mark. All the questions are compulsory. Section A will be prepared such that questions (i) through (v) are multiple-choice questions, while questions (vi) through (x) will be fill-in-the-blank questions.

Section B

(5 x 5 = 25 marks)

Section B (25 marks) shall contain 5 questions (two from each unit with internal choice). Each question shall be of 5 marks. The candidate is required to answer all 5 questions. The answers should not exceed 150 words.

Section C

(3 x 15 = 45 marks)

Section C (45 marks) shall contain 5 questions, one from each Unit. Each question shall be of 15 marks. The candidate is required to answer any three questions by selecting these three questions from different units. The answers should not exceed 400 words.

Scheme of End Semester DCCP (Practical) Paper Examination

1. Practical paper will carry 40 marks.
2. For practical papers of semesters, I, III, and V, no external examiner will be appointed by the University. Instead, the examiner will be appointed by the respective head or principal of the college, and both marks and credits will be submitted to the University.
3. The duration of the practical examination shall be six hours.
4. Scheme: 2 periods (each of two hours duration) per week per batch of 40 students.
5. **Distribution of marks: For Semester I, III and V** **Marks**
   1. Lab work/ Written work: 2 hrs duration 15
   2. Record work & viva- voce: 2 hr duration 10+5=15
   3. Field survey & viva-voce: 2 hr duration 7+3=10

   Total 40

6. Distribution of marks: For Semester II, IV and VI	Marks
1. Lab work/ Written work: 2 hrs duration	15
2. Record work & viva- voce: 2 hr duration	10+5=15
3. Field visit Report & viva- voce: 2 hr duration	7+3=10
Total	40

Note: The candidate is required to answer/attend any three exercises (5 marks each) out of five exercises during Lab Work/ Written work and 40 candidates shall be examined in one batch.

Syllabus (Semester – I)

- **Course Code:** GEO4.5DCCT12
- **Type of the course:** Discipline Specific Core Course
- **Title of the Course:** Physical Geography
- **Level of the Course:** NHEQF Level 4.5
- **Credit of the Course:** 4
- **Delivery sub-type of the course:** Theory -3, Tutorial -1
- **Pre-requisites and requisites of the course:** Student enrolled and registered in UG Programme first semester.
- **Objectives of the course:** To provide comprehensive understanding of physical geography, covering fundamental concepts and processes related to Earth's structure, geological history, atmospheric dynamics, and oceanographic features.
- **Course Learning Outcomes:** After the completion of the course, the student shall be able to:

  - Understand Earth's Dynamic Processes.
  - Knowledge of Earth Movements and Landforms.
  - Analise Landform Development and Denudation Processes.
  - Understand Atmospheric Processes.
  - Understand Oceanography and Coastal Processes.

GEO4.5DCCT12: PHYSICAL GEOGRAPHY

Unit I

Earth as a Planet; Origin of the Earth: Nebular hypothesis, Tidal hypothesis, Big Bang Theory; Geological History of the Earth; Interior of the Earth; Origin of Continents and Oceans: Wegner's Continental Drift Theory, Seafloor spreading, Plate tectonics.

Unit II

Earth Movements: Endogenetic and Exogenetic; Folds and Faults; Mountain and Mountain Building Theories: Kober- Geosynclinal Oraogen, Jeffreys- Thermal Contraction, and Holmes-

Convection Current Theory, Volcanoes: Types and Associated landforms; Rocks: Their Types and Characteristics; Denudation: Weathering and its types.

Unit III

Cycle of Erosion: W.M. Davis and Walther Penck; Landforms development: Work of River and Fluvial Topography, Work of Glacier and Glacial Topography, Work of Wind and Aeolian Topography, Work of Underground Water and Karst Topography, Work of Sea Waves and Coastal Topography.

Unit IV

Composition and layers of atmosphere; Insolation and heat budget of The Earth, Atmospheric Temperature; Atmospheric Pressure and Atmospheric Circulation (Winds, Air-Masses, Fronts, Jet Streams, Cyclones (Tropical and Temperate); Types and Distribution of Precipitation.

Unit V

Bottom Topography of Oceans; Temperature and Salinity in The Oceans; Ocean Circulation: Currents and Tides, ENSO (El Niño-Southern Oscillation); Marine deposits; Coral Reefs and Atolls: Types and their origin.

Suggested Readings:

- Monkhouse, F.J.: Principles of Physical Geography, Hodder & Stoughton, London,1960.
- Trewartha G.T., Robinson, A.H. and Hammond, E.H.: Fundamentals of Physical Geography, McGraw-Hill Book Co., Inc., New York.
- Singh, Savindra: Physical Geography (Hindi & English), Pravalika Publication, Prayagraj.
- Steers J.A.: The Unstable Earth, Kalyani Publishers, New Delhi.
- Strahler, A.N.: Modern Physical Geography, John Wiley, Revised 1992.
- Strahler, A.H. and Strahler, A.N.: Introducing Physical Geography, Wiley India.
- Khullar, D.R.: Physical Geography (Hindi & English), Kalyani Publishers, Ludhiana.
- Alka Gautam: Physical Geography (Hindi), Rastogi Publication, Meerut.
- Hess, Darrel and Mcknight, Tom: Physical Geography: A Landscape Appreciation, Pearson.
- Lal, D. S.: Physical Geography (Hindi & English), Sharda Pustak Bhawan, Allahabad.
- Whittow, John B.:The Penguin Dictionary of Physical Geography, Penguin Reference.
- Bunnett, R.B. and Parihar, Seema Mehra: Physical Geography in Diagrams, Pearson India.
- Leong, Goh Cheng: Certificate Physical and Human Geography, OUP, Oxford India.
- Bryant, Richard H.: Physical Geography, Rupa: Made Simple Books.
- Jat, B. C.: Physical Geography (Hindi), Malik & Co., Jaipur.
- Siddhartha, K.: Physical Geography, Kitab Mahal, Allahabad, First Edition, 2017.
- Lake, Philip: Physical Geography, Cambridge University Press.
- Thornbury, William D.: Principles of Geomorphology, New Age International Publishers, New Delhi, Third Edition, 2018.
- Worcestor, Philip G.: A Textbook of Geomorphology, Affiliated East-West Pvt. Ltd., New Delhi.

GEO4.5DCCT12: भौतिक भूगोल

इकाई I

पृथ्वी एक ग्रह के रूप में; पृथ्वी की उत्पत्ति: निहारकीय परिकल्पना, ज्वारीय परिकल्पना, बिग बैंग सिद्धांत; पृथ्वी का भूवैज्ञानिक इतिहास; पृथ्वी की आंतरिक संरचना; महाद्वीपों एवं महासागरों की उत्पत्ति: वेगनर का महाद्वीपीय विस्थापन सिद्धांत, सागर नितल प्रसरण, प्लेट विवर्तनिकी।

इकाई II

भू-संचलन: अन्तर्जात एवं बहिर्जात; वलन एवं भ्रंश; पर्वत एवं पर्वत निर्माण के सिद्धांत: कोबर- भू-सन्नति सिद्धांत, जैफ्रिज- तापीय संकुचन, और होम्स- संवहनीय तरंग सिद्धांत; ज्वालामुखी: प्रकार एवं संबंधित भू-आकृतियां; शैलें: उनके प्रकार और विशेषताएँ; अनाच्छादन: अपक्षय एवं इसके प्रकार।

इकाई III

अपरदन चक्र: डब्ल्यू.एम. डेविस एवं वॉल्टर पेंक; भू-आकृतियां का विकास: नदी के कार्य एवं जलीय स्थलाकृतियाँ, हिमनद के कार्य एवं हिमनदीय स्थलाकृतियाँ, पवन के कार्य एवं पवनकृत स्थलाकृतियाँ, भूमिगत जल के कार्य एवं कार्स्ट स्थलाकृतियाँ, समुद्री लहरों के कार्य एवं तटीय स्थलाकृतियाँ।

इकाई IV

वायुमंडल का संघटन एवं संरचना; सूर्यातप एवं पृथ्वी का ऊर्जा बजट, वायुमंडलीय तापमान; वायुमंडलीय दाब और वायुमंडलीय संचरण (पवनें, वायुराशियाँ, वाताग्र, जेट स्ट्रीम्स, चक्रवात (उष्ण एवं शीतोष्ण); वर्षण के प्रकार एवं वितरण।

इकाई V

महासागरीय तली का उच्चावच; महासागरों में तापमान और लवणता; महासागरीय संचरण: धाराएँ एवं ज्वारभाटे, ई.एन.एस.ओ. (एल निनो-दक्षिणी दोलन); सागरीय निक्षेप; प्रवाल भित्ति एवं प्रवाल वलय: प्रकार एवं उनकी उत्पत्ति।

GEO4.5DCCP12: PRACTICAL

CONTENTS:

1. Scale- Plain, Comparative and Diagonal.
2. Enlargement, Reduction and Combination of Maps.
3. Chain-Tape Survey.
4. Mean, Median, Mode and Standard Deviation.

Suggested Readings:

- Monkhouse, F.J. & Wilkinson, H.R.: Maps and Diagrams, Methuen, London, 1994.
- Singh, R.L. and Singh, Rana P.B.: Elements of Practical Geography (Hindi and English), Kalyani Publishers, Ludhiana.
- Sharma, J.P.: Prayogatmak Bhoogol ki Rooprekha (Hindi), Rastogi Publications, Meerut.
- Mamoria C.B. & Jain S.M. : Prayogatmak Bhoogol, Sahitya Bhawan, Agra.
- Singh, L.R.: Fundamentals of Practical Geography (Hindi and English), Sharda Pustak Bhawan, Allahabad.
- Mishra, R.N. and Sharma, P.K.: Practical Geography (Hindi and English), Pareek Publications, Jaipur.
- Khullar, D.R.: Essentials of Practical Geography (Hindi & English).
- Singh, Gopal: Map Work and Practical Geography, Vikas Publishing House, Noida.
- Tiwari, R.C. and Tripathi, Sudhakar: Abhinav Prayogatmak Bhoogol, Pravalika Publication, Prayagraj.
- Raisz, Erwin: General Cartography, McGraw-Hill, Inc., New York.

GEO4.5DCCP12: प्रायोगिक

पाठ्यक्रम:

1. मापनी- सरल, तुलनात्मक और विकर्ण।

2. मानचित्रों का विवर्धन, लघुकरण और संयोजन।

3. जरीब-फीता सर्वेक्षण।

4. माध्य, माध्यिका, बहुलक और मानक विचलन।

Syllabus (Semester – II)

- **Course Code:** GEO4.5DCCT22
- **Type of the course:** Discipline Specific Core Course
- **Title of the Course:** Geography of Resources and Environment
- **Level of the Course:** NHEQF Level 4.5
- **Credit of the Course:** 4
- **Delivery sub-type of the course:** Theory -3, Tutorial -1
- **Objectives of the course:** The objective of the course "Geography of Resources and Environment" is to provide students with a thorough understanding of the classification,

distribution, and sustainable management of natural resources. It explores the economic and environmental significance of soil, water, marine, forest, mineral, and energy resources, and examines human impacts on ecological systems. The course also aims to highlight the importance of addressing environmental degradation and hazards through effective management strategies and international policies, fostering a comprehensive approach to sustainable development.

- **Course Learning Outcomes:** After the completion of the course, the student shall be able to:

  - Understanding Resource Classification and Management
  - Knowledge of Soil, Water, and Marine Resources
  - Economic and Environmental Significance of Forest, Mineral, and Energy Resources
  - Human Ecology and Ecological Principles.
  - Environmental Degradation, Management, and Conservation.

GEO4.5DCCT22: GEOGRAPHY OF RESOURCES AND ENVIRONMENT

Unit I

Resources: Meaning, Nature, and Classification; Renewable and Non-renewable Resources; Biotic and Abiotic Resources; Natural Resources Management.

Unit – II

Soil Resources: Types and World Distribution, Soil Erosion and Methods of Soil Conservation; Water Resources: Types and World Distribution, Water Crisis and its Mitigation Methods; Marine Resources: Types and World Distribution.

Unit – III

Forest Resources: Types and World Distribution, Their Economic and Environmental Significance, Mineral and Energy Resources: Types, World Distribution of Iron Ore, Petroleum, Coal; Non-Conventional Energy Resources: Types, World Distribution and future prospectives.

Unit – IV

Human Ecology; Principles and Components of Ecology; Functions: Trophic Levels, Energy Flows, Cycles, Food Chain, Food Web, and Ecological Pyramid; Human Interaction and Impacts on Ecology and Environment; Global and Regional Ecological Changes and Imbalances; Ecosystem: Their Management and Conservation.

Unit – V

Environment: Meaning, Components, Degradation, Management, and Conservation; Biodiversity and Sustainable Development; Environmental Hazards and Remedial Measures:

Ozone Depletion, Global Warming, Urban Heat Island, Atmospheric Pollution, Water Pollution, Land Degradation; International Programmes and Polices: Kyoto Protocol, Agenda 21, Sustainable Development Goals, Paris Agreement etc.

Suggested Readings:

- Alexander, J.W. and Hartshorn, T.A.: Economic Geography, Prentice Hall of India Ltd., New Delhi, 1988.
- Janaki, V.A.: Economic Geography, Concept Pub. Co., New Delhi, 1985.
- Leong, G.C. and Morgan, G.C.: Human and Economic Geography, Oxford University Press, London, 1982.
- Simmons, I.G.: The Ecology of Natural Resources, Hodder Arnold, London, 1974.
- Negi, B.S.: Geography of Resources (Hindi & English), Kedar Nath Ram Nath, Meerut.
- Gurjar, R.K. and Jat, B.C.: Resources and Environment (Hindi), Panchsheel Prakasan, Malik & Co., Jaipur.
- Gautam, Alka: Resources and Environment (Hindi), Sharda Pustak Bhawan, Allahabad.
- Gautam, Alka: Geography of Resources, Sharda Pustak Bhawan, Allahabad.
- Kaushik, S. D., and Gautam, Alka: Sansadhan Bhoogol (Hindi), Rastogi Publications, Meerut.
- Guha, J.L. and Chattoraj, P.R.: A New Approach to Economic Geography, The World Press Pvt. Ltd., Kolkata.
- Rao, B.P.: Resources and Environment (Hindi), Vasundhara Prakashan, Gorakhpur.
- Singh, Jagdish: Sansadhan Bhoogol (Hindi), Gyanodaya Prakashan, Gorakhpur.

GEO4.5DCCT22: संसाधन एवं पर्यावरण भूगोल

इकाई I

संसाधन: अर्थ, प्रकृति और वर्गीकरण; नवीकरणीय और गैर-नवीकरणीय संसाधन; जैविक और अजैविक संसाधन; प्राकृतिक संसाधन प्रबंधन।

इकाई - II

मृदा संसाधन: प्रकार और विश्व वितरण, मृदा अपरदन और मृदा संरक्षण के तरीके; जल संसाधन: प्रकार और विश्व वितरण, जल संकट और इसके निवारण के तरीके; समुद्री संसाधन: प्रकार और विश्व वितरण।

इकाई - III

वन संसाधन: प्रकार और विश्व वितरण, उनका आर्थिक और पर्यावरणीय महत्व, खनिज और ऊर्जा संसाधन: प्रकार, लौह अयस्क, पेट्रोलियम, कोयले का विश्व वितरण; गैर-पारंपरिक ऊर्जा संसाधन: प्रकार, विश्व वितरण और भविष्य की संभावनाएँ।

इकाई - IV

मानव पारिस्थितिकी; पारिस्थितिकी के सिद्धांत और घटक; कार्य: पोषण स्तर, ऊर्जा प्रवाह, चक्र, खाद्य श्रृंखला, खाद्य जाल और पारिस्थितिक पिरामिड; मानव अंतर्संबंध एवं पारिस्थितिकी तथा पर्यावरण पर प्रभाव; वैश्विक एवं क्षेत्रीय पारिस्थितिकी परिवर्तन एवं असंतुलन; पारिस्थितिकी तंत्र: उनका प्रबंधन एवं संरक्षण।

इकाई - V

पर्यावरण: अर्थ, घटक, क्षरण, प्रबंधन एवं संरक्षण; जैव विविधता एवं सतत विकास; पर्यावरणीय खतरे एवं उपचारात्मक उपाय: ओजोन क्षरण, ग्लोबल वार्मिंग, नगरीय ऊष्मा द्वीप, वायुमंडलीय प्रदूषण, जल प्रदूषण, भूमि क्षरण; अंतर्राष्ट्रीय कार्यक्रम एवं नीतियाँ: क्योटो प्रोटोकॉल, एजेंडा 21, सतत विकास लक्ष्य, पेरिस समझौता आदि।

GEO4.5DCCP22: PRACTICAL

CONTENTS:

1. Methods of representation of relief- Hachures, Hill shading, Layer tint, Contours etc.

2. Relief features- Types of Slopes, Valleys, Waterfall, Gorge, Meanders, Plateaus, Conical Hill, Ridge, Saddle, Cliff, Spur, Col, Pass- to be drawn with the help of contours shown in topographical sheets of different physiographic regions.

3. Kinds of Profiles, Profile drawing.

4. Study of topographical sheets, scheme of Indian topographical sheets.

5. **Geographical Field Excursion:** Study of a village, based on socio- economic field survey. Each student will have to submit a separate report.

Suggested Readings:

- Monkhouse, F.J. & Wilkinson, H.R.: Maps and Diagrams, Methuen, London, 1994.
- Singh, R.L. and Singh, Rana P.B.: Elements of Practical Geography (Hindi and English), Kalyani Publishers, Ludhiana.
- Sharma, J.P.: Prayogatmak Bhoogol ki Rooprekha (Hindi), Rastogi Publications, Meerut.
- Mamoria C.B. & Jain S.M. : Prayogatmak Bhoogol, Sahitya Bhawan, Agra.
- Singh, L.R.: Fundamentals of Practical Geography (Hindi and English), Sharda Pustak Bhawan, Allahabad.
- Mishra, R.N. and Sharma, P.K.: Practical Geography (Hindi and English), Pareek Publications, Jaipur.
- Khullar, D.R.: Essentials of Practical Geography (Hindi & English).

- Singh, Gopal: Map Work and Practical Geography, Vikas Publishing House, Noida.
- Tiwari, R.C. and Tripathi, Sudhakar: Abhinav Prayogatmak Bhoogol, Pravalika Publication, Prayagraj.
- Raisz, Erwin: General Cartography, McGraw-Hill, Inc., New York.

GEO4.5DCCP22: प्रायोगिक

पाठ्यक्रम:

1. उच्चावच निरूपण की विधियाँः हैश्यूर, पर्वतीय छायाकरण, स्तर-रंजन, समोच्च रेखाएं इत्यादि।
2. स्थलाकृतिक पत्रकों में प्रदर्शित विभिन्न भ्वाकृतिक प्रदेशों के उच्चावच स्वरूपों, जैसे- ढाल के प्रकार, घाटियाँ, जलप्रपात, गार्ज, विसर्प, पठार, शंक्वाकार पहाड़ी, कटक, काठी, भृगु, पर्वत स्कंध, कॉल और दर्रों को समोच्चय रेखाओं द्वारा प्रदर्शित करना।
3. परिच्छेदिकाओं के भेद, परिच्छेदिका की रचना।
4. स्थलाकृतिक पत्रकों का अध्ययन, भारत के स्थलाकृतिक पत्रकों की पद्धति।
5. **<u>भौगोलिक क्षेत्रीय भ्रमण</u>**: सामाजिक-आर्थिक क्षेत्रीय सर्वेक्षण पर आधारित एक गाँव का अध्ययन। प्रत्येक विद्यार्थी को पृथक-पृथक प्रतिवेदन प्रस्तुत करना होगा।

<u>Syllabus (Semester – III)</u>

- **Course Code:** GEO4.5DCCT32
- **Type of the course:** Discipline Specific Core Course
- **Title of the Course:** Human Geography
- **Level of the Course:** NHEQF Level 4.5
- **Credit of the Course:** 4
- **Delivery sub-type of the course:** Theory -3, Tutorial -1
- **Objectives of the course:** The objective of the course is to provide students with a comprehensive understanding of the complex interactions between humans and their environment. This includes examining the foundational concepts, principles, and approaches of human geography, as well as the spatial distribution and characteristics of various racial, ethnic, and tribal groups worldwide and in India. The course also aims to analyze human adaptations to diverse environmental conditions, explore patterns of population distribution and migration, and evaluate the population dynamics, challenges, and policies specific to India, ultimately equipping students with the knowledge to understand and address human geographical issues.
- **Course Learning Outcomes:** After the completion of the course, the student shall be able to:
    - Comprehend the Scope and Principles of Human Geography.

- Analyze Human Diversity and Early Economic Activities.
- Evaluate Human Adaptations to Different Environments.
- Understand Population Distribution and Migration Patterns.
- Assess Population Dynamics and Policies in India.

GEO4.5DCCT32: HUMAN GEOGRAPHY

Unit I

Nature and scope of human geography; Branches of human geography; Principles of human geography; Approaches of human geography; Concepts of man-environment relationship- determinism, possibilism, and neo-determinism; Dichotomy in physical and human geography.

UNIT- II

Division of mankind: spatial distribution, physical and social profile of racial groups, ethnic groups, tribal groups in the world and in India; early economic activities of mankind- food gathering, hunting, fishing, and shifting cultivation.

UNIT-III

Human adaptation to environment (i) Cold region- Eskimos, (ii) Hot region- Bushman & Pigmy, (iii) Plateau region- Gonds & Masai, (iv) Mountain region- Gujjar & Naga, (v) Plain region- Bhils & Santhal, their social and economic activities.

UNIT-IV

Distribution of population: World distribution pattern; physical, economic, and social factors influencing spatial distribution; Concept of overpopulation, under population, and optimum population. Zero population growth; Migration- internal and international.

UNIT-V

Population regions of India: dynamic, prospective, depressed; Problem of over population of India and remedial measures. Population programmes and policy of India.

Suggested Readings:

- Bergwan Edward E: Human Geography: Culture, Connection and Landscape, Prentice Hall, New Jersey, 1995.
- Carr,M: Patterns, Process and Change in Human Geography, MacMillan,London, 1987.
- Fellman, J L: Human Geography- Landscape of human activities, Brown & Benchman, USA, 1997.
- Blij HJ: Human Geography, Culture, Society, and space; John Willey, New York, 1996.
- S.d. Kaushik: Manav Bhoogol ke saral sidhant, Rastogi Publications, Meerut.
- Dvivedi and Kannojia: Manav Bhoogol ke Sidhant, Kitab Mahal, Allahbad.
- Gujjar and Jat: Manav Bhoogol, Panchshee Prakashanl, Jaipur.

GEO4.5DCCT32: मानव भूगोल

इकाई I

मानव भूगोल की प्रकृति और विषयवस्तु; मानव भूगोल की शाखाएँ; मानव भूगोल के सिद्धांत; मानव भूगोल के उपागम; मानव-पर्यावरण संबंध की अवधारणाएँ- नियतिवाद, संभावनावाद और नव-नियतिवाद; द्वैतवाद: भौतिक बनाम मानव भूगोल।

इकाई- II

मानव समूह का विभाजन: विभिन्न प्रजातीय समूहों का स्थानिक वितरण, भौतिक एवं सामाजिक प्रारूप, नृजातीय समूह, विश्व और भारत में जनजातीय समूह; मानव की प्रारंभिक आर्थिक गतिविधियाँ- भोजन एकत्रीकरण, आखेट, मत्स्यन एवं स्थानांतरित कृषि।

इकाई- III

पर्यावरण के प्रति मानव अनुकूलन: (i) ठंडे प्रदेश- एस्किमो, (ii) गर्म प्रदेश- बुशमैन और पिग्मी, (iii) पठारी प्रदेश- गोंड और मसाई, (iv) पर्वतीय प्रदेश- गुज्जर और नागा, (v) मैदानी प्रदेश- भील और संथाल, इनकी सामाजिक और आर्थिक गतिविधियाँ।

इकाई- IV

जनसंख्या का वितरण: विश्व वितरण प्रारूप; स्थानिक वितरण को प्रभावित करने वाले भौतिक, आर्थिक तथा सामाजिक कारक; जनाधिक्य, जनाभाव और अनुकूलतम जनसंख्या की अवधारणा। शून्य जनसंख्या वृद्धि; प्रवास - आंतरिक और अंतर्राष्ट्रीय।

इकाई-V

भारत के जनसंख्या प्रदेश: गत्यात्मक, विकासोन्मुख तथा विकासविमुख क्षेत्र; भारत में जनाधिक्य की समस्या और उपचारात्मक उपाय। भारत के जनसंख्या कार्यक्रम और नीतियां।

GEO4.5DCCP32: PRACTICAL

CONTENTS:

1. Distribution Maps: Methods of Drawing Distribution maps, Qualitative Methods- Choro-chromatic, Simple Shade method, Pictorial Method, Choro-schematic method, Naming Method; Quantitative Methods- Choropleth Method, Isopleth Method, Dot Method, Diagrammatic Method, Cartogram
2. Plane Table Survey- radiation, intersection, resection: two- & three-point problems- Llano's method, Bassel's method, Trial & error method, Mechanical method.
3. Spearman's rank correlation and regression.

Suggested Readings:

- Monkhouse, F.J. & Wilkinson, H.R.: Maps and Diagrams, Methuen, London, 1994.
- Singh, R.L. and Singh, Rana P.B.: Elements of Practical Geography (Hindi and English), Kalyani Publishers, Ludhiana.
- Sharma, J.P.: Prayogatmak Bhoogol ki Rooprekha (Hindi), Rastogi Publications, Meerut.
- Mamoria C.B. & Jain S.M.: Prayogatmak Bhoogol, Sahitya Bhawan, Agra.
- Singh, L.R.: Fundamentals of Practical Geography (Hindi and English), Sharda Pustak Bhawan, Allahabad.
- Mishra, R.N. and Sharma, P.K.: Practical Geography (Hindi and English), Pareek Publications, Jaipur.
- Khullar, D.R.: Essentials of Practical Geography (Hindi & English).
- Singh, Gopal: Map Work and Practical Geography, Vikas Publishing House, Noida.
- Tiwari, R.C. and Tripathi, Sudhakar: Abhinav Prayogatmak Bhoogol, Pravalika Publication, Prayagraj.

GEO4.5DCCP32: प्रायोगिक

पाठ्यक्रम:

1. वितरण मानचित्र: वितरण मानचित्र बनाने की विधियाँ, गुणात्मक विधियाँ- कोरो-क्रोमैटिक, सामान्य छाया विधि, चित्रीय विधि, वर्णप्रतिकी विधि, नामांकन विधि; मात्रात्मक विधियाँ- वर्णमात्री विधि, सममान रेखा विधि, बिन्दु विधि, आरेखी विधि, मानारेख
2. समपटल सर्वेक्षण- विकिरण, प्रतिच्छेदन विधियाँ; स्थिति-निर्धारण: द्वि-बिंदु और त्रि-बिंदु समस्याएँ- लानो की विधि, बैसेल की विधि, जाँच और त्रुटि विधि, यांत्रिक विधि।
3. सहसंबंध: स्पीयरमैन का कोटि-अंतर विधि; प्रतिगमन।

Syllabus (Semester – IV)

- **Course Code:** GEO4.5DCCT42
- **Type of the course:** Discipline Specific Core Course
- **Title of the Course:** Geography of Rajasthan
- **Level of the Course:** NHEQF Level 4.5
- **Credit of the Course:** 4
- **Delivery sub-type of the course:** Theory -3, Tutorial -1
- **Objectives of the course:** The objective of the course is to provide a comprehensive understanding of Rajasthan's physical and socio-economic geography. Students will

explore the state's geological structure, climate, soils, and natural vegetation, along with its agricultural practices and economic development. The course covers energy resources, mineral industries, and demographic patterns, including urban-rural distribution and tribal communities. Additionally, students will study the unique geographical regions of Rajasthan, gaining insights into their distinct features and developmental challenges. This knowledge will enable students to analyze and interpret the diverse geographical and developmental aspects of Rajasthan.

- **Course Learning Outcomes:** After the completion of the course, the student shall be able to:
    - Understand Physiographic and Environmental Characteristics of Rajasthan.
    - Comprehend the Agricultural and Economic Practices of Rajasthan.
    - Evaluate Energy and Mineral Resources.
    - Analyse Demographic and Social Structures.
    - Understand Regional Geographical Diversity of Rajasthan.

GEO4.5DCCT42: GEOGRAPHY OF RAJASTHAN

Unit I

Introduction: Formation and administrative setting of the state; Geological structure; Relief; Physiographic regions; Drainage; Climate; Soils; Natural vegetation.

UNIT-II

Agricultural and economic aspects of the state: Food and commercial crops; Main irrigation sources: types and their distribution; waste land and desert land development programmes; Livestock and dairy development.

UNIT- III

Power and energy resources: Hydro based, Thermal, Atomic, Solar, Biogas; Mineral resources and industries.

UNIT-IV

Demographic structure: growth, distribution, density, urban- rural, occupational structure, literacy; Tribes of Rajasthn: Bhil and Grasia; Factors affecting the development of transportation and trade in the state.

UNIT-V

Geographical regions of Rajasthan: Detailed study of Marusthali, Aravalli, Hadoti and Eastern Plain.

Suggested Readings:

- Mishra, V C: Geography Rajasthan, National Book Trust, New Delhi, 1967.
- Sharmas H.S. & M.L.: Geographical Facts of Rajasthan.
- Bhalla L R: Rajasthan ka Bhoogol, Kuldip Prakashan, Ajmer.

- Sharm & Sharma: Rajasthan ka Bhoogol, Pancheel Prakashan, Jaipur.
- Saxena, H M: Rajasthan ka Bhoogol, Rajsthn Hindi Granth Academy, Jaipur.
- Sharma Dinesh Chandra & Puspa Sharma: Rajasthan Aaj Tak.

GEO4.5DCCT42: राजस्थान का भूगोल

इकाई I

परिचय: राज्य का गठन और प्रशासनिक व्यवस्था; भूगर्भिक संरचना; धरातल; भूआकृतिक प्रदेश; अपवाह प्रणाली; जलवायु; मृदा; प्राकृतिक वनस्पति।

इकाई-II

राज्य का कृषिगत एवं आर्थिक स्वरुप: खाद्यान्न और व्यापारिक फसलें; सिंचाई के प्रमुख स्रोत: प्रकार और उनका वितरण; बंजर भूमि और मरू भूमि विकास कार्यक्रम; पशुधन और डेयरी विकास।

इकाई-III

शक्ति व ऊर्जा संसाधन: जलशक्ति आधारित, तापीय, आणविक, सौर उर्जा, बायोगैस उर्जा; खनिज संसाधन और उद्योग।

इकाई-IV

जनसांख्यिकीय संरचना: जनसंख्या वृद्धि, वितरण, घनत्व, नगरीय-ग्रामीण जनसंख्या, व्यावसायिक संरचना, साक्षरता; राजस्थान की जनजातियाँ: भील और गरासिया; राज्य में परिवहन और व्यापार के विकास को प्रभावित करने वाले कारक।

इकाई-V

राजस्थान के भौगोलिक प्रदेश: मरुस्थली, अरावली, हाड़ौती और पूर्वी मैदान का विस्तृत अध्ययन।

GEO4.5DCCP42: PRACTICAL

CONTENTS:

1. Representation of Statistical Data: Diagrams and Graphs; Diagrams -One Dimensional Diagrams: Line, Bar- Simple, Multiple, Compound, Pyramid, Wind Rose Diagram; Two Dimensional Diagrams: Unit Square, Square Block, Rectangular, Wheel, Ring; Three Dimensional Diagrams- Spherical, Cube, Block Pile

2. Graphs: Simple Linear Graph, Polyline Graph, Climograph, Hythergraph
3. **Geographical Field Excursion:** Agricultural survey of a village. Each student will have to submit a separate report.

Suggested Readings:

- Lawrence, G R P: Cartographic Methods, Methuen, London.
- Mishra R P: Fundamentals of Cartography, McMilan, New Delhi.
- Monkhouse, F J & Wilkinson, H R: Maps and Diagrams, Methuen, London, 1994.
- Singh, R L: Elements of Practical Geography, Kalyani Publishers, New Delhi.
- J.P. Sharma: Prayogatmak Bhoogol ki Rooprekha, Rastogi, Meerut.
- Mamoria C B & Jain S M: Prayogatmak Bhoogol, Sahitya Bhavan Agra.
- S.M. Jain: Prayogatmak Bhoogol, Sahitya Bhavan, Agra.

GEO4.5DCCP42: प्रायोगिक

पाठ्यक्रम:

1. सांख्यिकीय आँकड़ों का निरूपण: आरेख और आलेख; आरेख - एकविम आरेख: रेखा, दण्ड आरेख- सरल, बहु दण्ड आरेख, मिश्रित, पिरामिड, पवनारेख; द्विविम आरेख: इकाई वर्ग, वर्गाकार ब्लॉक, आयताकार, चक्र, वलय; त्रिविम आरेख- गोलीय आरेख, घनारेख, ब्लॉक-पुंज आरेख
2. आलेख: सरल रेखीय आलेख, बहु-रेखिक आलेख, क्लाइमोग्राफ, हीदरग्राफ
3. **भौगोलिक क्षेत्र भ्रमण:** एक गांव का कृषि सर्वेक्षण, प्रत्येक विद्यार्थी को पृथक-पृथक प्रतिवेदन प्रस्तुत करना होगा।

Syllabus (Semester – V)

- **Course Code:** GEO4.5DCCT52
- **Type of the course:** Discipline Specific Core Course
- **Title of the Course:** Regional Geography
- **Level of the Course:** NHEQF Level 4.5
- **Credit of the Course:** 4
- **Delivery sub-type of the course:** Theory -3, Tutorial -1
- **Objectives of the course:** The course on Regional Geography aims to provide students with a comprehensive understanding of the concept and classification of regions, both geographically and economically. It seeks to enhance students' knowledge of various

natural regions of the world, with a particular emphasis on monsoon, Mediterranean, hot desert, and prairie regions. Through in-depth regional studies of countries like the United States, China, Australia, Brazil, Bangladesh, Nepal, and Sri Lanka, the course will enable students to analyze and compare these regions' physical landscapes, climatic conditions, agricultural patterns, mineral wealth, energy resources, and industrial sectors. Ultimately, the course aims to develop students' ability to critically evaluate regional differences and similarities, fostering a deeper appreciation of the diverse geographic and economic landscapes across the globe.

- **Course Learning Outcomes:** After the completion of the course, the student shall be able to:
    - Understand Regional Concepts and Classification.
    - Comprehend the Regional Study of United States.
    - Evaluate China's Regional Characteristics.
    - Analyse Comparative Study of Australia and Brazil.
    - Explore Regional characteristics of Bangladesh, Nepal, and Sri Lanka.

GEO4.5DCCT52: REGIONAL GEOGRAPHY

Unit I

Concept of region, Classification of region - geographical and economic. Natural regions of the world with special emphasis on monsoons, Mediterranean, hot desert, and prairie.

UNIT- II

Regional study of United States of America.

UNIT-III

Regional study of China.

UNIT- IV

Regional study of Australia and Brazil.

UNIT-V

Regional study of Bangladesh, Nepal, and Sri Lanka.

Note: Regional study of the above countries under the following heads: Relief, drainage, climate, soil, chief crops, main economic activities, major minerals, power resources and industries like cotton textile, iron & steel, paper & pulps, and industrial regions.

Suggested Readings:

- Crassey, G B: Geography of China.
- James, P E: Latin America, Cassed & Co. London.

- Minshull Roger: Regional Geography.
- Shaw E W: Anglo-America- A Regional Geography, John Willey &Co. New York
- L.R. Bhalla: Pradeshik Bhoogol, Kuldeep Publications, Ajmer.
- Banwari Lal: Uttari America ka bhoogol.
- Alka Gautam: Vishv Ka Pradeshik Bhugol.
- Hari Mohan Saxena: Vishv Bhugol- Samany evm Pradeshik, Rastogi Publications.

GEO4.5DCCT52: प्रादेशिक भूगोल

इकाई I

प्रदेश की अवधारणा; प्रदेशों का वर्गीकरण - भौगोलिक और आर्थिक; विश्व के प्राकृतिक प्रदेश- विशेष अध्ययन: मानसून, भूमध्यसागरीय, उष्ण मरुस्थल और प्रेयरी प्रदेश।

इकाई- II

प्रादेशिक अध्ययन: संयुक्त राज्य अमेरिका

इकाई- III

प्रादेशिक अध्ययन: चीन

इकाई- IV

प्रादेशिक अध्ययन: ऑस्ट्रेलिया और ब्राजील

इकाई- V

प्रादेशिक अध्ययन: बांग्लादेश, नेपाल और श्रीलंका

नोट: उपरोक्त देशों का निम्नलिखित शीर्षकों के अंतर्गत प्रादेशिक अध्ययन किया जाये: भौतिक स्वरुप, अपवाह प्रणाली, जलवायु, मृदा, मुख्य फसलें, मुख्य आर्थिक गतिविधियाँ, प्रमुख खनिज, उर्जा संसाधन और उद्योग जैसे- सूती वस्त्र, लौह और इस्पात, कागज और लुगदी उद्योग; औद्योगिक क्षेत्र।

GEO4.5DCCP52: PRACTICAL

CONTENTS:

1. Map Projection: Definition, Necessity, Classification, and Choice of Projections.

2. Construction, Properties, Limitations and Use of The Following Projections: 1. Cylindrical- Simple and Equal Area. 2. Conical- One Standard Parallel, Two Standard Parallel, Bone's and Polyconic. 3. Zenithal- Orthographic, Stereographic, Gnomonic and Equidistant (Polar Cases). 4. Conventional- Mollweide's Projection.
3. Prismatic Compass Survey- Required Instruments, Magnetic Bearing, Survey Methodology: Closed and Open Traverse, Corrections of Bearings and Removal of Closing Error.

Suggested Readings:

- Monkhouse, FG & Wilkinson, HR: Maps and Diagrams, Metheun, London,1994.
- Steers JA: Map Projections, University of London Press,London.
- Singh, RL: Elements of Practical Geography, Kalyani Publishers, New Delhi.
- Sharma JP: Prayogik Bhoogol, Rastogi, Meerut.
- S.M. Jain: Prayogatmak Bhoogol, Sahitya Bhavan, Agra. Lawrence, G R P: Cartographic Methods, Methuen, London.

GEO4.5DCCP52: प्रायोगिक

पाठ्यक्रम:

1. मानचित्र प्रक्षेप: परिभाषा, आवश्यकता, वर्गीकरण और प्रक्षेपों का चयन।
2. निम्नलिखित प्रक्षेपों का निर्माण, गुणधर्म, सीमाएँ और उपयोग: 1. बेलनाकार- सामान्य एवं समक्षेत्र 2. शंक्वाकार- एक मानक अक्षांश वाला, दो मानक अक्षांशों वाला, बोन और बहुशंकुक 3. खमध्य- लंबकोणीय, त्रिविम, नोमोनिक और समदूरस्थ (ध्रुवीय) 4. रूढ़- मोलवीड प्रक्षेप।
3. प्रिज्मीय कम्पास सर्वेक्षण- आवश्यक उपकरण, चुम्बकीय दिकमान, सर्वेक्षण- क्रियाविधि: बंद एवं खुली मालारेखा, दिक्मानों का संशोधन और समापक त्रुटि को हटाना।

Syllabus (Semester – VI)

- **Course Code:** GEO4.5DCCT62
- **Type of the course:** Discipline Specific Core Course
- **Title of the Course:** Geography of India
- **Level of the Course:** NHEQF Level 4.5
- **Credit of the Course:** 4
- **Delivery sub-type of the course:** Theory -3, Tutorial -1
- **Objectives of the course:** The objective of the "Geography of India" course is to provide students with a comprehensive understanding of India's diverse physical and cultural landscapes. This includes an exploration of its terrain, climate, vegetation, and natural

resources. The course aims to analyze the geographical factors that influence agricultural practices, industrial development, and transportation networks. Additionally, it seeks to evaluate the socio-economic implications of demographic changes and urbanization. By integrating these aspects, the course prepares students to critically assess the regional variations and developmental patterns that shape India's geography and its broader role within South-East and South Asia.

- **Course Learning Outcomes:** After the completion of the course, the student shall be able to:
    - Understand India's Geographical Context and Diversity.
    - Analyse Climatic and Environmental Patterns.
    - Explore Agricultural Practices and Production in India
    - Examine Natural Resources and Industrial Development of India
    - Assess Economic and Demographic Changes in India.

GEO4.5DCCT62: GEOGRAPHY OF INDIA

Unit I

India in the context of the South-east and South Asia; India- a land of diversity, unity within diversities; Major terrain elements of India and their role in shaping physical landscape of India; Drainage systems and its functional significance.

UNIT-II

Regional and seasonal variation of climate- The Monsoon, western disturbances, northwesters, climatic regions of India; Soil types- their distribution and characteristics, vegetation types and their distribution; Forests- the status of its use and need for conservation.

UNIT-III

Agriculture; Irrigation and multipurpose projects; Geographical conditions, distribution and production of wheat, rice, sugarcane, cotton, coffee, tea, fruits and vegetables etc.

UNIT-IV

Resources: Minerals- iron ore, mica, manganese; Power- coal, petroleum, hydropower, atomic power. Industries- iron & steel, textile, cement, chemical, fertilizer, paper & pulp. Transportation- railways, roads, air, and water.

UNIT-V

Changing nature of Indian economy- agricultural growth during the plan period, green revolution vis-à-vis traditional farming; Regionalization of Indian agriculture; Agricultural regions and its relevance in agricultural development planning; Spatial distribution of population and density, socio- economic implications of population explosion, urbanization.

Suggested Readings:

- Chattergy S B: Climatology of India, Calcutta University, Calcutta.
- Deshpande, C.D.: India- A Regional Interpretation, Northern Book Centre, New Delhi, 1992.
- Khullar, D.R.; India- A Comprehensive geography, Kalyani Publication, New Delhi.
- Gazetteers of India, Publication Division, New Delhi.
- Govt. of India: Five Years Plans of India.
- Indian Yearbook: Publication Division, New Delhi.
- Irrigation Atlas of India.
- Negi, Geography of India
- Singh R.L. (ed.): India- A Regional Geography, National Geog. Society, Varanasi, 1971.
- Wadia, D N: Geology of India, Mc Millan & Co. London, 1967.
- V.K. Tiwari: Bharat ka Vrahat Bhoogol, Himalya Publication
- Mamoria & Jain: Bharat ka Vrahat Bhoogol, Sahitya Bhavan, Agra.

GEO4.5DCCT62: भारत का भूगोल

इकाई I

दक्षिण-पूर्व और दक्षिण एशिया के संदर्भ में भारत; भारत- विविधताओं का देश, विविधताओं में एकता; भारत के प्रमुख स्थलाकृतिक घटकों का भारत के भौतिक परिदृश्य के निर्माण भूमिका; अपवाह प्रणाली और इसका कार्यात्मक महत्व।

इकाई-II

जलवायु की प्रादेशिक एवं मौसमिक विविधता- मानसून, पश्चिमी विक्षोभ, नॉरवेस्टर, भारत के जलवायु प्रदेश; मृदा के प्रकार- उनका वितरण और विशेषताएँ, प्राकृतिक वनस्पति- प्रकार और उनका वितरण; वन- इसके उपयोग की स्थिति और संरक्षण की आवश्यकता।

इकाई-III

कृषि; सिंचाई और बहुउद्देशीय परियोजनाएँ; भौगोलिक दशाएँ, वितरण और उत्पादन: गेहूँ, चावल, गन्ना, कपास, कॉफी, चाय, फल एवं सब्जियाँ आदि।

इकाई-IV

संसाधन: खनिज- लौह अयस्क, अभ्रक, मैंगनीज; उर्जा- कोयला, पेट्रोलियम, जल विद्युत, आणविक ऊर्जा; उद्योग- लौह और इस्पात, कपड़ा, सीमेंट, रसायन, उर्वरक, कागज एवं लुगदी उद्योग; परिवहन- रेलवे, सड़क, वायु और जल।

इकाई-V

भारतीय अर्थव्यवस्था का बदलता स्वरुप- पंचवर्षीय योजना अवधि के दौरान कृषि का विकास, हरित क्रांति बनाम पारंपरिक खेती; भारतीय कृषि का प्रादेशीकरण; कृषि प्रदेश और कृषि विकास नियोजन में इसकी प्रासंगिकता; जनसंख्या का स्थानिक वितरण और घनत्व, जनसंख्या विस्फोट के सामाजिक-आर्थिक निहितार्थ, नगरीयकरण।

GEO4.5DCCP62: PRACTICAL

CONTENTS:

1. Weather Maps, Recording of Weather Elements, Representation of Weather Elements on the Map, Interpretation of Indian Daily Weather Maps (January and July months).
2. Climatic Graphs: Climetograph, Ergograph
3. Elementary Remote Sensing and G.I.S., Global Positioning System
4. **Geographical Field Excursion:** One week's geographical survey outside the headquarters, based on the environmental problem of a particular area (Based on the survey, each student will have to submit a detailed report of 10-15 pages including Photographs and diagrams separately.)

Suggested Readings:

- Singh, RL: Elements of Practical Geography, Kalyani Publishers, New Delhi.
- Sharma JP: Prayogik Bhoogol, Rastogi, Meerut.
- S.M. Jain: Prayogatmak Bhoogol, Sahitya Bhavan, Agra. Lawrence, G R P: Cartographic Methods, Methuen, London.
- Pradeep Kumar Guha: Remote Sensing for the Beginner, East-West Press
- Prithvish Nag: Thematic Cartography and Remote Sensing, Concept Publishing Company.

GEO4.5DCCP62: प्रायोगिक

पाठ्यक्रम:

1. मौसम मानचित्र, मौसम तत्वों का मापन, मानचित्र पर मौसम तत्वों का प्रदर्शन, भारतीय दैनिक मौसम मानचित्रों की व्याख्या (जनवरी और जुलाई महीने)।
2. जलवायु आलेख: क्लाइमेटोग्राफ, एर्गोग्राफ
3. प्रारंभिक दूर संवेदन एवं जी.आई.एस., ग्लोबल पोजिशनिंग सिस्टम

4. **<u>भौगोलिक क्षेत्र भ्रमण:</u>** एक सप्ताह का मुख्यालय से बाहर, किसी क्षेत्र विशेष की पर्यावरणीय समस्या पर आधारित भौगोलिक सर्वेक्षण (सर्वेक्षण के आधार पर 10-15 पृष्ठों का चित्रों एवं आरेखों सहित विस्तृत प्रतिवेदन प्रत्येक विद्यार्थी को पृथक- पृथक प्रस्तुत करना होगा।)