SOPHIA GIRLS' COLLEGE

(AUTONOMOUS)

AJMER

Scheme of Examination

And

SYLLABUS

2023-24 (Batch)

FOR

Maters of Arts/ Masters of Science

(Geography)

Choice Based Credit System

Semester – I to IV

Scheme for Choice Based Credit System (PG) – M.Sc. / M.A. Geography

SEM.	CORE COURSE (120)	ELECTIVE COURSE		ABILITY ENHANCEMENT COURSE (AEC) (2 CREDITS)	Non-CGPA Credit Courses
	CORE COURSE (DSCC) / (DSCP) (102 CREDITS)	DISCIPLINE SPECIFIC ELECTIVE (DSE) (18 CREDITS)	GENERIC ELECTIVE (GE) (2 CREDITS)		Extra-curricular & Extension Activities (EEA) (2 CREDITS)
I	DSCC – I DSCC – II DSCC – III DSCC – IV DSCL – V	--	--	-	• Outreach • Research Activities • Exchange Activities • Entrepreneurship Programs • Internship • Specified Extra-Curricular Activities • Certified Course Completion from MOOCs/ Swayam /NPTEL etc.
II	DSCC – I DSCC – II DSCC – III DSCC – IV DSCL – V	--	--	➢ Advanced Communication Skill. ➢ Advanced Computer Application	
III	DSCC – I DSCC – II DSCC – III DSCL – V	DSE – IV (A/B)	--	--	
IV	DSCC – I DSCC – II DSCL – V	DSEC – III (A/B) DSE P / DSE C – IV (A/B)	➢ Human Rights. ➢ Advanced Tax Management	--	--

OUTLINE OF CHOICE BASED CREDIT SYSTEM FOR PG PROGRAMMES

1. **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 (DSCC)***
- ***Discipline Specific Core Project/ Dissertation (DSCP)***
- ***Discipline Specific Core Practical (DSCL)***

2. **Elective Course:** Generally, a course which can be chosen from a pool of courses:

2.1 **Discipline Specific Elective (DSE) Course or Project**: Elective courses may be offered by the main discipline/subject of study is referred to as Discipline Specific Elective.

2.2 **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.

3. **Ability Enhancement Courses (AEC):** The Ability Enhancement (AE) Courses are based upon the content that leads to Knowledge enhancement. 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) - (2 Credits) These courses may be chosen from a pool of courses designed to provide value-based or skill-based knowledge and is aimed at providing hands-on-training, competencies, skills, etc. It is a 2 credit course and the total duration will be 30 hours.

4. Non-CGPA Credit Courses (NCCC): These courses are co-curricular and extra-curricular activity based courses. It is mandatory that an UG student earns 2 credits through NCCC. It comprises of:

- ***Extra-curricular & Extension Activities (EEA) - 2 Credits (Maximum 4 credits)*** In addition, all students should take part in extension/extra-curricular activities

(NCC, NSS, Outreach, Research Initiatives, Exchange Programs, Entrepreneurship Programs, specified extra-curricular activities, Internships, Certified Course Completion from MOOCs/ Swayam / NPTEL etc.) in order to earn two credits as part of Extra-curricular and Extension Credits.

M.A./M.Sc. Geography

Eligibility for admission in M.A. /M. Sc. Geography is Graduation from any faculty with at least 48% marks. With regard to admission on reserved category seats government rules will be applicable.

SCHEME OF EXAMINATION

The number of the paper and the maximum marks for each paper together, with the minimum marks required to pass are shown against each subject separately. It will be necessary for a candidate to pass in the theory as well as the practical part of a subject/paper, wherever prescribed, separately.

Classification of successful candidates shall be as follows:

First Division 60% } of the aggregate marks prescribed in Semesters I to IV taken together

Second Division 50% }

All the rest shall be declared to have passed the examination.

- For passing a candidate shall have to secure at least 40% marks in each course (Theory and Practical separately).
- No division shall be awarded in Semesters I to III.
- Whenever a candidate appears for a due paper examination, she will do so according to the syllabus in force.
- A candidate not appearing in any examination/absent in any paper of term end Semester shall be considered as having DUE in those papers.

Program Outcomes

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

1. Demonstrate proficiency in integrated geographical knowledge using geographical research tools including Spatial Statistics, Cartography, Remote Sensing, GIS and GPS.
2. Identify human and environmental issues on global, regional, and local scales and critically assesses their various perspectives to provide sustainable solutions for humanity.
3. Formulate formal student-led research project and dissertation work by constructing research culture and investigative aptitude.
4. Develop geographical knowledge and skills to avail a plethora of opportunities in the field of Planning, Transportation, Industry, Resource development, urban management, cartography, tourism, civil services, wild life, defence, population, town planning, community development, teaching, research, consultancy etc.

Examination Pattern

Maximum Marks: 70 **Duration: 3 Hrs.**

Section A 10 x 1 = 10 marks

Contains 10 Questions of 1 mark each & all are compulsory to do.
Three questions from each unit (but 4 questions from one unit)
3 + 3 + 4 = 10 Questions

Section B 3 x 5 = 15 marks

Contains 3 questions with internal choice (Two questions from each unit).
Each Question carries 5 marks. All Questions are compulsory to do.

Section C 3 x 15 = 45 marks

Contains 3 questions with internal choice (Two questions from each unit).
Each Question carries 15 marks. All Questions are compulsory to do.

End Semester Practical Examination Pattern

Maximum Marks: 70 **Duration: 5 Hrs.**

Note:

1. A Laboratory Exercise File should be prepared by each student for practical paper and should be submitted during practical examination.
2. One internal and one external examiner shall conduct two practical exams, in a day.
3. Duration of practical exam is 5 hours.
4. Practical of 70 marks distribution is as under:

COURSE STRUCTURE M.A./M. Sc GEOGRAPHY SEMESTER-I

Paper Code	Nomenclature	Type	Contact HourPer Week	Credits	Total Marks		Max. Marks	Min. Pass Marks	Duration
					CIA	ESE			
GEOM-101	Geographical Thought	Core	06	06	30	70	100	40	3 hrs
GEOM-102	Geomorphology	Core	06	06	30	70	100	40	3 hrs
GEOM-103	Population Geography	Core	06	06	30	70	100	40	3 hrs
GEOM-104	Political Geography	Core	06	06	30	70	100	40	3 hrs
GEOM-105	Advanced Cartography	Practical	12	06	30	70	100	40	5 hrs

GEOM-101: Geographical Thought

Max Marks: 100 **Min. Marks: 40**
Credit: 06 **Duration: 03 hrs**

Learning Outcomes: On successful completion of the Course the student will be able to-

1. Recognize the elements of Geography and trace the evolution of the subject.
2. Discover and develop understanding about the contributions of various schools of Geographical Thought.
3. Identify and focus on the various geographical concept and dichotomy in the subject

UNIT-I

The nature and scope of geography; Geography of Vedic age and Geography of Purana: Dwipa, Ocean, River and Mountain systems, Contribution of Greek and Roman and Arab Geographers.

UNIT-II

German school of Geography: Contribution of Humboldt, Ritter and Ratzel; School of French Geography: Contribution of Blache and Brunhes; British and American school of Geography: Contribution of Mackinder, Herbertson, Miss Semple, Huntington and Davis.

UNIT-III

Dualism in Geography: Determinism and Possibilism and Concept of Neo-Determinism, Physical and Human, Quantitative Revolution in geography; Behavioural geography; Concepts of Terrestrial Unity, Pragmatism, Idealism, Positivism, Radicalism and Areal differentiation.

Reference Books

- Adams, P. Steven, H. and Karel, T. (2001). Texture of Place. Exploring Humanistic Geographies. Minneapolis: University of Minnesota Press.
- Anderson, K., Domosh, M., Pile, S. and Thrift, N. (2003). Handbook of Cultural Geography. London: Sage Publications.
- Barnes, T. and Gregory, D. (1997). Readings in Human Geography: The Poetics and Politics of Inquiry. London: Arnold.
- Bunkše, E. V. (2004). Geography and the Art of Life. Baltimore: John Hopkins University Press.
- Buttimer, A. (1971). Society and Milieu in the French Geographic Tradition. Chicago: Rand McNally.
- Daniels, P., Bradshaw, M., Shaw, D. and Sidaway, J. (2000). An Introduction to Human Geography. Issues for the 21st Century. London: Prentice Hall.
- Dear, M. J. and Flusty, S. (2002). The Spaces of Postmodernity: Readings in Human Geography. Oxford: Blackwell Publishers.
- Dikshit, R. D. (2004). Geographical Thought. A Critical History of Ideas.New Delhi: Prentice Hall of India.
- Dikshit, R.D. (1994). The Arts Science of Geography. Integrated Readings. New Delhi: Prentice Hall of India.

- Doel, M. (1999). Poststructuralist Geographies. The Diabolical Art of Spatial Science. Edinburgh: Edinburgh University Press.
- Haggett, P. (2000). Geography: A Modern Synthesis. Harper International Ed.
- Hartshorne, Richard. (2005). Perspectives on the Nature of Geography. The Association of American.
- Harvey & Holly. (2004). Themes in Geographic Thought. Jaipur: Rawat Publications.
- Husain, Majid. (2014). Evolution of Geographical Thought. Jaipur: Rawat Publications.
- Minshull, Roger. (1999). The Changing Nature of Geography.
- Saxena, D.P. (2003). Regional Geography of Vedic India. Kanpur: Granthan Rambag.
- Wooldridge & East. (2000). The Spirit and Purpose of Geography. London: Hutchinson University Library.

Pedagogy: Students should be acquainted with the different elements of geography, various philosphies and contributions made by various geographers of different schools. They should be motivated to interact amaongst themselves to explore more in geography.

GEOM – 101 : भौगोलिक विचारधारा

अधिकतम अंक :100 न्यूनतम अंक : 40

श्रेय : 06 अवधि : 3घंटे

इकाई – I

भूगोल की प्रकृति और कार्यक्षेत्र; वैदिक युग का भूगोल और पुराण का भूगोल: द्वीप, महासागर, नदी और पर्वतीय प्रणालियाँ, ग्रीक और रोमन और अरब भूगोलवेत्ताओं का योगदान □

इकाई – II

भूगोल के जर्मन स्कूल: हम्बोल्ट, रिटर और रैटजल का योगदान; फ्रेंच भूगोल का स्कूल: ब्लाश और ब्रुनश का योगदान; ब्रिटिश और अमेरिकी भूगोल स्कूल: मैकिंडर, हर्बर्टसन, मिस सेम्पल, हंटिंगटन और डेविस का योगदान।

इकाई – III

भूगोल में द्वैतवाद: नियतवाद और संभावनावाद और नव-नियतवाद की अवधारणा, भौतिक और मानव, भूगोल में मात्रात्मक क्रांति; व्यवहारिक भूगोल; स्थलीय एकता, व्यावहारवाद, आदर्शवाद, प्रत्यक्षवाद, अतिवाद और क्षेत्रीय भेदभाव की अवधारणाएं।

सन्दर्भः–

- हुसैन माजिद : भौगोलिक विचारधाराओं का इतिहास, रावत पबलिकेशन, जयपुर।
- कौशिक, एस.डी : भौगोलिक विचारधारा एवं विधि तंत्र, रस्तोगी प्रकाशन, मेरठ।
- जैन, एस.एम : भौगोलिक चिन्तन का विकास, साहित्य भवन

GEOM-102: Geomorphology

Max Marks: 100 **Min. Marks: 40**

Credit: 06 **Duration: 03 hrs**

Learning Outcomes - On successful completion of the Course the student will be able to-

1. Identify and discuss the fundamental concepts, incidences and occurrences of seismology and vulcanicity, plate tectonics and isostasy.
2. Summarize and evaluate Continental and mountain building theories.
3. Illustrate various landforms and classify their process of evolution and distribution.
4. Build competency and academic excellence for competition exams.

UNIT – I

Nature and Scope; Fundamental Concepts; Forces of the Earth; Plate Tectonics; Theories of Isostasy; Seismicity and Vulcanicity: Causes, consequences & associated features.

UNIT – II

Mountain Building: Continental Drift Theory (Wegner), Geosynclinal Theory of Kober, Holme's Convectional Current Theory; Denudation: Weathering and Erosion their process and types, Davisian Model of Cycle of Erosion and Penck's Morphological System.

UNIT – III

Formation and Characteristics: Fluvial, Glacial, Aeoline (Arid and Semi-Arid), Karst, Coastal landforms; Slopes: Forms, processes and evolution; Davis, Rejuvenation concept.

Reference Books

- Ahmed, E. (1985). Geomorphology. New Delhi: Kalyani Publishers.
- Bloom, A. L. (1998/ 2001). Geomorphology. 3rd edition. . New Delhi.Prentice Hall of India.
- Chorley, R.J., Schumm, S. A. and Sugden, D. E. (1984). Geomorphology.London: Methuen and Company Ltd.
- Dayal, P. (1994). A Text Book of Geomorphology. New Delhi: Kalyani Publishers.
- Fairbridge, R.W. (ed.) (1968). Encyclopaedia of Geomorphology. New York: Reinhold Book Corporation.
- Gregory, K.J. and Walling, D.E. (1973). Drainage Basin Form and Process.London: Edward Arnold.
- Jog, S. R. (ed.) (1995). Indian Geomorphology (2 vols.). Jaipur: Rawat Publications.
- Kale, V. and Gupta, A. (2001). Introduction to Geomorphology. Hyderabad: Orient Longman.
- King, C.A.M. (1966). Techniques in Geomorphology. London: Edward Arnold.
- Pethick, J. (1984). An Introduction to Coastal Geomorphology. Arnold. London: Indian reprint 2000.
- Sharma, P. R. (ed.). (1993). Applied Geomorphology in Tropics. Varanasi: Rishi Publications.
- Singh, S. (2004). Geomorphology. Allahabad: Prayag Pustak Bhawan.
- Sparks, B.W. (1986): Geomorphology. Longmans, London.
- Thornbury, W.D. (2005). Principles of Geomorphology. New York: John Wiley and Sons.
- Wooldridge, S.W. and Morgan. R.S. (1959). The Physical Basis of Geography- An Outline of Geomorphology. London: Longman.

Pedagogy: Landform's charts and videos wiil be made available to the students for proper understanding of the geomorphic processes involved in the formation of landforms.

GEOM – 102: भूआकृति विज्ञान

अधिकतम अंक :100 न्यूनतम अंक : 40

श्रेय : 06 अवधि : 3 घंटे

इकाई – I

प्रकृति और कार्यक्षेत्रय बुनियादी सिद्धांतय पृथ्वी के बलय प्लेट विवर्तनिकीय ह्न×प्रैट्टप्रद्द ऽृद्र प्रह्मीन्द्र६द्दय भूकंपीयता और ज्वालामुखीरू कारणए परिणाम और संबंधित विशेषताएं।

इकाई – II

"üद्द प्रत्त द्रü५द्ररू ह्मन्द्रउन्ध ध्क्र प्रै"ट्टद्र त्त प्रह्मीन्द्र६द्द ;"ब्रु÷त्त्न्द्धए कोबर का भूसन्नति **प्रह्मीन्द्र६द्द**ए होम्स का संवाहन तरंग सिद्धान्तय अनाच्छादनरू अपक्षय और ञ च्द्रत्त उनकी प्रक्रिया और प्रकारए ञ च्द्रत्त चक्र का डेविसियन मॉडल और पेंक की आकृति विज्ञान प्रणाली ।

इकाई – III

निर्माण और विशेषताएं**: नदी, हिमानी, पवन (**शुष्क और अर्ध-शुष्क**),** कार्स्ट**,** तटीय भू-आकृतियाँ**;** ढलान**:** रूप**,** प्रक्रियाएं और विकास**;** डेविस**:** पुनरूत्थान ।

सन्दर्भः–

- सविन्द्र सिंह : भूआकृति विज्ञान, वसुन्धरा प्रकाशन गोरखपुर।
- कौशिक, एस. डी : भूआकृति विज्ञान, रस्तोगी प्रकाशन, मेरठ।
- नेगी बी.एस : भूआकृति विज्ञान, रस्तोगी प्रकाशन, मेरठ।

GEOM – 103: Population Geography

Max Marks: 100 **Min. Marks: 40**
Credit: 06 **Duration: 03 hrs**

Learning Outcomes:

On successful completion of the Course the student will be able to-

1. Explain the development of demography and elaborate the concept of population.
2. Measure and discuss the population dynamics of the world.
3. Critically evaluate the population as a resource and population policies.
4. Build competency and academic excellence for competition exams.

Unit - I

Population Geography: Nature, Scope and Objectives; Modern theories: Malthusian Theory, Optimum Theory and Demographic Transition Theory.

Unit - II

Population Dynamics: Qualitative and Quantitative aspect; Urbanization (with special reference to India); Migration: Causes, Consequences and related theories.

Unit - III

World Population Distribution; Ackerman's Population Resource Regions; National Population Policy of India; Human Development Index: Indicators and Measurements.

Reference Books:

- Bhende, A. A. and Kanetkar T. (2003). Principles of Population Studies. Mumbai: Himalaya Publishing House.
- Bose, A. (ed.) (2001): Population in India's Development, 1947-2000. Vikas Publications, New Delhi.
- Champion, T. (ed.) (1993): Population Matters. Paul Chapman, London.
- Chandna, R. C. (2006): Geography of Population. Kalyani Publishers., New Delhi.
- Clark, J. I. (1972): Population Geography. Pergamon Press, Oxford.
- Dube, K.K. and Singh, M.B. (1994): Jansankhya Bhoogol, Rawat Publications, Jaipur and New Delhi.
- Ehrlich, P.R. and Ehrlich, A.H. (1996): Ecoscience: Population, Resources, Environment. 6th ed. W.H. Freeman and Company, San Francisco.
- Garnier, B.J. (1993): Geography of Population. 3rd edition. Longman, London.
- Jones, H. R. (2000): Population Geography. 3rd edition. Paul Chapman, London. 157.
- Pathak, L. P. (ed.) (1998): Population Studies. Rawat Publications., Jaipur and New Delhi
- Peters, G. L. and Larkin, R.P. (1983): Population Geography. Problems, Concepts and Prospects. Kendall/Hunt, Dubuque, IA.
- Poston, D. L. and Michael, M. (2005): Handbook of Population, Springer Heidelberg, Germany.
- Ross, John A. (ed.) (1982): International Encyclopaedia of Population. Free Press, New York.
- Singh, K.N. and Singh, D.N. (eds.) (1992). Population Growth, Environment and Development. EDSC, Varanasi.
- Srinivasan, K, and Vlassoff, M. (2001). Population Development Nexus in India: Challenges for the New Millennium. Tata McGraw Hill, New Delhi.
- Trewartha, G.T. (1985). A Geography of Population. World Patterns. John Wiley and Sons, New York.
- Woods, R. (1979). Population Analysis in Geography. Longman, London.

- Zelinsky, W., Kosinski, L. A. and Prothero M. R. (eds.) (1970): Geography and a Crowding World. Oxford University Press, New York and Oxford.
- Zelinsky, W. (1966): A Prologue to Population Geography. Prentice Hall, Englewood Cliffs, New Jersey. GMP 202. Elective (Major, Group I), Practical:

Pedagogy: Classroom discussions may focus on population and development linkages. Students may also be encouraged to consider various quantitative attributes of population from Census 2001, India. Discussion may be arranged on the implications of population policies announced from time to time.

GEOM – 103: जनसंख्या भूगोल

अधिकतम अंक :100 न्यूनतम अंक : 40

श्रेय : 06 अवधि : 3घंटे

इकाई – I

जनसंख्या भूगोल: प्रकृति, विषय क्षेत्र और उद्देश्य; आधुनिक सिद्धांत: माल्थुसियन सिद्धांत, इष्टतम सिद्धांत और जनसांख्यिकीय संक्रमण सिद्धांत।

इकाई – II

जनसंख्या गतिशीलता: गुणात्मक और मात्रात्मक पहलू; शहरीकरण (भारत के विशेष संदर्भ में); प्रवासन: कारण, परिणाम और संबंधित सिद्धांत।

इकाई – III

विश्व जनसंख्या वितरण; एकरमैन का जनसंख्या संसाधन क्षेत्र; भारत की राष्ट्रीय जनसंख्या नीति; मानव विकास सूचकांक: संकेतक और माप।

सन्दर्भः–

- डॉ. कौशिकःमानव भूगोल के सरल सिद्वान्त, रस्तोगी एण्ड कम्पनी, मेरठ।
- काशीनाथ सिंह एवं जगदीश सिंहः आर्थिक भूगोल के मूल तत्व, किताब महल इलाहाबाद।
- कांस्वा– मानव एवं पर्यावरण।

GEOM-104: Political Geography

Max Marks: 100 **Min. Marks: 40**

Credits: 06 **Duration: 03 hr**

Learning Outcomes:

On successful completion of the Course the student will be able to-

1. Identify elements of political geography for understanding the formation of state.
2. Compare the various themes of political geography to help evaluate the emerging world power.
3. Understand the geopolitical dimensions and evaluate the need for regional cooperation.

UNIT – I

Nature and Scope; Approaches; Elements of the State: Physical, Human, Economic; Concept of Geopolitics; Global geostrategic views of Mahan, Mackinder, Spykman and Seversky.

UNIT – II

Themes in Political Geography: State, Nation, Nation-State and Nation-building; Frontiers and Boundaries, Colonialism; Unitary, Federal Systems and other forms of Governance.

UNIT – III

Geopolitical significance of Indian Ocean; Importance of SAARC Region; Major Indo-China and Indo-Pakistan Border disputes.

Reference Books:

- Alexander, L.M. (1963). World Political Patterns Ran McNally. Chicago.
- De Blij, H. J. and Glassner, Martin. (1968). Systematic Political Geography, John Wiley, New York.
- Dikshit, R.D. (1996) Political Geography: A Contemporary Perspective. New Delhi:

- Tata McGraw Hill.
- Dikshit, R.D. (1999). Political geography: A Century of progress, New Delhi: Sage.
- Sukhwal.B.L. (1968). Modern Political Geography of India. New Delhi: Sterling Publishers.
- Taylor, Peter (1985). Political Geography. London: Longman.
- Fisher Charles A (1968). Essays in Political Geography. London: Methuen.
- Pounds N.J. G (1972). Political Geography. New York: McGraw Hill.
- John R. Short (1982). An introduction to Political Geography. London: Routledge.
- Moddie, A. E. Geography Behind Politics. London: Hutchinson.
- Prescott. J.R.V. The Geography of Frontiers and Boundaries. Chicago: Aldine.
- Deshpande C.D. (1992). India-A Regional Interpretation Northern Book Centre. New Delhi.
- Panikkar K. M. (1959). Geographical Factors in Indian History. 2 vols. Mumbai: Asia Publishing House.

Pedagogy Students may be encouraged to collect clippings from newspapers on various topics included in the syllabus. They may be involved in discussions on the emerging political issues and attempt to provide geographical interpretation.

GEOM – 104: राजनीति भूगोल

अधिकतम अंक :100 न्यूनतम अंक : 40

श्रेय : 06 अवधि : 3घंटे

इकाई – I

प्रकृति और विषय क्षेत्र; उपागम; राज्य के तत्व: भौतिक, मानवीय, आर्थिक; भू-राजनीति की अवधारणा; महान, मैकिंडर, स्पाईकमैन और सेवरस्की के वैश्विक भू-रणनीतिक विचार

इकाई – II

राजनीतिक भूगोल में विषय-वस्तु: राज्य, राष्ट्र, राष्ट्र-राज्य और राष्ट्र-निर्माण; सीमाएँ और सीमान्त, उपनिवेशवाद; एकात्मक, संघीय प्रणाली और शासन के अन्य रूप।

इकाई – III

हिंद महासागर का भू-राजनीतिक महत्व; सार्क क्षेत्र का महत्व; प्रमुख भारत-चीन और भारत-पाकिस्तान सीमा विवाद।

सन्दर्भः–

- सक्सेना, हरी मोहन : राजनैतिक भूगोल, रस्तोगी एण्ड कम्पनी मेरठ।
- कुमार, डॉ रतन : राजनैतिक भूगोल।

GEOM-105 : PRACTICAL: ADVANCED CARTOGRAPHY

Max Marks: 100 **Min. Marks: 40**

Credit: 6 **Duration: 05 hr**

Learning Outcomes: On successful completion of the Course the student will be able to-

Create, develop and interpret weather maps and understanding of the Topographical landscapes in consonance to Survey of India Toposheets and asses their regional differentiations.

- Build competency and academic excellence for competition exams.
- Hone & developemployability related skills for holistic development.

1. Weather maps: Study and interpretation of January and July months.
2. Study of Topographical sheets: Scheme of Indian Toposheets.

3. Graphs: Frequency Curve, Frequency Polygon, Histogram, Ogive.
4. Diagrams: Simple and Compound wind rose, Climograph, Hythergraph and Climatograph.

Reference Books

- Dickinson, G.C. Statistical Mapping of Statistics. London.
- Khan, Z.A. (1998). Text Book of Practical Geography, New Delhi: Concept.
- Lawrence, G.R.P (1971). Cartographic Methods. London
- Monkhouse, E.J. & Wilkinson, H.R. (1994). Maps and Diagrams. London: Methuen.
- Robinson, A.H. etal. (1995). Elements of Geography, U.S.A.: John Willey and Sons. U.S.A.
- Sarkar, A.K. (1997). Practical Geography. A Systematic Approach. Calcutta: Oriental Longman.
- Singh, R.L. Elements of Practical Geography. New Delhi: Kalyani Pub.
- Steer, J.A. Map Projections. London: University of London Press.

Pedagogy: The elements of practical geography will be conveyed to students through charts, map and diagrams for effective learning. Stuents will be making a practical file abd will learn to use instruments available in the geography lab.

GEOM – 105 : प्रायोगिक: आधुनिक मानचित्र कला

अधिकतम अंक :100 न्यूनतम अंक : 40

श्रेय 06 अवधि : 3घंटे

क) जनवरी और जुलाई महीनों के मानचित्रों का अध्ययन और व्याख्या।

ख) स्थलाकृतिक मानचित्रो का अध्ययन: भारतीय टोपोशीट की योजना।

ग) ग्राफ: फ़्रीक्वेंसी कर्व, फ़्रिक्वेंसी पॉलीगॉन, हिस्टोग्राम, ओजाइव।

घ) आरेख: सरल और मिश्रित विंड रोज़, क्लाइमोग्राफ, हीदरग्राफ और क्लाइमेटोग्राफ।

COURSE STRUCTURE M.A./M. Sc GEOGRAPHY SEMESTER-II

Paper Code	Nomenclature	Type	Contact Hours Per Sem	Credits	Total Marks		Max Marks	Min Marks	Duration
					CIA	ESE			
GEOM-201	Climatology and Oceanography	Core	06	06	30	70	100	40	3 hrs
GEOM-202	Resource and Economic Geography	Core	06	06	30	70	100	40	3 hrs
GEOM-203	Geography of India	Core	06	06	30	70	100	40	3 hrs
GEOM-204	Digital Cartography, Aerial Photography and GPS	Core	06	06	30	70	100	40	3 hrs
GEOM-205	Air Photo Interpretation and GPS	Practical	12	06	30	70	100	40	5 hrs
AEC-201 ***(Ability Enhancement Course)***	**A.** Advanced Communication Skills **OR** **B.** Advanced Computer Application		2	2	15	35	50	20	2 ½ hrs

GEOM-201: Climatology and Oceanography

Max Marks: 100 **Min. Marks: 40**
Credit: 06 **Duration: 03 hrs**

Learning Outcomes: On successful completion of the Course the student will be able to-

1. Distinguish the various climatic phenomenon and explain their global to regional distribution.
2. Classify climatic regions of the world and observe dynamics of cyclones.
3. Sketch the major features of ocean basins and critically evaluate the distribution of temperature and salinity in oceans
4. Build competency and academic excellence for competition exams.

Unit – I

Climatology

Nature and Scope of Climatology; Structure of the atmosphere; Insolation; Vertical and Horizontal distribution of temperature; Atmospheric pressure; Winds: Planetary, Periodic and Local winds.

Unit - II

Atmospheric moisture: Absolute and Relative Humidity; Types of Clouds and Precipitation; Air Masses and Fronts: Concept, Classification and properties. Tropical and Temperate cyclones; Climatic classification of Koppen and Thornthwaite.

Unit – III

Oceanography

Nature and scope of Oceanography; Major features of ocean basins; Ocean Temperature and Distribution; Salinity; currents; Tides: Types and Theories (Progressive Wave Theory and Newton Equilibrium Theory); Coral reefs: Types and Theories (Darwin, Daly and Murray)

Reference Books:

- Barry, R.G. and Chorley P.J. (1998). Atmosphere, Weather and Climate. London and New York: Routledge.
- Critchfield, J.H. (1993). General Climatology. New Delhi: Prentice Hall.India.
- Das, P.K. (1987). Monsoons. New Delhi: National Book Trust.
- Lal, D.S. (1986). Climatology. Allahabad: Chaitanya Publications.
- Lydolph, P.E. (1985). The Climate of the Earth, Rowman.
- Peterson, S. (1969). Introduction to Meteorology. London: Mc Graw Hill Book.
- Robinson, P.J. and Henderson S (1999). Contemporary Climatology. Henlow.
- Thompson, R.D. and Perry, A. (2000). Applied Climatology, Principles and Practice. London: Routledge.

- Davis.Richard J.A. (1986). Oceanography: An Introduction to the Marine Environment. Wm. C. Brown lowa.
- Duxbury, C.A and Duxbury B. (1986). An Introduction to the world's Oceans. Iowa: C. Brown. 2nd Ed.
- Garrison, T (2001). Oceanography. An Introduction to Marine Science. Books/Cole.USA: Pacific Grove.
- Gross, M. Grant. (1987). Oceanography. A View of the earth. New Jersy: Prantice - Hall Inc.
- King, C.A.M. (1962). Oceanography for Geographers.
- Sharma, R.C (1985). The Oceans. Delhi: Rajesh.
- Ummerkutty, A.N.P. (1985). Science of the Oceans and Human life. New Delhi: NBT.

Pedagogy: Weather and climatic charts be made available to the students to explain weather conditions. Audio-visual aids be used for effective teaching. Detailed charts and maps showing oceanic relief, currents and circulation of oceanic water be used for teaching. Audio Visual aids be provided for teaching.

GEOM – 201: जलवायु और समुद्र विज्ञान

अधिकतम अंक :100 न्यूनतम अंक : 40

श्रेय : 06 अवधि : 3घंटे

ईकाइ-I

जलवायुविज्ञान

जलवायु विज्ञान की प्रकृति और विषय क्षेत्र; वातावरण की संरचना; सूर्यताप; तापमान का लंबवत और क्षैतिज वितरण; वायुमण्डलीय दबाव; पवन: ग्रहीय, आवधिक और स्थानीय हवाएँ।

ईकाइ-II

वायुमंडलीय आद्रता: पूर्ण और सापेक्ष आर्द्रता; बादलों के प्रकार और वर्षा; वायु राशियाँ और वाताग्र: अवधारणा, वर्गीकरण और विशेषताये । उष्णकटिबंधीय और उपोष्ण कटिबंधीय चक्रवात; कोपेन और थॉर्नथवेट का जलवायु वर्गीकरण।

ईकाइ-III

समुद्र विज्ञान

समुद्र विज्ञान की प्रकृति और कार्यक्षेत्र; महासागरीय तलो की प्रमुख विशेषताएं; महासागर का तापमान और वितरण; लवणता; धाराएं; ज्वार: प्रकार और सिद्धांत (प्रगतिशील तरंग सिद्धांत और न्यूटन संतुलन सिद्धांत); प्रवाल भित्तियाँ: प्रकार और सिद्धांत (डार्विन, डेली और मरे)।

सन्दर्भः–

- सविन्द्र सिंहः भौतिक भूगोल–वसुन्धरा प्रकाशन गोरखपुर (उ.प्र.)
- भावना माथुरः भौतिक भूगोल–कल्याणी प्रकाशन।
- नेगी, बी.एसःभू आकृति विज्ञान, रस्तोगी प्रकाशन, मेरठ।
- कौशिक, एस.डी : भू आकृति विज्ञान, रस्तोगी प्रकाशन, मेरठ।

GEOM-202: Resource and Economic Geography

Max Marks: 100 **Min. Marks: 40**
Credits: 06 **Duration: 03 hr**

Learning Outcomes: On successful completion of the Course the student will be able to-

1. Classify economies and discover factors affecting location of economic activities.
2. Exemplify the economic theories and establish a connection with the industrial development of the world.
3. Observe various modes of transportation and access the impact of globalization on trade.
4. Build competency and academic excellence for competition exams.
5. Hone & developemployability related skills for holistic development.

Unit - I

Nature and Scope; Recent trends; Sectors of Economy (Primary, Secondary, Tertiary, Quaternary and Quinary); Factors of Location of Economic Activities: physical, social, economic and cultural.

Unit - II

Classification of Industries: Agro-based & Mineral; Concept of footloose, industries; World's Trade Blocs; Revival of Silk Route.

Unit - III

Network Analysis: accessibility, connectivity, nodes and matrix: Comparative Cost Analysis; Globalization and its impact on the spread of COVID.

Reference Books:

- Berry J.L .(1967). Geography of Market Centres and Retail Distribution. New York: Prentice Hall .
- Chatterjee, S.P . (1984). Economic Geography of Asia. Calcutta: Allied Book Agency.
- Chorley, R.J. and Haggett, P. (1999). Network Analysis in Geography.
- Dreze, J. and Sen, A. (1996). India: Economic Development and Social Opportunity. New Delhi: Oxford University Press
- Eckarsley, R. (2000). Markets, the State and the Environment. London: McMillan.
- Hamilton, I. (2001). Resources and Industry. New York: Oxford University Press.
- Hurst, E. (2002). Transport Geography: Comments and Readings. New York: Mc Graw Hill.
- Morgan, W.B. and Munton R.J. (1977). Agricultural Geography. London: Methuen.
- Robertson, D. (2001). Globalization and Environment. U.K.: E. Elgar Co.
- Rostow, W.W. (2000). The Stages of Economic Growth. London: Cambridge University Press. Singh, J. and Dhillon, S. S. (1999). Agricultural Geography. New Delhi: McGraw Hill.
- Symons, L. (2001). Agricultural Geography. London: Bell and Sons.
- Wheeler, J.O. (2003). Economic Geography. New York: John Wiley.

Pedagogy: The students should be acquainted with the different branches of economic geography with examples. They should be motivated to interact with the teacher to identify economic activities of the people residing in different parts of the world.

GEOM – 202: संसाधन और आर्थिक भूगोल

अधिकतम अंक :100 **न्यूनतम अंक : 40**

श्रेय 06 **अवधि : 3घंटे**

ₑüन्ऽₑद्रₑüनः८

प्रकृति और प्र”ह्यक्र ÿद्रह्वद्बद्रय ञद्रप्रह्टüऽₑ इह्ट÷द्रह्व९ ×ह्वञ त्”ध्त प्रवत्तियाँय अर्थव्यवस्था के क्षेत्र ;प्राथमिकए द्वितीयकए तृतीयकए चतुर्थक और क्विनरीह्वय आर्थिक गतिविधियों के स्थानिक कारकरू भौतिकए सामाजिकए आर्थिक और सांस्कृतिक।

ₑüन्ऽₑद्रₑüनःाा

उद्योगों का वर्गीकरणरू कृषि आधारित और खनिजय फुटलूजए उद्योगों की अवधारणाय विश्व के व्यापार ब्लॉकय रेशम मार्ग का पुनरुद्धार।

ₑüन्ऽₑद्रₑüनःााा

नेटवर्क विश्लेषणरू **अभिगम्यताएसंयोजकताए** नोड्स और मैट्रिक्सरू तुलनात्मक लागत विश्लेषणय वैश्वीकरण **पर** ब्व्टप्क प्रसार **का** प्रभाव।

सन्दर्भः—

- काशीनाथ सिंह : आर्थिक भूगोल के तत्व, वसुन्धरा प्रकाशन, गोरखपुर।
- पुरूषोत्तम जैन आर्थिक भूगोल, रस्तोगी प्रकाशन मेरठ।
- नेगी, वी.एस. : संसाधन भूगोल

GEOM-203: Geography of India

Max Marks: 100 **Min. Marks: 40**
Credits: 06 **Duration: 03 hrs**

Learning Outcomes: On successful completion of the Course the student will be able to-
1. Outline and interpret the different physiographical features of India.
2. Categorize and elaborate the mineral and power potential of India.
3. Estimate the impact of industrial development and assess the regional disparity levels in the country.
4. Build competency and academic excellence for competition exams.

Unit - I

Major Physiographic Regions of India; Mechanism of Monsoon: Classical and Dynamic Concept, Koppen's and Thornwaite's Climatic Classification; Drainage systems; Soil types and Distribution; Vegetation types and Distribution.

Unit - II

Mineral Resources: Distribution of Metallic Minerals (Iron-ore, Zinc, Manganese, Copper), Non-Metallic (Gypsum, Mica, Limestone, Marble); Power Resources: Coal, Petrol, Natural gas, Atomic, Hydroelectricity, Wind, Solar, Biogas; Major agricultural Crops: Wheat, Rice, Sugarcane, Cotton, Maize, Tea, Rubber, Coffee, Jute

Unit - III

Major Industrial regions; Spatial Distribution of population growth and density; urbanization; Transport Network: Roadways, Railways and Airways; Disparity and Regional Planning in India: macro, meso and micro regions of India.

Reference Books:

- Chauhan, P.R. and Prasad, M. (2003). Bharat Ka Vrihad Bhugol. Vasundhara Prakashan. Gorakhpur: Vasundhara Prakashan.
- Deshpande C. D. (1992). India. A Regional Interpretation. New Delhi: ICSSR.
- Farmer, B.H. (1983). An Introduction to South Asia. London: Methuen.
- Gautam, A. (2006). Advanced Geography of India. Allahabad: Sharda Pustak Bhawan.
- Johnson, B. L. C., ed. (2001). Geographical Dictionary of India. Vision Books, New Delhi.
- Johnson, B.L.C. (1963). Development in South Asia. Harmondsworth: Penguin Books.
- Khullar, D.R. (2007). India: A Comprehensive Geography. New Delhi: Kalyani Publishers.
- Krishnan, M.S. (1982). Geology of India and Burma. Delhi: CAS Publishers and Distributors.
- Nag, P. and Gupta, S. S. (1992). Geography of India. New Delhi: Concept Publishing Company.
- Pathak, C. R.(2003). Spatial Structure and Processes of Development in India. Regional Science Assoc., Kolkata.
- Rao, B.P. (2007). Bharat kee Bhaugolik Sameeksha. Gorakhpur: Vasundhara Prakashan.
- Sharma, T.C. and Coutinho, O. (2003). Economic and Commercial Geography of India. New Delhi: Vikas Publishing House Private Ltd.
- Singh, J. (2003). India. A Comprehensive Systematic Geography. Gorakhpur: Gyanodaya Prakashan.
- Singh R. L. (1971) India: A Regional Geography, National Geographical Society of India.
- Singh, J. (2001). Bharat: Bhougolik Aadhar Avam Ayam. Gorakhpur: Gyanodaya Prakashan.
- Singh, Jagdish (2003) India: A Comprehensive & Systematic Geography. Gorakhpur: Gyanodaya Prakashan.
- Spate O. H. K. and Learmonth A. T. A. (1967). India and Pakistan: A General and Regional Geography. Methuen.
- SukhwaI, B.L. (1987). India: Economic Resource Base and Contemporary Political Patterns. New Delhi: Sterling Publication.
- Tirtha, Ranjit (2002). Geography of India. Jaipur & New Delhi: Rawat Publs.
- Tiwari, R.C. (2007). Geography of India. Allahabad: Prayag Pustak Bhawan.
- Wadia, D. N. (1959). Geology of India. Mac-Millan and Company.Madras: London and student edition.

Pedagogy: Large-scale maps and illustrations through slide projectors/epidiascope, video-shows of the specific themes are advisable to create interest amongst. the students. The student teacher interaction should

be encouraged. The students should also be motivated to read daily newspapers to relate events, areas and places from regional geographical perspective.

GEOM – 203: भारत का भूगोल

अधिकतम अंक :100 न्यूनतम अंक : 40

श्रेय : 06 अवधि : 3घंटे

ईकाई-I

भारत के प्रमुख भौतिक क्षेत्र; मानसून का तंत्र: उत्कृष्ट और गतिशील अवधारणा, कोपेन और थॉर्नवेट का जलवायु वर्गीकरण; ञ "द्रह्मन्दञद्भद्र; मिट्टी के प्रकार और वितरण; वनस्पति के प्रकार और वितरण ।

ईकाई-II

खनिज संसाधन: धात्विक खनिजों का वितरण (लौह-अयस्क, जस्ता, मैंगनीज, तांबा), गैर-धातु (जिप्सम, अभ्रक, चूना पत्थर, संगमरमर); बिजली संसाधन: कोयला, पेट्रोल, प्राकृतिक गैस, परमाणु, जलविद्युत, पवन, सौर, बायोगैस; प्रमुख कृषि फसलें: गेहूं, चावल, गन्ना, कपास, मक्का, चाय, रबड़, कॉफी, जूट ।

ईकाई-III

प्रमुख औद्योगिक क्षेत्र; जनसंख्या वृद्धि और घनत्व का स्थानिक वितरण; शहरीकरण; परिवहन नेटवर्क: रोडवेज, रेलवे और एयरवेज; भारत मे असमानता और Âýद्रद्वद्वप्रह्लद्रऽ॒ प्रत्क्रद्रद्वप्रत्त: भारत के मैक्रो, मेसो और सूक्ष्म क्षेत्र।

सन्दर्भः–

- वी.के तिवारी : भारत का वृहत भूगोल, हिमालय पबलिकेशन।
- मामोरिया एवं जैन : भारत का वृहत भूगोल, साहित्य भवन, आगरा।
- सुरेश चन्द्र बंसल, भारत का वृहत भूगोल।

GEOM-204: Digital Cartography, Aerial Photography and GPS

Max Marks: 100 **Min. Marks: 40**
Credits: 06 **Duration: 03 hrs**

Learning Outcomes: On successful completion of the Course the student will be able to-

1. Identify the components on an aerial photography and distinguish the elements of photo interpretation
2. Become familiar with the history, film type, and angles of aerial photography distortions and displacement.
3. Use photogrammetric techniques to calculate: distance, area and object height from aerial photographs
4. Build competency and academic excellence for competition exams.
5. Hone & develop employability related skills for holistic development.

Unit – I

Nature and Scope of Cartography, Basic Geodesy, Geoid /Datum/ Ellipsoid, Elements of Digital Cartography, Maps: Types, Purpose and Classification, Generalization of Map, Map Layout, Data Models for Digital Cartographic Information, Qualitative Mapping Techniques: Choroschematic and Chorochromatic. Quantitative Mapping Techniques: Choropleth and Isopleth.

Unit - II

Aerial Photography: Introduction to Aerial Photography – Basic Information and Specifications of Aerial Photographs; Planning and Execution of Photographic Flights Basic; Geometric Characteristics of Aerial Photographs- Types of Aerial Photographs, Types of Aerial Camera. Photogrammetry and Its Applications.

Unit - III:

Global Positioning System (GPS) – Introduction of Global Positioning System and Its Segments, Satellite Constellation, Factors Affecting GPS, GPS Signals and Codes, Geo-Positioning-Basic Concepts. NAVSTAR, GLONASS, GALILEO & NAVIC, Applications of GPS.

Reference Books

- Aylmer, Johnson. (2004). Plane and Geodetic Surveying. CRC Press.
- Barrett, E.C and Curtis, L.F. (2000). Fundamentals of Remote Sensing and Air Photo Interpretation. New York: MacMillan.
- Gupta, K.K. and Tyagi, V. C. (1992). Working with Map, Survey of India. DST. New Delhi.
- Singh, R. L. and Singh, R. P. B. (1999). Elements of Practical Geography. Kalyani Publishers.

Pedagogy: The student may be ask to refer to any ancient maps, aerial photographs and grid square topgraphic maps in which different objects can be listed. They learn to use different softwares and hardware of geospatial and they produce their maps by doing excercises. Fields visit to mapping organization will be organized for them so that they will aware about.

GEOM – 204: डिजिटल मानचित्रकारी हवाई आलोक चित्र विद्या और जीपीएस

अधिकतम अंक :100 न्यूनतम अंक : 40

श्रेय 06 अवधि : 3घंटे

ईकाई-I

कार्टोग्राफी की प्रकृति और विषय क्षेत्र, बेसिक जियोडेसी, जियोइड / डेटम / एलिप्सोइड, डिजिटल कार्टोग्राफी के तत्व, मानचित्रः प्रकार, उद्देश्य और वर्गीकरण, मानचित्रों का सामान्यीकरण, मैप लेआउट, डिजिटल कार्टोग्राफिक सूचना के लिए डेटा मॉडल, गुणात्मक मानचित्र तकनीकः कोरोस्केमैटिक और कोरोक्रोमैटिक। मात्रात्मक मानचित्रण तकनीकः कोरोप्लेथ और आइसोप्लेथ।

ईकाई-II

एरियल फोटोग्राफी: एरियल फोटोग्राफी का परिचय - एरियल फोटोग्राफ की बुनियादी जानकारी और विशिष्टताएं; बुनियादी फोटोग्राफिक उड़ानों की योजना और निष्पादन; एरियल फोटोग्राफ की ज्यामितीय विशेषताएं- एरियल फोटोग्राफ के प्रकार, एरियल कैमरा के प्रकार। फोटोग्रामेट्री और उसके अनुप्रयोग।

ईकाई-III

ग्लोबल पोजिशनिंग सिस्टम (जीपीएस) - ग्लोबल पोजिशनिंग सिस्टम और उसके सेगमेंट, सैटेलाइट नक्षत्र, जीपीएस को प्रभावित करने वाले कारक, जीपीएस सिग्नल और कोड, जियो-पोजिशनिंग-बेसिक कॉन्सेप्ट्स का परिचय। NAVSTAR, GLONASS, GALILEO & NAVIC, GPS के अनुप्रयोग

GEOM-205: Practical: Air Photo Interpretation and GPS

Max Marks: 100 **Min. Marks: 40**
Credits: 06 **Duration: 05 hrs**

Learning Outcomes: On successful completion of the Course the student will be able to-
To develop knowledge, skills and competency to use stereoscopes, GPS for spatial mapping and referencing

1. Build competency and academic excellence for competition exams.
2. Hone & developemployability related skills for holistic development.

a) Air Photos and Photogrammetry: Elements of photographic system: types, scales and ground coverage, resolution, radiometric characteristics, films, filters, aerial cameras, film exposures
b) Geometric fundamentals of photogrammetry: Elements of vertical photographs, relief displacement, image parallax, stereoscopic, ortho photos air photo interpretation: shape, size, pattern, tone, texture, shadows, and site.
c) GPS Surveying and Mapping: Field Exercises using Hand Held GPS.

Reference Books

- Cracknell, A. and Ladson, H. (1990): Remote Sensing Year Book. Taylor and Francis, London.
- Curran, P.J. (1988): Principles of Remote Sensing. ELBS Longman, Essex, U.K.
- Deekshatulu, B.L. and Rajan, Y.S. (ed.) (1984): Remote Sensing. Indian Academy of Science, Bangalore. Floyd, F. S. Jr. (1997): Remote Sensing: Principles and Interpretation. W.H. Freeman, New York.Hallert, B. (1960): Photogrammetry. McGraw Hill Book Company. Inc. New YorkLeuder, D.R. (1959): Aerial Photographic Interpretation: Principles and Application, McGraw Hill, New York.
- Lillesand, T.M. and Kiefer, R.W. (2000): Remote Sensing and Image Interpretation. 4th ed. John Wiley and Sons, New York.
- Rampal, K.K. (1999): Handbook of Aerial Photography and Interpretation. Concept Publishing Company, New Delhi.
- Reeves, R.G. (ed.) (1983): Manual of Remote Sensing. Vols. 1 and 2, American Society of Photogrammetry and Remote Sensing, Falls Church, Virginia.
- Siegel, B.S. and Gillespie, R. (1985): Remote Sensing in Geology. John Wiley and Sons, New York.
- Spurr, R. (1960): Photogrammetry and Photo Interpretation. The Roland Press Company, London.
- Survey of India, (1973): Photogrammetry. Survey of India, Dehradun.
- Swain, P.H. and Davis, S.M. (ed.) (1978): Remote Sensing: The Quantitative Approach. McGraw-Hill, New York.
- Wolf P.R. and Dewitt, B. A. (2000): Elements of Photogrammetry with Applications in GIS. McGraw-Hill, New York.

Pedagogy: The elements of practical geography will be conveyed to students through charts, map and diagrams for effective learning. Stuents will be making a practical file abd will learn to use stereoscope and will be able to interpret air photos.

GEOM-205 : प्रायोगिक भूगोल आकाश फोटो इंटरप्रिटेशन और जीपीएस

अधिकतम अंक :100 न्यूनतम अंक : 40

श्रेय 06 अवधि : 5 घंटे

क) वायु तस्वीरें और फोटोग्रामेट्री: फोटोग्राफिक सिस्टम के तत्व: प्रकार, स्केल और ग्राउंड कवरेज, रिज़ॉल्यूशन, रेडियोमेट्रिक विशेषताओं, फिल्म, फिल्टर, हवाई कैमरे, फिल्म एक्सपोजर

ख) फोटोग्रामेट्री के ज्यामितीय बुनियादी सिद्धांत: ऊर्ध्वाधर तस्वीरों के तत्व, राहत विस्थापन, छवि लंबन, त्रिविम, ऑर्थो फोटो एयर फोटो व्याख्या: आकार, आकार, पैटर्न, टोन, बनावट, छाया और साइट।

ग) जीपीएस सर्वेइंग एंड मैपिंग: हैंड हेल्ड जीपीएस का इस्तेमाल करते हुए फील्ड एक्सरसाइज।

COURSE STRUCTURE M.A./M. Sc GEOGRAPHY SEMESTER-III

Paper Code	Nomenclature	Type	Contact Hours Per Sem	Credits	Total Marks		Max Marks	Min Marks	Duration
					CIA	ESE			
GEOM-301	Agricultural Geography	Core	06	06	30	70	100	40	3 hrs
GEOM-302	Industrial Geography	Core	06	06	30	70	100	40	3 hrs
GEOM-303	Urban Geography	Core	06	06	30	70	100	40	3 hrs
GEOM-304	a. Social Geography **OR** b. Cultural Geography	DSE	06	06	30	70	100	40	3 hrs
GEOM-305	Remote Sensing Techniques	Practical	12	06	30	70	100	40	5 hrs

GEOM-301: Agricultural Geography

Max Marks: 100 **Min. Marks: 40**
Credits: 06 **Duration: 03 Hrs**

Learning Outcomes: On successful completion of the Course the student will be able to-

1. Trace the development of agricultural geography as a subject and analyze the sources of agricultural data.
2. Distinguish agricultural concepts and theories for the classification of agricultural regions.
3. Examine the contemporary issues and discuss the agricultural policies of India.
4. Build competency and academic excellence for competition exams.

UNIT – I

Nature, Scope and Development; Approaches to the study of Agricultural Geography: Commodity, Systematic, Regional and Ecological; Origin and Dispersal; Concepts: Cropping Pattern, Crop Concentration, Crop Productivity, Crop Diversification, Crop Efficiency.

UNIT – II

Theories of Crop Combination Regions: Weaver, Doi and Raffiullah; Present relevance of Von Thunen's agricultural model; Whittlesey's classification of agricultural regions.

UNIT – III

Green Revolution and Regional Disparity; Agro-climatic Regions of India; Contemporary Issues: Food Security, Sustainable Agriculture, Dryland Farming, Organic Farming.

Reference Books:

- Bayliss Smith, T.P. (2001). The Ecology of Agricultural Systems.London: Cambridge University Press.
- Berry, B.J.L. (1976). et. al. The Geography of Economic Systems. New York: Prentice Hall.
- Brown, L.R. (1990).The Changing World Food Prospects .The Nineties and Beyond. Washington D.C. World Watch Institute.
- Dyson, T. (1996). Population and Food. Global Trends and Future Prospects. London: RoutledgeGregor, H.P. (1970). Geography of Agriculture, New York: Prentice hall.
- Grigg, D.B. (1974).The Agricultural Systems of the World. New York: Cambridge University Press.
- Hartshorn, T.N. and Alexander, J.W. (1988).Economic Geography. New Delhi: Prentice Hall.
- Singh, J. and Dhillon. S.S. (1988). Agricultural Geography. New Delhi: Tata McGraw Hill Pub.
- Tarrant, J.R (1974). Agricultural Geography. New York: Wiley.
- Hussain, Majid. Agriculture Geography (latest)

Pedagogy : The teacher should impress the students the overall importance of agriculture in the global perspective. The world is fast changing and its impact on felt on agriculture. Population is increasing and demand of agricultural products is also on the increase. Contrary to it, the farm lands are decreasing, that necessitates infusion of technology in agricultural sector.

GEOM-301 : कृषि भूगोल

अधिकतम अंक :100 न्यूनतम अंक : 40

श्रेय 06 अवधि : 3 घंटे

इकाई – I

प्रकृति, विषय क्षेत्र और विकास; कृषि भूगोल के अध्ययन के लिए दृष्टिकोण: कमोडिटी, व्यवस्थित, क्षेत्रीय और पारिस्थितिकी; उत्पत्ति और फैलाव; अवधारणाएं: फसल प्रतिरूप, फसल एकाग्रता, फसल उत्पादकता, फसल विविधीकरण, फसल क्षमता।

इकाई – II

फसल संयोजन क्षेत्रों के सिद्धांत: वीबर, दोई और रफीउल्लाह; वॉन थुनेन के कृषि मॉडल की वर्तमान प्रासंगिकता; व्हिट्लेसी द्वारा कृषि क्षेत्रों का वर्गीकरण।

इकाई – III

हरित क्रांति और क्षेत्रीय असमानता; भारत के कृषि-जलवायु क्षेत्र; समसामयिक मुद्दे: खाद्य सुरक्षा, सतत कृषि, शुष्क भूमि खेती, जैविक खेती।

सन्दर्भः–

- प्रमीला कुमार : कृषि भूगोल, मध्यप्रदेश हिन्दी अकेडमी।
- सिंह, ब्रज भूषण : कृषि भूगोल गोरखपुर।
- हुसैन माजिद : कृषि भूगोल।

GEOM-302: Industrial Geography

Max Marks: 100 **Min. Marks: 40**
Credits: 06 **Duration: 03 hrs**

Learning Outcomes:

On successful completion of the Course the student will be able to-

1. Identify the elements and factors of localization of industries.
2. Establish a connection between the localization theories and distribution of manufacturing industries in the world.
3. Speculate the impact of globalization and changing industrial policies on world environment.

UNIT – I

Nature, Scope and Recent Developments; Elements and Factors of Localization; Centralization and Decentralization; Theories and Models of Industrial Location: Weber, Losch, Isard and Hoover.

UNIT – II

Distribution and spatial pattern of manufacturing industries: Iron and Steel, Textiles, Chemicals, Major Manufacturing Regions of the World of USA and China.

UNIT – III

Environmental degradation caused by industries; Impact of industries on economic development; Role of Globalization on industrial sector; Concept of industrial decentralization.

Reference Books:

- Alexander, J.W (1988). Economic Geography. Englewood Cliffs: Prentice Hall.
- Alexanderson, C (1967). Geography of Manufacturing. Bombay: Prentice Hall.
- Hoover, E.M. (1948). The Location and Space Economy. New York: McGraw Hill.
- Isard, W. (1956). Methods of Regional Analysis. New York: The Technology Press of M.I.T. & John Wiley & Sons.
- Miller, E. (1962).A Geography of Manufacturing. New Jersey: Prentice Hall. Englewood Cliffs.

Pedagogy: The students should be acquainted with the different factors related to industries with examples. They should be motivated to interact with the teacher to identify economic activities of the people residing in different parts of the world.

GEOM-302: औद्योगिक भूगोल

अधिकतम अंक :100 न्यूनतम अंक : 40
श्रेय 06 अवधि : 3घंटे

इकाई – I

प्रकृति, प्र"ह्यक्र ÿंद्रवुद्धद्र और वर्तमान मे विकास; स्थानीयकरण के तत्व और कारक; केंद्रीकरण और विकेंद्रीकरण; औद्योगिक अवस्थिति के सिद्धांत और मॉडल: वेबर, लॉश, इसार्ड और हूवर।

इकाई – II

विनिर्माण उद्योगों का वितरण और स्थानिक पैटर्न: लोहा और इस्पात, कपड़ा, रसायन, संयुक्त राज्य अमेरिका और चीन के प्रमुख विनिर्माण क्षेत्र।

इकाई – III

उद्योगों के कारण पर्यावरणीय क्षरण; आर्थिक विकास पर उद्योगों का प्रभाव; औद्योगिक क्षेत्र पर वैश्वीकरण की भूमिका; एकीकृत औद्योगिक विकेंद्रीकरण की अवधारणा।

सन्दर्भः–

- आर्थिक भूगोल **डॉ चतुर्भुज ममोरिया , डॉ रतन जोशी**

GEOM-303: Urban Geography

Max Marks: 100 **Min. Marks: 40**
Credits: 06 **Duration: 03 hrs**

Learning Outcomes:
On successful completion of the Course the student will be able to-

1. Understand the nature, scope and evolution of urban geography as a subject.
2. Discover and summarize various theories of development of urban systems.
3. Elaborate the functional classification of cities and interpret sustainable urban planning and development.

UNIT – I

Nature, Scope and Development; Origin and Growth of urban centres; Trends of Urbanization; Views of Mumford and Griffith Taylor; Conurbation and Megalopolis.

UNIT – II

Christaller's Central Place Theory; Primate city; Rank-size rule: Urban land use Models: Burgess, Harris-Ullman and Hojet.

UNIT – III

Centripetal and Centrifugal forces of Urban Growth; Functional classification of cities; Rural Urban Fringe: Concept, Urban Problems and solutions; Concept of Smart City.

Reference Books:

- Bansal S.C. (2017). Urban Geography. Meerut: Meenakshi Prakashan.
- Bridge, B. and Watson, S. (eds.) (2000): A Companion to the City. Blackwell, Oxford.
- Carter, H. (1995): The Study of Urban Geography. 4th ed. Reprinted in 2002 by Rawat Publications, Jaipur and New Delhi.
- Dubey, K.K. (1976): Use and Misuse of Land in KAVAL Towns. Varanasi: National Geographical Society of India.
- Dubey, K.K. and Singh, A.K. (1983). Urban Environment in India. New Delhi: Deep and Deep.
- Dutt, A., Allen, K., Noble, G., Venugopal G. and Subbiah S. (eds.) (2003). Challenges to Asian Urbanisation in the 21st Century. Dordrecht and London: Kluwer Academic Publishers.
- Hall, P. (1992). Urban and Regional Planning. London: Routledge.
- Hall, T. (2001). Urban Geography.2nd edition. London: Routledge.
- Jacquemin, A. (1999). Urban Development and New Towns in the Third World: A Lesson from the New Bombay Experience.UK: Ashgate. Aldershot.
- Johnson, J.H. (1981). Urban Geography. Pergaman Press. Oxford.

- Mayer, H. and Cohn, C. F. (1959): Readings in Urban Geography. Chicago:
- University. of Chicago Press. Paddison, R. (ed.) (2001). Handbook of Urban Studies. London: Sage.
- Pacione, M. (2005). Urban Geography: A Global Perspective, Routledge, London and New York.
- Ramachandran, R. (1991). Urbanisation and Urban Systems in India. Oxford University Press, Delhi. 15. Rao, B. P. and Sharma, N. (2007): Nagariya Bhoogol. Gorakhpur: Vasundhara Prakashan.
- Singh. H. H. (1972). Kanpur: A Study in Urban Geography. Varanasi: Indrasini Publications.
- Singh, K. and Stainberg, F. (eds.). (1998) Urban India in Crisis. New Delhi:
- New Age International.
- Singh, O. P. (1987). Nagariya Bhoogol. Varanasi: Tara Book Agency.
- Singh, R.L. (1955). A Study in Urban Geography. Banaras: Nand Kishore and Brothers.
- Singh, R.L. and Singh, Rana P.B., (eds.) (1979). Place of Small Towns in India. National 160. Varanasi: Geographical Society of India.
- Singh, Rana P.B. and Rana, P.S. (2002). Banaras Region. , Varanasi: Indica Books.
- Singh, S. B. (ed.). (1996). New Perspectives in Urban Geography. New Delhi: M.D. Publications.
- Singh, T.D. (1985). Spatial Pattern of Population in the Cities of U.P. Tara Book Agency.
- Stanley, B., Jack, W. and Donald, Z. (eds.). (2003). Cities of the World. Rowman and Littlefield.

Pedagogy: Students shouls be acquainted with the local urban growth of the area. They should be encouraged to attend and participate in the seminars/lectures organized by various institutions over urban growth and issues. The paper should be taught with a multidisciplinary approach.

GEOM-303: नगरीय भूगोल

अधिकतम अंक :100 न्यूनतम अंक : 40

श्रेय 06 अवधि : 3घंटे

इकाई – I

प्रकृति, विषय क्षेत्र और विकास; शहरी केंद्रों की उत्पत्ति और विकास; शहरीकरण कि ओर रुझान; ममफोर्ड और ग्रिफ़िथ टेलर के विचार; नगर समूह और मेगालोपोलिस।

इकाई – II

क्रिस्टालर का सेंट्रल प्लेस थ्योरी; प्राइमेट सिटी; रैंक-आकार नियम: शहरी भूमि उपयोग मॉडल: बर्गेस, हैरिस-उलमैन और होयट।

इकाई – III

शहरी विकास के अभिकेंद्री और केन्द्राप्रसारक बल; शहरों का कार्यात्मक वर्गीकरण; ग्रामीण शहरी सीमा: अवधारणा, शहरी समस्याएं और समाधान; स्मार्ट सिटी की अवधारणा।

सन्दर्भः–

- जोशी, आर. एल : नगरीय भूगोल, राजस्थान हिन्दी ग्रन्थ अकादमी, जयपुर।
- सिंह, ओमप्रकाश : नगरीय भूगोल।

GEOM-304 (A): Social Geography

Max Marks: 100 **Min. Marks: 40**

Credits: 06 **Duration: 03 hrs**

Learning Outcomes: On successful completion of the Course the student will be able to-

1. Discuss the knowledge of formation of societies and social consciousness.
2. Explain the formation of regions with respect to various social parameters.
3. Speculate public policies and evaluate social planning system in India.

UNIT – I

Nature and Development; Philosophical bases: Positivism, Structuralism, Radicalism, Humanism, Post-Modernism and Post-Structuralism; Social well being.

UNIT – II

Social differentiation and Region Formation; Role of Race, Caste, Religion and Languages; Social Transformation and change in India; Human Development: measurement and indicators.

UNIT – III

Patterns and bases of rural and urban society; Strategies to improve social well-being state of tribes, women and transgender.

Reference Books:

- Ahmad, Aijazuddin (1999). Social Geography. New Delhi: Rawat Publication.
- De Blij. H.D. Human Geography. John Wiley and son, New York.
- Dreze Jean, Amartya Sen. Economic Development and Social opportunity. New Delhi: Oxford University Press.
- Dubey. S.C (1991). Indian Society, New Delhi: National Book Trust.
- Gregory, D and J. Larry, (eds.) . (1985). Social relations and spatial structures. McMillan.
- Haq. Mahbubul. Reflections on Human Development, New Delhi: Oxford University Press.
- Maloney, Clarence. (1974). People of South Asia. New York: Winston.
- Planning Commission, Government of India. (1981). Report on development of Tribal areas.
- Rao, M.S.A (1970). Urban Sociology in India. Orient Longman.
- Schwartzberg Joseph (1978). An Historical Atlas of South Asia. Chicago: University of Chicago Press.
- Sen, Amartya & Dreze Jean. (1996). Indian Development: Selected Regional Perspectives.
- Oxford University Press.
- Smith, David. (1977). Geography - A Welfare Approach. London: Edward Arnold.
- Sopher, David. (1980). An Exploration of India. Cornell University Press.
- Subba Rao. (1958). Personality of India; Pre and Proto Historic foundation of India and Pakistan. Vadodra: M.S. University.

Pedagogy: The students should familiarize themselves with different areas to understand the patterns of socio-economic differentiation/ segregation and their social and cultural habitats. They should also interact with other disciplines like sociology, psychology and demography for understanding the social issues.

GEOM-304 (A) : सामाजिक भूगोल

अधिकतम अंक :100 न्यूनतम अंक : 40

श्रेय 06 अवधि : 3 घंटे

इकाई – I

प्रकृति और विकास; दार्शनिक आधार: प्रत्यक्षवाद, संरचनावाद, अतिवाद, मानवतावाद, उत्तर-आधुनिकतावाद और उत्तर-संरचनावाद; सामाजिक कल्याण ।

इकाई – II

सामाजिक भेदभाव और क्षेत्र गठन; प्रजाति, जाति, धर्म और भाषाओं की भूमिका; भारत में सामाजिक रूपान्तरण और परिवर्तन; मानव विकास: माप और संकेतक।

इकाई – III

ग्रामीण और शहरी समाज के प्रतिरूप और आधार; जनजातीय, महिलाओं और ट्रांसजेंडर के सामाजिक कल्याण की रणनीतियाँ।

सन्दर्भः–

- डॉ.एस.डी.मौर्य : सामाजिक भूगोल, शारदा पुस्तक भवन, इलाहाबाद

GEOM-304 (B) : Cultural Geography

Max Marks: 100 **Min. Marks: 40**

Credits: 06 **Duration: 03 hrs**

Learning Outcomes: On successful completion of the Course the student will be able to-

1. Understand the role of elements of culture in the formation of cultural regions.
2. Discuss the importance of cultural regions and cultural ecology in economic development.
3. Summarize economic activities and cultural adaptations in developing countries.

UNIT – I

Introduction: Nature and scope of cultural geography; Definition, cultural element and components of culture; convergence and divergence processes; cultural changes: perception, behaviouralism and cultural relativism. Cultural Diversity: Bases of cultural diversity-race, religion and language. Cultural diversity in world, cultural diversity and regionalization in India.

UNIT – II

Geography of ethnic groups and tribal groups. Religion and its diffusion; diffusion of ethnic traits in world as well as India; ethnic landscape and economy of the area; Diffusion in folk geography; cultural landscape and cultural ecology in folk geography; Religions: origin, diffusion and spatial distribution; religion & economic development.

UNIT – III

Patterns of livelihood: various economic activities & cultural adaptations; agriculture, industrialization and modernization; technological changes and their geographic implications. Human settlements: Relation to ideology, social structure and technology, social structure and technology, pattern of rural & urban society, social processes in the city, the city in the developing countries.

Reference Books:

- Brook, J.C. and Webb, J.W. (1978) A Geography of Mankind, McGraw Hill, New York.
- Crang, Mike (1998) Cultural Geography, Routledge publications, London.
- Harmandorf (1989) Tribes of India: The Struggle for Survival, Oxford University Press, Delhi.
- Hazra, (1997) Dimensions in Human Geography, Rawat Publication, Jaipur.
- Hutchinson, and Smith, D. (1996) Ethnicity, Oxford University press, Oxford.
- Jordon, & Lester G. (1979) The Human Mosaic, Harpar & Row, New York.
- Massey, D & Jess P. (1995) A Place in the World: Places, Cultures and Globalization Oxford University, New York.
- Massey, et.al (1999) Human Geography Today, Polity Press, Combridge.
- Mukherjee, A.B. and Aijazuddin, A. (1985) India: Culture, society and Economy, Inter-India Publication, New Delhi.
- Steve.P & Michael.K (1993) Places and the Politics of Identify, Routledge, London.
- Schwartzberg, J.E. (1978) Historical Atlas of South Asia, University of Chicago.

Pedagogy: Students may be introduced to the cultural elements of society/groups from various regions through dance-drama-cultural shows, arts exhibitions and field-visits. They should be asked to prepare seminar papers on the issues/problems confronting various cultural groups in India.

GEOM-304 (B) : सांस्कृतिक भूगोल

अधिकतम अंक :100 न्यूनतम अंक : 40

श्रेय 06 अवधि : 3 घंटे

इकाई – I

परिचयः सांस्कृतिक भूगोल की प्रकृति और कार्यक्षेत्र; परिभाषाए सांस्कृतिक तत्व और संस्कृति के घटकय अभिसरण और विचलन प्रक्रियाओंय सांस्कृतिक परिवर्तनरू धारणाए व्यवहारवाद और सांस्कृतिक सापेक्षवाद। सांस्कृतिक विविधतारू सांस्कृतिक विविधता के आधार-जातिए धर्म और भाषा। भारत में सांस्कृतिक विविधताए सांस्कृतिक विविधता और क्षेत्रीयकरण।

इकाई – II

जातीय समूहों और आदिवासी समूहों का भूगोल। धर्म और उसका प्रसारय दुनिया के साथ.साथ भारत में भी जातीय लक्षणों का प्रसार क्षेत्र का जातीय परिदृश्य और अर्थव्यवस्थाय लोक भूगोल में प्रसारय लोक भूगोल में सांस्कृतिक परिदृश्य और सांस्कृतिक पारिस्थितिकीय धर्मरू उत्पत्तिए प्रसार और स्थानिक वितरणय धर्म और आर्थिक विकास।

इकाई – III

आजीविका के **प्रतिरूप** विभिन्न आर्थिक गतिविधियाँ और सांस्कृतिक अनुकूलन कृषि औद्योगीकरण और आधुनिकीकरण तकनीकी परिवर्तन और उनके भौगोलिक निहितार्थ। मानव बस्तियाँ विचारधारा सामाजिक संरचना और प्रौद्योगिकी सामाजिक संरचना और प्रौद्योगिकीए ग्रामीण और शहरी समाज का पैटर्न शहर में सामाजिक प्रक्रियाओं विकासशील देशों में शहर से संबंध।

सन्दर्भः–

- डॉ एस डी मौर्य और शालिनी सांस्कृतिक भूगोल शारदा पुष्कर भंडार

GEOM-305: Practical: Remote Sensing Techniques

Max Marks: 100 **Min. Marks: 40**
Credit: 06 **Duration: 05 hrs**

Written Test and Lab Work	**50 Marks**
Record Work	**30 Marks**
Viva	**20 Marks**

Learning Outcomes:

On successful completion of the Course the student will be able to-

1. Build a functional understanding of basic remote sensing concepts and applications.
2. Demonstrate GIS techniques of processing remotely sensed data and understand data acquisition, storage and its synthesis.
3. Build competency and academic excellence for competition exams.
4. Hone & developemployability related skills for holistic development.

Major Concepts in Remote Sensing

- Remote Sensing: Definitions, Concepts, Evolution and Stages of Remote Sensing, Electromagnetic Spectrum.
- Data Acquisition, Platforms, Sensors, Resolutions, Launch Vehicles, Merit and Demerit of Remote Sensing.
- Indian Space Programmes, Indian & Foreign Satellites, Hyperspectral Remote Sensing, Thermal and Microwave Remote Sensing,
- Elements of Visual Image Interpretation, Ground Verification. Applications of Remote Sensing.

Major Remote Sensing Practicals using Erdas & SAGA Software

- Creation of Base Map from Toposheet or Satellite Image
- Layer Stacking
- Mosaicking & Subset
- Low Pass & High Pass Filtering
- NDVI
- Resolution Merge

Reference Books:

- Barrett E.C and L.F. Curtis: Fundamentals of Remote Sensing and Air Photo Interpretation, Mcmillan, New York, 1992.
- Compbell J: Introduction to Remote Sensing, Guilford, New York. 1989.
- Curran, Paul J - Principles of Remote Sensing, Longman, London, 1985.
- Hord R.M - Digital Image Processing of Remotely Sensed Data, Academic, New York, 1989.
- Luder D - Aerial Photography Interpretation: Principles and Application, McGraw Hill, New York, 1959.
- Pratt W.K - Digital Image Processing, Wiley, New York, 1978.
- Rao D.P. (eds.) - Remote Sensing for Earth Resources, Association of Exploration Geophysicist, Hyderabad, 1998.
- Thomas M. Lillesand and Ralph W. Kefer - Remote Sensing and Image Interpretation, John Wiley & sons, New York, 1994.

Pedagogy: Students may be taken to any nearby Remote Sensing Organization to observe different equipments, techniques, and products. Students may be asked to look into weather satellite photographs being published in the daily news papers and to prepare some quick report of weather. Students may be asked to visit any nearby ground area with its imagery and to compare the ground reality and the corresponding reality in the imagery.

GEOM-305 : प्रायोगिक भूगोल : रिमोट सेंसिंग तकनीक

अधिकतम अंक :100 न्यूनतम अंक : 40

श्रेय 06 अवधि : 5 घंटे

Written Test and Lab Work	**50 Marks**
Record Work	**30 Marks**
Viva	**20 Marks**

रिमोट सेंसिंग में प्रमुख अवधारणाएँ

- रिमोट सेंसिंग: रिमोट सेंसिंग, इलेक्ट्रोमैग्नेटिक स्पेक्ट्रम की परिभाषाएं, अवधारणाएं, विकास और चरण।
- डेटा अधिग्रहण, प्लेटफार्म, सेंसर, संकल्प, प्रक्षेपण वाहन, रिमोट सेंसिंग की योग्यता और दोष।
- भारतीय अंतरिक्ष कार्यक्रम, भारतीय और विदेशी उपग्रह, हाइपरस्पेक्ट्रल रिमोट सेंसिंग, थर्मल और माइक्रोवेव रिमोट सेंसिंग,
- दृश्य छवि व्याख्या के तत्व, जमीनी सत्यापन। रिमोट सेंसिंग के अनुप्रयोग।
- एरडास और सागा सॉफ्टवेयर का उपयोग करते हुए

प्रमुख रिमोट सेंसिंग प्रैक्टिकल

- टॉपोशीट या सैटेलाइट इमेज से बेस मैप का निर्माण
- परत स्टैकिंग
- मोज़ेकिंग और सबसेट
- लो पास और हाई पास फ़िल्टरिंग
- एनडीवीआई
- रिज़ॉल्यूशन मर्ज

Paper Code	Nomenclature	Type	Contact Hours Per Week	Credits	Total Marks		Max Marks	Min Marks	Duration
					CIA	ESE			
GEOM-401	Geography of South Asia	Core	06	06	30	70	100	40	3 hrs
GEOM-402	Regional Development and Planning	Core	06	06	30	70	100	40	3 hrs
GEOM-403	a. Quantitative Techniques in Geography **OR** b. Natural Disaster Management	DSE	06	06	30	70	100	40	3 hrs
GEOM-404	a. Dissertation **OR** b. Geography of Tourism	DSE	06	06	30	70	100	40	3 hrs
GEOM-405	Geographic Information System Applications	Practical	12	06	30	70	100	40	5 hrs
GE-401 ***(Generic Elective)***	1. Tax Management **OR** 2. Human Rights		90	02	02	15	35	50	20

GEOM-401: Geography of South Asia

Max Marks: 100 **Min. Marks: 40**
Credit: 06 **Duration: 03 hrs**

Learning Outcomes: On successful completion of the Course the student will be able to-

1. Develop geographical understanding of Pakistan and discuss its political relations with South Asian countries.
2. Develop geographical understanding of Bangladesh and discuss its political relations with South Asian countries.
3. Develop geographical understanding of Nepal, Sri Lanka, Bhutan, Maldives and discuss their political relations with South Asian countries.
4. Build competency and academic excellence for competition exams.

UNIT – I

Geographical Realm of South Asia: Homogeneity and Diversity, Study of Pakistan: Physiography, Climate, Agriculture, Population, Trade, Economic Development, Political relations.

UNIT – II

Study of Bangladesh: Physiography, Climate, Agriculture, Population, Trade, Economic Development, Political relations.

UNIT – III

Study of Physiography: (Nepal, Bhutan & Sri Lanka), Climate, Agriculture, Population, Trade, Economic Development, Political relations.

Reference Books:

- Sisir Gupta. (1964). India and Regional Integration in Asia. Bombay: Asia Publishing House.
- Ayubur Rahman Bhuyan (1979). Economic Integration in South Asia: An Exploratory Study. Dacca: University of Dacca.
- Nicholas Tarling (ed.) (1992) The Cambridge History of South Asia Vol. I & II. Cambridge: Cambridge University Press.
- Naren Chitty. Framing South Asian Transformation. Delhi: South Asian Publishers.
- B.H. Farmer. (1983). An Introduction to South Asia.London: Methuen publishers.
- Bimal Prasad (1989). Regional Cooperation in South Asia. Delhi: Vikas Publishers. (eds Ramakant et.al.).
- Pran Chopra (2000). Future of South Asia, Macmillan, New Delhi, 1986 M.S Agawani (ed.).South Asia: Stability and Regional Cooperation, , Chandigarh: CRRID.

Pedagogy: Critical pedagogy will be adopted to teach bthe paper. Teacher will be picking up specific examples to explore the geographical aspects of South Asia.

GEOM-401: दक्षिण एशिया का भूगोल

अधिकतम अंक: 100 न्यूनतम अंक : 40

श्रेय 06 अवधि : 3घंटे

इकाई – I

दक्षिण एशिया का भौगोलिक क्षेत्र: एकरूपता और विविधता, पाकिस्तान का अध्ययन: भू आकृति, जलवायु, कृषि, जनसंख्या, व्यापार, आर्थिक विकास, राजनीतिक संबंध।

इकाई – II

बांग्लादेश का अध्ययन: भू आकृति, जलवायु, कृषि, जनसंख्या, व्यापार, आर्थिक विकास, राजनीतिक संबंध।

इकाई – III

भू आकृति का अध्ययन: (नेपाल, भूटान और श्रीलंका), जलवायु, कृषि, जनसंख्या, व्यापार, आर्थिक विकास, राजनीतिक संबंध।

सन्दर्भः–

- डॉ चतुर्भुज ममोरिया विश्व क्षेत्रीय भूगोल साहित्य भवन प्रकाशन

GEOM-402: Regional Development and Planning

Max Marks: 100 **Min. Marks: 40**
Credits: 06 **Duration: 03 hr**

Learning Outcomes: On successful completion of the Course the student will be able to-

1. Explain and interpret the concept of regional planning.
2. Discuss the models and theories of regional planning and their relevance in present times.
3. Assess the short- and long-term impact of planning in the process of regional development.
4. Build competency and academic excellence for competition exams.

UNIT – I

Regional Planning: Conceptual and Theoretical framework; Types of Regions: Formal and Functional, Uniform, Nodal, Single purpose and Composite region; Concept of special purpose regions.

UNIT – II

Theories and Models of Regional Development: Hirschman's Model, Growth Centres and growth population theory of Perroux, Rostov's Model, Gunnar Myrdal Model; Regional Disparity.

UNIT – III

Planning process in regional development: short-term and long-term; Concept of Multi-level planning; Regional development in India problems and prospects.

Reference Books

- Bridge, B. and Watson, S. (eds.) (2000). A Companion to the City. Blackwell. Oxford.
- Carter, H. (1995). The Study of Urban Geography. 4th ed. Reprinted in 2002. Jaipur and New Delhi: Rawat Publications.
- Dubey, K.K. (1976): Use and Misuse of Land in KAVAL Towns. Varanasi: National Geographical Society of India.
- Dubey, K.K. and Singh, A.K. (1983). Urban Environment in India. New Delhi: Deep and Deep.
- Dutt, A., Allen, K., Noble, G., Venugopal G. and Subbiah S. (eds.) (2003). Challenges to Asian Urbanisation in the 21st Century. Kluwer Academic Publishers, Dordrecht and London.
- Hall, P. (1992). Urban and Regional Planning. London: Routledge.
- Hall, T. (2001) Urban Geography. 2nd edition. London: Routledge.
- Haughton, G. and Hunter, C. (1994): Sustainable Cities. London: Jessica Kingsley.
- Jacquemin, A. (1999). Urban Development and New Towns in the Third World – A Lesson from the New Bombay Experience. Ashgate, Aldershot, UK.

- Johnson, J.H. (1981).Urban Geography. Oxford: Pergaman Press.
- Mayer, H. and Cohn, C. F. (1959). Readings in Urban Geography. Chicago: University of Chicago Press.
- Paddison, R. (ed.) (2001). Handbook of Urban Studies. London: Sage.
- Pacione, M. (2005). Urban Geography. A Global Perspective, Routledge, London and New York.
- Ramachandran, R. (1991): Urbanisation and Urban Systems in India. Delhi: Oxford University Press.
- Rao, B. P. and Sharma, N. (2007). Nagariya Bhoogol. Gorakhpur: Vasundhara Prakashan.
- Singh. H. H. (1972) Kanpur: A Study in Urban Geography. Varanasi: Indrasini Publications.
- Singh, K. and Stainberg, F. (eds.) (1998). Urban India in Crisis. New Delhi : New Age International.
- Singh, O. P. (1987). Nagariya Bhoogol. Varanasi : Tara Book Agency.
- Singh, R.L. (1955). Banaras. A Study in Urban Geography. Banaras: Nand Kishore and Brothers. Singh, R.L. and Singh, Rana P.B., (eds.) (1979). Place of Small Towns in India.National 160. Varanasi: Geographical Society of India.
- Singh, Rana P.B. and Rana, P.S. (2002).Banaras Region. Varanasi: Indica Books.
- Singh, S. B. (ed.) (1996): New Perspectives in Urban Geography. New Delhi: M.D. Publications.
- Singh, T.D. (1985). Spatial Pattern of Population in the Cities of U.P. Varanasi : Tara Book Agency.
- Stanley, B., Jack, W. and Donald, Z. (eds.) (2003). Cities of the World. Rowman and Littlefield
- New York and Oxford. GMP 206. Elective (Major, Group I), Practical: 3. Urban Geography 1. Global Perspective. Theoretical models of urban growth, infrastructure, community zone.

Pedagogy: The students should familiarizr themselves with various areas to understand the pattern of regional development. They should be acquainted with long term and short term governamental policies working in the direction of Regional Development to reduce disparities.

GEOM – 402: क्षेत्रीय विकास और योजना

अधिकतम अंक :100 न्यूनतम अंक : 40

श्रेय 06 अवधि : 3घंटे

इकाई – I

क्षेत्रीय नियोजना: वैचारिक और सैद्धांतिक ढांचा; क्षेत्रों के प्रकार: औपचारिक और कार्यात्मक, समरूप, नोडल, एकल उद्देश्य और समग्र क्षेत्र; विशेष प्रयोजन क्षेत्रों की अवधारणा।

इकाई – II

क्षेत्रीय विकास के सिद्धांत और मॉडल: हिर्शमैन का मॉडल, विकास केंद्र और पेरौक्स का विकास जनसंख्या सिद्धांत, रोस्तोव का मॉडल, गुन्नार मायर्डल मॉडल; क्षेत्रीय असमानता।

इकाई – III

क्षेत्रीय विकास में योजना प्रक्रिया: अल्पकालिक और दीर्घकालिक; बहु-स्तरीय योजना की अवधारणा; भारत में क्षेत्रीय विकास की समस्याएं और संभावनाएं।

सन्दर्भः–

- आर सी चंदान:क्षेत्रीय योजना और विकास, कल्याणी पब्लिकेशन

GEOM-403(A) : Quantitative Techniques in Geography

Max Marks: 100 **Min. Marks: 40**

Credits: 06 **Duration: 03 hrs**

Learning Outcomes: On successful completion of the Course the student will be able to-

1. Understand and estimate the importance of quantitative techniques.
2. Differentiate between parametric and non- parametric inferences.
3. Formulate hypothesis and measure the level of significance.
4. Build competency and academic excellence for competition exams.
5. Hone & developemployability related skills for holistic development.

UNIT-I

Statistics: Meaning and Objective; Sampling techniques; Central Tendencies: Mean, Median, Mode; Measures of Dispersion: Range, Quartile deviation, Standard deviation (uses and computation).

UNIT II

Types of Statistics: Parametric & Non- Parametric, descriptive and inferential statistics; scales of measurement: Nominal, Ordinal, Interval Ratio; Correlation: Meaning, rank, Spearman; Regression Analysis.

UNIT-III

Hypothesis testing, Level of significance; Chi-square test: Meaning & Computation; t-test; z-test; Analysis of Variance (ANOVA).

Reference Books:

- David Unwin.(1981). Introductory Spatial Analysis. London: Methuen.
- Gregory, S. Statistical Methods and the Geographer. London: Longman.
- Hammond R and P.S. (1974). McCullagh Quantitative Techniques in Geography: An Introduction, Clarendan Press, Oxford.
- John P.Cole and Cuchlaine A. M. King. (1968).Quantitative Geography.London: John Wiley.
- Nagar, K.N. (2018). Fundamentals of Statistics. Meerut: Meenakshi Prakashan.
- Peter Haggett, Andrew D. Cliff, & Allan Frey. (1977). Location Methods Vol. I and II. London:Edward Arnold.

Pedagogy: Students may be asked to compare the means of measurements of any one variable from a section of toposheet by varying the sampling frame and sample size. Students may be asked to delineate regions quantitatively, using district level or state level census or agricultural data and adopting a simple regionalization procedure. Students may be asked to work out a diffusion model, using some hypothetical data or data gathered from the fellow students in the class or college or university.

GEOM – 403(A) : भूगोल में मात्रात्मक तकनीक

अधिकतम अंक :100 न्यूनतम अंक : 40

श्रेय 06 अवधि : 3घंटे

इकाई – I

सांख्यिकी: अर्थ और उद्देश्य; नमूना तकनीक; केंद्रीय प्रवृत्तियाँ: माध्य, माध्यिका, बहुलक; फैलाव के उपाय: रेंज, चतुर्थक विचलन, मानक विचलन (उपयोग और गणना)।

इकाई – II

सांख्यिकी के प्रकार: पैरामीट्रिक और गैर-पैरामीट्रिक, वर्णनात्मक और अनुमानात्मक सांख्यिकी; माप के पैमाने: नाममात्र, सामान्य, अंतराल अनुपात; सहसंबंध: अर्थ, पद, स्पीयरमैन; प्रतिगमन विश्लेषण।

इकाई – III

परिकल्पना परीक्षण, महत्व का स्तर; काई-स्क्वायर टेस्ट: अर्थ और संगणना; टी-परीक्षण; जेड- परीक्षण; विचरण का विश्लेषण (एनोवा)।

GEOM-403 (B): Natural Disaster Management

Max Marks: 100 **Min. Marks: 40**

Credits: 06 **Duration: 03 hrs**

Learning Outcomes: On successful completion of the Course the student will be able to-

1. Differentiate between natural and man- made disaster.
2. Summarize the impact of disaster on humans and economy of a region.
3. Analyze the importance of GIS in disaster management.

UNIT – I

Concept of Hazards and Disaster – Risk and Vulnerability. Types of Hazards: Tectonic Hazards – Earthquakes and Volcanoes; Hydrological Hazards – Floods and Droughts; Anthropogenic hazards.

UNIT – II

Regional Dimension of Hazards; Occurrence and Trends of Earthquakes, Volcanoes; Floods and Droughts. Impact and consequences of disasters – Displacements and Livelihood; Economy and Infrastructure; Health related problems.

UNIT – III

Preparadeness, Mitigation and Management of disasters; Plans and Policies with specific reference to Seismicity, droughts and floods. Role of Remote Sensing, GIS and GPS in Disaster Management

Reference Books:

- Allan, S, Adam, B and Carter, C., (2001) Environmental Risks and the Media, Routledge, London
- Ambala, Bertrand, J.M., (1993) Political Economy of Large Natural Disasters: With Special Reference to Developing Countries, Claredon Press, Oxford.
- Blaikie, P Cannon, I and Davis (et al.) (1994) At Risk: Natural Hazards, People's Vulnerability, and Disasters, Routledge, London.
- Burton, I, Kates, R.W. and White, G.F. (1993) Environment as Hazards, 2nd edition, Guilford Press, New York.
- Hewitt, K.(1997) Regions of Risk, A Geographical Introduction to Disasters, Longman, London..
- Hood, C. and Jones, D.K.C. (1996) Accident and Design: Contemporary debates in Risk Management, UCL Press, London.
- Kasperson, J.X., Kasperson, R.E. and Turner, B.L (1997) Regions at Risk: Comparisons of Threatened Environments, United Nation University Press, Tokyo.

Pedagogy: Studenst should be acquainted with government plans and policies involved with preparedness, mitigation and management of natural disaster several case studies should be provided to the students to think upon the problems/issues and should motivated them to come up with create ideas to solve the problems.

GEOM-403(B) : प्राकृतिक आपदा प्रबन्धन

अधिकतम अंक :100 न्यूनतम अंक : 40

श्रेय 06 अवधि : 3घंटे

इकाई – I

जोखिम और आपदा की अवधारणा - जोखिम और भेद्यता। जोखिम के प्रकार: टेक्टोनिक जोखिम - भूकंप और ज्वालामुखी; हाइड्रोलॉजिकल जोखिम - बाढ़ और सूखा; मानवजनित जोखिम ।

इकाई – II

जोखिम के क्षेत्रीय आयाम; भूकंप, ज्वालामुखी की घटना और रुझान; बाढ़ और सूखा। आपदाओं का प्रभाव और परिणाम - विस्थापन और आजीविका; अर्थव्यवस्था और बुनियादी ढाँचा; स्वास्थ्य संबंधी समस्याएं।

इकाई – III

आपदाओं की तैयारी, शमन और प्रबंधन; भूकंपीयता, सूखे और बाढ़ के विशिष्ट संदर्भ के साथ योजनाएं और नीतियां। डिजास्टर मैनेजमेंट में रिमोट सेंसिंग, जीआईएस और जीपीएस की भूमिका

सन्दर्भ:–

डॉ एच.एस. भारत: आपदा प्रबंधन ,एसबीपीडी प्रकाशन

GEOM-404(A): Dissertation

Max Marks: 100 **Min. Marks: 40**

Credits: 06

Data Collection and Report Writing : 70
Presentation and Viva : 30

Learning Outcomes: On successful completion of the Course the student will be able to-

1. Apply the knowledge of quantitative techniques to analyze data through field surveys by constructing questionnaires.
2. Develop research aptitude and formulate an intensive micro level dissertation work.
3. Hone & developemployability related skills for holistic development.

The dissertation work requires the students to utilize advanced research techniques to undertake empirical research on relevant topics based on strong theoretical framework. The dissertation thesis has to be prepared on the following outline -

- Introduction
- Objectives of the study
- Methodology
- Results and discussion
- Conclusion
- References

GEOM-404(A): शोध निबंध

अधिकतम अंक :100 न्यूनतम अंक : 40
श्रेय 06 अवधि : 5 घंटे

Data Collection and Report Writing : 70
Presentation and Viva : 30

शोध कार्य के लिए छात्रों को मजबूत सैद्धांतिक रूपरेखा के आधार पर प्रासंगिक विषयों पर अनुभवजन्य अनुसंधान करने के लिए उन्नत अनुसंधान तकनीकों का उपयोग करने की आवश्यकता होती है। शोध प्रबंध थीसिस को निम्नलिखित रूपरेखा पर तैयार किया जाना है -

- परिचय
- अध्ययन के उद्देश्य
- क्रियाविधि
- परिणाम और चर्चा
- निष्कर्ष
- संदर्भ

GEOM-404(B) : Geography of Tourism

Max Marks: 100 **Min. Marks: 40**
Credits: 06 **Duration: 03 hrs**

Learning Outcomes: On successful completion of the Course the student will be able to-

1. Discover the basics and dimensions of tourism.
2. Explore the types of tourism and associated elements for the development of tourism.
3. Critically evaluate the impact of tourism on environment.

UNIT – I

Basics of tourism: Definition of tourism; Factors influencing tourism: historical, natural, socio-cultural and economic; motivating factors for pilgrimages: leisure, recreation; elements of tourism, tourism as an industry. Geography of tourism: - its spatial affinity; areal and locational dimensions comprising physical, cultural, historical and economic.

UNIT – II

Tourism types: cultural, eco – ethno-coastal and adventure tourism, national and international tourism; globalization and tourism. Indian Tourism: regional dimensions of tourist attraction; evolution of tourism, promotion of tourism. Infrastructure and support system - accommodation and supplementary accommodation; other facilities and amenities.

UNIT – III

Tourism circuits-short and longer - Agencies and intermediacies - Indian hotel industry. Impacts of tourism: physical, economic and social and perceptional positive and negative impacts; Environmental laws and tourism - Current trends, spatial patterns and recent changes; Role of foreign capital & impact of globalization on tourism; Role of foreign capital & impact of Covid on global tourism.

Reference Books

- Bhatia A.K (1996) Tourism Development: Principles and Practices. Sterling Publishers,
- New Delhi.
- Bhatiya, A.K ((1991) International Tourism - Fundamentals and Practices, Sterling, New Delhi.
- Chandra, R.H (1998) Hill Tourism: Planning and Development, Kanishka Publishers, New Delhi.
- Hunter, C and Green, H. (1995) Tourism and the Environment: A Sustainable Relationship, Routledge, London,.
- Inskeep, E. (1991) Tourism Planning: An Integrated and Sustainable Development Approach,Van Nostrand and Reinhold, New York.
- Kaul, R.K.(1985) Dynamics of Tourism & Recreation. Inter-India, New Delhi.
- Kaur, J.(1985) Himalayan Pilgrimages & New Tourism Himalayan Books, New Delhi.
- Lea, J.(1988) Tourism and Development in the Third World, Routledge, London.
- Milton, D (1993) Geography of World Tourism Prentice Hall, New York.
- Pearce D.G (1987) Tourism To-day: A Geographical Analysis, Harlow, Longman.
- Robinson, H. (1996) A Geography of Tourism, Macdonald and Evans, London.
- Shaw G. and Williams A.M. (1994) Critical issues in Tourism-A Geographical Perspective,Oxford: Blackwell.

Pedagogy: Studenst should be motivated for active classroom activities to understand the importance of tourism development. They should be aquinated with general theories and principles related to tourism.

GEOM – 404 (B): पर्यटन भूगोल

अधिकतम अंक :100 न्यूनतम अंक : 40

श्रेय 06 अवधि : 3घंटे

इकाई – I

पर्यटन की बुनियाद: पर्यटन की परिभाषा; पर्यटन को प्रभावित करने वाले कारक: ऐतिहासिक, प्राकृतिक, सामाजिक-सांस्कृतिक और आर्थिक; तीर्थयात्राओं के लिए प्रेरक कारक: अवकाश, मनोरंजन; पर्यटन के तत्व, एक उद्योग के रूप में पर्यटन। पर्यटन का भूगोल: - इसकी स्थानिक आत्मीयता; भौतिक, सांस्कृतिक, ऐतिहासिक और आर्थिक क्षेत्र और स्थानीय आयाम।

इकाई – II

पर्यटन प्रकार: सांस्कृतिक, पर्यावरण - जातीय-तटीय और साहसिक पर्यटन, राष्ट्रीय और अंतर्राष्ट्रीय पर्यटन; वैश्वीकरण और पर्यटन। भारतीय पर्यटन: पर्यटकों के आकर्षण के क्षेत्रीय आयाम; पर्यटन का विकास, पर्यटन को बढ़ावा देना; अवसंरचना और समर्थन प्रणाली - आवास और पूरक आवास; अन्य सुविधाएं और सुख साधन।

इकाई – III

टूरिज्म सर्किट-शॉर्ट एंड लॉन्ग - एजेंसीज और इंटरमेडिसियल्स - इंडियन होटल इंडस्ट्री; पर्यटन के प्रभाव: शारीरिक, आर्थिक और सामाजिक और अवधारणात्मक सकारात्मक और नकारात्मक प्रभाव; पर्यावरण कानून और पर्यटन - वर्तमान रुझान, स्थानिक पैटर्न और हालिया परिवर्तन; विदेशी पूंजी की भूमिका और पर्यटन पर वैश्वीकरण का प्रभाव; विदेशी पूंजी की भूमिका और COVID का वैश्विक पर्यटन पर प्रभाव।

सन्दर्भः–

- राजेश सुक्ला: पर्यटन भूगोल, नेहा पब्लिशर्स एंड डिस्ट्रिब्यूटर्स

GEOM-405: Practical: Geographic Information System Applications

Max Marks: 100 **Min. Marks: 40**
Credits: 06 **Duration: 05 hr**

Learning Outcomes: On successful completion of the Course the student will be able to-

1. Demonstrate proficiency in integrated geographical knowledge using geographical research tools including Spatial Statistics, Cartography, Remote Sensing, GIS and GPS.
2. Build competency and academic excellence for competition exams.
3. Hone & developemployability related skills for holistic development.

Major Concepts in GIS

- Introduction to GIS Basic Concepts: Definition and History, Components of GIS, Recent Trends and Applications of GIS.
- Data Structure and Formats, Spatial Data Models – Raster and Vector, Data Base, Linkage between Spatial and Non-Spatial Data, Data Inputting in GIS,
- Generating Thematic Map from the Toposheet.
- Advanced GIS: Clip, Buffer, Proximity Analysis, Overlay Analysis, Network Analysis, Interpolation, DEM, TIN.

Major GIS Practicals using ArcGIS and QGIS Softwares

- Digital Database Creation – Point Features, Line Features, Polygon Features
- Data Collection and Integration, Non-Spatial Data Attachment Working with Tables
- Editing and Digitization
- Clipping, Intersection, Union and Buffering Techniques.
- Spatial and Attribute Query and Analysis
- Interpolation Techniques
- GPS And GIS Integrations Output Preparation (Transfer of GPS Point Location)
- LU/LC Using Supervised and Unsupervised Classification
- Map Making

Reference Books:

- Aronoff, S - Geographic Information Systems: A Management Perspective, DDL Publication Ottawa, 1989.
- Burrough, P.A - Principles of Geographic information Systems for Land Resource Assessment Oxford University Press, New York, 1986.
- Fraser and Taylor, D.R - Geographic information Systems, Pergamon Press, Oxford, 1991.
- Maquire, D. J, Goodchild, M.F and Rhind, D.W (eds.) - Geographic information Systems:Principles and Application, Taylor & Francis, Washington, 1991.
- Monmonier, Mark S - Computer-assisted Cartography, Prentice-Hall, Englewood Cliff, New Jersey, 1982.
- Peuquet, D.J and Marble, D.F - Introductory Reading in Geographic Information Systems. Taylor & Francis, Washington, 1990.
- Star, J and Estes, J - Geographic Information Systems: An Introduction, PrenticeHall, Englewood Cliff, New Jersey, 1994.

Pedagogy : Student may be asked to refer to any one of the grid square of the SOI topographic maps and vector objects can be listed. They can convert this vector data into raster data and they may be asked to observe the difference in the vector and raster data. Student may be taken to any mapping organization and they can note the traditional and modern and computer-assisted cartography.

GEOM – 405: प्रायोगिक भूगोल : भौगोलिक सूचना तत्रं

अधिकतम अंक :100 न्यूनतम अंक : 40

श्रेय 06 अवधि : 5 घंटे

Written Test and Lab Work	**50 Marks**
Record Work	**30 Marks**
Viva	**20 Marks**

जीआईएस में प्रमुख अवधारणाएं

- जीआईएस मूल अवधारणाओं का परिचय: परिभाषा और इतिहास, जीआईएस के घटक, जीआईएस के हालिया रुझान और अनुप्रयोग।
- डेटा संरचना और प्रारूप, स्थानिक डेटा मॉडल - रेखापुंज और वेक्टर, डेटा बेस, स्थानिक और गैर-स्थानिक डेटा के बीच संबंध, जीआईएस में डेटा इनपुट,
- टोपोशीट से विषयगत मानचित्र बनाना।
- उन्नत जीआईएस: क्लिप, बफर, निकटता विश्लेषण, ओवरले विश्लेषण, नेटवर्क विश्लेषण, इंटरपोलेशन, डीईएम, टिन।

आर्कजीआईएस और क्यूजीआईएस सॉफ्टवेयर्स का उपयोग करते हुए प्रमुख जीआईएस प्रैक्टिकल

- डिजिटल डाटाबेस क्रिएशन - प्वाइंट फीचर्स, लाइन फीचर्स, पॉलीगॉन फीचर्स
- डेटा संग्रह और एकीकरण, गैर-स्थानिक डेटा अनुलग्नक तालिकाओं के साथ कार्य करना
- संपादन और डिजिटलीकरण
- कतरन, प्रतिच्छेदन, संघ और बफरिंग तकनीक।
- स्थानिक और विशेषता क्वेरी और विश्लेषण
- प्रक्षेप तकनीक
- जीपीएस और जीआईएस इंटीग्रेशन आउटपुट तैयारी (जीपीएस प्वाइंट लोकेशन का ट्रांसफर)
- पर्यवेक्षित और अनुपयोगी वर्गीकरण का उपयोग करते हुए LU/LC
- नक्शा बनाना
