

DEPARTMENT OF GEOGRAPHY

School of Earth Science



SYLLABUS

(Revised)

M.A/M.Sc. Geography

(Effective from academic session 2024-25)

H.N.B. Garhwal University, Srinagar (Garhwal)

(A Central University)

MASTER'S PROGRAM DETAILS

Programme Objectives (POs): The 'Master of Arts in Geography' programme offered by the department, "aims at empowering students with knowledge and skills for spatial thinking and analysis, to navigate real world problems, and contribute to society in a meaningful way".

Programme Specific Outcomes (PSOs): At the end of the two-year (four-semester) course, students will have comprehensive knowledge about contemporary issues in geography, both physical and human.

Programme Structure:

The Master's programme is a two-year course divided into four-semesters. A student is required to complete 72 credits for the completion of course and the award of degree.

Part	Year	Semester	Semester
Part – I	First	Semester I	Semester II
Part – II	Second	Semester III	Semester IV

Semester	Core Course			Elective Courses /Open Elective Courses			Total No of Papers	Credits (per paper)	Grand Total Credits
	No. of Papers	Credits (per paper)	Total Credits	No. of Papers	Credits (per paper)	Total Credits			
I	6	3	18	0	0	0	6	3	18
II	6	3	18	0	0	0	6	3	18
III	4	3	12	2	3	06	6	3	18
IV	3	3	09	3	3	09	6	3	18
Total	18	3	54	06	03	18	18	3	72

SYLLABUS

M.A./M.Sc. GEOGRAPHY (Effective from 2024-2025 Session)

Ist Semester

Course Code	Paper No.	Title of Course/ Paper	Marks		
			Internal Assessment	End Semester Exam	Credit
SOES/GEOG/C001	I	Geographic Thought	40	60	03
SOES/GEOG/C002	II	Geomorphology	40	60	03
SOES/GEOG/C003	III	Resources Geography	40	60	03
SOES/GEOG/C004	IV	Geography of India	40	60	03
SOES/GEOG/C005	V	Locational Aspects (Map) India and World	40	60	03
SOES/GEOG/C006	VI	Practical I-Surveying	40	60	03
		Total	240	360	18

IInd Semester

Course Code	Paper No.	Title of Course/ Paper	Marks		
			Internal Assessment	End Semester Exam	Credit
SOES/GEOG/C007	VII	Geography of Himalaya	40	60	03
SOES/GEOG/C008	VIII	Climatology	40	60	03
SOES/GEOG/C009	IX	Geo-Environmental Studies	40	60	03
SOES/GEOG/C010	X	Remote Sensing and GIS	40	60	03
SOES/GEOG/C011	XI	Population Geography	40	60	03
SOES/GEOG/C012	XII	Practical II- Quantitative Techniques	40	60	03
		Total	240	360	18

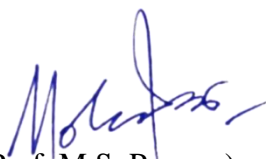
IIIrd Semester

Course Code	Paper No.	Title of Course/ Paper	Marks		
			Internal Assessment	End Semester Exam	Credit
SOES/GEOG/C013	XIII	Research Techniques and Methodology	40	60	03
SOES/GEOG/C014	XIV	Hazards and Disaster Management	40	60	03
SOES/GEOG/C015	XV	Oceanography	40	60	03
SOES/GEOG/C016	XVI	Practical III- Remote Sensing, GIS and Field	40	60	03

		Study Tour			
		Total	160	240	12
Elective Courses					
		Any Two of the following elective (optional) courses			
SOES/GEOG/E001	XVII (a)	Climate Change and Sustainability	40	60	03
SOES/GEOG/E002	XVII (b)	Urban Geography	40	60	03
SOES/GEOG/E003	XVII (c)	Regional Planning and Development	40	60	03
SOES/GEOG/E004	XVII (d)	Medical Geography	40	60	03
SOES/GEOG/E005	XVII (e)	Cultural Geography	40	60	03
SOES/GEOG/E006	XVII (f)	Political Geography	40	60	03
		Total	80	120	06

IVth Semester

Course Code	Paper No.	Title of Course/ Paper	Marks		
			Internal Assessment	End Semester Exam	Credit
SOES/GEOG/C018	XVIII	Geography of Uttarakhand	40	60	03
SOES/GEOG/C019	XIX	Dissertation	40	60	03
SOES/GEOG/C020	XX	Practical IV - Cartography	40	60	03
		Total	120	180	09
Elective Coerces					
		Any Three of the following elective (optional) Papers			
SOES/GEOG/E007	XXI (a)	Agriculture Geography	40	60	03
SOES/GEOG/E008	XXI (b)	Bio-Geography	40	60	03
SOES/GEOG/E009	XXI (c)	Geography of Tourism	40	60	03
SOES/GEOG/E010	XXI (d)	Glacial Geomorphology	40	60	03
SOES/GEOG/E011	XXI (e)	Rural Geography	40	60	03
SOES/GEOG/E012	XXI (f)	Social Geography	40	60	03



(Prof. M.S. Panwar)

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M.A./M.Sc. of Geography 02 Years Semester

Guidelines for continuous internal assessment for post graduate courses of Geography Semester System:

Only those candidates who had offered Geography as one of the optional subjects in B.A./ B.Sc. III level may be admitted to M.A./M.Sc. Geography course. No private is allowed. Candidate must pass in theory and practical examinations separately.

Effective from the Ist semester admission for the academic session 2024-25 and onward.

1. Two sessional tests of continuous internal assessment 40%
 2. End semester (Terminal) Exams 60%
- Continuous internal assessment may include objective tests, written test, snap test, assignment, paper presentation, participation in class discussion and laboratory work etc.; suitable to the course paper presentation should be given priority and presentation must be one of the important methods of internal assessment.
 - Weightage of 2 marks for attendance component out of 40 marks for continuous assessment shall be available only to those students who attend 75% and more of classroom theory and practical.
 - (i) 76% attendance and above up to 85% : 2 marks
 - (ii) Above 85% : 3 marks
 - There will be six core (compulsory) papers including practical in I semester and same pattern in II semester.
 - There will be three core (compulsory) including practical and three electives (out of the offered elective papers) in III semester and same pattern in IV semester.
 - For all courses/paper core and elective the credits will be three for each. End semester exam will be 02 hours' duration.
 - One qualifying self-study course of minimum 03 credits is mandatory but not to be including in the grades. Maximum 03 self-study courses are allowed. This study can be taken up in II or IV semester. This paper should be inter-disciplinary in nature.

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MASTER of ARTS in GEOGRAPHY

Semester I

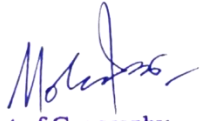
Master of Arts in Geography			
Semester- I			
Paper - 1: GEOGRAPHIC THOUGHT			
Paper Code: SOES/GEOG/C001			
Credit: 03			
Total Marks: 100	Internal Assessment: 40	End Semester: 60	Contact Hour per Week: 03
Course Objectives:			
<ol style="list-style-type: none"> 1. The course aims to present an overview of the evolution of the discipline. 2. The course will introduce students to the multi-paradigm nature of geography as a discipline, key debates and emergence of modern geography 3. It aims to enable students to contextualize the conceptual traditions within geography along with the major philosophical influences. 			
Course Outcomes:			
After the end of course, students will be able to visualize the basic theme, ideas, dichotomies and approaches of geographic knowledge with relation to historical juncture, varying schools and era of their emergence. Students will be able to critically evaluate the nature of geography as spatial science with changing space and time			
Note: The paper consists of three units. Two questions will be set from each unit. The candidate will be required to attempt three questions in all. Answer should be precise. All questions carry equal marks.			
UNIT I			
Contribution of Greeks and Romans with special reference to Ptolemy and Strabo, German School of Geography – Humboldt, Ritter and Ratzel French School of Geography – Blache & Brunches American School of Geography – Sauer, Huntington and Bowman British School of Geography – Mackinder, Herbertson and Peter Hagett			
UNIT II			
Models and Paradigm, System Theory ' Dualism between: (i) Physical vs Human Geography (ii) Regional vs Systematic Geography; Quantitative Revolution, Post Mordernism.			

UNIT III

Positivism; Pragmatism; Functionalism; Idealism; Existentialism; Behavioural; Radical and Humanistic Geography; Future of Geography; Contribution of Indian Geographers; Development of Geography in Uttarakhand; Geographers of Uttarakhand.

Book Recommended:

1. Haggett, P.: Geography – A Modern Synthesis.
2. Chorley, R.J. and Hagget, P.: Model in Geography.
3. Johnston, R.J. and Claval, P.: Geography since the Second World War. An International Survey, Crown Halm, Sydney, 1984.
4. Johnston, R.J.: The Future of Geography, Methuen, London, 1988.
5. Adhkarl, S.: Fundamentals of Geographical Thought, Chaitanya Publishing House, Allahabad, 2006.
6. Marcus, D.: Post-Structuralism in Geography, The Diabolical Arts of Spatial Sciences Edinburgh University Press, Edinburgh, 1999.
7. Galle, G. and Wilmot, C. (ed.): Geography in America at the Down of the 21st Century, Oxford University Press, Oxford and New York 2003.
8. Hubbard, P., at al: Space, Theory and Contemporary Human Geography, Continuum, London, 2002.
9. Majid Hussain: Geography Thought (2007).
10. Dixit, R.D.: Geographical Thought: A Contextual History of Geographical Ideas, Prentice Hall of India, New Delhi, 2001.

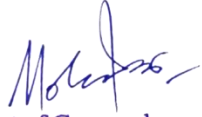

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Master of Arts in Geography			
Semester- I			
Paper - II: GEOMORPHOLOGY			
Paper Code: SOES/GEOG/C002			
Credit: 03			
Total Marks: 100	Internal Assessment: 40	End Semester: 60	Contact Hour per Week: 03
Course Objectives:			
1. The purpose of the course is to introduce students the evolution, structure and configuration, landforms and, land forming process.			
Course Outcomes: After the completion of the course, the students will have the ability to:			
I. Understand the components of the earth system – atmosphere, lithosphere and hydrosphere;			
II. Appreciate and understand various features of the spheres with local, regional and global examples;			
III. Understand the Earth Movements and development of landforms.			
Note: The paper consists of four units. Two questions will be set from each unit. The candidate will be required to attempt four questions in all. Answer should be precise. All questions carry equal marks.			
UNIT I			
Fundamental concepts of Geomorphology; Methods and Approaches of landforms study; Theories of landscape development by Gilbert, Davis, Penk and Hack and morphogenetic region.			
UNIT II			
Plate tectonics; Mountain building; Isostasy; Tectonic Geomorphology; Theories of slope development by Young and King; Peneplain and pediplains; Geological structure and rocks.			
UNIT III			
Geomorphic process – River, glacier, underground water: Mass movement and resultant landforms; Morphometry of drainage basin; Profile of equilibrium rejuvenation and polycyclic landscape. (With special reference to Uttarakhand Himalaya)			
UNIT IV			
Applied Geomorphology engineering works; Anthropogenic process and landscape planning; Regional Geomorphology of Uttarakhand -Great, Lesser and Siwalik Himalaya.			

Books Recommended:

1. Bloom, A.L.: Geomorphology, Prentice Hall, New Jersey USA, 1979.
2. Goudie, A.: Geomorphological Techniques, George Allen and Unwin, London, 1981.
3. Washborn, A.L.: Periglacial Process and Environment, Edward Arnold, London, 1973.
4. Young, A.: Slopes, Oliver and Boyd, London, 1972.

5. King, C.A.M.: Techniques in Geomorphology, Edward Arnold, London, 1968.
6. Embleton, C. and Theories, J.: Processes in Geomorphology, Arnold Hienman, London, 1979.
7. Phodes, D.D. and William, G.P.: Adjustment of Fluvial Process, George Allen and Unwin, Boston, 1982.
8. Tricart, L. and Callam: Introduction to climate Geomorpholgy, Longman, London, 1972.
9. Derbyshrine, E. Gregory K.J. and Halls, J.R.: Geomorphological Processes, Butterworths, London, 1979.
10. Gregory, K.J. and Willing, D.E.: Drainage Basin Processes and Forms, Edward Arnold, London, 1973.
11. Gregory, K.J. and Willing, D.E.: Man and Environment Processes, Butter Worths, London, 1981.
12. Singh Savindra: Bhu- Akriti vigyan in Hindi



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Master of Arts in Geography			
Semester- I			
Paper – III: GEOGRAPHY OF RESOURCES			
Paper Code: SOES/GEOG/E003			
Credit: 03			
Total Marks: 100	Internal Assessment: 40	End Semester: 60	Contact Hour per Week: 03
Course Objectives:			
1. Awareness about resource availability, accessibility, utilization, its use and misuse. 2. Spatial distribution of natural resources. 3. Resource management and governance.			
Course Outcomes:			
After end of this course student will be able to understand and comprehends types, classification, distribution of resources and path of sustainable resource management.			
Note: The paper consists of four units. Two questions will be set from each unit. The candidate will be required to attempt four questions in all. Answer should be precise. All questions carry equal marks.			
UNIT I			
Definition and concept of Resources, Classification of Resources; Definition scope and development of Resources Geography; Concept of Resource geography.			
UNIT II			
Land, water, mineral, energy and biotic resources - distribution, use-misuse and conservation global and Indian scenario			
UNIT III			
Resources depletion and emerging issues - Desertification, deforestation, loss of bio-diversity, acid rain, energy crises, water scarcity, environmental problems.			
UNIT IV			
Conservation of resources; Sustainable development; Natural resource data management system (NRDMS); Community base Natural Resource Management (CBNRM)			

Books Recommended:

1. Holechek. J.L. et al: Natural Resources- Ecology, Economics and Policy, Prentice Hall, New Jersey, 2000.
2. Kates, R.W. and Burton, I. (ed): Geography, Resources and Environment, Vol, II, University of Chicago Press, Chicago, 1986.
3. Mc Laren, D.J. and Sklnnet, B.J. (ed): Resources and World Development, Jogn Wiley and Sons, New York, 1986.
4. Newson, M.D.: Land, Water and Development, River Basin System and Management, Routledge, London, 1991.
5. Owen, S. and Owen, P.L.: Environment Resources and Conservation, Cambridge University Press, New York, 1991.

6. Rees, J.: Natural Resources, Allocation, Economics and Policy, Methuen, London, 1988.
7. Simmons, I.G.: Earth, Air and Water Resources and Environment in Late 20th Century, Edward, Arnold, 1991.
8. Thomas, Alan, et al: Environmental Policies and NGO Influence, Routledge, London, 1985.
9. Mather, A.S. and Chapman, K.: Environmental Resources, Longman Scientific and Technical, London, 1995.
10. Harper, C.L.: Environment and Society Human Perspectives on Environment Issues, Prentice Hall, New Jersey.
11. Burton, I. and Kates, R.W. (ed): Readings in Resource Management and Conservation, 1965.
12. Allen, S.W. and Leonard, J.W.: Conserving Natural Resources, Mc Graw Hill, New York.
13. Smith, G.H. (ed): Conservation of Natural Resources, John Wiley, New York

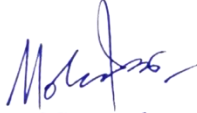

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Master of Arts in Geography			
Semester- I			
Paper - IV: GEOGRAPHY OF INDIA			
Paper Code: SOES/GEOG/C004			
Credit: 03			
Total Marks: 100	Internal Assessment: 40	End Semester: 60	Contact Hour per Week: 03
Course Objectives:			
<ol style="list-style-type: none"> 1. To provide a comprehensive understanding of the geographical and socio-economic aspects of India 2. To analyze the interconnectedness between geography, human development, and economic development: 3. To evaluate the effectiveness of planning strategies and policies in addressing socio-economic challenges 			
Course Outcomes:			
<ol style="list-style-type: none"> 1. Comprehensive Understanding of India & Geography and Socio-economic Dynamics 2. Upon completing the course, students will be well-equipped to understand and engage with the 3. complex geographical issues of India, contributing to informed decision-making and sustainable development in the region. 			
Note: The paper consists of four units. Two questions will be set from each unit. The candidate will be required to attempt four questions in all. Answer should be precise. All questions carry equal marks.			
UNIT I			
Indian federalism; India unity in diversity (view points from Social Geography); Physiography; Drainage (volume); Climate mechanism of Indian monsoon (recent theories); Soil and natural vegetation			
UNIT II			
Human development index and its components; Growth distribution and density of population; Trends of Urbanization; Special distribution pattern of settlement (rural & urban).			
UNIT III			
Agro-climate region; Rainbow revolution, Industrial Complex and Industrial regions; Major river valley projects; Energy crises and food security.			
UNIT IV			
Growing importance of ports; Last five years plans; Experience of Rural Planning; Integrated R.D.P; Multi level planning; Community participation & governance and planning contemporary issues; Economic reforms – Multinationals and liberalization.			

Books Recommended:

1. Mishra, R.P. et al: Regional Development Planning in India, Vikas Publishers, New Delhi, 1978.


2. Mishra, R.P. (ed): Local Level Planning and Development, Sterling Publication New Delhi.
3. Diamond, D. (ed): Regional Disparities and Regional Policies, Program Press, Oxford, 1982.
4. Subrahmayam, K.N. (ed): Economic Development and Planning in India, Pub. New Delhi, 1985.
5. Sundaram, K.V., Mishra, R.P. and Rao, V.L.S.P.: Spatial Planning for a Tribal Region, inst. Of Development Studies, Mysore, 1971.
6. Regional Science Association: Regional Planning in India, IIT, Kharagpur, 1995.
7. Prasad, K.V.: Planning at the Grass Roots, Sterling Pub, Pvt. Ltd, New Delhi.
8. Chand, Mahesh and Puri, V.K.: Regional Planning in India, Allied, New Delhi, 1983.
9. Chandna, R.C.: Regional Planning: A comprehensive Text, Kalyani Publication, New Delhi.
10. Tiwari, R.C.: Geography of India, Prayag Pushtak Bhawan, Allahabad, 2008.
11. Tiwari, R.C.: Bharat ka Bhoogal, Prayag Pushtak Bhawan, Allahabad, 2008.
12. Mishra, R.P.: Regional Planning and National Development, Vikas Publications, New Delhi.


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Master of Arts in Geography			
Semester- I			
Paper - V: LOCATIONAL ASPECTS (MAP) INDIA AND WORLD			
Paper Code: SOES/GEOG/C005			
Credit: 03			
Total Marks: 100	Internal Assessment: 40	End Semester: 60	Contact Hour per Week: 03
Course Objectives:			
<p>Objective: The paper is designed to acquaint the students with the importance of location as one of the important aspects of geographical studies. The aim is to promote awareness among students about Atlas.</p> <p>An outline map of India and world will be prepared by the students and they will have to mark locations on it. 20 locations will be inserted on it and one mark for each correct location.</p> <p>Distribution of Marks:</p> <p>(A) World- (i) Preparing the outline Maps -10 (ii) Inserting the given Locations - 20</p> <p>(B) India - (i) Preparing the outline Maps -10 (ii) Inserting the given Locations - 20</p>			
UNIT I			
Physical –Mountain and Range, Major Rivers, Deserts, Glacier and lakes, Straits, Island, Earthquake Zones, Volcanic, Ocean Currents, Major Water fall,			
UNIT II			
Cultural – Country, State and Capitals, Important Cities, Tribal Areas, Planning Region and major Cultural Realms			
UNIT III			
Economic – Agricultural region/belts, Industrial region and complexes, Power plants, Atomic Plants, Important ports and Mineral Resources, Fisheries banks; rail way line, Roads; Sea roles			
UNIT IV			
Others – Bio-diversity, National Parks, Wildlife sanctuary, Biomes, Grassland, Vegetation Types, Contemporary issues, UN and Headquarters of International agencies			

Books Recommended:

- India & the World – NATMO, School Atlas, Oxford-Atlas & Time UK Print World Atlas and Uttarakhand Atlas.


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Master of Arts in Geography			
Semester- I			
Paper - VI: PRACTICAL I - SURVEYING			
Paper Code: SOES/GEOG/C006			
Credit: 03			
Total Marks: 100	Internal Assessment: 40	End Semester: 60	Contact Hour per Week: 03
Course Objectives:			
1. The course aims to equip the students with principles and procedures of surveying techniques.			
Note: The syllabi for practical is divided into two section: section A and B. A is related to field work. Candidate will have to attempt two exercise of surveying from section A of 2 hours' duration and two exercises of section B of 1-hour duration.			
Distribution of Marks			
(i)	Surveying (Two exercise)	30	
(ii)	Survey Camp	20	
(iii)	Sessional Record (min)	05	
(iv)	Viva-voce	05	
Section A: Field Work:			
UNIT I			
Plane Table Survey: Radiation Method. Triangulation and determination of heights and contouring with clinometers.			
UNIT II			
Prismatic Compass Survey: Closes Traverse error adjustment by Bowditch method and trigonometry.			
UNIT III			
Dumpy level survey: Contouring and Profile Drawing.			
UNIT IV			
Total Station Survey			
Section B: Laboratory Work			
(i)	GPS: Handling usages, GPS based data acquisition, GPS system and application.		
(ii)	Altimeter (Hi-tech with precision): Handling and use.		
(iii)	Interpretation of Indian daily weather maps through the study of thermal & cloud condition and pressure system. Weather forecasting method.		

Note: Examination: Departmental Committee Appointed by HoD for University Campuses. External Examiners will be Appointed by the University for Affiliated Colleges


Note:

1. In all 20 exercise from both the parts A and B shall constitute the sessional record covering all sub section.

2. Candidate shall attend (compulsory) field training (survey camp) of at least seven days' duration in a suitable area handling different instruments. They shall prepare minimum 05 exercise (survey camp) belonging to the original field survey.
3. Survey camp work will be evaluated at the time of the end semester practical exam.

Recommended Books

1. Anson R. and Ormelling F. J., 1994: International Cartographic Association: Basic Cartographic Vol. Pregmen Press.
2. Gupta K.K. and Tyagi, V. C., 1992: Working with Map, Survey of India, DST, New Delhi.
3. Khan Jabir, Hasan, T & Shamshad, Scales, Academic Publications, 2014.
4. Mishra R.P. and Ramesh, A., 1989: Fundamentals of Cartography, Concept, New Delhi.
5. Monkhouse F. J. and Wilkinson H. R., 1973: Maps and Diagrams, Methuen, London.
6. Rhind D. W. and Taylor D. R. F., (eds.), 1989: Cartography: Past, Present and Future, Elsevier, International Cartographic Association.
7. Robinson A. H., 2009: Elements of Cartography, John Wiley and Sons, New York.
8. Sharma J. P., 2010: Prayogic Bhugol, Rastogi Publishers, Meerut.
9. Singh R. L. and Singh R. P. B., 1999: Elements of Practical Geography, Kalyani Publishers.
10. Sarkar, A. (2015) Practical geography: A systematic approach. Orient Black Swan Private Ltd., New Delhi.
11. Singh R L & Rana P B Singh (1991) Prayogtmak Bhugolke MoolTatva, Kalyani Publishers, New Delhi.
12. Sharma, J P (2010) Prayogtmak Bhugolki Rooprekha, Rastogi Publications, Meerut.
13. Singh, R L & Dutta, P K (2012) Prayogtmak Bhugol, Central Book Depot, Allahabad.

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MASTER of ARTS in GEOGRAPHY

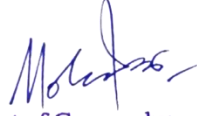
Semester II

Master of Arts in Geography			
Semester- II			
Paper - VII: GEOGRAPHY OF THE HIMALAYA			
Paper Code: SOES/GEOG/C007			
Credit: 03			
Total Marks: 100	Internal Assessment: 40	End Semester: 60	Contact Hour per Week: 03
Course Objectives:			
1. Understanding physiological characteristics, ecology of river basins of Himalaya.			
2. Mapping vulnerability, hazards and Disaster Risk Reduction (DRR) in Himalaya.			
3. Evaluation of livelihood and Sustainability in Himalaya.			
Course Outcomes:			
After end of this course student will be able to understand and comprehends the physical and human environment in relation of fragile Himalayan environment.			
Note: The paper consists of four units. Two questions will be set from each unit. The candidate will be required to attempt four questions in all. Answer should be precise. All questions carry equal marks.			
UNIT I			
Geo-physical identity, Origin of Himalaya and its structure; Himalaya as regional entity; Geo-political issues; Cultural Appraisal; Himalayan people and tribes; Geo-sensitivity of Himalaya; Future of Himalaya.			
UNIT II			
Physiographic Structure; Landforms, Drainage System; Himalaya as water tower; Glaciers; Lakes; Passes; Climate; Natural Vegetation; Natural Hazards; Geo-Ecological Problems of Himalaya created by anthropogenic activities.			
UNIT III			
Demography and Economy – Distribution, density and growth of population; Migration; Urbanization; Rural and Urban Population; Agriculture; Industry; Animal Husbandry; Horticulture; Tourism; Developing problems of Himalaya; Power projects.			
UNIT IV			
Geographical account of Western, Central and Eastern Himalaya; Regional analysis of Kashmir Valley; Ladakh; Lahul and Spiti; Kathmandu Valley and Teesta Valley; Mountain Development Planning and Policy.			

Books Recommende:

1. Lal, J.S. &Moddie: The Himalaya – Aspect of Change A.D. (ed).

2. Bose, S.C.: Land and people of the Himalaya.
3. Singh, O.P. (ed): The Himalaya – Nature, Man and Culture.
4. Joshi, S.C. and Others: Kumaun Himalaya.
5. Nityanand and Kumar, K.: The Holy Himalaya – Geographical Interpretation of Garhwal Himalaya.
6. Kharkwal, S.C.: Uttarakhandm – Physio-Culture Complex.
7. Maithani, D.D.: Central Himalaya: Ecology, Environmental Resources & Development.
8. Rawat, M.S.S. (ed): Central Himalaya- Environment Development Vol. I & II.
9. Valdiya, K.S. (ed): Kumaun: Land and People (1988).
10. Bhatt, H.P. & Bhatt Sangita: Environmental Dimensions of Rural Settlements in the Himalaya in 1993.

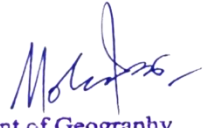

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Semester- II			
Paper - VIII: CLIMATOLOGY			
Paper Code: SOES/GEOG/C008			
Credit: 03			
Total Marks: 100	Internal Assessment: 40	End Semester: 60	Contact Hour per Week: 03
Course Objectives:			
<ol style="list-style-type: none"> 1. The objective of the course is to provide understanding of weather phenomena, 2. dynamics of global climates and generation of climatic information and their application. 			
Course Objectives:			
Students will learn the atmosphere, climate, weather, ocean and related processes which affect human day to day life. Additionally, student will learn regarding the emerging environmental problems such as global warming and climate change.			
Note: The paper consists of four units. Two questions will be set from each unit. The candidate will be required to attempt four questions in all. Answer should be precise. All questions carry equal marks.			
UNIT I			
Meaning, scope and development of Climatology; Atmospheric Equilibrium; Adiabatic Temperature Change; Jet Stream; El-Nino; La-Nina; Walker Circulation; Precipitation and Humidity.			
UNIT II			
Air Masses – Origin, growth, classification and distribution; Horizontal and vertical motion of winds; Fronts and Fronts Genesis; Cyclones and Anti- cyclones; Temperate and Tropical Cyclones			
UNIT III			
Climate Classification of Koppen and Thornthwalte; Major climate types; Weather analysis – weather forecasting- methods, types and accuracy; Weather and human behavior; Weather modification; Atmospheric hazards- Cloud Bursts.			
UNIT IV			
Climatic Changes – Definition and detection; Tree rings; Solar variability; Human impact on global climate; Global Warming; Artificial climate and acid precipitation.			

Books Recommended:

1. Chorley, R.J. and Barry, R.G.: Atmosphere, Weather and Climate Methuen & Co. Ltd. London, 1995.
2. Critchfield, H.J.: General Climatology, Prentice Hall of India, New Delhi, 2002.
3. Hidoore, J.J.: Global Environment Change, Prentice Hall, New Jersey, 1996.
4. Lockwood, J.G.: World Climatology, Elbs and Edward Arnold (Pub.) Ltd., 1979.
5. Miller, A. et al: Elements of Meteorology, Merrill and Columbus.
6. Oliver, J.E. &Hiddore J.J.: Climatology: An Atmosphere Science, Pearson Education, India, 2003.

7. Thomson, R.D. and Perry, A.: Applied Climatology, Routledge, London and New York, 1997.
8. Trewartha, G.T.: An introduction to climate, McGraw Hill Series in Geography, 1954.
9. Lal, D.S.: Climatology, Sharda Pushtak Bhawan, Allahabad.
10. Singh, Savindra: Climatology, Prayag Pushtak Bhawan, Allahabad, 2005.
11. Lal, D.S.: Jalvayu Vigyan, Sharda Pushtak Bhawan, Allahabad.
12. Singh, Savindra: Jalvayu Vigyan, Prayag Pushtak Bhawan, Allahabad.


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Master of Arts in Geography			
Semester- II			
Paper - IX: GEO-ENVIRONMENTAL STUDIES			
Paper Code: SOES/GEOG/C009			
Credit: 03			
Total Marks: 100	Internal Assessment: 40	End Semester: 60	Contact Hour per Week: 03
Course Objectives:			
<ol style="list-style-type: none"> 1. To introduce students to the fundamental concepts and scope of Environmental Geography, including the various components and types of environments, ecological principles, and the dynamic relationship between humans and the environment. 2. To provide an in-depth understanding of ecosystems, including their structure, function, trophic dynamics, energy flow, stability, and productivity, to enable students to comprehend ecological processes and dynamics. 3. To explore the complexities of environmental degradation, pollution, and global environmental issues, along with the principles and strategies of environmental management, policy frameworks, and sustainable development initiatives. 			
Course Outcomes:			
<ol style="list-style-type: none"> 1. Students will be able to articulate the key concepts and principles of Environmental Geography, demonstrating a comprehensive understanding of the components and types of environments, ecological principles, and the dynamics of the man-environment relationship. 2. Students will develop the analytical skills necessary to evaluate ecosystem structures and functions, including trophic levels, food chains, energy flow, stability, and productivity, and apply this knowledge to assess ecosystem health and resilience. 3. Students will gain the ability to critically analyze environmental degradation, pollution, and global environmental challenges such as climate change, ozone depletion, and their impacts on ecosystems and human societies, and propose effective environmental management strategies and policies to address these issues. 			
Note: The paper consists of four units. Two questions will be set from each unit. The candidate will be required to attempt four questions in all. Answer should be precise. All questions carry equal marks.			
UNIT I			
Meaning and scope of Environmental Geography; Basic concept of Environmental Geography; Component and types of environment; Ecology; Principles, types and ecological succession; Man-environment relationship.			
UNIT II			
Ecosystem - Concept and components; Trophic levels; Food Chain and Food Webs; Energy flow in the ecosystem; Ecosystem stability, and productivity.			

UNIT III

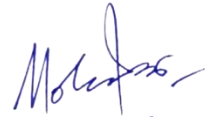
Environmental degradation; Environmental Pollution (Air, Water and Solid Waste); Environmental Problems- Global Warming, Ozone depletion and Green House effect; Acid rain and climate change.

UNIT IV

Environmental Management: Concepts, approaches and management strategies; Environmental dimension in planning and sustainable development; Limits to growth - Rio Summit, Kyoto Protocol; Environment impact assessment; National environment policy and programs.

Books Recommended:

1. Sing. L.R. et al.: Environmental Management, Allahabad Geographical Society, Allahabad.
2. National Academy of Sciences: Understanding Climate Changes, Washington, D.C.
3. Furley, P.A. and Neway, W.W.: Man and the Biosphere, Butterworth, London.
4. Arvil, R.: Man and Environment, Penguin.
5. Bennet, R.J. and Chorley, R.J.: Environmental System- Philosophy, Analysis and Control, Methuen, London.
6. Singh, Savindra: Environmental Geography, Prayag Pushtak Bhawan, Allahabad.
7. Detwler, T.R.: Man's impact on the Environment, McGraw Hill, New York.
8. Sing, Savindra: ParyavaranBhoogal, Prayag Pushtak Bhawan, Allahabad.
9. Odum, E.P.: Fundamentals of Ecology, W.B. Saunders Co. Philaelfia, 1971.
10. Mather, A.S. and Chapman, K.: Environmental Resources, Longman Group Ltd. U.K., 1995.

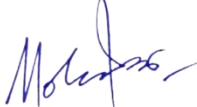

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Master of Arts in Geography			
Semester- II			
Paper - X: REMOTE SENSING AND GIS			
Paper Code: SOES/GEOG/C010			
Credit: 03			
Total Marks: 100	Internal Assessment: 40	End Semester: 60	Contact Hour per Week: 03
Course Objectives:			
1. To introduce to the students about the basic principles of Remote Sensing, to indicate the methods of visual and digital interpretations of satellite imageries and to outline the application of remote sensing.			
Course Outcomes: After the completion of the course, the students will have the ability to:			
1. Appreciate the basic principles and components of Remote sensing;			
2. comprehend the basics of aerial photogrammetry and image processing for spatial analysis;			
3. Analyze the basic spatial resources for land use and Land Cover for meaningful interpretation.			
Note: The paper consists of four units. Two questions will be set from each unit. The candidate will be required to attempt four questions in all. Answer should be precise. All questions carry equal marks.			
UNIT I			
Definition, process and stages of Remote Sensing; Energy sources and radiation; EMR; Energy interaction with atmosphere and earth surface principles of micro wave Remote Sensing. Types of R.S. Platforms; Satellites and sensor; Sensor resolution, Digital image and satellite imagery; Elements of visual image interpretation; Digital image processing techniques			
UNIT II			
Definition, history types; classification and planning mission of A.P.; Basic geometric characteristics- scale, height, overlap, mosaic, resolution, stereoscopic coverage; Fundamental concept of Photogrammetry, Orientation, relief displacement, stereoscopic, 3D viewing, Uses of A.P. in landforms mapping and urban planning.			
UNIT III			
Definition, concept, scope and components of GIS; Data and Information; Geo-referencing and rectification; Data imputing methods and GPS. Data base, type of data; Data models in GIS; Data integration; Geospatial data analysis.			
UNIT IV			
Computer Cartography and mapping in digital image; Internal GIS, Web GIS, DTM, Recent trends of GIS, Emerging branches of GIS Science. Application of Remote Sensing and GIS in watershed management, weather information, disaster forecast and geo-information.			

Books Recommended:

1. Sabine, F.F.: Remote Sensing- Principles & Interpretation.
2. Lillesand, R.M.: Remote Sensing and Image Interpretation Kiefer R.W.


3. Chauniyal, D.D.: Remote Sensing and GIS (Hindi).
4. Jensen, J.R.: Introductory Digital Image Processing- A Remote Sensing Perspective.
5. Demer, M.N.: Fundamentals of Geographic Information System.
6. Martin, D.S.: Geographic Information System- Socio-Economic Applications.
7. Aronoff, S.: Principles of Geographical Information Systems for Land Resource Assessment.
8. Aronoff, S.: Geographic Information System- A Management Perspective.
9. Bontham Carter, G.F.: Geographic Information System for Geoscientists.
10. Jones, C.: Geographical Information System & Computer Cartography.
11. Ayery, T.E.: Introduction to Aerial Photographs.
12. Pratt, W.K.: Digital Image Processing, John Wiley & Sons Now York (1995).

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Master of Arts in Geography			
Semester- II			
Paper - XI: POPULATION GEOGRAPHY			
Paper Code: SOES/GEOG/C011			
Credit: 03			
Total Marks: 100	Internal Assessment: 40	End Semester: 60	Contact Hour per Week: 03
Course Objectives:			
<ol style="list-style-type: none"> 1. This course intends to orient the students towards interdisciplinary perspectives on population issues at different geographical scales. 2. It will acquaint the candidate to appreciate the role of spatial perspectives towards showcasing population changes and its impact on the economy, society, environment and politics at diverse geographical spheres. 			
Course Outcomes:			
At the end of this course, it is expected that students will enable to describe and evaluate spatial dimension of population dynamics			
Note: The paper consists of four units. Two questions will be set from each unit. The candidate will be required to attempt four questions in all. Answer should be precise. All questions carry equal marks.			
UNIT I			
Nature, scope and significance of Population Geography and its relation with demography, Relevance of Population studies in Geography; Nature and sources of population data and maps; Methods and approaches to population study; Recent development in Population Geography; Population and development planning.			
UNIT II			
Population growth distribution and density; World patterns and their determinants; Concepts of under, over and optimum Population; Population composition - Age, sex, literacy, occupational structure and gender issues; Population growth in the context of manpower and employment.			
UNIT III			
Population Dynamics; Measurement of fertility and mortality; Migration- causes, types, national and International pattern; Push and Pull factors; Mobility Transition; Rural and Urban dimensions; Globalization and labor mobility; Demographic regions of India; attributes, structure and characteristics			
UNIT IV			
Concept of Human Resource and Management; Population resource regions; Population planning and policies in under-developed and developed countries with special reference to Japan and India, Human development index; National Population Policy.			

Books Recommended:

1. Chandna, R.C.: A Geography of Population; Concept, Determinants and Patterns, Kalyani Pub. New Delhi, 2000.
2. Clarke, John I.: Population Ecology, Pergamon Press, Oxford 1973.
3. Crook, Nigael: Principles of Population and Development, Pergamon Press New York 1997,
4. Garnle,R.B.J.; Geography of Population, Longman, London 1970.
5. Srinivasan,K.&Vlassoff M. ; Population Development Nexus in India: Challenges for the Millennium, Tata Mc Graw Hill, New Delhi,2001.
6. Srinivasan, k.: Demographic Techniques and Applications, Sage Pub. New Delhi, 1998.
7. Sundaram, K.V. and Nangia , Sudesh (ed.): Population Geography, Heritage Pub. Delhi, 1986.
8. Woods, R.; Population Analysis in Geography, London 1979.
9. Zelinsky, Wilbur: A Prologue to Population Geography, Prentice Hall, 16966.
10. Clarke, J.I.; Population Geograhly, Pergamon. Oxford, 1972.

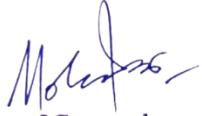

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Master of Arts in Geography									
Semester- II									
Paper - XII: PRACTICAL-II QUANTITATIVE TECHNIQUES									
Paper Code: SOES/GEOG/C012									
Credit: 03									
Total Marks: 100	Internal Assessment: 40	End Semester: 60	Contact Hour per Week: 03						
Course Objectives:									
<ol style="list-style-type: none"> 1. This course studies the concept of statistics and its geographical applications. 2. It lays the foundation of quantitative techniques to the students for spatial analysis. 3. It will enhance the ability to interpret data statistically. 									
<p>The syllabus for practical is related to laboratory work on quantitative techniques and mapping. Eight questions will be set selecting at least two questions from each unit. Candidate will have to attempt four questions selecting one question from each unit. It will be of three-hour duration.</p> <p>Distribution of Marks:</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 80%;">Laboratory Work</td> <td style="width: 20%; text-align: right;">-40</td> </tr> <tr> <td>Sessional Record</td> <td style="text-align: right;">-10</td> </tr> <tr> <td>Viva Voce</td> <td style="text-align: right;">-10</td> </tr> </table>				Laboratory Work	-40	Sessional Record	-10	Viva Voce	-10
Laboratory Work	-40								
Sessional Record	-10								
Viva Voce	-10								
UNIT I									
Types of spatial data- Line, area and point; Levels of their measurement- Nominal, ordinal, interval and ratio; Diagrammatic representation of data circle, spheres, block piling; Erograph (Crop cycle and activity pattern); Climatograph.									
UNIT II									
Nearest Neighbour analysis (NNA); Gini's Co-efficient; Rank size rule; Location quotient; Lorenz curve; Compositing the indices of Nodal accessibility.									
UNIT III									
Elements of Maps: Generalization, Symbolization and classification; Techniques of Mapping-dot, choropleth and isopleths, Stilgenbauer's & Sten de Geer's method; Choropleth –simple and asymmetric stepped statistical surface, class less choropleth, errors and their elimination.									
UNIT IV									
Correlation by spearman's and Karl Pearson's method; Scatter diagram; Simple linear regression analysis; Construction of regression line; Plotting of absolute and relative location; Explanation of residuals plotted on the maps. Introduction to basics of open sources statistical software (hands on training)									

Books Recommended:

1. Barrett, E.C. & Curtis, L.F. : Introduction to Environmental Remote Sensing.
2. Dickinson, G.O.: Maps and aerial Photographs.
3. Smith, H.T.V.: Aerial photographs and their Applications.

4. Deekshatula, B.L. & Rajani, Y.S.: Remote Sensing.
5. Davis, P.: Data Description and Presentation.
6. Garnett, A.: Geographical Interpretation of Topographical Maps.
7. Mishra, R.P. & Ramesh A.: Fundamentals of Cartography.
8. Raja Moonis: Source of Socio-Economic Data.
9. Sharma, J.P. : Practical Geography (Hindi)
10. Singh, R.L. : Practical Geography (English/Hindi)
11. Lillesand, T.M. and Keifer, R.W.: Remote Sensing and Image Interpretation, John Wiley and Sons, New York, 1999.
12. Jenson, J.R.: Introduction to Digital Image Processing, Prentice Hall, Englewood Cliffs, NJ.
13. Hord, R.M.: Digital Image Processing, of Remotely Sensed Data, Academic Press, New York, 1989.
14. Pratt, W.K.: Digital Image Processing, John Wiley and Sons, New York, 1995.
15. Robinson, A.H. et al : Elements of cartography, John Wiley and Sons, New York.


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MASTER of ARTS in GEOGRAPHY


Semester III

Master of Arts in Geography			
Semester- III			
Paper - XIII: RESEARCH TECHNIQUES AND METHODOLOGY			
Paper Code: SOES/GEOG/C013			
Credit: 03			
Total Marks: 100	Internal Assessment: 40	End Semester: 60	Contact Hour per Week: 03
Course Objectives:			
1. To develop, enable and familiarize the students with different research approaches and aptitudes of geography.			
2. To explain and understand the research design, database, methodology, sampling framework, hypotheses testing with relevant tools and techniques.			
Note: The paper consists of four units. Two questions will be set from each unit. The candidate will be required to attempt four questions in all. Answer should be precise. All questions carry equal marks.			
UNIT I			
Concept & significance of research in Geography; Nature, objective and basis of research; Types of research, approaches and methods; Research problem selection; Techniques and research process			
UNIT II			
Research Design-meaning, need, features and types Sampling: methods and steps; Design of spatial sampling; Survey and experiments; Data collection methods - primary and secondary data, schedule, questionnaire and observation. Introduction to advance open sources statistical software (hands on training)			
UNIT III			
Hypothesis: meaning, characteristic importance and formulation; Testing of Hypothesis parametric (standard) and non-parametric; Review of literature; Bibliography and Case Study.			
UNIT IV			
Application of Remote Sensing and GIS in research; Arrangements and analysis of data and map; Quantitative and qualitative interpretations; writing of research report / paper and dissertation; Farming of pilot and projects.			

Books Recommended:

1. Bhatt H. P. and Bansal S.C. (2012): Research methodology (in Hindi), Meenakshi Prakashan, Meerut.
2. Ahuja, R. (2001) : Research Methods, Rwaat methodology, Excel Books, New Delhi.
3. Bhattacharya, D.K. (2005) : Research Methodology, Excel Books, New Delhi.

4. Blackburn, J. And Holland, J. (eds.) (1998) : Who Changes? Institutionalizing participation in Development IT Publications, London.
5. Blaxter, L.; Hughes, C. and Tight, M.(1996) : How to Research. Open University Press, Buckingham.
6. Crang, Mike 1999. Cultural Geography. Routledge, London.
7. Daniels, P., Bradshaw, M., et al. (2000) : Human Geography: Issue for the 21st Century. Prentice Hall, London, and Perason Publishers., Singapore, Indian reprint, 2003.
8. Denzin, N.K. and Lincoln, Y.S., (eds.) (2000): handbook of Qualitative Research thousand Oaks C.A. Sage Publications.
9. Dikshit, R.D. (2003): The Art and Science Of Georaphy: Integrated Readings. Prentice-Hall of India, New Delhi.
10. Dorling, D. And Simpson, L.(eds.) (1999): Statistics in Society . Edward Arnold, London.
11. Fisher, P. And Unwin, D., (eds.) (2002): Virtual Reality in Geography, Taylor and Francis, London.
12. Flowerdew, R. and Martin, D. (eds.) (1997): Methods in Human Geography. A Guide for Students Doing a Research Project. Longman, Harlow.
13. Hay, I. (ed.) (2000): Qualitative research Methods in Human Geography. Oxford University Press, New York.
14. Henn, M., Mark W., and Nick F. (2006): A short introduction to Social Research, Vistaar Publications, New Delhi.
15. Eyles J. And Smith D.M. (1988): Qualitative Methods in Human Geography, Polity Press, Dales Brewering Cambridge.
16. Kitchin, R. And Tate, N., (2001): Conducting Research into Human geography, Theory, Methodology and Practice. Prentice-hall, London.
17. Har Prasad: Research Methodology and Techniques in Geography, Rawat Publications, Jaipur.

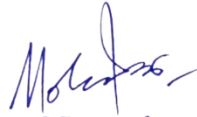

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Master of Arts in Geography			
Semester- III			
Paper - XIV: HAZARD AND DISASTER MANAGEMENT			
Paper Code: SOES/GEOG/C014			
Credit: 03			
Total Marks: 100	Internal Assessment: 40	End Semester: 60	Contact Hour per Week: 03
Course Objectives:			
<ol style="list-style-type: none"> 1. The course begins with a discussion on alternative concepts of disasters, calamity, risk and hazard. 2. The course then proceeds to aggregate the models used to benchmark disasters 3. In the final it de-myths that disasters are natural and lays bare the role of vulnerability in creating disasters and what needs to be managed. 			
Course Outcomes:			
After end of this lesson, it is expected that students will prepare project on given topic varying from natural calamities to disaster impact region.			
Note: The paper consists of four units. Two questions will be set from each unit. The candidate will be required to attempt four questions in all. Answer should be precise. All questions carry equal marks.			
UNIT I			
Meaning and concept of Hazards and Disaster; Type of Natural and manmade Hazards; Elements of disasters; Magnitude determinants and scale.			
UNIT II			
Natural Hazards – Typology; Regional dimension of Hazards; Occurrence and trends; Methods of identifying hazard prone regions; Major terrestrial disaster- seismic disasters, volcanic disaster, landslides and tsunamic disasters; Reasons of increasing frequency of disasters.			
UNIT III			
Disaster Management: Concept, stage of disaster management; Pre-disaster stage-disaster preparedness, disaster research, disaster prediction and disaster warning; Methods and levels of preparedness; Disaster mitigation and disaster prevention; Post-disaster stage-rescue and relief work; Remedial measures; Long term disaster planning.			
UNIT IV			
Different types of disaster and hazard prone areas in India; Disaster management policies and approaches; Major disasters in India and their management; Response to disasters, government, non-government; Community and individual; Mitigation and Management; Appraisal of government programs/institution of Disaster Management; Significance of Remote Sensing and GIS in planning to the context of Disaster Management.			

Books Recommended:

1. Tianch, L.: Landslide Hazard Mapping and Management in China, ICIMOD. Nepal, 1996
2. Valdiya, K.S.: Environmental Geography, Tata McGraw Hill Co. Ltd. New Delhi, 1987

3. Zereba, Q. And Mance V.: Landslides and their Control, Elsevier Amsterdam, 1969.
4. White, G.F.: (ed.): Natural Hards: Local, National, Global, Oxford University Press, London, 1974.
5. Gupta, H.K.: Dams and Earthquakes, Elsevier, Amsterdam, 1976.
6. Burton, I. Et al: The Environment as Hazards, Spinger Verlay, New York, 1950.
7. Bolt, B.A. et ai. (ed.): Geological Hazards, Springer Verlay, New York, 1950.
8. Enbliton, C.: Natural Hazards and Global Change I.T.C., Journal, 1989.
9. Singh, Savindra: Environmental Geography (Eng. /Hindi).
10. Petak, W.J. & Atkinson, A.D.: Natural Hazards Risk Assessment and Public Policy, Springer-Verlay, New York, 1982.

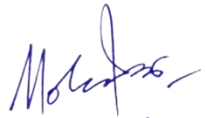

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Master of Arts in Geography			
Semester- III			
Paper – XV: OCEANOGRAPHY			
Paper Code: SOES/GEOG/E015			
Credit: 03			
Total Marks: 100	Internal Assessment: 40	End Semester: 60	Contact Hour per Week: 03
Course Objectives:			
<ol style="list-style-type: none"> 1. To enable the learner to understand the basics of oceanography. 2. To enable the learner to explain the configuration of the ocean bottom 3. To enable the learner to discuss ocean water and its unique ecosystem 4. To equip the learner to appreciate and elaborate the problems and policies for sustainable oceans 			
Course Outcomes:			
After the end of syllabus students will be able to examine and compare the different ocean and water bodies with their distinct oceanic bottom relief, circulation system and marine deposit.			
Note: The paper consists of four units. Two questions will be set from each unit. The candidate will be required to attempt four questions in all. Answer should be precise. All questions carry equal marks.			
UNIT I			
Meaning, Objective, scope and significance of oceanography, submarine topography, configuration of pacific, Indian and Atlantic Ocean floors, Sea floor spreading.			
UNIT II			
Ocean temperature, Salinity, Gyres and Currents, tides			
UNIT III			
Ocean deposit, Coral reefs, Marine resource: mineral, biotic and energy; marine pollution and ocean dumping.			
UNIT IV			
Zone of the seas, Global warming and transgression of seas. Tsunami and El-nino, Seal level change, Contemporary issues.			

Books Recommended:

1. Davis, R. J.A., 1986 Oceanography-An Introduction of the Marine Environment, Win C. Brown, Iowa.
2. Griffith. J.F., 1976 Applied climatology, oxford press, New York.
3. Huntington , E. and S.S. Visher, 1922 Climatic Changes, Yale University Press.
4. Hussain T. and Tahir, M. 2003 Oceanography, Jawahar, New York.
5. Kings, C.A.M., 1963 An Introduction to Oceanography, McGraw, New York.

6. Lamb.H.H., 1972 Climate :Present ,Past and Future, Methuen London.
7. Stahler, A. N. Stahler A.M., 1997, Geography and man's Environment, John Wiley and Sons, New York.
8. Thurnman, H.V., 1978, Introduction to oceanography, Charles E. Merrill Pub. Co., London.
9. Weyl, P.K. 1970, Oceanography an Introduction of the Marine Environment, John Wiley and Sons Ltd., London.


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Master of Arts in Geography			
Semester- III			
Paper - XVI: PRACTICAL III - Remote Sensing, GIS and Field Study Tour			
Paper Code: SOES/GEOG/C016			
Credit: 03			
Total Marks: 100	Internal Assessment: 40	End Semester: 60	Contact Hour per Week: 03
Course Objectives:			
1. The course aims at to equip students with principles and procedures of conduct field survey based on remote sensing data assisted by GIS.			
Note: The Syllabi for practical is divided into two sections, Section- ‘A’ is related to laboratory work and section ‘B’ is related to field work (Geographical Tour). The Laboratory work is divided into four units. Eight questions will be set selecting at least two question from each unit. The division of marks in practical is given below:			
Note: Examination Departmental Committee Appointed by HoD for University Campuses. External Examiners will be Appointed by the University for Affiliated Colleges.			
Laboratory Work	:	M.M. 20	
Field Work	:	M.M. 30	
Sessional Records	:	M.M. 05	
Viva-voce	:	M.M. 05	
SECTION A – Laboratory Work			
UNIT I			
Basic of Computer; Concept of maps; Coordinates System; Projection (WGS84 and Everest); Types of files, Export/Import file; Layer Stacking of Multispectral Imagery.			
UNIT II			
Concept of Geo-referencing (maps to image, image to image), sub-setting with the help of AOI layer; Mosaicing; Radiometric and Geometric errors and correction; Image classification.			
UNIT III			
Spatial data integration; Digitization (Point, Line, Polygon); Non-Spatial Data Integration; Editing of Spatial and Non-Spatial data; Building Topology.			
UNIT IV			
Basic of GPS and Computer Cartography & Mapping.			
SECTION B – Field Work			
(i)	The field study is compulsory for all students, those who will not take part, will not be given any mark for this. The field study work is designed to acquaint the students that, “Geography is an observational science” and field work is one of the important methodologies in geographical studies.		
(ii)	The students are to be sensitized about pre-field work preparation, conduct of field work, post field work and report writing.		
(iii)	Filed study tour to provide traverses across and macro regions of the country especially problem areas, areas in news and needs will be arranged of about two-week duration.		

- Student will be trained in field work collection of data, mapping, sketching and collection of socio-economic data etc. using observational and interview method etc.
- (iv) The report will involve statement of objective, selection of area (reasons), method of field study data collection, analysis of collection data/information etc. in which minimum 5 maps and diagrams and 50 pages of write up is necessary.
- (v) FIELD STUDY GUIDE (TEACHER): - Will submit a precise report (1 or 2 pages) of field study work with the list of students present/attended the field study to the HOD concern.

Note: Examination: Departmental Committee Appointed by HoD for University Campuses. External Examiners will be Appointed by the University for Affiliated Colleges

Books Recommended:

1. Jenson, J.R.: Introduction to Digital Image Processing, Prentice Hall, Englewood Cliffs, NJ.
2. Pratt, W.K.: Digital Image Processing, John Wiley & Sons, New York, 1995.
3. Hord, R.M.: Digital Image Processing of Remotely sensed data, Academic Press, New York, 1989.
4. Nag, P.: Thematic cartography and Remote Sensing Concept, Publishing House, New Delhi.
5. Blackwell, B.: Statistics in Geography, Basil Blackwell Ltd., 1988.
6. Sinha, P.K. & Sinha, P.: Computer Fundamentals, 3rd Ed. B.P.B. Publishing.
7. Lo, C.P.: Applied Remote Sensing, Longman Scientific and Technical, Harlow, ESSEX.
8. PEUQUET, D.J. & Marble, D.F.: Introductory Readings in Geographic Information Systems, Taylor & Francis, Washington, 1990.
9. Spurr, R.: Photogrammetry and Photo Interpretation, The Rolland Press, Co. London, 1960.
10. Cole, J.P. and King, C.A.M.: Quantitative Geography, John Wiley, London, 1968.


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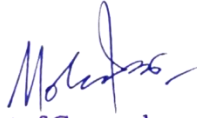
Master of Arts in Geography			
Semester- III			
Paper – XVII (a): CLIMATE CHANGE AND SUSTAIBILITY			
Paper Code: SOES/GEOG/E001			
Credit: 03			
Total Marks: 100	Internal Assessment: 40	End Semester: 60	Contact Hour per Week: 03
Course Objectives:			
To introduce the students with the basics of climate change and to develop the skills of palaeo-climatic reconstructions.			
Course Outcomes:			
After the completion of the course, the students will have the ability to:			
1. understand the basic principles of climate changes and factors responsible for the same;			
2. identify different proxies for paleoclimatic reconstruction in different environment;			
3. will have a comprehensive understanding of the climate change policy at national and international level.			
Note: The paper consists of four units. Two questions will be set from each unit. The candidate will be required to attempt four questions in all. Answer should be precise. All questions carry equal marks.			
UNIT I			
Introduction to climate change studies: its relevance in the present time. Definition, nature and scope. Difference between climatic variability and change. Present and palaeo-climates, normal climate and climatic anomalies. Schools of climate change.			
UNIT II			
Causes of climatic changes, Milankovitch cycle, terrestrial causes; volcanism, land and sea distribution, mountain emergence, tropical forests, cow dungs, role of greenhouse gases and humans, Geological time scale, ice ages, record of past 1000 years.			
UNIT III			
proxies of palaeo-climatic reconstructions: geomorphological; glacial facies, fluvial facies, geochemical analysis, dendrochronology analysis, lichenometric analysis, Ice core analysis and archaeological analysis for climatic reconstructions.			
UNIT IV			
Measurement of various climate indices, degree day, aridity index, Global warming and Greenhouse gases policy issue, History of IPCC and UNFCCC, The climate change convention, National and local government responses, Adaptive response and mitigation activity			

Books Recommended:

1. Barry, R. G. and Chorley, R. J. 2003: Atmosphere, weather and climate, Routledge, 8th edition. London: Methuen.
2. Huddart, D. and Stott, T. 2010: Earth environments past, present and future, Wiley Blackwell, 1st edition, West Sussex.

3. Shroder, J.F. (edited) 2005: Himalaya to the sea geology, geomorphology and the Quaternary, Taylor & Francis, London.
4. Anderson, G.D.; Maasch, K.A.; Sandweiss, D.H. (edited) 2007: Climate Change and cultural dynamics, a global perspective on Mid-Holocene Transition, Academic Press, London.
5. Walker, Mike 2005: Quaternary Dating Methods, John Wiley & Sons, West Sussex.
Last, W.M. and Smol, J.P. (edited) 2002: Tracking Environmental change using lake sediment vol I, Kluwer Academic Publishing, New York.
6. Bennet, M.R. and Glasser, N.F. 2009: Glacial geology ice sheets and landforms, Wiley Blackwell, West Sussex.
7. IPCC Assessment Reports (2001, 2004, 2007, 2020)
8. Climate Change- An Indian Perspective by S.K.Das , Foundation books


Journals: Quaternary International, Quaternary International Review, Journal of Quaternary Science, Quaternary, Climate of the Past, Nature Geoscience


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Master of Arts in Geography			
Semester- III			
Paper – XVII(b): URBAN GEOGRAPHY			
Paper Code: SOES/GEOG/E002			
Credit: 03			
Total Marks: 100	Internal Assessment: 40	End Semester: 60	Contact Hour per Week: 03
Course Objectives:			
<ol style="list-style-type: none"> 1. To understand the meaning, scope, and various approaches of Urban Geography, including its changing paradigms over time. 2. To explore the development of Urban Geography in India, tracing its historical evolution and contemporary trends. 3. To analyze theories of urban origin, urbanization cycles, and global and Indian trends in urbanization from both historical and spatial perspectives. 			
Course Outcomes:			
<ol style="list-style-type: none"> 1. Identify and explain the changing paradigms within Urban Geography, illustrating how theoretical frameworks have evolved over time. 2. Evaluate the significance of Urban Geography in the context of India, recognizing its unique challenges and contributions to the discipline & global landscape. 			
Note: The paper consists of four units. Two questions will be set from each unit. The candidate will be required to attempt four questions in all. Answer should be precise. All questions carry equal marks.			
UNIT I			
Meaning, scope and approaches of Urban Geography, Changing paradigms of Urban Geography; Development of Urban Geography in India; Theories of urban origin: early Urban Hearths; Urbanization cycle; Trends of urbanization-World and India, historical and spatial perspective.			
UNIT II			
Urban morphology; Land use models and city growth-concentric zone; Urban economic base; Sector and multiple nuclei models; Structure and characteristics of Central Business District, Functional Classification; Nelson – steigenga-webb and double index method; Rank size rule and applicability.			
UNIT III			
Centrality and hierarchy of towns; Central Place theory of Chrystalher, Concept of City Region, Rural- Urban Fringe and its delimitation; Satellite Towns. suburbs conurbation; Urban problems; Urban poverty, slums, urban renewal and sprawl, solid waste.			
UNIT IV			
National urban policy and urban landuse planning; Concept of Garden City and New Town; Master Plans: A case study of Nainital and Dehradun; Planned cities – Jaipur; Chandigarh and New Tehri; Urban development planning in India – Policies programs and implication; Delhi & NCA; Globalization and urban planning.			

Books Recommended:

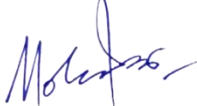
1. Singh, L.S. and Goledge, R.G. : Cities, Space and Behaviour: Elements of Urban Geography, Prentice Hall, New Delhi.
2. Mishra, H.N. (ed.): Urban Geography, Heritage.
3. Northam, R.M. : Urban Geography, John Wiley, New York.
4. Short, R.J.: An Introduction to Urban Geography, Routledge and Kegan Paul, London, 1984.
5. Johnston, R.J.: City and Society, Hutchinson, London.
6. Herbert, D.T.: Urban Geography: A Social Perspective, David and Charles Newton And Abbot, 1977.
7. Johnston, J.H.: Urban Geography: An Introductory Analysis, Pergamon Press, London, 1972.
8. Singh, R.L.: Urban Geography in Development Countries, National Geographical Society of India, Varanasi.
9. Berry, B.J.L. and Harton, F.F.: Geographic Perspectives on Urban System, Prentice Hall, Englewood Cliffs, New Jersey, 1970.
10. Ramchandran, R.: Urbanization and Urban System of India, Oxford, New Delhi, 1993.
11. Knox, P.L. and Taylor, P.J.: World Cities in a World System, Cambridge University Press, UK, 1995.
12. Harvey, D.: Social Justice and the City, Arnold, 1973.

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Master of Arts in Geography			
Semester- III			
Paper – XVII(c): REGIONAL PLANNING AND DEVELOPMENT			
Paper Code: SOES/GEOG/E003			
Credit: 03			
Total Marks: 100	Internal Assessment: 40	End Semester: 60	Contact Hour per Week: 03
Course Objectives:			
<ol style="list-style-type: none"> 1. To comprehend the concept, scope, and various types of planning, with a focus on Regional Planning and its significance. 2. To examine the historical development of Regional Planning globally and within the context of India, tracing its evolution and key milestones. 3. To analyze the planning regions of India, understanding their characteristics, needs, and challenges in the process of regional development. 			
Course Outcomes:			
<ol style="list-style-type: none"> 1. Demonstrate an understanding of the diverse types of planning, including Regional Planning, and their roles in addressing spatial challenges and fostering balanced development. 2. Evaluate the historical evolution of Regional Planning, recognizing its adaptation to changing socio-economic contexts and its implications for contemporary regional development strategies. 			
Note: The paper consists of four units. Two questions will be set from each unit. The candidate will be required to attempt four questions in all. Answer should be precise. All questions carry equal marks.			
UNIT I			
Concept, scope and types of Planning, Regional Planning-its meaning and needs; Approaches to Regional Planning ; Historical development of Regional Planning, Planning Regions of the India			
UNIT II			
Methodology and techniques of Regional Planning; Analytical techniques and procedural techniques; Principles of regionalization; Planning Processes- sectoral and spatial planning; Short-term and long-term perspective planning; Multi- regional, multi- level and decentralize planning.			
UNIT III			
Regional development strategies: Identification of planning region; Delineation and regions; Regional Planning strategies for backward areas, hill areas, tribal areas; Case studies of planning regions; Problems and prospects of Himalayan region.			
UNIT IV			
Spatial inequalities and regional imbalances in India; Problems of planning regions, indicators and level of regional development; Dilemma of development of problem areas, Regional Planning & development in India; Regional Planning and development strategies in the 21 st century; NITI Aayog			

Books Recommended:


1. Kuhlinski A.R. (ed.): Growth Poles and Growth Centers in Regional Planning, Mouton, The Hague, 1972.
2. Misra, R.P. et al: Regional Planning Concepts, Techniques and Policies, University of Mysore, Mysore, 1969.
3. Misra, R.P. et. At: Multi Level Planning, Heritage Publishers, Delhi, 1930.
4. Hall, Peter: Urban and Regional Planning, Penguin Books ins. New York.
5. Glasson John: Regional Planning, Hutchison, London.
6. Misra, R.P.: Development Issues of Our Time, Concepts Pub. Co., New Delhi.


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Master of Arts in Geography			
Semester- III			
Paper – XVII(d): MEDICAL GEOGRAPHY			
Paper Code: SOES/GEOG/E004			
Credit: 03			
Total Marks: 100	Internal Assessment: 40	End Semester: 60	Contact Hour per Week: 03
Course Objectives:			
<ol style="list-style-type: none"> 1. This course intends to reorient the students towards interdisciplinary perspectives on population health issues at different geographical scales. 2. It will acquaint the candidate to appreciate the role of spatial perspectives towards showcasing drivers of population health transition and major approaches used to explain it. 3. Students shall be able to understand the interplay of social environment, global environmental changes and its association with population health. 			
Course Outcomes:			
At the end of this course, students will demonstrate the ability to analyze, interpret, and draw conclusion about role of geography in origin and spread of major disease and also can assess the role of health care planning.			
Note: The paper consists of four units. Two questions will be set from each unit. The candidate will be required to attempt four questions in all. Answer should be precise. All questions carry equal marks.			
UNIT I			
Definition, scope and significance, of Medical Geography; Concept and its relation with other branches; Sequential development of Medical Geography.			
UNIT II			
Geographical factors affecting human health and diseases; Physical Factors: relief, climate, soil, vegetation and water; Social factors: population, density, literacy, social customs and poverty; Economic Factors: food security, nutrition, occupation structure, quality of life, income; Environmental Factors: urbanization, congestion, pollution and waste disposal.			
UNIT III			
Classification of diseases; Communicable and non- communicable; Endemic areas and pandemic areas; Occupational and deficiency diseases; Pattern of world distribution of major disease.			
UNIT IV			
Medical facilities, health centers and their problems, Medical facilities and population ratio; Government health schemes and programs in Uttarakhand; Case study of health status of any district of Uttarakhand.			

Suggested Readings:

1. Ashraf, S.W.A., Agriculture, Environment and Health, Concept Pub., New Delhi.
2. Banerjee, b and Hazra J., Geo-Ecology of Cholera in West Bengal, Unv of Culcutta, 1980.
3. Chatterjee Mera, Implementing Health Policy, Centre for Policy Research, New Delhi, 1988.
4. Cliff, A. & Stewart, L., (eds.), Atlas of Diseases distribution, Basil Blackwell, Oxford, 1989.
5. Hazra, J., (eds.), Health Care Planning in Developing Centres, Unv of Culcutta, 1997.
6. Learmonth, A.T.A., Patterns of Diseases and Hunger – A Study in Medical Geography, David & Charles, Victoria, 1978.
7. May, J.M., Ecology and Human Diseases, M.D. Pub. New York, 1959.
8. May, J.M., Studies in Disease Ecology, Hafner Pub. New York, 1961.
9. Mc. Glashan. N.D., Medical Geography, Methuen , London, 1972.
10. Misra, R.P., Medical Geography of India, National Book. Inst, India, New Delhi.
11. Rais, A and Learmonth, A.T.A., Geomorphic aspect of health and diseases in India.
12. Stamp, L.D., The Geography of Life and Death, Cornell Univ. Ithaca, 1964.


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Master of Arts in Geography			
Semester- III			
Paper – XVII (e): CULTURAL GEOGRAPHY			
Paper Code: SOES/GEOG/E005			
Credit: 03			
Total Marks: 100	Internal Assessment: 40	End Semester: 60	Contact Hour per Week: 03
Course Objectives:			
<ol style="list-style-type: none"> 1. To enhance the understanding of culture using key concepts of geography 2. To develop analytical skills to decode culture 3. To provide a critical understanding of the contemporary issues and the politics underlying it. 			
Course Outcomes:			
<p>Note: The paper consists of four units. Two questions will be set from each unit. The candidate will be required to attempt four questions in all. Answer should be precise. All questions carry equal marks.</p>			
UNIT I			
Concept of Culture and Culture as indicator of regional identity; The study of culture in Geography, nature, scope concept and significance of Cultural Geography, Development of Cultural Geography, Cultural Landscape; Cultural process, Cultural diffusion.			
UNIT II			
Origin and dispersal of man; Brief cultural history; Migration processes and cultural development –prehistoric primitive agrarian; Industrial revolution; Role of technological Change in cultural development; Cultural Hearths, Cultural Ecology.			
UNIT III			
Human Races – Origin and dispersal and related theories; Type and distribution; Major ethnic and racial and linguistic groups; Resource and culture–Resource extraction and conversion; Processes and elements of cultural transformation. Cultural segregation and assimilation; Cultural unity and distribution.			
UNIT IV			
Cultural realm – Monsoon Asian – African, Mediterranean, Western European, Anglo American, Latin American. Cultural Region –Indo-Aryan, Dravidian, Arabian Islamic, Anglo American costal, Brazilian, Mexican, English - European			

Book Recommended.

1. Spencer, J.E & thomses, W.I : Introducing cultural Geography .
2. Rostlund, F. Outline of cultural Geography.
3. Wegner, P.J & Mikesell, M.W [eds] Reading cultural Geography .


4. Frezire, D. E. : Race and cultural contact in the modern world.
5. Sopher, D.F. : Geography of Religions.
6. Carter G.F. : Man and the land a cultural Geography.
7. Dora, F.E. & Sommers L.M. [eds] Cultural Geography selected Readings.
8. Brood, J.M. : Geography of mankind .
9. Jain, J.K. & Vohara, D.M. : Sanskrit bhoogol (hindi).
10. Prasad, Gayatri: Sanskrit bhoogol (hindi) .


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Master of Arts in Geography			
Semester- III			
Paper – XVII (f): POLITICAL GEOGRAPHY			
Paper Code: SOES/GEOG/E006			
Credit: 03			
Total Marks: 100	Internal Assessment: 40	End Semester: 60	Contact Hour per Week: 03
Course Objectives:			
<ol style="list-style-type: none"> 1. The course will explain the historical evolution, of discipline of Political Geography. 2. It will help to understand about theoretical models related to geopolitics and geo-strategy. 3. It will provide the knowledge about political attributes that evolved with territorial structure and geographic influence like state, nation, boundary, elections, and frontier of world in general and India in particular. 			
Course Outcomes:			
Students will be able to critically examine the geographical bases of political studies. They will be able to evaluate and correlate different theories with contemporary geopolitical and geo-strategic issues.			
Note: The paper consists of four units. Two questions will be set from each unit. The candidate will be required to attempt four questions in all. Answer should be precise. All questions carry equal marks.			
UNIT I			
Meaning, scope, approaches of study and recent development in Political Geography, Concept of nation, state and spatial factors of state; Buffer state and core area; Concept of Geo-strategy Geostrategic ideas of Mackinder and Spykman.			
UNIT II			
Capital City, types of capitals. Boundaries and frontiers and their laws. Implication in the current geopolitical context; Geo Political significance of Indian Ocean NATO, SAARC. OPEC and ASEAN			
UNIT III			
World Geopolitics in changing perspective – colonization. decolonization, federalism, Strategic basics and military alliances; Nonaligned movement, Water disputes and terrorism, India’s position in World politics.			
UNIT IV			
Concept, nature and scope of Electoral Geography. Parliamentary constituencies in India and legislative allotment of Uttarakhand. National and regional political parties and voting behaviors in India and Uttarakhand; Changing political map of India. Role and future of regional parties in Uttarakhand. Recent controversies about re-delineation of constituencies in Uttarakhand and its effects.			

Books Recommended:

1. Dikshit,R.D.: Political Geography-a Contemporary Perspective, Tata MaGraw Hill Pub, New Delhi, 1996.
2. Dwivedi,R.L.: Political Geography, Chaitanya Publication Allahabad.
3. Dikshit R.D.: Political Geography- A Century of Progress, sage. New Delhi, 1999.
4. Short,J.R.: An Introduction to Political Geography, Routledge, London,1982.
5. Bergman,E.F.: Modern Political Geography, WMC Brown. CO Dobuque, Iowa, 1975.
6. Nijman,A.J.: The Geopolitics of Power and Conflict, Belhaven Press, 1993.
7. Jonston, R.J.: Geography and the state, Macmillan.
8. Norrls R.E.: and Haring, L.L.: Political Geography, Bell and Hawell, 1980.
9. Dikshit, R.D.: Rajnitik Bhoogol, Tata MaGraw Hill, New Delhi.
10. Dikshit,S.K.: Rajnitik Bhoogol, Vasundhara Prakashan Gorakhpur.
11. Sinha, Manorma: Political Geography, Horizen Publication, Allahabad.


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MASTER of ARTS in GEOGRAPHY

Semester IV

Master of Arts in Geography			
Semester- IV			
Paper - XVIII: GEOGRAPHY OF UTTRAKHAND			
Paper Code: SOES/GEOG/C018			
Credit: 03			
Total Marks: 100	Internal Assessment: 40	End Semester: 60	Contact Hour per Week: 03
Course Objectives:			
<ol style="list-style-type: none">1. To provide a comprehensive understanding of the geographical, geological, and environmental characteristics of Uttarakhand.2. To examine the socio-economic dynamics, including population distribution, occupational structure, and development initiatives within the state.3. To analyze the various hazards, disasters, and contemporary issues impacting Uttarakhand & socio-economic and environmental landscape, along with exploring success stories and conservation efforts.			
Course Outcomes:			
<ol style="list-style-type: none">1. Students will be able to demonstrate a deep understanding of Uttarakhand & geographical features, including its geo-political and geophysical settings, river systems, glaciers, climate, and natural vegetation.2. Students will acquire the analytical skills necessary to assess the socio-economic and environmental factors influencing population distribution, occupational structure, industrial development, and tourism within Uttarakhand.3. Students will be able to critically evaluate the challenges posed by hazards, disasters, and contemporary issues in Uttarakhand, and propose sustainable solutions for mitigating risks and promoting socio-economic and environmental resilience.			
Note: The paper consists of four units. Two questions will be set from each unit. The candidate will be required to attempt four questions in all. Answer should be precise. All questions carry equal marks.			
UNIT I			
Geo-political setting; Geophysical setting; Geological structure; River systems and river basins; Glaciers and Lakes.			
UNIT II			
Climate; Natural vegetation; Soil; Population distribution and demographic structure; Migration; Tribes.			
UNIT III			
Occupational structure; Agriculture, Animal husbandry, Industrial development; Horticulture;			

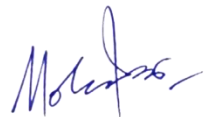
Hydropower projects; Tourism and Pilgrimage.

UNIT IV

Hazard and Disasters; Planning regions; Limitation of development; contemporary issues; Protected areas and Biosphere Reserves of Uttarakhand; Socio-economic and environment success stories.

Books Recommended:

1. Lal, J.S. & Moddie: The Himalaya- Aspect of Change A.D. (ed).
2. Bhatt, H.P. & Bhatt Sangeeta (1992): Environment- Yesterday, Today and Tomorrow, Galgotia, Publication, New Delhi.
3. Bose, S.C.: Land and people of the Himalaya.
4. Valdin, K.S. (ed): Kumaun- Land and People.
5. Singh, T.V. (ed): Mountain and Development.
6. Singh, O.P. (ed): The Himalay- Nature, Man & Culture.
7. Joshi, S.C. and Others: Kumaun Himalaya.
8. Nityanand & Kumar, K.: The Holy Himalaya- Geographical Interpretation of Garhwal Himalaya.
9. Kharakwal, S.C.: Uttarakhand Physico-culture Complex.
10. Maithani, D.D.: Central Himalaya: Ecology, Environmental Resources & Development.
11. Rawat, M.S.S. (ed): Central Himalaya- Environment Development Vol. I & II.
12. Valdia, K.S. (ed): Kumaun- Land and People (1988).
13. Maitani, D.D., Gayatri Prasad & Nautiyal Rajesh: Geography of Uttarakhand (2010), Sharda Pushtak Bhawan, Allahabad.
14. Misra, R.P.: Regional Planning and National Develoment, Vikas Publication, New Delhi.

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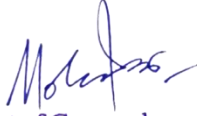
Master of Arts in Geography									
Semester- IV									
Paper - XIX: DISSERTATION									
Paper Code: SOES/GEOG/C019									
Credit: 03									
Total Marks: 100	Internal Assessment: 40	End Semester: 60	Contact Hour per Week: 03						
Course Objectives:									
<ol style="list-style-type: none"> 1. The paper is designed to acquaint the student with the importance of field work as one of the methodologies in Geography and especially in research work. 2. The students are to be sensitized about field work and data/information collection and writing of report. 									
Note:									
<p>Topic of dissertation will be assigned by HOD or Supervisor of the Dept. concerned. HOD will ensure no repetition of topic and area. Dissertation topic will be selected from any core/elective paper offered by the student in semester only. Area of study shall be the Himalaya region preferably.</p> <p>Distribution of marks</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 80%;">Periodical presentation (Internal Assessment) by Supervisor</td> <td style="text-align: right;">- 20 Marks</td> </tr> <tr> <td>Dissertation (evaluation by external examiner and supervisor jointly)</td> <td style="text-align: right;">- 60 Marks</td> </tr> <tr> <td>Power Point/ Viva-voce</td> <td style="text-align: right;">- 20 Marks</td> </tr> </table>				Periodical presentation (Internal Assessment) by Supervisor	- 20 Marks	Dissertation (evaluation by external examiner and supervisor jointly)	- 60 Marks	Power Point/ Viva-voce	- 20 Marks
Periodical presentation (Internal Assessment) by Supervisor	- 20 Marks								
Dissertation (evaluation by external examiner and supervisor jointly)	- 60 Marks								
Power Point/ Viva-voce	- 20 Marks								
<p>The project report will involve statement of objectives and scope of field investigation, methods of field work for studies of different scales (Macro, Meso and Micro), Preparation of a questionnaire/schedule, sampling techniques, collection, processing, presentation, analysis and interpretation of data/information. The candidates are required to write a project report on assigned problem involving field investigations.</p> <ol style="list-style-type: none"> 1. The candidates are required to submit their project reports one week before the commencement of examination to the concerned head of the department. 2. Assessment of report will be done by a Board of Examiners, consisting of external examiner and internal examiner. 3. Power point presentation is must, Separate external examiner will be appointed by the University, Supervisor of dissertation will act as an Internal examiner. In the absence of Supervisor, HOD will act as internal examiner. 									

Master of Arts in Geography									
Semester- IV									
Paper - XX: PRACTICAL IV - CARTOGRAPHY									
Paper Code: SOES/GEOG/C020									
Credit: 03									
Total Marks: 100	Internal Assessment: 40	End Semester: 60	Contact Hour per Week: 03						
Course Objectives:									
<ol style="list-style-type: none"> 1. Larger objective of this course is to develop the cartographic skill of students to depict and represent the geographic information on the map. 2. The course will create the ability of students to adapt various methods of relief, slope, projection and climatic analysis as well as thematic mapping. 									
<p>Note: The syllabus for practical is related to laboratory work on cartographic mapping. The practical exam will be of three hours' duration. The division of marks in practical shall be as given below.</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 80%;">Laboratory work (Cartography) -</td> <td style="text-align: right;">40</td> </tr> <tr> <td>Session Record Work -</td> <td style="text-align: right;">10</td> </tr> <tr> <td>Viva-voce -</td> <td style="text-align: right;">10</td> </tr> </table> <p>The laboratory work is divided into four units. Two exercises are to be set from each unit with internal choice and candidates will be required to attempt four exercises in all. The cartographic mapping work examination will be of three hours' duration in which exercises will be given on cartographic. All questions carry equal marks.</p>				Laboratory work (Cartography) -	40	Session Record Work -	10	Viva-voce -	10
Laboratory work (Cartography) -	40								
Session Record Work -	10								
Viva-voce -	10								
UNIT I									
Mercator's, Polyconic, International, Gnomonic (Equatorial Aspect), Gall's, Sterographic, Interrupted Mollwede's and Interrupted Sinusoidal.									
UNIT II									
Slope analysis by Wentworth's, Smith's, Henry-Raiz's and Robinson's Methods; Analysis of relief characteristics from contour; Profile - Transverse, Longitudinal, Serial, Superimposed, Projected and Composite.									
UNIT III									
Morphometric analysis – Area-height, Altimetric frequency and Hypsometric curve; Drainage density; Stream order, Elongation; Circularity and Bifurcation ratio; Geomorphic Mapping.									
UNIT IV									
Interpretation of Topographical maps – Land use and settlements; Topographical mapping; Geological Cross - Section Drawing.									

Note: Examination - Departmental Committee appointed by HoD for University Campuses.
External Examiners will be Appointed by the University for Affiliated Colleges.

Books Recommended:

1. Barrett, E.C. & Curtis, L.F.: Introduction to Environmental Remote Sensing.
2. Dickinson, G.O.: Maps and Areal Photographs.
3. Smith, H.T.V.: Aerial Photographs and their Applications.
4. Deekshatula, B.L. & Rajani, Y.S.: Remote Sensing.
5. Davis, P.: Data Description and Presentation.
6. Garnett, A.: Geographical Interpretation of Topographical Maps.
7. Mishra, R.P. & Ramesh, A.: Fundamentals of Cartography.
8. Raja, Moonis: Source of Socio-Economic Data.
9. Sharma, J.P.: Practical Geography (Hindi).

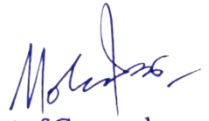

Head
Department of Geography
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Srinagar (Uttarakhand)

Master of Arts in Geography			
Semester- IV			
Paper – XXI(a): AGRICULTURAL GEOGRAPHY			
Paper Code: SOES/GEOG/E007			
Credit: 03			
Total Marks: 100	Internal Assessment: 40	End Semester: 60	Contact Hour per Week: 03
Course Objectives:			
<ol style="list-style-type: none"> 1. This course attempts to introduce the students to the nature and origin of agriculture and its regions. 2. The course examines the questions related to agricultural development and productivity in India. 3. It also critically evaluates the environmental consequences and emerging perspective and policies and interventions aimed at sustainable agriculture 			
Course Outcomes:			
At the end of this course students will be able to evaluate the agricultural dynamics includes land use, agricultural systems and major drawbacks in agricultural development.			
Note: The paper consists of four units. Two questions will be set from each unit. The candidate will be required to attempt four questions in all. Answer should be precise. All questions carry equal marks.			
UNIT I			
Nature, scope, significance and development of Agricultural Geography; Origin and dispersal of agriculture-major agricultural hearths; Diffusion of agricultural innovations; Recent trends in Agriculture.			
UNIT II			
Determinants of agriculture-physical, economic, Political, technological; socio-cultural, Land reforms; Measures of Agricultural Development: Productivity, Diversification and Specialization; Cropping Pattern; Cropping intensity; Crop combination regions, First and Second Green Revolution in India, Doubly green revolution			
UNIT III			
Theories of agricultural location: Von Thunen’s model and its modification-sinclair’s approach; concept of agricultural region; Whittlesey’s classification of agricultural regions; Agricultural typology; Mix cropping; Crop- rotation and eco-farming.			
UNIT IV			
Agricultural in Uttarakhand: Landuse and cropping pattern; New trends in Uttarakhand agriculture; Problems of Uttarakhand agriculture; Agricultural policy in Uttarakhand; Food security.			

Books Recommended:

1. Symons, L: Agricultural Geography, G. Bells, London, 1967.
2. Grigg, D.: An introduction to Agricultural Geography, Hutchinson Publication, London.

3. Grigg, D. B.: The Agriculture System of the World, Cambridge University press, New York.1974
4. Mannion, A. M.: Agriculture and Environment change, John Wiley, London, 1995.
5. Sauer, Carl: Agriculture Origin and Dispersals American Geographical society, New York.1952
6. Brown, L. R.: The Changing World Food Prospect: The Nineties and Beyond, World Watch Institute, Washington D.C.,1990.
7. Dyson, T.: Population and Food Global Trends and Future Prospect, Routledge, London, 1997.
8. Morgan, W. B.: Agriculture in the Third World - A Spatial analysis, West view Press, Boulder, 1997
9. Singh B.B.: Krishi Bhoogol, Gyanoday Prakashan, Gorakhpur.
10. Kumar, Pramila, Sharma, S. K.: Krishi Bhoogol, Hindi Granth Academy, Bhopal.
11. Tiwari R.C. and Singh, B.N.: Prayag Pustak Bhawan, Allahabad.



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Master of Arts in Geography			
Semester- IV			
Paper – XXI (b): BIO-GEOGRAPHY			
Paper Code: SOES/GEOG/E008			
Credit: 03			
Total Marks: 100	Internal Assessment: 40	End Semester: 60	Contact Hour per Week: 03
Course Objectives:			
<ol style="list-style-type: none"> 1. To develop the understanding about concepts associated with hydrosphere with context to oceanic relief, surfaces and their distribution on earth. 2. To provide the knowledge about physical principles, characteristics, oceanic deposits and processes governing the circulation and characteristics of water bodies on Earth. 			
Course Outcomes:			
After end of this course student will be able to understand symbiotic relation between man and environment and act accordingly to save ecology and regional ecosystem.			
Note: The paper consists of four units. Two questions will be set from each unit. The candidate will be required to attempt four questions in all. Answer should be precise. All questions carry equal marks.			
UNIT I			
Biography: Nature, scope, significance, approaches, history and recent development; Succession and ecological adaptation; Climax concept and ecosystem balance; Spatial dimension in Biogeography.			
UNIT II			
Historical evolution of plants and animals; Pattern and causes of plant and animal distribution; Factor influencing the distribution of life; Bio geographical regions and realm of the world; Biome and biomass.			
UNIT III			
Biodiversity and the source of novelty in life; Biodiversity: concept and significance; Biodiversity and global climate change; Palaeo-botanical and palaeo-climatological records of environmental change in India; Adaptations of plants and animals to the environment; Biogeography of Uttarakhand Himalaya.			
UNIT IV			
Bio-geographical information/data collection retrieval and application. Conservation of wildlife and forestry International and national efforts for conserving biological resources; Biosphere Reserves; Tropical Forest Action Plan.			

Books Recommended:

1. Bradshaw, M.J. : Earth and Living Planet, ELBS, London, 1979.
2. Cox, C.B. and Moore, P.D. : Biogeography: An Ecological and Evolutionary Approach, 5th Edition Blackwell, 1993.

3. Hoyt, J.B.: Man and the Earth, Prentice Hall, USA, 1992.
4. Huggett, R.J.: Fundamentals of Biogeography, Rout ledge, USA, 1998.
5. Bansereau, B.M.: Biogeography-An Ecological perspective, Round Press, New York, 1957.
6. Joy, T.: Biogeography: A study of Plants in the Ecosphere, Oliver & Boyd, Edinburgh, 1977.
7. Mani, M.S. (ed.): Biogeography of India, The Hague, 1975.
8. Martin, C.: Plant Geography, Methuen, London, 1975.
9. Mathur, H.S.: Essentials of Biogeography, Any Printers, Jaipur, 1998.



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Master of Arts in Geography			
Semester- VI			
Paper – XXI(c): GEOGRAPHY OF TOURISM			
Paper Code: SOES/GEOG/E009			
Credit: 03			
Total Marks: 100	Internal Assessment: 40	End Semester: 60	Contact Hour per Week: 03
Course Objectives:			
<ol style="list-style-type: none"> 1. To understand the relationship between Geography and Tourism, including the nature, scope, and significance of Tourism Geography. 2. To explore the concept of tourism and its various types, with a focus on understanding tourism patterns in India, particularly in the Himalayan region. 3. To analyze tourism promotion policies in India, examining their impact on tourism development and sustainability. 			
Course Outcomes			
<ol style="list-style-type: none"> 1. Demonstrate knowledge of the diverse types of tourism and their patterns in India, with particular emphasis on the Himalayan region, through the determination of tourism patterns. 2. Evaluate the significance of tourism promotion policies in India, understanding their role in shaping tourism development and strategies for sustainable tourism growth. 			
Note: The paper consists of four units. Two questions will be set from each unit. The candidate will be required to attempt four questions in all. Answer should be precise. All questions carry equal marks.			
UNIT I			
Geography and Tourism; Nature scope and significance of Tourism Geography; Concept of Tourism; Type of Tourism; Determination of Tourism patterns in India with special reference to Himalaya, Tourism promotion policies in India.			
UNIT II			
Tourism attractions in Uttarakhand - Geographical component; Eco-Tourism; Mass Tourism; Adventure Tourism; Pilgrimage.			
UNIT III			
Tourism Attraction: Switzerland, Singapore, Indonesia, Thailand, Malaysia, Arunachal Pradesh, Assam, Goa, Gujrat, Himanchal Pradesh. Tourism Organization: UNWTO, WTTC, ITDC.			
UNIT IV			
Impact of Tourism in Uttarakhand; economy, environment, society and culture; Tourism Infrastructure; Case Studies of Uttarakhand.			

Readings Recommended:

- 1) Bhardwaj, D.S. Chaudhary, M.: Contemporary issues in Tourism, Himalaya, Mumbai, 1997.

- 2) Bhatt ,Rajesh and Kumar, K., Uttarakhand Tourism Geography, Research India Press,New Delhi,2018.
- 3) Bhatla, A.K.: Tourism Development, Principles and Practices, Sterling, Bangalore, 1989.
- 4) Cris, Ryan: Recreationl Tourism, A Social Science Perspective, Routledge, London, 1991.
- 5) Garg, N.K.: Tourism and Economics Development, Avishkar, Jaipur, 1996.
- 6) Hall,C.M: and Page, S.J.: Tourism in South and South East Asia; Issues and Cases, Butterworth Heinemann, Oxford,2001.
- 7) Kaul, R.K.: Dynamics of Tourism and Recreation, Inter India, New Delhi, 1985.

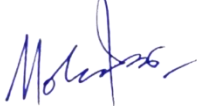

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Master of Arts in Geography			
Semester- IV			
Paper – XXI(d): GLACIAL GEOMORPHOLOGY			
Paper Code: SOES/GEOG/E010			
Credit: 03			
Total Marks: 100	Internal Assessment: 40	End Semester: 60	Contact Hour per Week: 03
Course Objectives:			
To actively engage the students in glacial studies to generate the capacity building as per the mandate of DST government of India, New Delhi so that more research is generated on Himalayan cryosphere.			
Course Outcomes: After the completion of the course, the students will have the ability to:			
<ol style="list-style-type: none"> 1. Appreciate the basic principles and components of glacial geomorphology and the importance of Himalayan cryosphere. 2. analyze glacier as an indicator of present and paleoclimatic changes change; 3. will have comprehensive understanding of the paleoclimate and glacial fluctuations in the Himalayan region. 			
Note: The paper consists of four units. Two questions will be set from each unit. The candidate will be required to attempt four questions in all. Answer should be precise. All questions carry equal marks.			
UNIT I			
Definition, scope and significance of Glacial Geomorphology; Approaches and relationship with Climatology, Geology and Glaciology; Identification system of glaciers; ice age, Climatic changes and glaciers.			
UNIT II			
Type of glaciers; Important glaciers of the world; Movement of glaciers; Glacial morphology; Glacial process; Erosion landforms and their development; Sediments transportation system.			
UNIT III			
Glacial depositional processes and landforms stratified and non-stratified forms of moraines; Glacio-fluvial and glacial lacustrine environment.			
UNIT IV			
Glaciations -concept of glacial cycle, peri-glacial process and land forms; Morphometry of glaciated basin, Techniques of glacial studies- Remote sensing, advanced surveying techniques and GPS etc. Inventory of Himalayan glaciers with special reference to Uttarakhand Glaciers. Problems of retreating glaciers; Case study of Gangotri Glacier, Contemporary issues.			

Books Recommended:

1. Bloom A. L.: Geomorphology Prentice Hall, New Jersey USA, 1979.
2. Goudie, A: Geomorphological Techniques, George Allen and Unwin, London, 1981.
3. Washborn, A.L.: Peri-glacial Process and Environment, Edward Arnold London, 1973.
4. Young, A.: Slopes, Oliver and Boyd London, 1972.

5. King, C.A.M.: Techniques in Geomorphology Edward Arnold London, 1968.
6. Embleton, C. and Theories, J.: Process in geomorphology, Arnold Hienmann, London, 1979.
7. Phodes, D.D. and William, G.P.: Adjustment of fluvial processes, George Allen and Unvin, Bostan, 1982.
8. Tricart, I. and Calliam , Introduction to climate Geomorphology, Longmans London, 1972.

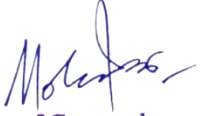

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Master of Arts in Geography			
Semester- VI			
Paper – XXI(e): RURAL GEOGRAPHY			
Paper Code: SOES/GEOG/E011			
Credit: 03			
Total Marks: 100	Internal Assessment: 40	End Semester: 60	Contact Hour per Week: 03
Course Objectives:			
<ol style="list-style-type: none"> 1. To familiarize the students about general concepts, nature and issues of rural Geography 2. To acquaint the students about nature of rural settlement, infrastructure, morphology, infrastructure and challenges for rural development. 			
Course Outcomes:			
Students will be able to efficiently formulate the issues and challenges of rural settlement and critically evaluate the suitability of different plan adapted for rural development in varying spatial context.			
Note: The paper consists of four units. Two questions will be set from each unit. The candidate will be required to attempt four questions in all. Answer should be precise. All questions carry equal marks.			
UNIT I			
Rural Geography - Definition, nature, scope and significance of Rural Geography. Rural Settlement Studies: Concepts, approaches and contents definitions and characteristics of Rural Settlements. Histogenesis of Rural Settlements, Sequence of occupancy; Site, situations, size, type, pattern and spacing of rural settlements.			
UNIT II			
Spatio-temporal dimensions of rural settlements; Morphology of Rural settlement with special reference to India, House types and field patterns, their categories and related factors; Rural houses in different Geographical environs folk culture and folk architecture.			
UNIT III			
Rural Land use; Land use, classification, agriculture land utilization, forest land, waste land and its management; Land use and land cover; Changes soil categories; Problem related to land use and agriculture.			
UNIT IV			
Rural Economy; Primary occupation Agriculture; Animal husbandry, Transhumance in Himalayan region. Rural handicrafts; economic potential; contemporary issue related to rural economy of India and Uttarakhand.			

Books Recommended:

1. Bhatt H.P. & Bhatt Sangeeta: Environmental Dimensions of Rural Settlements in the Himalaya in 1993.

2. Davis, S.: Computer Data Displays.
3. Bhatt Sangeeta(1984): Economic Transformation- A case study of district Uttarkashi (Unpublished.D.Phil. Thesis)
4. Davis P. ; Data Description & Presentation.
5. Mishra, R.P.: Research Methodology.
6. Kanetkar, T.P.: Surveying & Levelling.
7. Punmia, B.C.: Surveying & Levelling.
8. Singh, R.L.: Elements of Practical Geography.
9. Hord. R.M. ; Digital Image Processing of Remotely Sensed Data, New York, 1989.
10. Pratt.W.K. : Digital Image Processing, John Wiley, New York, 1978.


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Master of Arts in Geography			
Semester- IV			
Paper – XXI(f): SOCIAL GEOGRAPHY			
Paper Code: SOES/GEOG/E012			
Credit: 03			
Total Marks: 100	Internal Assessment: 40	End Semester: 60	Contact Hour per Week: 03
Course Objectives:			
<ol style="list-style-type: none"> 1. To acquaint the students to the unique social geography of society 2. To allow students to appreciate the roles of geographic factors in socio-cultural regionalization 3. To provide an understanding of the socio-geographical elements within a framework of pan Indian unity and regional specificity. 			
<p>Note: The paper consists of four units. Two questions will be set from each unit. The candidate will be required to attempt four questions in all. Answer should be precise. All questions carry equal marks.</p>			
UNIT I			
Definition, nature and scope of Social Geography; Major concepts of Social Geography; Social Geography in the realm of sciences; Social ecology, social space, social segregation and assimilation; Social justice; Social well-being level in India.			
UNIT II			
Evolution of socio-cultural regions in India; Society as indicator of regional identity; Social security; Evolution of socio-cultural region in India; Evidence from classical literature; Core and peripheral regions; Social components in region formation; Language & dialect; Social groups.			
UNIT III			
Social transformation and change in India; Process and elements of social transformation; Modernization and Sanskritization; Role of rural-urban interaction; Problems of social transformation in the traditional society.			
UNIT IV			
Social and ethnic diversity of India and national integration; Social pluralism and development. Society and environment; Social pollution, conflicts and violence; Emphasis on social planning in the last five years plan.			

Books Recommende:

1. Ahmed, A. (1999), Social Geography, Rawat Publication, Jaipur.
2. Carter, John and Jones, T. (1989), Social Geography: An Introduction to Contemporary Issues, Edward Arnold, London.
3. Chandana, R.C. (1989), Spatial Dimension of Scheduled Castes in India, Intellectual Publisher House, New Delhi.

4. Crane, R.I. (1973), Regions and regionalism in South Asia Studies: An Exploratory Study, Durham, Duke University.
5. D.M. Smith (1995), Geography and Social Justice, Black-well.
6. Dube, S.C. (1991), Indian Societies, National Book Trust of India, New Delhi.
7. Dube, S.C.: Tribal Heritage of India, Vias Publishing Co., New Delhi.
8. Ghurye, G.S. (1963), The Scheduled Tribes, Bombay, PopulatPrakashan,
9. Guha, B.S. (1994), Racial Elements in Indian Population, Oxford University Press, Bombay.



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Head

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