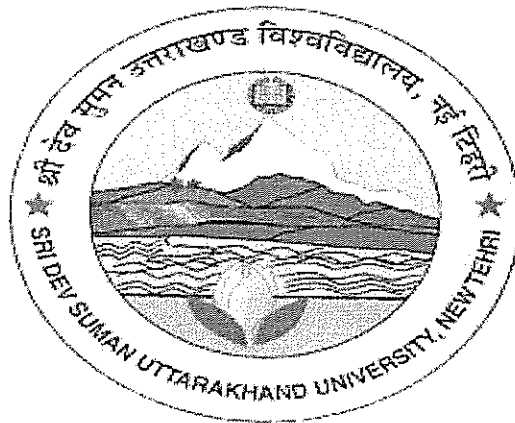


NATIONAL EDUCATION POLICY-2020

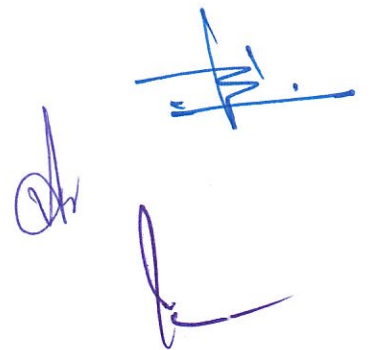
Common Minimum Syllabus for University Campus
and all Affiliated Colleges of Sri Dev Suman
Uttarakhand University



STRUCTURE OF
MA/MSc ONE YEAR
GEOGRAPHY
SYLLABUS
2023-2024

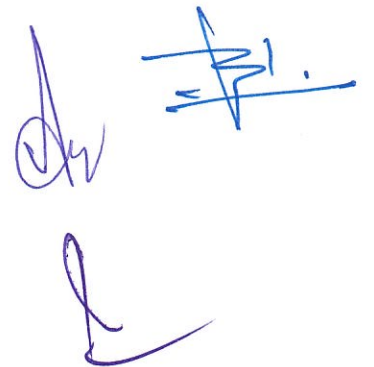
Curriculum Design Committee, Uttarakhand

Sr.No.	Name & Designation
1	Prof. N.K. Joshi Vice-Chancellor , Sri Dev Suman Uttarakhand University, Tehri Chairman
2	Vice-Chancellor, Kumaun University Nainital Member
3	Prof. Surekha Dangwal Vice-Chancellor, Doon University, Dehradun
4	Prof. Jagat Singh Bisht Vice-Chancellor, Soban Singh Jeena University Almora
5	Prof. O.P.S. Negi Vice-Chancellor , Uttarakhand Open University
6	Prof. M.S.M. Rawat Advisor, Rashtriya Uchchatar Shiksha Abhiyan, Uttarakhand
7	Prof. K. D. Purohit Advisor, Rashtriya Uchchatar Shiksha Abhiyan, Uttarakhand

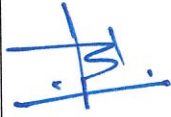
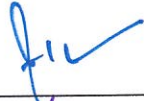




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Syllabus Preparation Committee

S.NO.	Name	Designation	Department Affiliation
1	Dr. R.C. Joshi	Professor & Head	Department of Geography D.S.B. Kumaun University, Nainital
2	Dr. D.C. Goswami	Professor, Head & Dean of Arts Faculty	Department of Geography Sri Dev Suman Uttarakhand University, Campus- Rishikesh
3	Dr. Jyoti Joshi	Associate Professor & Head	Department of Geography Soban Singh Jeena Almora University, Almora
4	Dr. Kritika Bora	Guest Faculty	Department of Geography D.S.B. Kumaun University, Nainital



SRI DEV SUMAN UTTARAKHAND UNIVERSITY
Badshahithaul, Tehri Garhwal (Uttarakhand)
Members of Board of Studies Geography

S.N.	Name of the Members	Designation	Nominated As	Signature
1.	Dr. D.C. Goswami	Professor, Head & Dean of Arts,	Chairman	
2.	Dr. T.B. Singh	Professor	Member	
3.	Dr. A.P. Dubey	Professor	Member	
4.	Dr. Aruna P. Sutradhar	Associate Professor	Member	
5.	Dr. R.C. Joshi	Professor, Head Kumaun University, Nainital	Member	
6.	Prof. Janki Panwar	Principal	G.P.G.C. Kotdwar	
7.	Prof. Loveny R. Rajvanshi	Principal	G.P.G.C. Jaiharikhal	
8.	Prof. K.L. Talwar	Principal	G.D.C. Chakrata	
9.	Nedesak, Uttarakhand Bhasa Sansthan	Nedesak	Rajpur Road, Dehradun	

Proposed Syllabus
NEP Post Graduate Programme in Geography
(M.A. One year PG Programme for those who have completed four years NEP Graduation Programme)

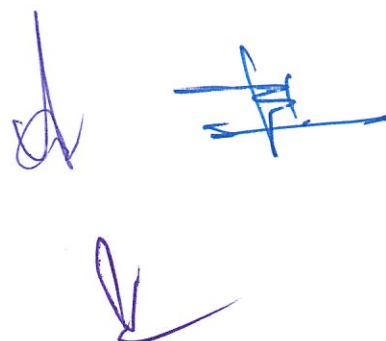
Year	Se m	Course/Paper	Credit	Rese arch Proje ct	Credi t	Total Cred its	
First Year	I	GEOG901T Disaster Management		4	GEOG908P r Project	4	
		GEOG902T Integrated Watershed Management		4			
		*Optional-I	Physical Geography Stream	GEOG903T Fluvial Geomorphology			4
				GEOG904T Hydrology			4
		*Optional-II	Human Geography Stream	GEOG905T Urban Geography			4
				GEOG906T Regional Planning and Development			4
		GEOG907P Quantitative Technique		4			
	II	GEOG1001T Biogeography		4	GEOG1008 Pr Project	4	
		GEOG1002T Geography of Uttarakhand		4			
		*Optional-I	Physical Geography Stream	GEOG1003T Glacial and Periglacial Geomorphology			4
				GEOG1004T Aeolian Geomorphology			4
		*Optional-II	Human Geography Stream	GEOG1005T Population Geography			4
				GEOG1006T Geography of Tourism			4
	GEOG1007P Map Projection, Geological Map and Field Survey		4				

T=Theory, P= Practical, Pr=Project

*Out of Two Optional streams student has to choose one optional stream of his/her choice.
Each stream includes twopapers.

First Semester

Programme: Post Graduate in Arts/Science		Year: I	Semester: I Paper-I
Subject: Geography			
Course Code: GEOG901T		Course Title: Disaster Management	
Course Outcome: This course will develop the skill of understanding about natural calamities and disaster and, also realize the consequences as well as preparedness. It will also give an exposure about the natural and manmade disasters of Uttarakhand			
Credits: 04		Max. Marks: 25 Internal Assessment (IS10+P/S10+P5) 75 Term End Exam.	
Unit	Course Content	No. of Lectures	
Unit – I	Fundamentals of Disaster Management: The significance of disaster, Disaster threat, National disaster management policy, Major requirements for coping with disaster, Disaster and disaster management cycle,	12	
Unit – II	Long term Measures: Prevention, Mitigation, Preparedness, Disaster and development, Disaster legislature, Counterdisaster resources, Disaster management plans, Utilization of resources.	12	
Unit – III	Response to Disaster Impact: Response; Search, Rescue and Evacuation, Logistic; Incident command system.	10	
Unit – IV	Major Post impact Factors: Recovery, Post disaster review and damage assessment, Relief, Rehabilitation and Restructuring	12	
Unit – V	Regional Pattern of Disaster Management: International disaster assistance, Leadership in disaster, Organization, Disaster scenario of Uttarakhand, Disaster management system in Uttarakhand.	14	



Suggested Reading:

- Bhargava, Gopal (1992): Environmental Challenges and Ecological Disaster, Mittal Publication, New Delhi
- Kapur, A. (2010) Vulnerable India: A Geographical Study of Disasters, Sage Pub. New Delhi,
- Muhammad Z Mamun and A T M Nurul Amin, Densification: A Strategic Plan to Mitigate River bank Erosion Disaster in Bangladesh, The University Press Limited (UPL), 1999
- Sahni, Pardeep et.al. (eds.) 2002, Disaster Mitigation Experiences and Reflections, Prentice Hall of India, New Delhi.
- Modh, S. (2010) Managing Natural Disaster: Hydrological, Marine and Geological Disasters, Macmillan, Delhi.
- Singh, R.B. (2005) Risk Assessment and Vulnerability Analysis, IGNOU, New Delhi.
- Singh, R. B. (ed.), (2006) Natural Hazards and Disaster Management: Vulnerability and Mitigation, Rawat Publications, New Delhi
- Government of India. (1997) Vulnerability Atlas of India. New Delhi, Building Materials & Technology Promotion Council, Ministry of Urban Development, Government of India
- Feilden, B. 1987, "Between Two Earthquakes; Cultural Property in Seismic Zones", ICCROM and Getty Conservation Institute, Online Bibliography for Museum Emergency Programme; <http://goibibs.getty.edu/asp/> accessed on 25 August 2008
- Stovel, H. 1998, ICCROM "Risk Preparedness: A Management Manual for World Cultural Heritage", Rome,
- Jigyasu, R. & Masuda, K. 2005, "Proceedings; Cultural Heritage Risk Management", World Conference on Disaster Reduction Kyoto; Research Center for Disaster Mitigation of Urban Cultural Heritage, Ritsumeikan; Kyoto, Japan
- Menegazzi, C. 2004, "Cultural Heritage Disaster Preparedness and Response", Proceedings of the International Symposium held at Salar Jung Museum, Hyderabad, India, 23-27 November 2003, ICOM Paris http://icom.museum/disaster_preparedness_book/copyright.pdf accessed on 15 August 2008
- Spenneman, D. & Look, D. (eds.) 1998, "Disaster Management Programs for Historic Sites", US National Park Service, Western Chapter of the Association of Preservation Technology, California and the Johnstone Centre, Charles Sturt University, Albery, Proceedings of a Symposium organized by the U.S. National Park Service, Western Regional Office, San Francisco, in collaboration with the Western Chapter of the Association for Preservation Technology, and held on 27-29 June, 1997 in San Francisco
- UNESCO-WHC 1983, "Desirability of adopting an international instrument on the Protection of the cultural heritage against natural disasters and their consequences", Report of the Director General; <http://unesdoc.unesco.org/images/0005/000560/056088eo.pdf> accessed on 15 August 2008
- UNESCO-WHC 2008, "Policy Document on the Impacts of Climate Change on World Heritage Properties", UNESCO Paris document/ "Case Studies on Climate Change and World Heritage", 2007, UNESCO: Paris <http://unesdoc.unesco.org/images/0015/001506/150600e.pdf>
- Michalski S. 2004, "Care and Preservation of Collections", in Running a Museum, A Practical Handbook (ed. P. Boylan), ICOM, Paris. p. 51 - 91
- Waller R. 2003, Canadian Museum of Nature", Gutenberg Studies in Conservation 13, Gutenberg Act Universitatis Gothoburgensis.

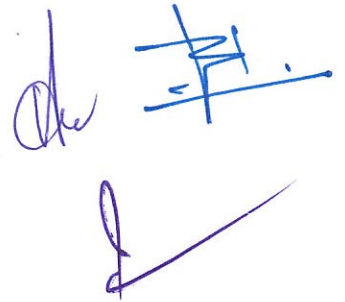


Programme: Post Graduate in Arts/Science		Year: I	Semester: I Paper-II
Subject: Geography			
Course Code: GEOG902T		Course Title: Integrated Watershed Management	
Course Outcome: It will impart the knowledge about the significance of the watershed as an important unit for the planning and implementation of the developmental programme.			
Credits: 04		Max. Marks: 25 Internal Assessment (IS10+P/S10+P5) 75 Term End Exam.	
Unit	Course Content	No. of Lectures	
Unit – I	Conceptual Base: Concept, Scope and Significance: Approaches of Watershed Management, Drainage of Watershed Management.	10	
Unit – II	Ecosystem and Energy Environment: Land Use Pattern, Natural Resource appraisal and Development, Ecological Processes and Ecosystem: Agro-Ecosystem, forest Ecosystem, River Ecosystem and Hydrological Cycle; Energy Analysis and Energy Budget of the Watershed.	14	
Unit – III	Environmental Status and Hazards: Environmental Health Status: Physical properties (Viz, Temperature, Rainfall, Soil etc.) and Human Habitat of the Watershed; Impact of Environmental and Anthropogenic Interferences on the Status and Quality of the Watershed; Major Natural Hazards: Landslides, Erosion, Floods, Droughts, Sedimentation, Disruption of Hydrological Cycle etc.	14	
Unit – IV	Functioning of Ecosystem: Impact of Agriculture, Mining and Quarrying, Deforestation, Livestock, Frequent Construction of Roads on Ecosystems Functioning of Watershed with particular reference to Uttarakhand Himalaya; Environmental Impact Assessment (EIA).	12	
Unit – V	Watershed Management: Watershed Management: Techniques and Methods, Land and Soil Conservation, Run-off Control, Sustainable Environment Management Plan for Local Resources.	10	

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Suggested Readings:

- C.S.E.; The State of India's Environment-Citizens Report, Centre for Science and Environment. (CSF), New Delhi, 1982
- Valdiya, K.S.; Environmental Geology: Indian Context, T.M.H., New Delhi, 1987.
- Dassman, R.F.; Environmental Conservation, John Wiley & Sons, New York, 1976
- Edington, J.M. & Edington, M.A.; Ecology and environmental Planning, Chapman and Hall, London, 1977
- Harvey, B. and Hallet, J.D.; Introductory Analysis, Macmillan, London, 1977
- Thomas, W.L.(ed.); Man's role in changing the Face of the Earth, University of Chicago Press, Chicago, 1956
- Simmons, I.G., The Ecology of Natural Resources, Edward Arnold, London, 1974
- Whittaker, R.H.; Communities and Ecosystems, 2nd Edn. Collier-Macmillan, London, 1975
- Singh, L.R. et al.(eds.); Environmental Management, Allahabad Geographical Society, Dept. of Geography, University of Allahabad, 1983
- Singh, Savindra; Environmental Geography, Allahabad, 1991 (both in English & Hindi) latest edn.

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Optional - I Physical Geography Stream

(Out of Two Optional streams student has to choose one optional stream of his/her choice. Each stream includes two papers)

Programme: Post Graduate in Arts/Science		Year: I	Semester: I Paper III (Physical Geography Stream)
Subject: Geography			
Course Code: GEOG903T (Physical Geography Stream)		Course Title Fluvial Geomorphology	
Course Outcome: It will provide an understanding of the fluvial forms and processes. This course also will make familiar with the evolution of drainage pattern hydraulic geometry and sediment load of river.			
Credits: 04		Max. Marks: 25 Internal Assessment (IS10+P/S10+P5) 75 Term End Exam.	
Unit	Course Content	No. of Lectures	
Unit – I	Fluvial Geomorphology and Geography; hydrological cycle and subcycle; drainage pattern evolution; limits of drainage development; channel changes with time.	10	
Unit – II	Fundamentals of river mechanics: - types of flow and flow discrimination; forces acting in channels; Low regimes; sediment load of streams. sediment transport; competent velocity; lift force; critical tractive force	12	
Unit – III	Hydraulic geometry of streams at a station and down-stream; channel thalweg; causes of concavity; channel patterns, equilibrium profile - straight, meandering and braided.	12	
Unit – IV	Drainage basin as a fundamental geomorphic unit. Drainage basin - form and process; drainage basin morphometry; morphometric interrelations.	12	
Unit – V	Applied fluvial geomorphology; human adjustment to flood plain, alluvial fans and deltaic environments (case studies). Effects of reservoirs on fluvial systems. Remote sensing and GIS application to fluvial environments.	14	

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Suggested Readings:

- Chorley R.J. (ed) Introduction of Fluvial Processes Methuen & Co., London, 1973.
Coates D.R. and Vitek J.I. Thresholds in Geomorphology. George Allen Unwin, London 1980
Gregory K.J. River Channel Changes' John Wiley & Sons, New York, 1977.
Gregory K.J. and Walling, D.E.: Drainage Basin: Forms and Process- A Geomorphological Approach. John Wiley & Sons, New York, 1985.
Kingston D. Fluvial Forms and Processes Edward Arnold, London, 1984.
Leopold C.B. et.al.: Fluvial Processes in Geomorphology; Freeman, London 1964.
Morisawa M.(ed.) Fluvial Geomorphology. George Allen & Unwin, 1981.
Gleick, P.H. (ed.): Water in Crisis Oxford University Press, New York 1993.
Morisawa M: Streams - Their Dynamics and Morphology' McGraw Hill, New York, 1968.



Programme: Post Graduate in Arts/Science		Year: I	Semester: I Paper IV (Physical Geography Stream)
Subject: Geography			
Course Code: GEOG904T (Physical Geography Stream)		Course Title: Hydrology	
Course Outcome: Water is an integral part of all living things in the world. Hence it is necessary to make the students to understand the significance of a systematic study on fresh water resources and occurrence, flow, storage and utilization.			
Credits: 04		Max. Marks: 25 Internal Assessment (IS10+P/S10+P5) 75 Term End Exam.	
Unit	Course Content	No. of Lectures	
Unit – I	Conceptual Base: Concepts and scope of hydrology, Elements of hydrological cycle: precipitation - intensity and duration; evaporation; infiltration, surface runoff, Man's interference on hydrological cycle	10	
Unit – II	Underground Hydrosphere: Hydrological properties of rocks. Structure of the underground hydrosphere - Vadose and phreatic Zones, Types of aquifer, Underground water classification, Recharge and discharge of ground water.	12	
Unit – III	Ground Water Movements and Drainage Basin Characteristics Hydraulic conductivity, Darcy's law, Porosity, Permeability, Transmissibility, Drainage basin characteristics : human impact on hydrological system , morphometric analysis	12	
Unit – IV	Flow Measurements and Hydrograph: Channel flow measurement, Hydrograph analysis; Water quality , Surface water resources of India.	12	
Unit – V	Application of Remote Sensing and Water Management: Principles of water balance and their application - its relevance in crop geography; water pollution, need for water management; Application of remote sensing in hydrological studies.	14	

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Suggested Readings:

- Chorley, R.J. (ed.) (1969): Water Earth and Man, Methuen, London.
- Dakshinamurthy, et.al. (1973) : Water, Resources of India and Their Utilization in Agriculture, IARI, New Delhi.
- Govt. of India, Ministry of Agriculture (1972), Report of the Irrigation Commission, Vol. 1 to IV, New Delhi.
- Govt. of India, Ministry of Agriculture (1974), Report of National Commission on Agriculture, Parts IV & V, New Delhi.
- Govt. of India, Ministry of Energy and Irrigation (Dept. of Irrigation, 1980), Rashtriya Barh Ayog, Report- National Commission on Floods, Vol. I & II.
- Gregory, K.J. and Walling De (1973)) : Drainage Basin Form and Processes, Edward Arnold, London.
- Jackson, P.J. (1977) : Climate, Water and Agriculture in the Tropics, London.
- Law, B.C. (ed.) (1968) : Mountains and Rivers of India, 21,
- G.C. National Committee for Geography, Calcutta.
- Linslay, R.K. et.al. (1958) : Hydrology for Engineers, Mc Graw Hill.
- Rao, K.L. : India's Water Wealth, Orient Longman.
- David Knighton (1984) : Fluvial Forms and Processes, Edward Arnold, London
- Jones, J.A.A : Global Hydrology: Processes, Resources and Environmental Management, Longman, London, 1997.
- Matter, J.R., Water Resources. Distribution, Use and Management, John Wiley, Marylane, 1984.
- Singh, R.A. and Singh, S.R.: Water Management: Principles and Practices. Tara Publication, Varanasi, 1972.
- Todd, D.K.: Ground Water Hydrology, John Wiley, New York, 1959.

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Optional - II Human Geography Stream

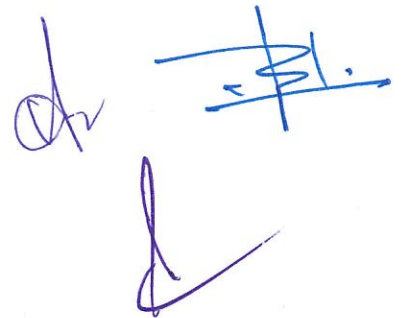
(Out of Two Optional streams student has to choose one optional stream of his/her choice. Each stream includes two papers)

Programme: Post Graduate in Arts/Science		Year: I	Semester: I Paper-III
Subject: Geography			
Course Code: GEOG905T (Human Geography Stream)			Course Title: URBAN GEOGRAPHY
Course Outcome: Students will understand the process of urbanization, origin, growth and classification of Urban Settlements with relevant theories and models. Finally will have an exposure to examine the contemporary urban issues and suggest new urban planning and urban policy.			
Credits: 04		Max. Marks: 25 Internal Assessment (IS10+P/S10+P5) 75 Term End Exam.	
Unit	Course Content		No. of Lectures
Unit – I	Nature and scope of urban geography, different approaches and recent trends in urban geography; attributes of urban places during ancient, medieval and modern period; origin and growth of urban settlements: bases and process of urbanization and development; classification of urban settlements on the basis of size and function; urban systems: Urban growth and theories. Central Place Theory of Christaller and Losch; contributions of Indian scholars to the studies of urban settlements		14
Unit – II	Urban economic base: Basic and non-basic functions, input-output models, concept of dualism; colonial and postcolonial structure, metropolitan city and changing urban function; role of informal sector in urban economy.		10
Unit – III	Organization of urban space: urban morphology and land use structure: city core, commercial, industrial and residential areas; cores-country variations; city-region relations, modern urban landscape; morphology of urban settlements and its comparison with western urban settlements; urban expansion, unland and periphery		12
Unit – IV	Contemporary urban issues: urban poverty, urban renewal, urban sprawl, slums; transportation, housing, urban infrastructure; urban finance; environmental pollution: air, water, noise, solid waste, urban crime, issues of environmental health.		12
Unit – V	Urban policy and planning: development of small and medium sized towns, planning for new wards, city planning, green belts, garden cities, urban policy; contemporary issues in urban planning; globalization and urban planning in the Third World, urban land use planning, Concept of Smart cities.		12

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Suggested Readings:

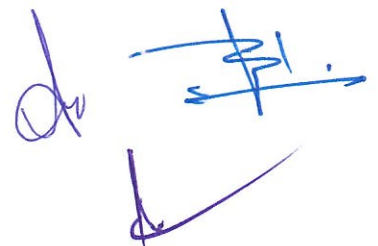
- Alan, S.M.: Hyderabad - Secunderabad Twin Cities Asia Publishing House, Bombay, 1964.
- Berry, B.J.L. and Horton F.F. Geographic Perspectives on Urban Systems, Prentice Hall, Englewood Cliffs, New Jersey, 1970. Carter: The Study of Urban Geography, Edward Arnold Publishers, London, 1972.
- Chorley, R.J.O., Haggett P. (ed.) : Models in Geography, Methuen, London, 1966. Dickinson, R.E.: City and Region, Routledge, London, 1964
- Dwyer, D.J. (ed.) The City as a Centre of Change in Asia, University of Hong Kong Press, Hongkong, 1971. Gibbs J.P.: Urban Research Methods D. Van Nostrand Co. Inc. Princeton, New Jersey, 1961.
- Hall P. : Urban and Regional Planning, Routledge, London, 1992.
- Hauser, Philip M. and Schnore Leo F. (ed.) : The Study of Urbanisation, Wiley, New York, 1965.
- James, P.E. and Jones C.F. (eds.) : American Geography, Inventory and Prospect, Syracuse University Press, Syracuse, 1954. Kundu, A. : Urban Development and Urban Research in India, Khanna Publication, 1992.
- Meyor, H.M. Kohn C.F. (eds.) : Readings in Urban Geography, University of Chicago Press, Chicago, 1955. Mumford, L : Culture of Cities, McMillan & Co., London, 1958.
- Nangia, Sudesh Delhi Metropolitan Region: A study in settlement geography, Rajesh Publication, 1976.
- Rao V.L.S.P. : Urbanisation in India: Spacial Dimensions. Concept Publishing Co. New Delhi Concept, New Delhi. Rao VL.S.P.: The Structure of an Indian Metropolis: A study of Bangalore Allied Publishers Bangalore, 1979.
- Singh K and Steinberg F. (eds.) : Urban India in Crisis, New Age Interns, New Delhi, 1998. Smailes A.E.: The Geography of Towns, Hutchinsonson, London, 1953.
- Tewari, Vinod K, Jay A. Weinstein, VLS Prakasa Rao (editors) Indian Cities: Ecological Perspectives Concept 1986. Singh O P Nagriya Bhugol

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Programme: Post Graduate in Arts/Science		Year: I	Semester: I Paper-IV
Subject: Geography			
Course Code: GEOG906T (Human Geography Stream)		Course Title: Regional Development and Planning: Concepts, Principles and Techniques	
Course Outcome: It will be helpful to understand and evaluate the concept of region in geography and its role and relevance in regional planning. Students will identify the issues relating to the development of the region through the process of spatial organization of various attributes and their inter relationship.			
Credits: 04		Max. Marks: 25 Internal Assessment (IS10+P/S10+P5) 75 Term End Exam.	
Unit	Course Content	No. of Lectures	
Unit – I	Geography and its role in regional development and planning: Concept, Scope & purpose of Regional planning, Types of regions: formal and functional; growth and development.	10	
Unit – II	Regional Planning: Planning process - sectoral, temporal and spatial dimensions; short-term and long term perspective planning, Indicators of development and their data sources	14	
Unit – III	Regional development theories : Economic growth doctrines and their impact on regional growth theories: F. Perroux, W. Isard, A. Losch; Western concerns: Paradigm shift from regional resource development to spatial planning of economic development for the third world; G. Myrdal, A.O. Hirschman	10	
Unit – IV	Regional Planning Strategies : Urban industrial growth strategies and diffusion of modernization; Regional planning in Five Year Plans; Spatial aspects of sectoral development: agriculture, industry and infrastructure.	12	
Unit – V	Schemes of regionalization for planning: V. Nath, L.S. Bhat, P. Sengupta and Galina Sdyasuk; territorial production and complexes. Regional development planning; the state and regional development in India.	14	

Suggested Readings:

- Bernstein, H. (1979) : Sociology of Development versus Sociology of Underdevelopment in D. Lehmann (ed.), Development Theory : Four Critical Studies, Cass, London.
- Berry, B.J.L. (1972) : Hierarchical Diffusion : The Basis of Development Filtering and Spread in a System of Growth Centres in N.N.Hansen (ed.), Growth in Regional Economic Development, Macmillan, London
- Bhat, L.S. (1972) Regional Planning in India, Indian Statistical Institute, Calcutta.
- Bhat, L.S. (2003) Micro Planning: A Case Study of Karnal Area, KB Publications, New Delhi.
- Brookfield, H.C. (1975) : Interdependent Development, Methuen, London.
- Carney, J. Hudson, R. and Lewis, J. (eds.) (1980) : Regions in Crisis, Croom Helm, London.
- Dewar, D. et. Al. (eds.) (1986): Regional Development and Settlement Policy, Allen and Unwin, Boston.
- Dube, K.K. and Singh, M.B. (1986): *Pradeshik Niyojan*. Tara Book Agency, Varanasi.
- Forbes, D.K. (1984) : The Geography of Underdevelopment : A Critical Survey, Croom Helm, London.
- Friedmann, J. (1966): Regional Development Policy : A Case Study of Venezuela, MIT Press, Cambridge, Mass.
- Friedmann, J. and Weaver, C. (1979) : Territory and Function : The Evolution of Regional Planning , London, Arnold.
- Gore, Charles (1984) : Regions in Question, Methuen, London and New York.
- Hall, P. (1981) : Urban and Regional Planning, Allan and Unwin, Boston.
- Hansen, N.N. (1972) : Growth Centres in Regional Economic Development, Macmillan, London.
- Kitching, G. (1982) : Development and underdevelopment in Historical Perspective : Population, Nationalism and Industrialization, Methuen, New York.
- Kuklinski, A. (ed. (1975): Regional Development and planning, Sythoff, London.
- Mabogunje, A.L. (1980): The Development Process: A Spatial Perspective, Hutchinson, London.
- Mishra, R.P., K.V. Sundaram and V.L.S.P. Rao (1974): Regional Development Planning in India , Viking, Delhi.
- Mishra, R.P. (1969) Regional Planning. University of Mysore, Mysore.
- Mishra, R.P. (2002) Regional Planning, Concepts, Techniques, Policies and Case Studies, Concept Publishing
- Chandana, R. C. (2005) Regional Development and Planning. Kalyani Publishers, New Delhi.
- Stohr, W.B. and Taylor, D.R.F. (1981): Development from above or Development from Below, John Wiley, Chichester.



Programme: Post Graduate in Arts/Science		Year: I	Semester: I Practical
Subject: Geography			
Course Code: GEOG907P		Course Title: Quantitative Technique	
Course Outcome: Students will identify the basic statistical procedures to be applied to various themes in geography. It will also train the studentsto handle these statistical techniques towards analysing the geographical problems			
Credits: 04		(Max. Marks: 100 (Evaluation will be made by both Internal and externalExaminers) Internal Assessment: 25 (10-Viva Voce + 10-Record Book + 5-Attendance) Term End Exam 75 (Theory and Practical)	
Unit	Course Content	No. of Lectures	
Unit – I	Basics of Statistics Definitions of statistics, Importance and use of statistical techniques in geography, Types and sourcesof statistical data in geography, Formation of frequency distribution table, Graphical representation of frequency distribution using Histogram, O give curve, Cumulative percentage curve	10	
Unit – II	Measures of Statistics Measures of central tendency: Mean, Median and Mode. Measures of position: Estimation of quartiles, deciles and percentiles; Measures of dispersion: Absolute measurements- Mean deviation, Quartile deviation, and Standard deviation; Relative measurements: Coefficient of mean deviation, Coefficient of quartile deviation, Coefficient of variations, Index variability and Relative variability	10	
Unit – III	Analysis of Statistical Relationship Skewness: Karl Pearson’s and Bowley’s methods; Kurtosis; Correlation analysis: Spearman’s rankorder correlation and Pearson product moment correlation, Kendall rank correlation coefficient; Regression analysis: Simple and Multiple Regression; Least square method	10	
Unit – IV	Probability Distribution Probability: Theory of probabilities-law of addition and multiplication- probabilities of distribution: normal, binomial, Poisson-sampling: basic concepts, sample units and design, sampling frame andprocedures, standard error and sample size, testing the adequacy of samples	10	
Unit – V	Hypothesis Testing: Needs and types of hypotheses-goodness of fit and significance and confidence levels-parametric and non-parametric procedures: contingency tables, Chi-square test, binomial test,t-test.	10	

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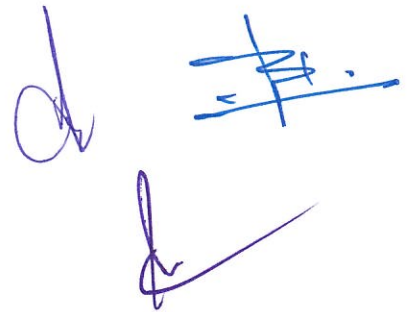
Suggested Reading:

- Alvi, Z. (1995): Statistical Geography: Methods and Applications, Rawat Publications, Jaipur
- Cole, J.P. & King, C.A.M. (1968): Quantitative Techniques in Geography. John Wiley & sons Inc. New York.
- Elhance, D.N. (1972): Fundamentals of statistics, Kitab Mahal, Allahabad.
- Gregory, S. (1968): Statistical methods and the geographer. Longman, London.
- Gupta, C.B. (1978); An introduction to statistical Methods, Vikas Pub. House, New Delhi. Hemawati: Statistical Methods for Geographers.
- Hoel P.G.: Elementary Statistics, Wiley, New York.
- King, L.J. (1991): Statistical Analysis in geography. Prentice Hall, Englewood Cliff N.J. David Unwin, Introductory Spatial Analysis, Methuen, London, 1981.
- Gregory, S. Statistical Methods and the Geographer, Longman, London, 1978.
- Hammond R and P.S. McCullagh Quantitative Techniques in Geography: An Introduction, Clarendon Press, Oxford, 1974. John P. Cole and Cuchlaine A. M. King, Quantitative Geography, John Wiley, London, 1968.
- Johnston R. J., Multivariate Statistical Analysis in Geography, Longman, London. 1973. Koutsoyiannis, Theory of Econometrics, Mcmillan, London, 1973.
- Maurice Yeats, An Introduction to Quantitative Analysis in Human Geography, McGraw Hill, New York, 1974. Peter Haggett, Andrew D. Cliff, & Allan Frey, Location Methods Vol. I and II, Edward Arnold, London, 1977.

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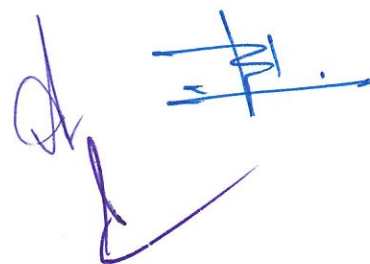
Research Project

Programme: Post Graduate in Arts/Science	Year: I	Semester: I Research Project
Subject: Geography		
Course Code: GEOG908Pr	Course Title: Research Project	
Course Outcome: To learn how to select a Research Proposal based on research gap found during the literature survey or field observations mdae. Preparation of synopsis/outline will be also learned. Finally will learn how to collect data and write a report based on the data analysis		
Credits: 04	Max. Marks: 100 (Evaluation by External & Internal Examiner) Dissertation: 75 Internal Assessment: Viva Voce + Attendance :25 (20+5)	
The students will be required to select a topic and area of their interest with the help of their respective supervisors allotted to them by the Head of the Department. Research Project dissertation must be submitted to the Department one week before the commencement of the Theory Examinations. The size of the Dissertation normally ranges between 60 and 70 pages.The Research Project Dissertation will be evaluated by the external and internal examiners.		

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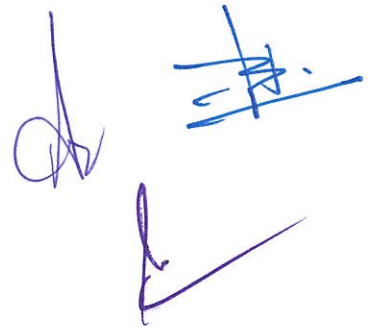
Second Semester

Programme: Post Graduate in Arts/Science		Year: I	Semester: II Paper-I
Subject: Geography			
Course Code: GEOG1001T		Course Title: BIOGEOGRAPHY	
Course Outcome: Student will understand the interrelationships among the living organisms within the environment and the importance of conservation of biosphere and biodiversity.			
Credits: 04		Max. Marks: 25 Internal Assessment (IS10+P/S10+P5) 75 Term End Exam.	
Unit	Course Content	No. of Lectures	
Unit – I	Fundamental Concepts: Concept, Scope, Significance and Development of Biogeography; Environment, Habitats and Plant-animal Association.	10	
Unit – II	Plant Geography & Plant Succession: Elements of Plant Geography, Distribution of Forests and Major Plant Communities. Plant successions in newly formed landforms. Examples from flood plains and glacial fore fields.	12	
Unit – III	Zoogeography & Biodiversity: Zoogeography and its environmental relationship; Physical factors influencing world distribution of animals and their actual world distribution; classification & distribution of animals; faunal regions; biomes and their types; Bio-diversity and its depletion through natural and man-induced causes.	14	
Unit – IV	Climate Change: Temporal Perspectives: Paleo botanical and Paleo climatological records of environmental Changes. Impact of Climate Change on Flora and Fauna with special reference to Uttarakhand Himalaya.	12	
Unit – V	Biotic Resource Management: National Forest and Wildlife Policy of India. Conservation of biotic resources. Bioinformatics, Protected Areas and their management with special reference to National Parks, Wildlife Sanctuaries and Biosphere Reserves of Uttarakhand.	12	



Suggested Reading:

- Agarwal, D.P. (1992) : Man and Environment in India Through Ages, Books and Books. Bradshaw, M.J. (1979): Earth and Living Planet, ELBS, London
- Cox, C.D. and Moore, P.D. (1993): Biogeography: An Ecological and Evolutionary, 5th Edn., Blackwell.
- Gaur, R. (1987): Environment and Ecology of Early Man in Northern India, R.B. Publication, Corporation. Hoyt, J.B. (1992): Man and the Earth, Prentice Hall, U.S.A.
- Hugget, R.J. (1998): Fundamentals of Biogeography, Routledge, U.S.A.
- Illies, J. (1974): Introductory to Zoogeography, Mcmillan, London.
- Khoshoo, T.N. and Sharma, M. (eds.) (1991): Indian Geosphere – Biosphere Har – Anand Publication, Delhi. Lapedes, D.N. (ed.) (1974) : Encyclopedia of Environmental Science, McGraw Hill.
- Mathur, H.S. (1998) : Essentials of Biogeography, Anuj Printers, Jaipur.
- Pears, N. (1985) : Basic Biogeography, 2nd Edn. Longman, London.
- Simmon, I.G. (1974) : Biogeography, Natural and Cultural, Longman, London.
- Tivy, J. (1992) : Biogeography : A Study of Plants in Ecosphere, 3rd Edn., Oliver and Boyd, U.S.A
- Tiwari, P.C. and Bhagwati Joshi (1997): Wildlife in the Himalayan Foothills of Uttar Pradesh: Conservation and Management, New Delhi

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Programme: Post Graduate in Arts/Science		Year: I	Semester: II Paper-II
Subject: Geography			
Course Code: GEOG1002T		Course Title: Geography of Uttarakhand	
Course Outcome: Students will identify the basic physical and socio-economic background of Uttarakhand for the planning and utilization of its resources for sustainable development.			
Credits: 04		Max. Marks: 25 Internal Assessment (IS10+P/S10+P5) 75 Term End Exam.	
Unit	Course Content	No. of Lectures	
Unit – I	Physical Background: Geo-environmental background: Geology, Physiography, climate, drainage, Soils, flora and fauna, Natural and Bio-geographic Regions.	10	
Unit – II	Population and Settlements: Population and Human Resource Development; Spatial Patterns, Structure, Composition and Dynamics of Population; Tribal Groups and their Spatial Distribution, Fairs Festivals and Languages and Dialects, Settlements: Types and Patterns	12	
Unit – III	Agricultural Development: Agricultural Characteristics and Trends; land holdings; Land Reforms; Cropping Pattern; Irrigation; Farm Technology; Agricultural Productivity and Agricultural Regions; Impact of Green Revolution; Horticultural and Floriculture Development including medicinal, aromatic plants and Organic farming.	12	
Unit – IV	Mineral and Energy Resources and Industries: Major Mineral Deposits: Distribution and Production, Energy Resources: Development of Hydro- electricity, Industries: Localization and Spatial Distribution, Principal Industries of the region, Industrial Regions, Trade, Transport, Tourism and forestry, Potentials and Prospects,	12	
Unit – V	Future Prospects and Development Plans: Prospects of Tourism, Sustainable Development Plan for Uttarakhand Himalaya, Environmental Hazards and Management in Uttarakhand Himalaya.	14	

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Suggested Readings:

- Valdiya, K.S. : Land and People, 1988
Bose, S.C.: Land and People of the Himalaya, Calcutta, 1968
Singh O.P.(ed.) : The Himalaya: Nature, Man and Culture, 1983
Joshi, S.C. et.al : Kumaun Himalaya, Nainital, 1983
Singh, O.P. & Pande, R.K.: Human Habitat in the Mountain (1998)
Joshi, S.C.: Uttaranchal: Environment & Development, 2001
Saklani, P.S.(ed.): Tectonic Geology of the Himalaya, 1978
Singh, R.L.: India: A Regional Geography, 1971
Nityanand & K.Kumar : The Holy Himalaya



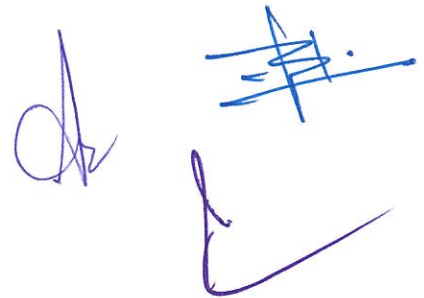
Optional - I Physical Geography Stream

(Out of Two Optional streams student has to choose one optional stream of his/her choice. Each stream includes two papers)

Programme: Post Graduate in Arts/Science		Year: I	Semester: II Paper: III
Subject: Geography			
Course Code: GEOG1003T(Physical Geography Stream)		Course Title: Glacial and Periglacial Geomorphology	
Course Outcome: It will make familiar with the geomorphic processes and resultant landforms of the glacial and periglacial area. It will also make understand about the sensitiveness of the periglacial environment to heat budget			
Credits: 04		Max. Marks: 25 Internal Assessment(IS10+P/S10+P5) 75 Term End Exam.	
Unit	Course Content	No. of Lectures	
Unit – I	Theoretical Base: Definition of Glacial Geomorphology; Ice Age; Causes of ice ages; Pleistocene Glaciation; onset and retreat.	12	
Unit – II	Erosional Processes and Landforms: Erosional process; glacial erosion, development of erosional landforms; superglacial, englacial and basal .	10	
Unit – III	Depositional Processes and Landforms: Depositional processes: processes-stratified and non stratified; forms of Moraines; glaciofluvial and glacio-lacustrine environment.	12	
Unit – IV	Periglacial Processes: Periglacial process: frozen ground phenomenon – identical ,depth variations, classification and distribution; mechanism of frost action.	12	
Unit – V	Periglacial Landforms and Human adaptation: Periglacial landforms; frost action and landforms-mass wasting and landforms, adaptation of human beings to periglacial environment.	14	

Suggested Readings:


- Brown, R.J.E.: Permafrost in Canada. University of Toronto Press, Toronto, 1970.
Carson MA. and Kirkby M.J., Hillslope Form and Process, Cambridge University Press, 1972.
Coates, D.R.(ed.), Glacial Geomorphology, State University of New York, 1974, New York, 1974. Dixon,
J.C. and Abrahams, A.D. (eds.), :Periglacial Geomorphology. John Wiley, New York, 1992.
Drewry, D., Glacial Geological Processes, Edward Arnold, London, 1986.
Embleton, C. and King, C.A.M., Glacial and Periglacial Geomorphology, Edward Arnold, London, 1968.
Embleton, C. and Thormes, J. (eds.), Process in Geopmorphology, Arnold - Hesnemann, New Delhi, 1980.
Hails, J.R. (ed.): Applied Geomorphology Elsevier Sci. Amsterdam, 1977.
Pewe, T.L.(ed.): The Periglacial Environment. Mc. Gill- Queen's University Press, Montreal 1969
Peterson, W.S.B., The Physics of Glaciers. Pergamon Press, Oxford 1969.
Price, L.W., The Periglacial Environment, Permafrost and Man., Commission on College Geography, Resource Paper No. 14, Washington, D.C, 1972.
Ritter, D.F. Craig, R. and Miller, J.P., Process of Geomorphology. , W.C. Brown Dubuque, 1995.
Slymaker, O. (ed.), Steepland Geomorphology., John Wiley, London, 1995.
Sugden, D.E. and John, B.S. Glaciers and Landscape. Edward Arnold, London, 1976.
Vander Veen, C.J., Fundamentals of Glacier Dynamics., A.A. Balkemma, Rotterdam, 1999.
Wright, A.E and Mosley, P.(eds), Ice Ages: Ancient and Modern., Seel House Press, Liverpool, 1975.

The image shows three handwritten signatures in blue ink. On the left is a stylized signature that appears to be 'D'. To its right is a signature that looks like 'A' with some horizontal lines through it. Below these two is a large, simple signature that resembles a 'C' or 'E'.

Programme: Post Graduate in Arts/Science		Year: I	Semester: II Paper: IV
Subject: Geography			
Course Code: GEOG1004T (Physical Geography Stream)		Course Title: Aeolian Geomorphology	
Course Outcome: It will make aware about the environments which is sensitive to aridity, bio-mass and human interferences. This course will alsomake familiar with the aeolian processes and their resulting landforms.			
Credits: 04		Max. Marks: 25 Internal Assessment (IS10+P/S10+P5) 75 Term End Exam.	
Unit	Course Content	No. of Lectures	
Unit – I	Wind Environments: Introduction; desert wind systems; directional variability and resultant drift potential; scope of aeolian geomorphology. Grain in motion: fluid flows - flow types; interaction of thewind and the bed - wind shear; entrainment – lift and drag; Thresholds of movement: static and dynamic ; modes of transport: saltation, creep, reptation and suspension; transport rates.	12	
Unit – II	Wind erosion and landforms: Processes: abrasion, deflation and aerodynamic erosion; Landforms: ventifacts, yardangs, pans, stone pavements, deflation hollows; desert varnish; processes and significance. Dusts-Sources; - contemporary and proximal, mineral composition; Dust-generating anddust yielding systems, gross spatial patterns of production and removal; deposition: loess, types, palaeo - environmental significance.	12	
Unit – III	Forms of wind deposition: sand ripples, obstacle dunes; dune-classification schemes;morphodynamics of the crescentic, longitudinal and complex dunes	10	
Unit – IV	Plaeo—environments : Introduction; sediment movement in the past; relic and active dunes; datingaeolion deposits; pre-leistocene sand dunes; Pleistocene and Holocene dunes; Aeolinites - composition and distribution.	12	
Unit – V	Applied Aeolian Geomorphology : Introduction; wind erosion on agricultural fields; controls of dust; Management of coastal dunes and dunes in semi -arid areas; desertification and its controls withspecial reference to India. Remote sensing and GIS applications in aeolian settings.	14	

Suggested Readings:

- Abrahams, A.D. and Parsons, A.J. (eds.), *Geomorphology of Desert Environments* Chapman & Hall, London, 1994.
- Goudie, A and Hegde : *Palaeo-geography and Pre-history of Indian Desert*, Academic Press, London, 1980.
- Baumont, P.: *Drylands-Environment, Management and Development*, Routledge, New York, 1993.
- Bagnold, R.A. *The Physics of Blown Sand and Desert Dunes*, Methuen, London, 1941.
- Cook, R.U.,
Waren, A. and Goudie, A.S. *Desert Geomorphology*, London, UCL Press, London, 1993.
- Embleton, C. and Thornes, J. (eds.), *Process in Geomorphology*, Arnold -Heinemann, New Delhi, 1980.
- Greeley, R and Iversen, J.D., *Wind as a Geological Process*. Cambridge University Press, Cambridge, 1985.
- Lancaster, N: *Geomorphology of Desert Dunes* Routledge, New York, 1995.
- Livingstone I. and Warren, A. *Aeolian Geomorphology*, Adison Wesley, Longman, Essex, 1996.
- McKee, E.D. (ed.) *A Study of Global Sand Seas*, Castel House, Kent, 1980.
- Nickling, W.G. (ed.) *Aeolian Geomorphology*. Allen & Unwin, Boston, 1986.
- Singhvi, A.K. and Derbyshire, E.(eds.) *Palaeo—environmental Reconstruction in Arid Lands*, Oxford & IBH, New Delhi, 1999.
- Tchakerian, V.P. (ed.) *Desert Aeolian Process*, Chapman & Hall, London, 1995.



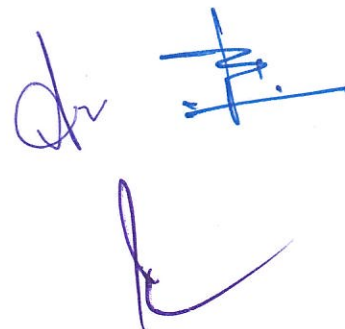
Optional - II Human Geography Stream

(Out of Two Optional streams student has to choose one optional stream of his/her choice. Each stream includes two papers)

Programme: Post Graduate in Arts/Science	Year: I	Semester: II Paper: III
Subject: Geography		
Course Code: GEOG1005T (Human Geography Stream)	Course Title Population Geography	
Course Outcome: It will introduce to the students about the complex dimensions of population. Students will also understand and evaluate the association between demographic and socio-economic attributes of population and the resultant levels of social well- being and economic development.		
Credits: 04	Max. Marks: 25 Internal Assessment (IS10+P/S10+P5) 75 Term End Exam	
Unit	Course Content	No. of Lectures
Unit – I	Population Geography: Scope and Objectives; development of Population Geography as a field of specialization; Population Geography and Demography sources of population data, their level of reliability, and problems of mapping of population data	12
Unit – II	Population distribution: density and growth - theoretical issues; Classical and modern theories in population distribution and growth; World patterns and their determinants; India -: population distribution, density and growth profile, Concepts of under population and over population.	12
Unit – III	Population composition: age and sex; family and households; literacy and education; religion, caste and tribes; rural and urban; urbanization; occupational structure; gender issues; Population composition of India	12
Unit – IV	Population dynamics: Measurements of fertility and mortality. Migration: national and international patterns; India's population dynamics.	10
Unit – V	Population and development: population- resource regions and levels of population and socio- economic development; population policies ; Human Development Index and its components; population and environment; implications for the future.	14

Suggested Readings:

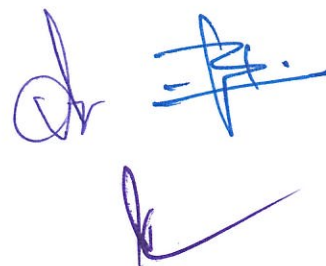
- Bilasborrow, Richard E and Daniel Hogan, Population and Deforestation in the Humid Tropics, International Union for the Scientific Study of Population, Belgium 1999.
- Bogue, D.J. Principles in Demography, John Wiley, New York 1969.
- Bose, Ashish et. al. : Population in India's Development (1947-2000); Vikas Publishing House, New Delhi 1974. Chandna, R.C. Geography of Population; concept, Determinants and Patterns. Kalyani Publishers, New York 2000.
- Clarke, John I., Population Geography, Pergamon Press, Oxford 1973.
- Crook, Nigel Principles of Population and Development. Pergamon Press, New York 1997.
- Daugherty, Helen Gin, Kenneth C.W. Kammeyir, An Introduction to Population (Second Edition), The Guilford Press, New York, London 1998.
- Garnier, B.J. Geography of Population Longman, London 1970.
- Kochhar, Rajesh, The Vedic People: Their History and Geography Orient Longman Ltd., New Delhi 2000. Mamoria C.B. India's Population Problem, Kitab Mahal New Delhi 1981.
- Mitra, Asok, India's Population: Aspects of Quality and Control. Vol. I & II, Abhinav Publications, New Delhi 1978. Premi M.K., India's Population: Heading Towards a Billion, B.R. Publishing Corporation, 1991.
- Srinivasan K. and M. Vlassoff. Population Development Nexus in India: Challenges for the New Millennium. Tata McGraw -Hill, New Delhi 2001.
- Srinivasan, K. Basic Demographic Techniques and Applications Sage Publications, New Delhi 1998. Sundaram K.V. and Sudesh Nangia, (ed.) Population Geography, Heritage, Publications, Delhi 1986.
- UNDP: Human Development Report. Oxford University Press, Oxford 2000.
- United Nations, Methods for Projections of Urban and Rural Populations, No. VIII, New York 1974. Woods R. Population Analysis in Geography. Longman, London 1979.
- Zelinsky Wilbur, A Prologue to Population Geography, Prentice Hall, 1966

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Programme: Post Graduate in Arts/Science		Year: I	Semester: II Paper: IV
Subject: Geography			
Course Code: GEOG1006T (Human Geography Stream)		Course Title: Geography of Tourism	
Course Outcome: Students will have an exposure of the tourism scenario and different techniques to analyse the various techniques used in tourism Industry.			
Credits: 04		Max. Marks: 25 Internal Assessment (IS10+P/S10+P5) 75 Term End Exam	
Unit	Course Content	No. of Lectures	
Unit – I	Introduction and the Concept: Definition, Scope, Nature, Significance and Development of Geography of Tourism; Geography of Tourism as Applied Geography; The Tourist Phenomenon; Concept of Man, Environment and Tourism : The Interrelated Phenomena.	12	
Unit – II	Measurements and Dimensions of Tourism: Basic concept and Need of Tourism Phenomena; Tourist: the Connotation; Types of Tourist Statistics; Methods of Measurement; The Importance of Measurement; The Organization of Tourism, The National Tourism Organization; Dimensions of World Tourism; International Tourist Movements.	14	
Unit – III	Resort Towns and Morphology: Analysis of Splendor Resources; Accommodation : Early History, Classification and Gradation, Attributes of Resort Towns, Morphology and Shape of Resort Towns, Parks and Wildlife Sanctuaries, Cultural, Social and Historical Attractions with special reference to Uttarakhand Himalaya.	14	
Unit – IV	Tourist Industry and Environment: Transport and Tourism, Spatial Interaction Determinants and Pattern, Tourism Marketing; Tourism Promotion; Social and Economic significance of Travel and Tourism; Domestic and Foreign Travel.	10	
Unit – V	Planning and Management: Eco- friendly Tourism, Environmental Consequences of Tourism, Tourism Planning and Management with special reference to India and Uttarakhand State.	10	

Suggested Readings:

- Arvil, R.(1967): Man and Environment Crisis and Strategy of Choice, Penguin, Harmondsworth, 1967.
- Berril, N.J.(1967): Inheriting the Earth- The Story of Man and Changing Planet, Forwcett, Greenwich, Connecticut, 1967.
- Bhargava, Gopal (1992): Environmental Challenges and Ecological Disaster, Mittal Publication, New Delhi.
- Botkin, D.B. (1982) : Environmental Studies, Charles, E. Meril and Keller, Edward, A. Publishing Co. Columbus, Ohio.
- C.S.E. (1984) : The State of India's Environment : A Citizens Report, Centre for Science and Environment, New Delhi.
- Chada, S.K. (1993) : Fragile Environment, Anmol Publication, NewDelhi.
- Darlington, P.J. (1957) : Zoo-Geography : The Geographical Distribution of Animals, Wiley, New York.
- Dasman, R.F. (1972) : Environmental Conservation, John Wiley and Sons, NewYork.
- Detwyler, J.R. (1975) : Man's Impact on Environment, John Wiley and Sons, New York.
- Khusoo, T.N.: Environmental Management Policies and Issues.
- Knowles, R. and Wareing, J Economic and Social Geography.
- Marsh, C..P. (1967): Man and Nature, Morvad.
- Odum, E.P. : Fundamentals of Ecology, Prentice Hall.
- Rustomji, N.K. and Ramble Charles (1990) : Himalayan Environment and Culture, Indus Publishing Company, New Delhi.
- Robinson, H. (1976) : A Geography of Tourism, Macdonald & Evans Ltd., Estober, Plymouth.
- Bhatia, A.K. (1983) : Tourism Development: Principles andPractices, Sterling Publishers Pvt. Ltd., NewDelhi.
- Cosgrove, I. and Jackson, R. (1972) ; The Geography of Recreation and Leisure,

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Programme: Post Graduate in Arts/Science		Year: I	Semester: II Paper: Practical
Subject: Geography			
Course Code: GEOG1007P		Course Title: Map Projection, Geological Map and Field Study Trip Part A: Map Projection and Preparation of Geological Maps Part B: Field Study Trip and Preparation of Report	
Course Outcome: Student will understand the significance of the projection in correct map making process with reference to the shape, size and area. Another important output is to learn the preparation of the geological cross-section on the bases of contour and Geological Map			
Credits: 04		(Max. Marks: 100 (Evaluation will be made by both Internal and external Examiners) Internal Assessment: 25 (10-Viva Voce + 10-Record Book + 5-Attendance) Term End Exam: 75 (50-Theory and Practical+25- Field Survey)	
Unit	Course Content	No. of Lectures	
Part A			
Unit – I	Map Projection: Meaning and classification; Principles, merits, demerits.	08	
Unit – II	Construction (with emphasis on mathematical methods) and use of the following projections: Gall’s, Mercator’s, Bonne’s, Polyconic, Gnomonic, Stereographic and Orthographic Zenithal Projections.	14	
Unit – III	Identification of Rocks and Minerals, Rock Types and their characteristics, Structure (Fold, Fault and Thrust), Unconformity; Dip and strike	10	
Unit – IV	Preparation of Geological cross-section of folded and faulted structure	10	
Unit – V	Preparation of Geological cross-section of thrust and unconformity area.	08	
Part B			
Part B: Field Study Trip and Preparation of Report The course is based on supervised field work carried out by the fourth semester students for about one week. One region (if possible, based on the optional paper offered by the department) will be selected every year within Uttarakhand/any part of India. Observations will be made regarding various aspects such as different landforms, drainage, vegetation, agriculture, industries, transport and communication, settlement, environmental problems etc. The information thus collected will be submitted by the students in the form of the field survey diary and field report for evaluation.			



Research Project

Programme: Post Graduate in Arts/Science	Year: I	Semester: II Research Project
Subject: Geography		
Course Code: GEOG1008Pr	Course Title: Research Project	
Outcome To learn how to select a Research Proposal based on research gap found during the literature survey or field observations mdae. Preparation of synopsis/outline will be also learned. Finally will learn how to collect data and write areport based on the data analysis		
Credits: 04	Max. Marks: 100 (Evaluation by External & Internal Examiner) Dissertation: 75 Internal Assessment: Viva Voce + Attendance :25 (20+5)	
<p>The students will be required to select a topic and area of interest with the help of their respective supervisors allotted to them by the Head of the Department. Research Project dissertation must be submitted to the Department one week before the commencement of the Theory Examinations. The size of the Dissertation normally ranges between 60 and 70 pages. The Research Project Dissertation will be evaluated by the external and internal examiners.</p>		

