

Department of Geography

School of Earth Science

Course Contents & Syllabus

Fourth year (7th & 8th Semesters)

Four Year Under Graduate Programme (FYUP)

Under NEP 2020

for Students enrolled in 2026-27 Academic Session



Hemvati Nandan Bahuguna Garhwal University

(A Central University)

Srinagar Garhwal-246174 (Uttarakhand)

Head
Department of Geography
School of Earth Science
H.N.B. Garhwal University
Srinagar (Uttarakhand)

Fourth Year- (U.G. with Honours)

[illegible]

Fourth Year- (U.G. Honours with Research)

[illegible]

Four Year Under Graduate Programme (FYUP) Under NEP 2020

Semester	Major Subject	Course Name	Credit	
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Fourth Year- (U.G. with Honours)				
Semester	Major Subject	Course Name	Credit	
VII	DSC (Major) -XIII	Geomorphology	4	-
	DSC (Major) –XIV	Advanced Geography of India	4	-
	DSC (Major) –XV	History of Geographical Thought	4	
	DSC (Major) –XVI	Surveying	-	4
	DSE (Major) Elective –III	Geography of Resources	4	-
	(Minor)–VII Or M.D/I.D. (M)-V	Locational Aspects India and World	4	-
	Total		24	
Semester	Major Subject	Course Name	Credit	
VIII	DSC (Major) -XVII	Climatology	4	-
	DSC (Major) –XVIII	Geography of Himalaya	4	-
	DSC (Major) –XIX	Geo-Environmental Studies	4	-
	DSC (Major) –XX	Quantitative & Qualitative Methods in Geography	-	4
	DSE (Major) Elective –IV	Population Geography	4	-
	(Minor)–VIII Or M.D/I.D. (M)-VI	Introduction to GIS	4	-
	Total		24	
Fourth Year- (U.G. Honours with Research)				
Semester	Major Subject	Course Name	Credit	
VII	DSC (Major) -XIII	Geomorphology	4	-
	DSC (Major) –XIV	Advanced Geography of India	4	-
	DSC (Major) –XV	History of Geographical Thought	4	-
	DSC (Major)- XVI-	Research Methodology and Techniques	4	-
	DSE (Major) Elective-III	Surveying	-	4
	(Minor)–VII Or M.D/I.D. (M)-V	Geography of Resources	4	-
	Total		24	
Semester	Major Subject	Course Name	Credit	
VIII	DSC (Major)-XVII	Geography of Himalaya	4	-
	DSC- (Major)-XVIII	Dissertation	-	12
	DSE (Major) Elective -IV	Quantitative & Qualitative Methods in Geography	-	4
	(Minor)–VIII Or M.D/I.D. (M)-VI	Population Geography	4	-
	Total		24	

for Students enrolled in 2026-27 Academic Session

Fourth year (7th & 8th Semesters)

Fourth Year- (U.G. with Honours)

<u>Bachelor of Arts/ Science (B.A./B.SC.) 4 Year</u> <i>Course- DSC Subject -Major</i>			
Programme: B.A./B.Sc.		Year: Four	Semester: Seven
Subject: Geography			
Course Code: GEOG/DSC-MJ008		Course Title: GEOMORPHOLOGY	
Course Learning Objectives: - Understand the concepts, theories, and processes of geomorphology and landscape evolution. - Explain endogenic and exogenic processes in shaping Earth's surface. - An understanding of the linkages between landscape form and processes. - Understanding of the conceptual and dynamic aspects of landform development.			
Course Learning Outcomes: - Discuss and apply the fundamental concepts and theories of geomorphology. - Explain the origin and evolution of major landforms using classical and contemporary geomorphic theories. - Analyse the basic principles and forces for development of landforms through time. - Familiarity and experience applying fundamental concepts in physical systems.			
<i>Credits: 4</i>		<i>DSC</i>	
<i>Max. Marks: 30+70</i>		<i>Min. Passing Marks: 35</i>	
<i>Total No. of Lectures- Tutorials - Practical (in hours per week): L-T-4/W</i>			
Unit		Course Contents	
UNIT-I	Fundamental concepts of Geomorphology; Methods and Approaches of landforms study; Theories of landscape development by Gilbert, Davis, Penck 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	Denudation process, Mass movement, Geomorphic process-River, Glacier, Wind, underground water 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.		
Suggested Readings: - Allison, R. J. (Ed.). (2002). <i>Applied geomorphology: Theory and practice</i>. John Wiley & Sons Ltd., Chichester. U.K. - Anderson, R. S., & Anderson, S. P. (2010). <i>Geomorphology: The mechanics and chemistry of landscapes</i>. Cambridge University Press. Cambridge. - Bierman, P. R., & Montgomery, D. R. (2014). <i>Key concepts in geomorphology</i>. W. H. Freeman and Company Publishers. New York. - Bloom A. L., (2003). <i>Geomorphology: A Systematic Analysis of Late Cenozoic Landforms</i>, Prentice-Hall of India. New Delhi. - Bridges, E. M. (1990). <i>World geomorphology</i>. Cambridge University Press. Cambridge. U.K. - Chorley, R. J. (1972). <i>Spatial Analysis in Geomorphology</i>. Methuen London. - Christopherson, R. W. (2011), <i>Geosystems: An Introduction to Physical Geography</i>, 8 Ed.,Macmillan Publishing Company. - Condie, K.C. (2003). <i>Plate Tectonic and Crustal Evolution</i>, Butterworth-Heinemann, Oxford, Burlington. - Dayal, P. (2015). <i>Text-Book of Geomorphology</i>, Shukla Book Depot, Patna. - Dury, G.H. (Ed.). (1966). <i>Essays in Geomorphology</i>. Heinmann Educational Books Ltd., London. - Fairbridge, R.W. (Ed.) (1968). <i>Encyclopedia of Geomorphology</i>. Rein-hold Book Corp., New York. - Gabler R.E, Peterson. J.F., Trapasso, L.M., Sack, D. (2009). <i>Physical Geography</i>, Brooks/Cole, Cengage Learning, Belmont, USA.			

13. Garner, H.F. (1974). The Origin of Landscape: A Synthesis of Geomorphology. Oxford Univ. Press, New York.
14. Gautam, A (2010): Bhautik Bhugol, Rastogi Publications, Meerut.
15. Gautam, A. (2015). Geomorphology. Sharda Pustak Bhawan. Allahabad.
16. Goudie, A. (Ed.). (2003). Encyclopedia of Geomorphology, Routledge, London.
17. Goudie, A. (Ed.). (2005). Geomorphological Techniques (2nd Edition), Routledge, London.
18. Gregory, K. J., & Goudie, A. S. (Eds.). (2011). *The SAGE handbook of geomorphology*. SAGE Publications.
19. Hails, J.R. (1977). Applied Geomorphology. Elsevier.
20. Harvey, A. (2012). Introducing geomorphology: A guide to landforms and processes. Dunedin Academic Press.
21. Huggett, R.J. (2011). Fundamentals of Geomorphology, (3rd Ed.), Routledge. New York.
22. Kale, V. and Gupta, A. (2001). Elements of Geomorphology. Oxford University Press. Delhi.
23. Kale, V.S. and Gupta, A. (2001). Introduction to Geomorphology, Orient Longman. Hyderabad. India.
24. Knighton, A.D. (1984). Fluvial Forms and Processes, Edward Arnold Publishers Ltd., London. U.K.
25. Leopold, L.B., Wolman, M.G., and Miller, J.P. (1964). Fluvial Processes in Geomorphology, W.H. Freeman Company, San Francisco.
26. Mateo-Gutiérrez, J. (2012). Geomorphology. CRC Press, Boca Raton (FL). USA.
27. Pitty, A. F. (1971). Introduction to Geomorphology. Methuen, London.
28. Richards, K.S. (1982). Rivers: Form and Processes in Alluvial Channels, Methuen & C., Ltd., London
29. Schumm, S. A. (1977). The fluvial system. John Wiley & Sons, Inc., New York.
30. Selby, M.J. (2005). Earth's Changing Surface, Indian Edition, OUP.
31. Singh, S (2009). Bhautik Bhugol ka Swaroop, Prayag Pustak, Allahabad
32. Singh, S. (2004). Geomorphology. Prayag Pustak Bhawan, Allahabad.
33. Skinner, B. J. and Stephen C. P. (2000). The Dynamic Earth: An Introduction to physical Geology, 4th Edition. John Wiley and Sons.
34. Sparks, B. W. (1960). Geomorphology. Longman, London.
35. Strahler, A. H. (2013). Introducing physical geography (6th ed.). John Wiley & Sons.
36. Summerfield, M. A. (1991). Global geomorphology. Pearson Prentice Hall. U.K.
37. Thornbury, W. D. (1968). Principles of geomorphology (2nd ed.). John Wiley & Sons. New York.
38. Tikkaa, R. N. (1989). Bhautik Bhugol ka Swaroop. Kedarnath Ram Nath. Meerut.
39. Worcester, P. G. (1969). Textbook of geomorphology. East-West Press. New Delhi.

Suggested Continuous Evaluation Methods: **Assignment/ Test/ Quiz (MCQ)/ Seminar/ Presentations** (any methods)

Marks distribution of theory examination: **30 marks** by **internal** assessment and **70 marks** by **external** assessment.

<u>Bachelor of Arts/ Science (B.A./B.Sc.) 4 Year</u> <i>Course- DSC Subject -Major</i>			
Programme: B.A./B.Sc.		Year: Four	Semester: Seven
Subject: Geography			
Course Code: GEOG/DSC-MJ009		Course Title: ADVANCED GEOGRAPHY OF INDIA	
Course Learning Objectives: </			

14. Ahmed, Waquar, Amitabh Kundra and Richard Peet (eds.) 2010. India's New Economic Policy: A Cractical Analysis, Jaipur/ Dew Delhi: Rawat Publications
Suggested Continuous Evaluation Methods: Assignment/ Test/ Quiz (MCQ)/ Seminar/ Presentations (any methods)
Marks distribution of theory examination: 30 marks by internal assessment and 70 marks by external assessment.

<u>Bachelor of Arts/ Science (B.A./B.SC.) 4 Year</u> <i>Course- DSC Subject -Major</i>			
Programme: B.A./B.Sc.		Year: Four	Semester: Seven
Subject: Geography			
Course Code: GEOG/DSC-MJ010		Course Title: HISTORY OF GEOGRAPHICAL THOUGHT	
Course Learning Objectives: 1. To introduce to the basic nature of the discipline, its philosophical and methodological development 2. To examine the landmark contributions of classical, medieval, and modern geographers 3. To analyse the evolution of geography across different schools of thought worldwide 4. To critically engage with models, paradigms, and philosophical approaches in geography			
Course Learning Outcomes: 1. Students will gain a clear understanding of the basic nature, scope, and methodological foundations of geography as a discipline. 2. Students will be able to identify and evaluate the landmark contributions of classical, medieval, and modern geographers across different traditions. 3. Students will develop the ability to analyse the evolution of geography through German, French, American, British, and Indian schools of thought. 4. Students will enhance their critical thinking skills by engaging with models, paradigms, and philosophical approaches, and applying them to contemporary geographical debates.			
<i>Credits: 4</i>		<i>DSC</i>	
<i>Max. Marks: 30+70</i>		<i>Min. Passing Marks: 35</i>	
<i>Total No. of Lectures- Tutorials - Practical (in hours per week): L-T-4/W</i>			
Unit		Course Contents	
UNIT-I	Nature, scope and changing perspectives of Geography; Geography as the study of space, place, region, landscape, environment and human-Earth relations; Ancient Indian and selected Asian geographical traditions; Contributions of the Greeks and Romans; Renaissance and the Age of Discovery.		
UNIT-II	Development of modern Geography: German, French, British, American and Russian traditions; Major geographical thinkers -Ratzel, Hettner, Vidal de la Blache, Davis, Mackinder, Sauer, Hartshorne and Schaefer; Dualisms, dichotomies and methodological debates; Development of Geography in India.		
UNIT-III	Philosophical foundations and scientific traditions: Positivism, Pragmatism and Paradigms; Quantitative Revolution, Spatial Science, Models, Laws and Systems Theory; Behavioural and Humanistic Geography (Phenomenology, Idealism and Existentialism); Marxist, Radical and Welfare Geography; Critical Realism		
UNIT-IV	Contemporary geographical thought: Feminist, Political Ecology, Decolonial, Structuralist, Poststructuralist and Postmodern perspectives; Critical Cartography and Digital Geography; Geography in the Anthropocene and Earth-System perspectives; Future directions in Geography; Geographers of Uttarakhand.		
Suggested Readings: 1. Haggett, P. (2001). Geography: A global synthesis. Prentice Hall. 2. Chorley, R. J., & Haggett, P. (Eds.). (1967). Models in geography. Methuen. 3. Johnston, R. J., & Claval, P. (Eds.). (1984). Geography since the Second World War: An international survey. Croom Helm. 4. Johnston, R. J. (1988). The future of geography. Methuen.			

5. Adhikari, S. (2006). Fundamentals of geographical thought. Chaitanya Publishing House.
6. Marcus, D. (1999). Post-structuralism in geography: The diabolical art of spatial science. Edinburgh University Press.
7. Gaile, G. L., & Willmott, C. J. (Eds.). (2003). Geography in America at the dawn of the 21st century. Oxford University Press.
8. Hubbard, P., Kitchin, R., Bartley, B., & Fuller, D. (2002). Thinking geographically: Space, theory and contemporary human geography. Continuum.
9. Hussain, M. (2007). Evolution of geographical thought (5th ed.). Rawat Publications.
10. Dixit, R.D.: Geographical Thought: A Contextual History of Geographical Ideas, Prentice Hall of India, New Delhi, 2001.
10. Peet, R. (1998). *Modern geographical thought*. Blackwell.
11. Cloke, P., Crang, P., & Goodwin, M. (Eds.). (2014). *Introducing human geographies* (3rd ed.). Routledge.
12. Cresswell, T. (2013). *Geographic thought: A critical introduction*. Wiley-Blackwell.
13. Holt-Jensen, A. (2018). *Geography: History and concepts* (6th ed.). Sage.
14. Johnston, R. J., & Sidaway, J. D. (2016). *The dictionary of human geography* (5th ed.). Wiley-Blackwell.
15. Livingstone, D. N. (1992). *The geographical tradition: Episodes in the history of a contested enterprise*. Blackwell.
16. Harvey, D. (1989). *The condition of postmodernity*. Blackwell.
17. Soja, E. W. (1989). *Postmodern geographies: The reassertion of space in critical social theory*. Verso
18. Schaefer, F. K. (1953). Exceptionalism in geography: A methodological examination. *Annals of the Association of American Geographers*, 43(3), 226–249.
19. Agnew, J., Livingstone, D. N., & Rogers, A. (Eds.). (1996). *Human geography: An essential anthology*. Blackwell.
20. Negi, M. S., & Sunil (2025) Geographers of Uttarakhand (Pioneers of Himalayan Geography), AKINIK Publication

Suggested Continuous Evaluation Methods: **Assignment/ Test/ Quiz (MCQ)/ Seminar/ Presentations** (any methods)

Marks distribution of theory examination: **30 marks** by **internal** assessment and **70 marks** by **external** assessment.

Bachelor of Arts/ Science (B.A./B.SC.) 4 Year		
Course- DSC Subject -Major		
Programme: B.A./B.Sc.	Year: Four	Semester: Seven
Subject: Geography		
Course Code: GEOG/DSC-MJ011 (P)	Course Title: SURVEYING	
Course Learning Objectives: 1. To develop advanced knowledge of surveying principles and techniques. 2. To enable students to collect, process and analyse spatial data accurately using classical and modern surveying instruments. 3. To develop the ability to design and execute field survey for geographical research. 4. To promote the application of surveying techniques in solving real-world geographical problems.		
Course Learning Outcomes: 1. Demonstrate advanced proficiency in surveying techniques by applying conventional and modern surveying methods. 2. Analyse and interpret survey data using geospatial techniques to produce an accurate map and spatial analysis for research and planning. 3. Design and conduct an independent field survey by selecting an appropriate survey method, ensuring data quality, and addressing practical challenges in geographical research. 4. Integrate surveying with geospatial technologies such as GIS and remote sensing to solve complex problems in the field of Geography		
Credits: 4	MAJOR	
Max. Marks: 30+70	Min. Passing Marks: 35	
Total No. of Lectures- Tutorials - Practical (in hours per week): L-T-4/W		
Unit	Course Contents	
UNIT-I	Plain table survey: Intersection and radiation method, Triangulation and determination of heights and contouring with clinometers.	
UNIT-II	Dumpy level survey; Prismatic compass survey, Open and close traverse; Instrument-based: Total station Survey.	
UNIT-III	Weather Map: Weather symbols, Representation of atmospheric features, Interpretation of Indian daily weather maps, Weather forecasting method.	
UNIT-IV	GPS: GPS system, Handling usages, GPS-based data acquisition and applications; Altimeter (Hi-tech with precision): Handling and use.	
Suggested Readings: 1. Campbell, J., Introductory Cartography, Prentice Hall, Inc., Englewood Cliff, New Jersey, 1984. 2. Cuff, D.J., & Mattson, M.T., Thematic Maps, their Design and Production, Mathuen, New York., 1982. 3. Robinson, A.H. & others., Elements of Cartography, John Willey and Sons, New York (New edition). 4. Archer, J.E., & Dalton, T.H., Fieldwork in Geography, London. 5. National Atlas and Thematic Maps Organization (NATMO): National Atlas of India, Calcutta. 6. Monkhouse, F.J., Maps and Diagrams, Methuen & Co., London,1967 7. Sarkar, A. K. (1997): Practical Geography: A Systematic Approach. Orient Longman, Kolkata. 8. Sharma, J. P. (2001): Prayogik Bhugol. Rastogi Publication, Meerut 3rd edition. 9. Singh, R.L. and Singh, Rana P.B. (1993): Elements of Practical Geography. (Hindi and English editions). Kalyani Publishers, New Delhi		
Suggested Continuous Evaluation Methods: Assignment/ Test/ Quiz (MCQ)/ Seminar/ Presentations (any methods)		
Marks distribution of theory examination: 30 marks by internal assessment and 70 marks by external assessment.		

<u>Bachelor of Arts/ Science (B.A./B.SC.) 4 Year</u>		
<i>Course- DSE Subject -Major</i>		
Programme: B.A./B.Sc.	Year: Four	Semester: Seven
Subject: Geography		
Course Code: GEOG/DSE-MJ007	Course Title: GEOGRAPHY OF RESOURCES	
Course Learning Objectives: 1. To understand the basic concepts of resource and resource management. 2. To discuss the causes of resource depletion and its consequences from local to global. 3. To study the challenges in the management of different natural resources. 4. To study the resource management policy at national and global levels.		
Course Learning Outcomes: 1. Explain the concepts related to the field of natural resource management. 2. Elaborate the regions behind the resource depletion and their impact. 3. Assess the various issues in the field of natural resource management. 4. Explain the sustainable resource management and resource management policies.		
<i>Credits: 4</i>		<i>DSE</i>
<i>Max. Marks: 30+70</i>		<i>Min. Passing Marks: 35</i>
<i>Total No. of Lectures- Tutorials - Practical (in hours per week): L-T-4/W</i>		
Unit	Course Contents	
UNIT-I	Natural Resources: Meaning, Definition and Concept; Nature and Scope of Resources Geography; Classification of Resources,	
UNIT-II	Soil, Water and Forest Resource: distribution, utilization, problems, management and conservation; Mineral Resources: Iron ore and Bauxite.	
UNIT-III	Energy Resources-Coal, Petroleum and Natural Gas: distribution, production, problems, management and conservation; Renewable energy resources and World energy crisis.	
UNIT-IV	Contemporary Strategies for Resource Management: Sustainable Resource Development; Resource Management Policies. Community Based Natural Resource Management (CBNRM).	
Suggested Readings: 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, Cambdridge 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.		
Suggested Continuous Evaluation Methods: Assignment/ Test/ Quiz (MCQ)/ Seminar/ Presentations (any methods)		
Marks distribution of theory examination: 30 marks by internal assessment and 70 marks by external assessment.		

<u>Bachelor of Arts/ Science (B.A./B.SC.) 4 Year</u> <i>Course -Minor</i>		
Programme: B.A./B.Sc.	Year: Four	Semester: Seven
Subject: Geography		
Course Code: GEOG/MN007	Course Title: LOCATIONAL ASPECTS: INDIA AND WORLD	
Course Learning Objectives: 1. To understand the basics of locational aspects. 2. To discuss the location of various administrative units of India and World. 3. To study the location of different geographical features of India and World. 4. To study the important locations of some man-made resource/ features.		
Course Learning Outcomes: 1. Explain the basics of locational aspects. 2. Locate and identify the different administrative units. 3. Locate and identify the different geographical features of India and world. 4. Locate and identify the important man-made features in India and world.		
<i>Credits: 4</i>	<i>Minor</i>	
<i>Max. Marks: 30+70</i>	<i>Min. Passing Marks: 35</i>	
<i>Total No. of Lectures- Tutorials - Practical (in hours per week): L-T-4/W</i>		
Unit	Course Contents	
UNIT-I	Administrative Units: Country, State, District, Developmental Block and Capital; Important Cities.	
UNIT-II	Geographical Features: Mountain and Range, Major Rivers, Glaciers, lakes, Deserts, Straits, Island, Volcanic and Major Water falls.	
UNIT-III	Man-made Features: Agricultural Belts, Industrial Region, Power Plants; Important Sea & Air Ports, Transportation Routes: Road, Rail and Sea. .	
UNIT-IV	National Parks, Wildlife Sanctuary, Ramsar Sites, Bio-diversity Parks, Grassland and Contemporary issues.	
Suggested Readings: India & the World – NATMO, School Atlas, Oxford-Atlas & Time UK Print World Atlas and Uttarakhand Atlas.		
Suggested Continuous Evaluation Methods: Assignment/ Test/ Quiz (MCQ)/ Seminar/ Presentations (any methods)		
Marks distribution of theory examination: 30 marks by internal assessment and 70 marks by external assessment.		

<u>Bachelor of Arts/ Science (B.A./B.SC.) 4 Year</u>		
Course- DSC Subject -Major		
Programme: B.A./B.Sc.	Year: Four	Semester: Eight
Subject: Geography		
Course Code: GEOG/DSC-MJ012	Course Title: CLIMATOLOGY	
Course Learning Objectives: 1. To understand the meaning, scope, and development of climatology as a scientific discipline. 2. To analyse atmospheric processes including circulation, precipitation, and climatic systems. 3. To study air masses, fronts, cyclones, and their global/regional impacts. 4. To evaluate climate classification systems and their application to global climatic regions. 5. To critically examine climatic change processes, both natural and anthropogenic.		
Course Learning Outcomes: 1. Students will be able to explain atmospheric equilibrium, adiabatic processes, and global circulation systems. 2. Students will understand the origin, classification, and dynamics of air masses, fronts, and cyclones. 3. Students will apply climate classification methods (Köppen, Thornthwaite) to analyze global climates. 4. Students will evaluate climatic change processes, including solar variability, tree-ring analysis, and human impacts. 5. Students will develop informed perspectives on global warming, acid precipitation, and climate hazards.		
Credits: 4		DSC
Max. Marks: 30+70		Min. Passing Marks: 35
Total No. of Lectures- Tutorials - Practical (in hours per week): L-T-4/W		
Unit	Course Contents	
UNIT-I	Meaning, scope, and development of climatology; Composition and structure of atmosphere, Jet streams and Walker circulation; ENSO phenomena (El Niño and La Niña); and precipitation processes and humidity.	
UNIT-II	Origin, growth, classification, and distribution of air masses; horizontal and vertical motion of winds; fronts and frontogenesis; and tropical and temperate cyclones and anticyclones	
UNIT-III	Climate classification: Köppen and Thornthwaite; Weather analysis and forecasting; Weather modification and human behaviour; Atmospheric hazards: cloudbursts and other extreme weather events.	
UNIT-IV	Climatic change: definition, indicators, anatomy; Human impact on global climate; Global warming and the greenhouse effect; Artificial rain, acid precipitation and contemporary debates and policy perspectives on climate change.	
Suggested Readings: 1. Chorley, R. J., & Barry, R. G. (1995). <i>Atmosphere, Weather and Climate</i>. Methuen & Co. Ltd., London. 2. Critchfield, H. J. (2002). <i>General Climatology</i>. Prentice Hall of India, New Delhi. 3. Hidoore, J. J. (1996). <i>Global Environment Change</i>. Prentice Hall, New Jersey. 4. Lockwood, J. G. (1979). <i>World Climatology</i>. Elbs and Edward Arnold (Pub.) Ltd. 5. Miller, A., et al. <i>Elements of Meteorology</i>. Merrill and Columbus. 6. Oliver, J. E., & Hiddore, J. J. (2003). <i>Climatology: An Atmospheric Science</i>. Pearson Education, India. 7. Thomson, R. D., & Perry, A. (1997). <i>Applied Climatology</i>. Routledge, London and New York. 8. Trewartha, G. T. (1954). <i>An Introduction to Climate</i>. McGraw Hill Series in Geography. 9. Lal, D. S. <i>Climatology</i>. Sharda Pustak Bhawan, Allahabad. 10. Singh, Savindra. (2005). <i>Climatology</i>. Prayag Pustak Bhawan, Allahabad. 11. Lal, D. S. <i>Jalvayu Vigyan</i>. Sharda Pustak Bhawan, Allahabad.		
Suggested Continuous Evaluation Methods: Assignment/ Test/ Quiz (MCQ)/ Seminar/ Presentations (any methods)		
Marks distribution of theory examination: 30 marks by internal assessment and 70 marks by external assessment.		

<u>Bachelor of Arts/ Science (B.A./B.SC.) 4 Year</u> Course- DSC Subject -Major		
Programme: B.A./B.Sc.	Year: Four	Semester: Eight
Subject: Geography		
Course Code: GEOG/DSC-MJ013	Course Title: GEOGRAPHY OF HIMALAYA	
Course Learning Objectives: 1. To understand the geo-physical identity, origin, and structural evolution of the Himalaya. 2. To analyse the physiographic and ecological characteristics of the Himalayan region. 3. To examine demographic, economic, and developmental aspects of the Himalayan states. 4. To evaluate regional diversity and policy frameworks for sustainable mountain development.		
Course Learning Outcomes: 1. Students will comprehend the geological formation, physiographic divisions, and geo-sensitivity of the Himalaya. 2. Students will understand the natural and anthropogenic processes shaping Himalayan landscapes and ecosystems. 3. Students will analyse demographic and economic patterns, including agriculture, tourism, and power development. 4. Students will critically assess regional planning and policy approaches for sustainable Himalayan development.		
Credits: 4		DSC
Max. Marks: 30+70		Min. Passing Marks: 35
Total No. of Lectures- Tutorials - Practical (in hours per week): L-T-4/W		
Unit	Course Contents	
UNIT-I	Geo-physical identity and origin of the Himalaya; structural divisions and their regional significance; geo-political issues and border dynamics; cultural appraisal and ethnic diversity; Himalayan people and tribes; and the geo-sensitivity and future prospects of the Himalayan region.	
UNIT-II	Physiographic structure and landforms; drainage system and Himalayan water resources; glaciers, lakes, and mountain passes; climate and natural vegetation; and natural hazards and geo-ecological problems resulting from anthropogenic activities.	
UNIT-III	Population distribution, density, and growth; migration and urbanization trends; agriculture, horticulture, and animal husbandry; industrial development and tourism; developmental challenges; and hydroelectric power projects in the Himalayan region.	
UNIT-IV	Geographical account of the Western, Central, and Eastern Himalaya; regional analysis of the Kashmir Valley, Ladakh, Lahaul & Spiti, Kathmandu Valley, and Teesta Valley; mountain development planning and policy; and sustainable development and climate resilience in the Himalayan states.	
Suggested Readings: 1. Lal, J. S., & Moddie (Ed.). <i>The Himalaya: Aspect of Change</i> . 2. Bose, S. C. <i>Land and People of the Himalaya</i> . 3. Singh, O. P. (Ed.). <i>The Himalaya: Nature, Man and Culture</i> . 4. Joshi, S. C., & Others. <i>Kumaun Himalaya</i> . 5. Nityanand, & Kumar, K. <i>The Holy Himalaya: Geographical Interpretation of Garhwal Himalaya</i> . 6. Kharkwal, S. C. <i>Uttarakhand: Physio-Culture Complex</i> . 7. Maithani, D. D. <i>Central Himalaya: Ecology, Environmental Resources & Development</i> . 8. Rawat, M. S. S. (Ed.). <i>Central Himalaya: Environment and Development</i> (Vols. I & II). 9. Valdiya, K. S. (Ed.). (1988). <i>Kumaun: Land and People</i> . 10. Bhatt, H. P., & Bhatt, S. (1993). <i>Environmental Dimensions of Rural Settlements in the Himalaya</i> . 11. Valdiya, K. S. (1998). <i>The Himalayan Rivers: Aspects of Change</i> . Oxford & IBH Publishing, New Delhi. 12. Ives, J. D., & Messerli, B. (1989). <i>Himalayan Dilemma: Reconciling Development and Conservation</i> . Cambridge University Press, Cambridge. 13. Zoller, H. (1981). <i>Man and Environment in the Himalaya</i> . K. G. Saur Verlag, Munich. 14. Gulia, K. S. (2007). <i>Ecology and Environment in the Himalayas</i> . Isha Books, New Delhi.		
Suggested Continuous Evaluation Methods: Assignment/ Test/ Quiz (MCQ)/ Seminar/ Presentations (any methods)		
Marks distribution of theory examination: 30 marks by internal assessment and 70 marks by external assessment.		

<u>Bachelor of Arts/ Science (B.A./B.SC.) 4 Year</u> <i>Course- DSC Subject -Major</i>		
Programme: B.A./B.Sc.	Year: Four	Semester: Eight
Subject: Geography		
Course Code: GEOG/DSC-MJ014	Course Title: GEO-ENVIRONMENTAL STUDIES	
Course Learning Objectives: 1.To introduce students to the fundamental concepts and scope of Environmental Geography. 2.To provide an in-depth understanding of ecosystems, including their structure, ecological processes and dynamics. 3.To explore the complexities of environmental degradation, pollution and sustainable development initiatives. 4. To develop critical thinking and problem-solving skills to address environmental challenges at local, regional, and global scales.		
Course Learning Outcomes: 1. Students will be able to articulate the key concepts and principles of Environmental Geography. 2. Students will develop the analytical skills necessary to evaluate ecosystem structures and functions. 3. Students will gain the ability to critically analyze environmental degradation, pollution and global environmental challenges. 4. Students will be able to demonstrate awareness of environmental ethics and global environmental challenges.		
<i>Credits: 4</i>	<i>DSC</i>	
<i>Max. Marks: 30+70</i>	<i>Min. Passing Marks: 35</i>	
<i>Total No. of Lectures- Tutorials - Practical (in hours per week): L-T-4/W</i>		
Unit	Course Contents	
UNIT-I	Meaning and scope of Environmental Geography; Basic concept of Environmental Geography; Component and types of environments; Ecology; Principles, types and ecological secession; 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. Sendai Framework for Disaster Risk Reduction.	
Suggested Readings: 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. 11. Smith, K. (1996): Environmental Hazards, Routledge, London		
Suggested Continuous Evaluation Methods: Assignment/ Test/ Quiz (MCQ)/ Seminar/ Presentations (any methods)		
Marks distribution of theory examination: 30 marks by internal assessment and 70 marks by external assessment.		

<u>Bachelor of Arts/ Science (B.A./B.SC.) 4 Year</u> Course- DSC Subject -Major		
Programme: B.A./B.Sc.	Year: Four	Semester: Eight
Subject: Geography		
Course Code: GEOG/DSC-MJ015 (P)	Course Title: QUANTITATIVE & QUALITATIVE METHODS IN GEOGRAPHY	
Course Learning Objectives: 1. To introduce students to qualitative research traditions in geography 2. To develop skills in qualitative data collection, analysis, and interpretation 3. To understand ethical, positional, and field-based dimensions of research 4. To enable students to design and conduct small-scale qualitative research		
Course Learning Outcomes: 1. Understand the philosophical foundations and approaches of qualitative research 2. Apply qualitative methods such as interviews, ethnography, and observation 3. Critically analyse qualitative data using coding and thematic interpretation 4. Design and present a qualitative research project with ethical considerations		
Credits: 4	Major	
Max. Marks: 30+70	Min. Passing Marks: 35	
Total No. of Lectures- Tutorials - Practical (in hours per week): L-T-4/W		
Unit	Course Contents	
UNIT-I	Research methods in geography, quantitative vs qualitative vs mixed methods, Levels of measurement, nature of data in quantitative and qualitative research; preparing data collection tools; audio-visual methods, focus group discussion,	
UNIT-II	content and thematic analysis; discourse and narrative analysis; basic introduction to qualitative data analysis software	
UNIT-III	Measures of inequality, central tendencies and dispersion, Location quotient; Lorenz curve, Gini's Co-efficient; Nearest Neighbour Analysis ; Rank Size Rule;	
UNIT-IV	Correlation: Spearman's Rank and Karl Pearson's method, Simple linear regression: basic concepts and construction of regression line; Introduction to basics of R software (hands on training)	
Suggested Readings: 1. Basu, P. (2009). Practical Geography: A Systematic Approach. Orient BlackSwan. 2. Tulsian, P. C. (2007). Business Statistics. Pearson Education India. 3. S. P. Gupta (2021). Statistica Methods, 46th Edition, Sultan Chand and Sons, New Delhi 4. Mahmood, A. (1998). Statistical Methods in Geographical Studies. Rajesh Publications. 5. D. N. Gujrati, D.C. Porter and S. Gunasekar (2017), Basic Econometrics, 5th Edition, McGraw Hill Education 6. Ashis Sarkar (2015). Practical Geography: A Systematic Approach, 3rd Edition, Orient BlackSwan 7. Mishra, R.P. & Ramesh A (1989). Fundamentals of Cartography, 2nd Edition, South Aisa Books 8. Singh, R. L. and R. P. B. Singh (2015). Elements of Practical Geography (English/Hindi), Kalyani Publishers 9. Hay, I. (2010). Qualitative research methods in human geography (3rd ed.). Oxford University Press. 10. Creswell, J. W. (2009). Research design: Qualitative, quantitative, and mixed methods approaches (3rd ed.). SAGE Publications. 11. DeLyser, D., Herbert, S., Aitken, S., Crang, M., & McDowell, L. (Eds.). (2010). The SAGE handbook of qualitative geography. SAGE Publications. 12. Clifford, N., & Valentine, G. (Eds.). (2010). Key methods in geography (2nd ed.). SAGE Publications. 13. Silverman, D. (2011). Interpreting qualitative data (4th ed.). SAGE Publications. 14. Kabacoff, R. I. (2015). R in action: Data analysis and graphics with R (2nd ed.). Manning Publications.		
Suggested Continuous Evaluation Methods: Assignment/ Test/ Quiz (MCQ)/ Seminar/ Presentations (any methods)		
Marks distribution of theory examination: 30 marks by internal assessment and 70 marks by external assessment.		

Bachelor of Arts/ Science (B.A./B.SC.) 4 Year		
Course- DSE Subject -Major		
Programme: B.A./B.Sc.	Year: Four	Semester: Eight
Subject: Geography		
Course Code: GEOG/DSE-MJ008	Course Title: POPULATION GEOGRAPHY	
Course Learning Objectives:		
1. Understand the fundamental concepts, theories and approaches of Population Geography and their geographical significance.		
2. Analyse population distribution, composition, dynamics and migration using demographic data and geographical methods.		
3. Evaluate population issues, policies and development challenges from local, national and global perspectives.		
Course Learning Outcomes:		
1. Explain the concepts, theories and methods of Population Geography.		
2. Interpret demographic data to identify patterns of population distribution, composition and change.		
3. Analyse the spatial dimensions of fertility, mortality, migration and population growth.		
Credits: 4	DSE	
Max. Marks: 30+70	Min. Passing Marks: 35	
Total No. of Lectures- Tutorials - Practical (in hours per week): L-T-4/W		
Unit	Course Contents	
UNIT-I	Nature, scope and significance of Population Geography and its relationship with demography, Relevance of Population Geography; Recent approaches and methods to study population geography.	
UNIT-II	Population composition; Population growth, density, distribution patterns and their determinants; Concepts of under, over and optimum Population.	
UNIT-III	Concepts and measurements of fertility, mortality and migrations; major theories of fertility, mortality and migration, demographic transition theory, demographic dividend.	
UNIT-IV	Concept of Human Resource and Management; Population resource regions; Population planning and policies in under-developed and developed countries, Human development index; National Population Policies in India.	
Suggested Readings:		
1. Asha A. Bhende and Tata Kanitkar (2024). Principles of Population Studies, 19 th Edition, Himalaya Publishing House Pvt. Ltd., India		
2. Chandna, R.C. (2000). A Geography of Population; Concept, Determinants and Patterns, Kalyani Pub. New Delhi		
3. Beaujeu-Garnier, Jacqueline (1978). Geography of Population, Longman, London 1970.		
4. Srinivasan, K. (1997). Basic Demographic Techniques and Applications, Sage Pub. New Delhi,		
5. Clarke, J.I. (1972). Population Geography, Pergamon. Oxford		
6. Bhagat, R. B. and Rajan, S. I. (2023). Researching Internal Migration, Routledge, London		
7. Bhagat, R. B. (2008). Assessing the measurement of internal migration in India , Asian and Pacific Migration Journal, 17(1), 91-102		
8. Md Izhaar Hassan (2020): Population Geography-A Systematic Exposition, Routledge, London		
9. United Nations Demographic Manuals: https://www.unpopulation.org/en/development/desa/population/publications/manual/index.html		
10. ORGI, UNFPA (2014), Training Manual on Demographic Techniques, https://india.unfpa.org/en/publications/training-manual-demographic-techniques		
Suggested Continuous Evaluation Methods: Assignment/ Test/ Quiz (MCQ)/ Seminar/ Presentations (any methods)		
Marks distribution of theory examination: 30 marks by internal assessment and 70 marks by external assessment.		

<u>Bachelor of Arts/ Science (B.A./B.SC.) 4 Year</u>		
Course- Minor		
Programme: B.A./B.Sc.	Year: Four	Semester: Eight
Subject: Geography		
Course Code: GEOG/MN008	Course Title: INTRODUCTION TO GIS	
Course Learning Objectives: 1. Explain the basic principles and components of remote sensing. 2. Understand the fundamentals of aerial photogrammetry and image processing for spatial analysis. 3. Analyse land-use and land-cover data using remote sensing techniques. 4. Recognise the applications of remote sensing in geography, environmental monitoring, resource management, and disaster management.		
Course Learning Outcomes: 1. Demonstrate an understanding of the principles and components of Remote Sensing and GIS. 2. Analyse spatial data and satellite imagery using Remote Sensing and GIS techniques. 3. Apply geospatial tools for mapping, spatial analysis, and problem-solving. 4. Evaluate the role of Remote Sensing and GIS in geographical research and sustainable development.		
Credits: 4	DSE	
Max. Marks: 30+70	Min. Passing Marks: 35	
Total No. of Lectures- Tutorials - Practical (in hours per week): L-T-4/W		
Unit	Course Contents	
UNIT-I	Definition, process and stages of Remote Sensing; Energy sources and radiation; EMR; Energy interaction with atmosphere and earth surface principles of microwave Remote Sensing, Remote sensing Platforms, Satellites, sensors and 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 Aerial photography; Basic geometric characteristics- scale, height, overlap, mosaic, resolution, stereoscopic coverage; Fundamental concept of Photogrammetry, Orientation, relief displacement, stereoscopic, 3D viewing, Uses of Aerial photography.	
UNIT-III	Definition, concept, scope and components of GIS; Data and Information; Geo-referencing and rectification; Data imputing methods and GPS. Databases, types 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.	
Suggested Readings: 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).		
Suggested Continuous Evaluation Methods: Assignment/ Test/ Quiz (MCQ)/ Seminar/ Presentations (any methods)		
Marks distribution of theory examination: 30 marks by internal assessment and 70 marks by external assessment.		

Fourth Year- (U.G. Honours with Research)

<u>Bachelor of Arts/ Science (B.A./B.SC.) 4 Year</u> Course- DSC Subject -Major		
Programme: B.A./B.Sc.	Year: Four	Semester: Seven
Subject: Geography		
Course Code: GEOG/DSC-MJ008	Course Title: GEOMORPHOLOGY	
Course Learning Objectives: 1. Understand the concepts, theories, and processes of geomorphology and landscape evolution. 2. Explain endogenic and exogenic processes in shaping Earth's surface. 3. An understanding of the linkages between landscape form and processes. 4. Understanding of the conceptual and dynamic aspects of landform development.		
Course Learning Outcomes: 1. Discuss and apply the fundamental concepts and theories of geomorphology. 2. Explain the origin and evolution of major landforms using classical and contemporary geomorphic theories. 3. Analyse the basic principles and forces for development of landforms through time. 4. Familiarity and experience applying fundamental concepts in physical systems.		
<i>Credits: 4</i>	<i>DSC</i>	
<i>Max. Marks: 30+70</i>	<i>Min. Passing Marks: 35</i>	
<i>Total No. of Lectures- Tutorials - Practical (in hours per week): L-T-4/W</i>		
Unit	Course Contents	
UNIT-I	Fundamental concepts of Geomorphology; Methods and Approaches of landforms study; Theories of landscape development by Gilbert, Davis, Penck 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	Denudation process, Mass movement, Geomorphic process-River, Glacier, Wind, underground water 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.	
Suggested Readings: 1. Allison, R. J. (Ed.). (2002). <i>Applied geomorphology: Theory and practice</i>. John Wiley & Sons Ltd., Chichester. U.K. 2. Anderson, R. S., & Anderson, S. P. (2010). <i>Geomorphology: The mechanics and chemistry of landscapes</i>. Cambridge University Press. Cambridge. 3. Bierman, P. R., & Montgomery, D. R. (2014). <i>Key concepts in geomorphology</i>. W. H. Freeman and Company Publishers. New York. 4. Bloom A. L., (2003). <i>Geomorphology: A Systematic Analysis of Late Cenozoic Landforms</i>, Prentice-Hall of India. New Delhi. 5. Bridges, E. M. (1990). <i>World geomorphology</i>. Cambridge University Press. Cambridge. U.K. 6. Chorley, R. J. (1972). <i>Spatial Analysis in Geomorphology</i>. Methuen London. 7. Christopherson, R. W. (2011), <i>Geosystems: An Introduction to Physical Geography</i>, 8 Ed.,Macmillan Publishing Company. 8. Condie, K.C. (2003). <i>Plate Tectonic and Crustal Evolution</i>, Butterworth-Heinemann, Oxford, Burlington. 9. Dayal, P. (2015). <i>Text-Book of Geomorphology</i>, Shukla Book Depot, Patna. 10. Dury, G.H. (Ed.). (1966). <i>Essays in Geomorphology</i>. Heinmann Educational Books Ltd., London. 11. Fairbridge, R.W. (Ed.) (1968). <i>Encyclopedia of Geomorphology</i>. Rein-hold Book Corp., New York. 12. Gabler R.E, Peterson. J.F., Trapasso, L.M., Sack, D. (2009). <i>Physical Geography</i>, Brooks/Cole, Cengage Learning, Belmont, USA. 13. Garner, H.F. (1974). <i>The Origin of Landscape: A Synthesis of Geomorphology</i>. Oxford Univ. Press, New York. 14. Gautam, A (2010): <i>Bhautik Bhugol</i>, Rastogi Publications, Meerut. 15. Gautam, A. (2015). <i>Geomorphology</i>. Sharda Pustak Bhawan. Allahabad.		

16. Goudie, A. (Ed.). (2003). *Encyclopedia of Geomorphology*, Routledge, London.
17. Goudie, A. (Ed.). (2005). *Geomorphological Techniques* (2nd Edition), Routledge, London.
18. Gregory, K. J., & Goudie, A. S. (Eds.). (2011). *The SAGE handbook of geomorphology*. SAGE Publications.
19. Hails, J.R. (1977). *Applied Geomorphology*. Elsevier.
20. Harvey, A. (2012). *Introducing geomorphology: A guide to landforms and processes*. Dunedin Academic Press.
21. Huggett, R.J. (2011). *Fundamentals of Geomorphology*, (3rd Ed.), Routledge. New York.
22. Kale, V. and Gupta, A. (2001). *Elements of Geomorphology*. Oxford University Press. Delhi.
23. Kale, V.S. and Gupta, A. (2001). *Introduction to Geomorphology*, Orient Longman. Hyderabad. India.
24. Knighton, A.D. (1984). *Fluvial Forms and Processes*, Edward Arnold Publishers Ltd., London. U.K.
25. Leopold, L.B., Wolman, M.G., and Miller, J.P. (1964). *Fluvial Processes in Geomorphology*, W.H. Freeman Company, San Francisco.
26. Mateo-Gutiérrez, J. (2012). *Geomorphology*. CRC Press, Boca Raton (FL). USA.
27. Pitty, A. F. (1971). *Introduction to Geomorphology*. Methuen, London.
28. Richards, K.S. (1982). *Rivers: Form and Processes in Alluvial Channels*, Methuen & C., Ltd., London
29. Schumm, S. A. (1977). *The fluvial system*. John Wiley & Sons, Inc., New York.
30. Selby, M.J. (2005). *Earth's Changing Surface*, Indian Edition, OUP.
31. Singh, S (2009). *Bhautik Bhugol ka Swaroop*, Prayag Pustak, Allahabad
32. Singh, S. (2004). *Geomorphology*. Prayag Pustak Bhawan, Allahabad.
33. Skinner, B. J. and Stephen C. P. (2000). *The Dynamic Earth: An Introduction to physical Geology*, 4th Edition. John Wiley and Sons.
34. Sparks, B. W. (1960). *Geomorphology*. Longman, London.
35. Strahler, A. H. (2013). *Introducing physical geography* (6th ed.). John Wiley & Sons.
36. Summerfield, M. A. (1991). *Global geomorphology*. Pearson Prentice Hall. U.K.
37. Thornbury, W. D. (1968). *Principles of geomorphology* (2nd ed.). John Wiley & Sons. New York.
38. Tikkaa, R. N. (1989). *Bhautik Bhugol ka Swaroop*. Kedarnath Ram Nath. Meerut.
39. Worcester, P. G. (1969). *Textbook of geomorphology*. East-West Press. New Delhi.

Suggested Continuous Evaluation Methods: **Assignment/ Test/ Quiz (MCQ)/ Seminar/ Presentations** (any methods)

Marks distribution of theory examination: **30 marks** by **internal** assessment and **70 marks** by **external** assessment.

Bachelor of Arts/ Science (B.A./B.SC.) 4 Year		
Course- DSC Subject -Major		
Programme: B.A./B.Sc.	Year: Four	Semester: Seven
Subject: Geography		
Course Code: GEOG/DSC-MJ009	Course Title: ADVANCED GEOGRAPHY OF INDIA	
Course Learning Objectives: 1. To understand the geological evolution, physiographic characteristics that shape the physical geography of India. 2. To analyse the demographic characteristics, population dynamics and population policies. 3. To examine the spatial patterns of agriculture, agro-climatic regions and infrastructure for sustainable economic growth. 4. To evaluate India's planning process, economic reforms and contemporary developmental issues.		
Course Learning Outcomes: 1. Explain the geological evolution, physiographic and monsoon mechanisms influencing India's physical environment. 2. Analyse the spatial patterns of population, settlement distribution and the implications of the National Population Policy. 3. Assess the characteristics of Indian agriculture, industrial regions, and their role in regional economic development. 4. Critically evaluate India's planning process and emerging contemporary issues affecting regional development.		
Credits: 4		DSC
Max. Marks: 30+70		Min. Passing Marks: 35
Total No. of Lectures- Tutorials - Practical (in hours per week): L-T-4/W		
Unit	Course Contents	
UNIT-I	Making of India through geological times, structure and relief; Drainage systems and watersheds; Physiographic divisions; Mechanisms of the Indian Monsoon.	
UNIT-II	Population growth, trends and distribution; Population- density, Sex and literacy, Trends of urbanisation; Spatial distribution and pattern of settlement, National population policy.	
UNIT-III	Agricultural characteristics and trends; Agro-climate region, Infrastructure: irrigation, power, fertilizer, HYV seeds and farm technology; Green, white, blue and yellow revolutions.	
UNIT-IV	Industrial Complex and Industrial regions, New industrial policy, Evolution of Planning in India: Five-Year Plans to NITI Aayog, Integrated Rural Development and Sustainable Livelihoods, Economic Reforms- Multinationals, liberalization and Contemporary Issues.	
Suggested Readings: 1. Chapman, G. and Baker, K.M. (eds.) (1992): The Changing Geography of Asia. Routledge, London. 2. Farmer, B.H. (1983): Introduction to South Asia. Methuen and Company Ltd. and Company Ltd., London. 3. Ganguly, S. and Neil, De Votta (eds.) (2003): Understanding Contemporary India. Lynne Rienner Publishers., Boulder and London. 4. Johnson, B. L. C. (ed.) (2001): Geographical Dictionary of India. Vision Books, New Delhi. Johnson, B.L.C. (1983): Development in South Asia. Penguin Books, Harmondsworth. 5. Khullar, D. R. (2006): India. A Comprehensive Geography. Kalyani Publishers., New Delhi. Krishnan, M. S. (1968): Geology of India and Burma. 4th edition. Higgin Bothams Private. Ltd.,Madras. 6. Nag, P. and Gupta S. S. (1992): Geography of India. Concept Publishing. Company, New Delhi. Sharma, T. C. (2003): India: Economic and Commercial Geography. Vikas Publication., New Delhi. 7. Singh, J. (2003): India: A Comprehensive and Systematic Geography. Gyanodaya Prakashan, Gorakhpur. 8. Singh, R. L. (ed.) (1971): India. A Regional Geography. National Geographical Society of India, Varanasi. 9. Spate, O.H.K., Learmonth, A.T.A. and Farmer, B. H. (1979): India and Pakistan. Methuen and Company Ltd. and Company Ltd., London. 10. Subbarao, B. (1959): The Personality of India. University of Baroda Press, Baroda. 11. Tirtha, R. (2002): Geography of India. Rawat Publications., Jaipur and New Delhi. 12. Tiwari, R. C. (2007): Geography of India, Prayag Pustak Bhawan, Allahabad 13. Wadia, D. N. (1959): Geology of India. MacMillan and Company, London and Madras. Student edition. 14. Ahmed, Waquar, Amitabh Kundra and Richard Peet (eds.) 2010. India’s New Economic Policy: A Cractical Analysis, Jaipur/ Dew Delhi: Rawat Publications		
Suggested Continuous Evaluation Methods: Assignment/ Test/ Quiz (MCQ)/ Seminar/ Presentations (any methods)		
Marks distribution of theory examination: 30 marks by internal assessment and 70 marks by external assessment.		

<u>Bachelor of Arts/ Science (B.A./B.Sc.) 4 Year</u>		
<i>Course- DSC Subject -Major</i>		
Programme: B.A./B.Sc.	Year: Four	Semester: Seven
Subject: Geography		
Course Code: GEOG/DSC-MJ010	Course Title: HISTORY OF GEOGRAPHICAL THOUGHT	
Course Learning Objectives: 1. To introduce to the basic nature of the discipline, its philosophical and methodological development 2. To examine the landmark contributions of classical, medieval, and modern geographers 3. To analyse the evolution of geography across different schools of thought worldwide 4. To critically engage with models, paradigms, and philosophical approaches in geography		
Course Learning Outcomes: 1. Students will gain a clear understanding of the basic nature, scope, and methodological foundations of geography as a discipline. 2. Students will be able to identify and evaluate the landmark contributions of classical, medieval, and modern geographers across different traditions. 3. Students will develop the ability to analyse the evolution of geography through German, French, American, British, and Indian schools of thought. 4. Students will enhance their critical thinking skills by engaging with models, paradigms, and philosophical approaches, and applying them to contemporary geographical debates.		
<i>Credits: 4</i>	<i>DSC</i>	
<i>Max. Marks: 30+70</i>	<i>Min. Passing Marks: 35</i>	
<i>Total No. of Lectures- Tutorials - Practical (in hours per week): L-T-4/W</i>		
Unit	Course Contents	
UNIT-I	Nature, scope and changing perspectives of Geography; Geography as the study of space, place, region, landscape, environment and human-earth relations; Ancient Indian and selected Asian geographical traditions; Contributions of the Greeks and Romans; Renaissance and the Age of Discovery.	
UNIT-II	Development of modern Geography: German, French, British, American and Russian traditions; Major geographical thinkers -Ratzel, Hettner, Vidal de la Blache, Davis, Mackinder, Sauer, Hartshorne and Schaefer; Dualisms, dichotomies and methodological debates; Development of Geography in India.	
UNIT-III	Philosophical foundations and scientific traditions: Positivism, Pragmatism and Paradigms; Quantitative Revolution, Spatial Science, Models, Laws and Systems Theory; Behavioural and Humanistic Geography (Phenomenology, Idealism and Existentialism); Marxist, Radical and Welfare Geography; Critical Realism	
UNIT-IV	Contemporary geographical thought: Feminist, Political Ecology, Decolonial, Structuralist, Poststructuralist and Postmodern perspectives; Critical Cartography and Digital Geography; Geography in the Anthropocene and Earth-System perspectives; Future directions in Geography; Geographers of Uttarakhand.	
Suggested Readings: 1. Haggett, P. (2001). Geography: A global synthesis. Prentice Hall. 2. Chorley, R. J., & Haggett, P. (Eds.). (1967). Models in geography. Methuen. 3. Johnston, R. J., & Claval, P. (Eds.). (1984). Geography since the Second World War: An international survey. Croom Helm. 4. Johnston, R. J. (1988). The future of geography. Methuen. 5. Adhikari, S. (2006). Fundamentals of geographical thought. Chaitanya Publishing House. 6. Marcus, D. (1999). Post-structuralism in geography: The diabolical art of spatial science. Edinburgh University Press. 7. Gaile, G. L., & Willmott, C. J. (Eds.). (2003). Geography in America at the dawn of the 21st century. Oxford University Press. 8. Hubbard, P., Kitchin, R., Bartley, B., & Fuller, D. (2002). Thinking geographically: Space, theory and contemporary human geography. Continuum.		

9. Hussain, M. (2007). Evolution of geographical thought (5th ed.). Rawat Publications.
10. Dixit, R.D.: Geographical Thought: A Contextual History of Geographical Ideas, Prentice Hall of India, New Delhi, 2001.
10. Peet, R. (1998). *Modern geographical thought*. Blackwell.
11. Cloke, P., Crang, P., & Goodwin, M. (Eds.). (2014). *Introducing human geographies* (3rd ed.). Routledge.
12. Cresswell, T. (2013). *Geographic thought: A critical introduction*. Wiley-Blackwell.
13. Holt-Jensen, A. (2018). *Geography: History and concepts* (6th ed.). Sage.
14. Johnston, R. J., & Sidaway, J. D. (2016). *The dictionary of human geography* (5th ed.). Wiley-Blackwell.
15. Livingstone, D. N. (1992). *The geographical tradition: Episodes in the history of a contested enterprise*. Blackwell.
16. Harvey, D. (1989). *The condition of postmodernity*. Blackwell.
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18. Schaefer, F. K. (1953). Exceptionalism in geography: A methodological examination. *Annals of the Association of American Geographers*, 43(3), 226–249.
19. Agnew, J., Livingstone, D. N., & Rogers, A. (Eds.). (1996). *Human geography: An essential anthology*. Blackwell.
20. Negi, M. S., & Sunil (2025) Geographers of Uttarakhand (Pioneers of Himalayan Geography), AKINIK Publication

Suggested Continuous Evaluation Methods: **Assignment/ Test/ Quiz (MCQ)/ Seminar/ Presentations** (any methods)

Marks distribution of theory examination: **30 marks** by **internal** assessment and **70 marks** by **external** assessment.

Bachelor of Arts/ Science (B.A./B.SC.) 4 Year		
Course- DSC Subject -Major		
Programme: B.A./B.Sc.	Year: Four	Semester: Seven
Subject: Geography		
Course Code: GEOG/DSC-MJ011	Course Title: RESEARCH METHODOLOGY AND TECHNIQUES	
Course Learning Objectives: 1. To understand the concepts, methodologies of geographical research and formulate scientifically relevant research problems. 2. To develop competencies in research design, sampling techniques and the application of appropriate statistical tools. 3. To apply geospatial technologies and interpretation in geographical research. 4. Acquire skills in scientific writing, dissemination of research findings and ethical research practices.		
Course Learning Outcomes: 1. Explain the fundamental concepts and methods in Geography, and formulate appropriate research problems. 2. Design and conduct geographical research using suitable sampling techniques. 3. Analyse and interpret quantitative, qualitative and statistical techniques to address geographical problems. 4. Prepare research proposals, pilot studies, project reports and research papers, citation practices and research ethics.		
Credits: 4		DSC
Max. Marks: 30+70		Min. Passing Marks: 35
Total No. of Lectures- Tutorials - Practical (in hours per week): L-T-4/W		
Unit	Course Contents	
UNIT-I	Concept & significance of research in Geography; Nature, objective and basis of research; Types of research, Approaches and methods; Review of literature, Formulation of Research problem; Techniques and research process.	
UNIT-II	Research Design: Meaning, need, features and types; Sampling: Types, methods and steps; Design of spatial sampling; Survey and experiments; Data collection methods - primary and secondary data, schedule, questionnaire and observation.	
UNIT-III	Hypothesis: meaning, characteristic importance and formulation; Testing of Hypothesis; Parametric and non-parametric tests; Introduction to open sources statistical software;	
UNIT-IV	Research Ethics and plagiarism; Writing of research report/paper and dissertation; Framing of pilot projects; Citation and referencing using softwares.	
Suggested Readings: 1. Bhatt H. P. and Bansal S.C. (2012): Research methodology (in Hindi), Meenakshi Prakashan, Meerut. 2. Ahuja, R. (2001): Research Methods, Rawat methodology, Excel Books, New Delhi. 3. Bhattacharya, D.K. (2005): Research Methodology, Excel Books, New Delhi. 4. Blaxter, L.; Hughes, C. and Tight, M. (1996): How to Research. Open University Press, Buckingham. 5. Crang, Mike 1999. Cultural Geography. Routledge, London. 6. Denzin, N.K. and Lincoln, Y.S., (eds.) (2000): handbook of Qualitative Research thousand Oaks C.A. Sage Publications. 7. Dikshit, R.D. (2003): The Art and Science of Geography: Integrated Readings. Prentice- Hall of India, New Delhi. 8. Dorling, D. And Simpson, L.(eds.) (1999): Statistics in Society. Edward Arnold, London. 9. Fisher, P. And Unwin, D., (eds.) (2002): Virtual Reality in Geography, Taylor and Francis, London. 10. Hay, I. (ed.) (2000): Qualitative research Methods in Human Geography. Oxford University Press, New York. 11. Henn, M., Mark W., and Nick F. (2006): A short introduction to Social Research, Vistara Publications, New Delhi. 12. Eyles J. And Smith D.M. (1988): Qualitative Methods in Human Geography, Polity Press, Dales Brewering Cambridge. 13. Kitchin, R. And Tate, N., (2001): Conducting Research into Human geography, Theory, Methodology and Practice. Prentice-hall, London. 14. Har Prasad: Research Methodology and Techniques in Geography, Rawat Publications, Jaipur.		
Suggested Continuous Evaluation Methods: Assignment/ Test/ Quiz (MCQ)/ Seminar/ Presentations (any methods)		
Marks distribution of theory examination: 30 marks by internal assessment and 70 marks by external assessment.		

<u>Bachelor of Arts/ Science (B.A./B.SC.) 4 Year</u>		
Course- DSC Subject -Major		
Programme: B.A./B.Sc.	Year: Four	Semester: Seven
Subject: Geography		
Course Code: GEOG/DSC-MJ011 (P)	Course Title: SURVEYING	
Course Learning Objectives: 1. To develop advanced knowledge of surveying principles and techniques. 2. To enable students to collect, process and analyse spatial data accurately using classical and modern surveying instruments. 3. To develop the ability to design and execute field survey for geographical research. 4. To promote the application of surveying techniques in solving real-world geographical problems.		
Course Learning Outcomes: 1. Demonstrate advanced proficiency in surveying techniques by applying conventional and modern surveying methods. 2. Analyse and interpret survey data using geospatial techniques to produce an accurate map and spatial analysis for research and planning. 3. Design and conduct an independent field survey by selecting an appropriate survey method, ensuring data quality, and addressing practical challenges in geographical research. 4. Integrate surveying with geospatial technologies such as GIS and remote sensing to solve complex problems in the field of Geography		
Credits: 4	MAJOR	
Max. Marks: 30+70	Min. Passing Marks: 35	
Total No. of Lectures- Tutorials - Practical (in hours per week): L-T-4/W		
Unit	Course Contents	
UNIT-I	Plain table survey: Intersection and radiation method, Triangulation and determination of heights and contouring with clinometers.	
UNIT-II	Dumpy level survey; Prismatic compass survey, Open and close traverse; Instrument-based: Total station Survey.	
UNIT-III	Weather Map: Weather symbols, Representation of atmospheric features, Interpretation of Indian daily weather maps, Weather forecasting method.	
UNIT-IV	GPS: GPS system, Handling usages, GPS-based data acquisition and applications; Altimeter (Hi-tech with precision): Handling and use.	
Suggested Readings: 1. Campbell, J., Introductory Cartography, Prentice Hall, Inc., Englewood Cliff, New Jersey, 1984. 2. Cuff, D.J., & Mattson, M.T., Thematic Maps, their Design and Production, Mathuen, New York., 1982. 3. Robinson, A.H. & others., Elements of Cartography, John Willey and Sons, New York (New edition). 4. Archer, J.E., & Dalton, T.H., Fieldwork in Geography, London. 5. National Atlas and Thematic Maps Organization (NATMO): National Atlas of India, Calcutta. 6. Monkhouse, F.J., Maps and Diagrams, Methuen & Co., London,1967 7. Sarkar, A. K. (1997): Practical Geography: A Systematic Approach. Orient Longman, Kolkata. 8. Sharma, J. P. (2001): Prayogik Bhugol. Rastogi Publication, Meerut 3rd edition. 9. Singh, R.L. and Singh, Rana P.B. (1993): Elements of Practical Geography. (Hindi and English editions). Kalyani Publishers, New Delhi		
Suggested Continuous Evaluation Methods: Assignment/ Test/ Quiz (MCQ)/ Seminar/ Presentations (any methods)		
Marks distribution of theory examination: 30 marks by internal assessment and 70 marks by external assessment.		

<u>Bachelor of Arts/ Science (B.A./B.SC.) 4 Year</u> <i>Course- DSE Subject -Major</i>		
Programme: B.A./B.Sc.	Year: Four	Semester: Seven
Subject: Geography		
Course Code: GEOG/DSE-MJ007	Course Title: GEOGRAPHY OF RESOURCES	
Course Learning Objectives: 1. To understand the basic concepts of resource and resource management. 2. To discuss the causes of resource depletion and its consequences from local to global. 3. To study the challenges in the management of different natural resources. 4. To study the resource management policy at national and global levels.		
Course Learning Outcomes: 1. Explain the concepts related to the field of natural resource management. 2. Elaborate the regions behind the resource depletion and their impact. 3. Assess the various issues in the field of natural resource management. 4. Explain the sustainable resource management and resource management policies.		
<i>Credits: 4</i>		<i>DSE</i>
<i>Max. Marks: 30+70</i>		<i>Min. Passing Marks: 35</i>
<i>Total No. of Lectures- Tutorials - Practical (in hours per week): L-T-4/W</i>		
Unit	Course Contents	
UNIT-I	Natural Resources: Meaning, Definition and Concept; Nature and Scope of Resources Geography; Classification of Resources,	
UNIT-II	Soil, Water and Forest Resource: distribution, utilization, problems, management and conservation; Mineral Resources: Iron ore and Bauxite.	
UNIT-III	Energy Resources-Coal, Petroleum and Natural Gas: distribution, production, problems, management and conservation; Renewable energy resources and World energy crisis.	
UNIT-IV	Contemporary Strategies for Resource Management: Sustainable Resource Development; Resource Management Policies. Community Based Natural Resource Management (CBNRM).	
Suggested Readings: 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, Cambdridge 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.		
Suggested Continuous Evaluation Methods: Assignment/ Test/ Quiz (MCQ)/ Seminar/ Presentations (any methods)		
Marks distribution of theory examination: 30 marks by internal assessment and 70 marks by external assessment.		

Bachelor of Arts/ Science (B.A./B.SC.) 4 Year		
Course- DSC Subject -Major		
Programme: B.A./B.Sc.	Year: Four	Semester: Eight
Subject: Geography		
Course Code: GEOG/DSC-MJ013	Course Title: GEOGRAPHY OF HIMALAYA	
Course Learning Objectives: 1. To understand the geo-physical identity, origin, and structural evolution of the Himalaya. 2. To analyse the physiographic and ecological characteristics of the Himalayan region. 3. To examine demographic, economic, and developmental aspects of the Himalayan states. 4. To evaluate regional diversity and policy frameworks for sustainable mountain development.		
Course Learning Outcomes: 1. Students will comprehend the geological formation, physiographic divisions, and geo-sensitivity of the Himalaya. 2. Students will understand the natural and anthropogenic processes shaping Himalayan landscapes and ecosystems. 3. Students will analyse demographic and economic patterns, including agriculture, tourism, and power development. 4. Students will critically assess regional planning and policy approaches for sustainable Himalayan development.		
Credits: 4		DSC
Max. Marks: 30+70		Min. Passing Marks: 35
Total No. of Lectures- Tutorials - Practical (in hours per week): L-T-4/W		
Unit	Course Contents	
UNIT-I	Geo-physical identity and origin of the Himalaya; Structural divisions and their regional significance; Geo-political issues and border dynamics; Cultural appraisal and ethnic diversity; Himalayan people and tribes, Geo-sensitivity and future prospects of the Himalayan region.	
UNIT-II	Geomorphic process and landforms; drainage system and Himalayan water resources; Glaciers, lakes, and mountain passes; Climate and natural vegetation, Natural hazards and geo-ecological problems resulting from anthropogenic activities.	
UNIT-III	Population distribution, density, and growth; Migration and urbanization trends; Agriculture, horticulture, and animal husbandry; Industrial development and tourism; Developmental challenges, Hydroelectric power projects in the Himalayan region.	
UNIT-IV	Geographical division of the Western, Central, and Eastern Himalaya; Regional analysis of the Kashmir Valley, Ladakh, Lahaul & Spiti, Kathmandu Valley, Teesta Valley and Doon valley; Mountain development planning and policy, Sustainable development and climate resilience in the Himalayan states.	
Suggested Readings: 1. Lal, J. S., & Moddie (Ed.). <i>The Himalaya: Aspect of Change</i> . 2. Bose, S. C. <i>Land and People of the Himalaya</i> . 3. Singh, O. P. (Ed.). <i>The Himalaya: Nature, Man and Culture</i> . 4. Joshi, S. C., & Others. <i>Kumaun Himalaya</i> . 5. Nityanand, & Kumar, K. <i>The Holy Himalaya: Geographical Interpretation of Garhwal Himalaya</i> . 6. Kharkwal, S. C. <i>Uttarakhand: Physio-Culture Complex</i> . 7. Maithani, D. D. <i>Central Himalaya: Ecology, Environmental Resources & Development</i> . 8. Rawat, M. S. S. (Ed.). <i>Central Himalaya: Environment and Development</i> (Vols. I & II). 9. Valdiya, K. S. (Ed.). (1988). <i>Kumaun: Land and People</i> . 10. Bhatt, H. P., & Bhatt, S. (1993). <i>Environmental Dimensions of Rural Settlements in the Himalaya</i> . 11. Valdiya, K. S. (1998). <i>The Himalayan Rivers: Aspects of Change</i> . Oxford & IBH Publishing, New Delhi. 12. Ives, J. D., & Messerli, B. (1989). <i>Himalayan Dilemma: Reconciling Development and Conservation</i> . Cambridge University Press, Cambridge. 13. Zoller, H. (1981). <i>Man and Environment in the Himalaya</i> . K. G. Saur Verlag, Munich. 14. Gulia, K. S. (2007). <i>Ecology and Environment in the Himalayas</i> . Isha Books, New Delhi.		
Suggested Continuous Evaluation Methods: Assignment/ Test/ Quiz (MCQ)/ Seminar/ Presentations (any methods)		
Marks distribution of theory examination: 30 marks by internal assessment and 70 marks by external assessment.		

<u>Bachelor of Arts/ Science (B.A./B.SC.) 4 Year</u> <i>Course- DSC Subject -Major</i>			
Programme: B.A./B.Sc.		Year: Four	Semester: Eight
Subject: Geography			
Course Code: GEOG/DSC-MJ014		Course Title: DISSERTATION	
Course Learning Objectives: To discuss how to write report/dissertation.			
Course Learning Outcomes: To explain the report/dissertation writing process.			
<i>Credits: 12</i>		<i>DSC</i>	
<i>Max. Marks: 30+70</i>		<i>Min. Passing Marks: 35</i>	
Note: 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. Distribution of marks Periodical presentation (Internal Assessment) by Supervisor - 30 Marks Dissertation (evaluation by external examiner and supervisor jointly) - 60 Marks Power Point/ Viva-voce - 10 Marks 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. 			

<u>Bachelor of Arts/ Science (B.A./B.SC.) 4 Year</u> <i>Course- DSC Subject -Major</i>		
Programme: B.A./B.Sc.	Year: Four	Semester: Eight
Subject: Geography		
Course Code: GEOG/DSC-MJ015 (P)	Course Title: QUANTITATIVE & QUALITATIVE METHODS IN GEOGRAPHY	
Course Learning Objectives: 1. To introduce students to qualitative research traditions in geography 2. To develop skills in qualitative data collection, analysis, and interpretation 3. To understand ethical, positional, and field-based dimensions of research 4. To enable students to design and conduct small-scale qualitative research		
Course Learning Outcomes: 1. Understand the philosophical foundations and approaches of qualitative research 2. Apply qualitative methods such as interviews, ethnography, and observation 3. Critically analyse qualitative data using coding and thematic interpretation 4. Design and present a qualitative research project with ethical considerations		
<i>Credits: 4</i>	<i>Major</i>	
<i>Max. Marks: 30+70</i>	<i>Min. Passing Marks: 35</i>	
<i>Total No. of Lectures- Tutorials - Practical (in hours per week): L-T-4/W</i>		
Unit	Course Contents	
UNIT-I	Research methods in geography, quantitative, qualitative and mixed methods, Levels of measurement, nature of data in quantitative and qualitative research; Preparing data collection tools; audio-visual methods, focus group discussion.	
UNIT-II	Content and thematic analysis; discourse and narrative analysis; basic introduction to qualitative data analysis software.	
UNIT-III	Measures of inequality, central tendencies and dispersion, Location quotient; Lorenz curve, Gini's Co-efficient; Nearest Neighbour Analysis; Rank Size Rule.	
UNIT-IV	Correlation: Spearman's Rank and Karl Pearson's method, Simple linear regression: basic concepts and construction of regression line; Introduction to basics of R software (hands on training).	
Suggested Readings: 1. Basu, P. (2009). Practical Geography: A Systematic Approach. Orient BlackSwan. 2. Tulsian, P. C. (2007). Business Statistics. Pearson Education India. 3. S. P. Gupta (2021). Statistica Methods, 46th Edition, Sultan Chand and Sons, New Delhi 4. Mahmood, A. (1998). Statistical Methods in Geographical Studies. Rajesh Publications. 5. D. N. Gujrati, D.C. Porter and S. Gunasekar (2017), Basic Econometrics, 5th Edition, McGraw Hill Education 6. Ashis Sarkar (2015). Practical Geography: A Systematic Approach, 3rd Edition, Orient BlackSwan 7. Mishra, R.P. & Ramesh A (1989). Fundamentals of Cartography, 2nd Edition, South Aisa Books 8. Singh, R. L. and R. P. B. Singh (2015). Elements of Practical Geography (English/Hindi), Kalyani Publishers 9. Hay, I. (2010). Qualitative research methods in human geography (3rd ed.). Oxford University Press. 10. Creswell, J. W. (2009). Research design: Qualitative, quantitative, and mixed methods approaches (3rd ed.). SAGE Publications. 11. DeLyser, D., Herbert, S., Aitken, S., Crang, M., & McDowell, L. (Eds.). (2010). The SAGE handbook of qualitative geography. SAGE Publications. 12. Clifford, N., & Valentine, G. (Eds.). (2010). Key methods in geography (2nd ed.). SAGE Publications. 13. Silverman, D. (2011). Interpreting qualitative data (4th ed.). SAGE Publications. 14. Kabacoff, R. I. (2015). <i>R in action: Data analysis and graphics with R</i> (2nd ed.). Manning Publications.		
Suggested Continuous Evaluation Methods: Assignment/ Test/ Quiz (MCQ)/ Seminar/ Presentations (any methods)		
Marks distribution of theory examination: 30 marks by internal assessment and 70 marks by external assessment.		

Bachelor of Arts/ Science (B.A./B.SC.) 4 Year		
Course- DSE Subject -Major		
Programme: B.A./B.Sc.	Year: Four	Semester: Eight
Subject: Geography		
Course Code: GEOG/DSE-MJ008	Course Title: POPULATION GEOGRAPHY	
Course Learning Objectives:		
1. Understand the fundamental concepts, theories and approaches of Population Geography and their geographical significance.		
2. Analyse population distribution, composition, dynamics and migration using demographic data and geographical methods.		
3. Evaluate population issues, policies and development challenges from local, national and global perspectives.		
Course Learning Outcomes:		
1. Explain the concepts, theories and methods of Population Geography.		
2. Interpret demographic data to identify patterns of population distribution, composition and change.		
3. Analyse the spatial dimensions of fertility, mortality, migration and population growth.		
Credits: 4	DSE	
Max. Marks: 30+70	Min. Passing Marks: 35	
Total No. of Lectures- Tutorials - Practical (in hours per week): L-T-4/W		
Unit	Course Contents	
UNIT-I	Nature, scope and significance of Population Geography and its relationship with demography, Relevance of Population Geography; Recent approaches and methods to study population geography.	
UNIT-II	Population structure and composition; Population growth, density, distribution patterns and their determinants; Concepts of under, over and optimum Population.	
UNIT-III	Concepts and measurements of fertility, mortality and migrations; major theories of fertility, mortality and migration, demographic transition theory, demographic dividend.	
UNIT-IV	Concept of Human Resource and Management; Population resource regions; Population planning and policies in under-developed and developed countries, Human development index; National Population Policies in India.	
Suggested Readings:		
1. Asha A. Bhende and Tata Kanitkar (2024). Principles of Population Studies, 19 th Edition, Himalaya Publishing House Pvt. Ltd., India		
2. Chandna, R.C. (2000). A Geography of Population; Concept, Determinants and Patterns, Kalyani Pub. New Delhi		
3. Beaujeu-Garnier, Jacqueline (1978). Geography of Population, Longman, London 1970.		
4. Srinivasan, K. (1997). Basic Demographic Techniques and Applications, Sage Pub. New Delhi,		
5. Clarke, J.I. (1972). Population Geography, Pergamon. Oxford		
6. Bhagat, R. B. and Rajan, S. I. (2023). Researching Internal Migration, Routledge, London		
7. Bhagat, R. B. (2008). Assessing the measurement of internal migration in India , Asian and Pacific Migration Journal, 17(1), 91-102		
8. Md Izhaar Hassan (2020): Population Geography-A Systematic Exposition, Routledge, London		
9. United Nations Demographic Manuals: https://www.unpopulation.org/en/development/desa/population/publications/manual/index.html		
10. ORGI, UNFPA (2014), Training Manual on Demographic Techniques, https://india.unfpa.org/en/publications/training-manual-demographic-techniques		
Suggested Continuous Evaluation Methods: Assignment/ Test/ Quiz (MCQ)/ Seminar/ Presentations (any methods)		
Marks distribution of theory examination: 30 marks by internal assessment and 70 marks by external assessment.		



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