STATE MODEL SYLLABUS FOR UNDER GRADUATE COURSE IN GEOGRAPHY (Bachelor of Arts Examination)

UNDER

CHOICE BASED CREDIT SYSTEM

GEOGRAPHY

Semester		CORE COURSE (14)	Ability Enhancement Compulsory Course (AECC) (2)	Ability Enhancement Elective Course (AEEC) (2) (Skill Based)	Elective: Discipline Specific DSE (4)	Elective: Generic (GE) (4)
I	CC1	Geomorphology	English Communication/ Odia/ Hindi	SEC -II Communicative English and English Writing		GE-I Geography of India
	CCII	Cartography				
II	CCIII	Human Geography	Environmental Studies			GE-II Geography of Odisha
	CCIV	Climatology				
III	CCV	Oceanography		SEC -I Disaster Management		GE-III Climatology
	CCVI	Statistical Methods in Geography				
	CCVII	Geography of Odisha				
IV	CCVIII	Evolution of Geographical Thought				GE- IV Human Geography
	CCIX	Economic Geography				
	CCX	Environmental Geography				
V	CCXI	Regional Planning and Development			DSE-I Population Geography	
	CCXII	Remote Sensing & GIS			DSE -II Resource Geography	
VI	CCXIII	Geography of India			DSE -III Urban Geography	
	CC XIV	Disaster management			DSE - IV Dissertation/ Project Work	

Geography (Honours)

Core course – 14 papers, Discipline Specific Elective – 4 papers
Generic Elective for Non Geography students – 4 papers. Incase University offers 2 subjects as GE, then papers 1 and 2 will be the GE paper.

Marks per paper - Midterm : 15 marks, End term : 60 marks,Practical:25 Total – 100 marks
Credit per paper – 6 ,Teaching hours per paper – 50 hours + 10 hours tutorial

CC I: Geomorphology

Unit I: Geomorphology: Meaning, Nature & Scope, Field of Geomorphology, History of Development in 19th and 20th Century (European and American School), Recent trends

Unit II: Earth: Interior Structure and Isostasy (Airy and Pratt's view), Rocks-Types

Unit III: Earth Movements: Plate Tectonics, Types of Folds and Faults, Earthquakes and Volcanoes (Types and Landforms).

Unit IV: Geomorphic Processes: Weathering, Mass Wasting, Cycle of Erosion (Davis and Penck).

Unit V: Evolution of Landforms: (Erosional and Depositional): Fluvial, Karst, Aeolian, Glacial and Coastal

Practical

Unit I: Drawing of Contour Features – Mountain, Valley (U shape and V shape), Water Fall, Plateau and Escarpment

Unit II: Drawing of Latitude and Longitude

Unit III: Calculation of time of place with reference to GMT

Unit IV: Practical Record and Viva-voce (10% of marks)

Text Book

1. Singh, S (2009):Bhautik Bhugol ka Swaroop, Prayag Pustak, Allahabad

Reading List:

1. Bloom A. L., 2003: Geomorphology: A Systematic Analysis of Late Cenozoic Landforms, Prentice-Hall of India, New Delhi.
2. Bridges E. M., 1990: World Geomorphology, Cambridge University Press, Cambridge.
3. Christopherson, Robert W., (2011), Geosystems: An Introduction to Physical Geography, 8 Ed., Macmillan Publishing Company
4. Kale V. S. and Gupta A., 2001: Introduction to Geomorphology, Orient Longman, Hyderabad.
5. Knighton A. D., 1984: Fluvial Forms and Processes, Edward Arnold Publishers, London.
6. Richards K. S., 1982: Rivers: Form and Processes in Alluvial Channels, Methuen, London.
7. Selby, M.J., (2005), Earth's Changing Surface, Indian Edition, OUP
8. Skinner, Brian J. and Stephen C. Porter (2000), The Dynamic Earth: An Introduction to physical Geology, 4th Edition, John Wiley and Sons
9. Thornbury W. D., 1968: Principles of Geomorphology, Wiley.
10. Gautam, A (2010): Bhautik Bhugol, Rastogi Publications, Meerut
11. Tikkaa, R N (1989): Bhautik Bhugol ka Swaroop, Kedarnath Ram Nath, Meerut
12. Singh, S (2009): Geomorphology, Prayag Pustak Bhawan, Allahabad.
13. Steers, J. A. – Unstable Earth, Kalyani Publisher.

CC II: Cartography

Unit I: Cartography-Nature and scope

(a) Scientific basis of Cartography
(b) Cartography as a science of human communication
(c) Branches of Cartography

Unit II: Basic Geodesy, Scale – Concept and application

(a) Spherical Earth, Ellipsoidal Earth. Geoid Earth
(b) Geographical Coordinates (Latitude and Longitude), Graticules
(c) Scale, Construction of types of Scales (Plain, Comparative and Diagonal Scale)

Unit III: Map Projections:

(a) Meaning and Use, Brief Historical aspect.
(b) Transformation of area, Distance and Direction
(c) Simple Cylindrical Projection, Conical Projection with one standard projection

Unit IV: Slope Analysis and Geological Map Gradient and slope

(a) Interpretation of Bedding plane, Strike and Dip structure & stratigraphy of Geological map.
(b) Slope defined and methods of determination of slope (Wentworth's method and Smith)

Practical Record:

A Project File in pencil, comprising one exercise *each*, on scale, map projection, interpretation of geological maps, slope analysis. Record and Viva-Voce carries 10% of marks

Text Book

1. Singh R. L. and Singh R. P. B., 1999: Elements of Practical Geography, Kalyani Publishers.
2. Mishra R.P. and Ramesh, A., 1989: Fundamentals of Cartography, Concept, New Delhi.

Reference Books

1. Anson R. and Ormelling F. J., 1994: International Cartographic Association: Basic Cartographic Vol. Pregmen Press.
2. Monkhouse F. J. and Wilkinson H. R., 1973: Maps and Diagrams, Methuen, London.
3. Robinson A. H., 2009: Elements of Cartography, John Wiley and Sons, New York.
4. Sarkar, A. (2015) Practical geography: A systematic approach. Orient Black Swan Private Ltd., New Delhi.

CC III:Human Geography

Unit I: Introduction: Defining Human Geography: Nature and scope; Major Themes; Contemporary Relevance, Man-nature Relation.

Unit II: Society: Race, Religion & Language of World, culture – count, meaning cultural Regions of the world.

Unit III: Population: Factor affecting population distribution, Population Growth and Distribution; Population Composition; Demographic Transition Theory, Population Problems in under developed world.

Unit IV: Settlements: Types and pattern of Rural Settlements; Functional Classification of towns and Trends of World Urbanization

Practical: Interaction with a community and report on socio cultural status.

Text Book

Hussain, Majid (2012) Human Geography. Rawat Publications, Jaipur

Reference Books

1. Human & Economic Geography- Go cheng leong
2. Johnston R; Gregory D, Pratt G. et al. (2008) The Dictionary of Human Geography, Blackwell Publication.
3. Daniel, P.A. and Hopkinson, M.F. (1989) The Geography of Settlement, Oliver & Boyd, London. Human Geography, Rupa Publication
4. Human Geography, B.S. Negi
5. Chandna, R.C. (2010) Population Geography, Kalyani Publisher.
6. Hassan, M.I. (2005) Population Geography, Rawat Publications, Jaipur
7. Jordan-Bychkov et al. (2006) The Human Mosaic: A Thematic Introduction to Cultural Geography. W. H. Freeman and Company, New York.

CC IV:Climatology

Unit I: Atmospheric Composition and Structure – Variation with Altitude, Latitude and

Season.

Unit II: Insolation and Temperature – Factors and Distribution, Heat Budget, Temperature Inversion.

Unit III: Atmospheric Pressure and Winds – Planetary Winds, Forces affecting Winds, General Circulation, Jet Streams.

Unit IV: Atmospheric Moisture – Evaporation, Humidity, Condensation, Fog and Clouds, Precipitation Types, Stability and Instability, Climatic Regions (Koppen)

Unit V: Cyclones – Tropical Cyclones, Extra Tropical Cyclones, Monsoon - Origin and Mechanism.

Practical

1. Drawing & Use of weather instruments- Six maximum & Minimum Thermometer, Aneroid Borometer, Rain Gauge.
2. Interpretation of Weather Map, Drawing of Climograph.
3. Record & Viva-Voce carries 10% of marks

Text Book

1. Lal, D S (2006): Jalvayu Vigyan, Prayag Pustak Bhavan, Allahabad

Reading List –

2. Barry R. G. and Carleton A. M., 2001: *Synoptic and Dynamic Climatology*, Routledge, UK.
3. Barry R. G. and Corley R. J., 1998: *Atmosphere, Weather and Climate*, Routledge, New York.
4. Critchfield H. J., 1987: *General Climatology*, Prentice-Hall of India, New Delhi
5. Lutgens F. K., Tarbuck E. J. and Tasa D., 2009: *The Atmosphere: An Introduction to Meteorology*, Prentice-Hall, Englewood Cliffs, New Jersey.
6. Oliver J. E. and Hidore J. J., 2002: *Climatology: An Atmospheric Science*, Pearson Education, New Delhi.
7. Trewartha G. T. and Horne L. H., 1980: *An Introduction to Climate*, McGraw-Hill.
8. Gupta L S(2000): Jalvayu Vigyan, Hindi Madhyam Karyanvay Nidishalya, Delhi Vishwa Vidhyalaya, Delhi
9. Vatal, M (1986): Bhautik Bhugol, Central Book Depot, Allahabad
10. Singh, S (2009): Jalvayu Vigyan, Prayag Pustak Bhawan, Allahabad

CC V:Oceanography

Unit I: Bottom Relief of Ocean, Atlantic, Indian Ocean and Pacific

Unit II: Temperature and salinity of ocean - determinants and distribution, T-S Diagram

Unit III: Movement of Ocean water- Waves, Currents (Atlantic, Pacific and Indian) Tides: Types and Theories

Unit IV: Ocean Deposits: Types and Distribution, Coral Reefs : Types, Theory of Origin (Darwin and Dana, Louis Agasiz)

Project (Practical)

Text Book

1. Sharma R. C. amd M. Vital: Oceanography
2. Lal, D. S. – Oceanography.

Reference Book:`

1. King, L. C. : Oceanography
2. Singh, S. – Physical Geography

CC VI:Statistical Methods in Geography

Unit I: Use of Data in Geography: Geographical Data Matrix, Tapes and Sources of Data, Scales of Measurement (Nominal, Ordinal, Interval, Ratio).

Unit II: Tabulation and Descriptive Statistics: Frequencies. Distribution & measures of Central Tendency (Mean, Median and Mode)

Unit III: Measures of Dispersion (mean Deviation, Standard Deviation, Variance and Coefficient of Variation).

Unit IV: Measures of Association and Correlation: Rank correlation, Product moment correlation and Simple linear Regression.

Practical

Class Record: Each student will submit a record containing five exercises:

1. Tabular and graphical representation of frequency distribution.
2. Exercises on mean, medium, mode in grouped Data.
3. Exercises on Drawing of scatter diagram, correlation and regression.
4. Record & Viva-voce carries 10% of marks.

Text Book:

1. Mahmood A., 1977: *Statistical Methods in Geographical Studies,* Concept.
2. Sarkar, A. (2013) Quantitative geography: techniques and presentations. Orient Black Swan Private Ltd., New Delhi

Reference Book:

1. Hammond P. and McCullagh P. S., 1978: *Quantitative Techniques in Geography: An Introduction,* Oxford University Press.
2. Yeates M., 1974: *An Introduction to Quantitative Analysis in Human Geography*, McGraw Hill, New York
3. Silk J., 1979: *Statistical Concepts in Geography*, Allen and Unwin, London
4. King L. S., 1969: *Statistical Analysis in Geography*, Prentice-Hall
5. Pal S. K., 1998: *Statistics for Geoscientists*, Tata McGraw Hill, New Delhi
6. Ebdon D., 1977: *Statistics in Geography: A Practical Approach*.

CC VII: **Geography of Odisha**

Unit I: Physiographic of Odisha, Drainage
Climate, Soil, Natural Vegetation

Unit II: Agriculture: (a) Production and Distribution of Rice, Pulses, Oil seeds;
(b) Agricultural Problems and Prospects

Unit III: Minerals and power recourses:
(a) Distribution of Iron Ore, Bauxite, Coal
(b)Iron and steel industry, Aluminum Industry, Cotton Textile

Unit IV: (a) Population: Distribution and Growth
(b) Transport : Roadways & Railways

Practical

Unit I: Drawing Population Density map of Odisha
Unit II: Bar diagram showing major rice producing districts in Odisha
Unit III: Identification of Iron ore and Bauxite region in Odisha
Unit IV: Drawing of Major rivers in Odisha
Unit IV: Practical Record and Viva-voce (10% of marks)

Text Book:

1.Sinha, B. N. - Geography of Odisha

Reading List:

1. Roy, G. C.- Geography of Odisha

CC VIII: Evolution of Geographical Thought

Unit I: Geographical concepts of ancient and classical period: Greek, Roman & Indian.

Unit II: Founders of modern geographical thought: Carl Ritter, Ratzel, Vidal Dela Block.

Unit III: Dichotomy in Geography– Environmental Determinism and Possibilism, Systematic and Regional, Ideographic and Nomeothetic.

Unit IV: Recent – Quantitative Revolution in Geography, Behavioural approach in Geography, radicalism in Geography.

Project (Practical) -Project form course content

Text Book:

1. Evolution of Geographical Thought- Majid Hussain

Reference Books:

1. Dikshit R. D., 1997: Geographical Thought: A Contextual History of Ideas, Prentice–Hall India.
2. Hartshone R., 1959: *Perspectives of Nature of Geography*, Rand MacNally and Co.

3. Martin Geoffrey J., 2005: *All Possible Worlds: A History of Geographical Ideas*, Oxford.
4. Holt-Jensen A., 2011: *Geography: History and Its Concepts: A Students Guide*, SAGE.
5. Kapur A., 2001: *Indian Geography Voice of Concern*, Concept Publications.

CC IX: **Economic Geography**

Unit I: Concept and classification of economic activity, Factors Affecting location of Economic Activity with special reference to Agriculture, Location of Economic Activity: Von Thunen Theory and Weber's theory.

Unit II: Primary Activities: Types and problems and agriculture, agricultural regions of the world, forestry and fishing.

Unit III: Secondary Activities: Manufacturing (Cotton Textile, Iron and Steel), Regions of the world: Special Economic Zones and its significance.

Unit IV: Tertiary Activities: Transport, Roads and Railways, Air and Water, Trade

Practical

Class Record: Each student will submit a record containing five exercises:

1. Determination of Agricultural efficiency – Bhatia & Kendal
2. Drawing of Traffic flow diagram, Isochrone
3. Drawing of Isotim & Isodapane
4. Practical record and viva-voce 10% of mark

Text Book

1. Roy, Pritish: *Economic Geography*
2. Gautam, Alaka: *Economic Geography*,

Reference Book

1. Alexander J. W., 1963: *Economic Geography*, Prentice-Hall Inc., Englewood Cliffs, New Jersey.
2. Wheeler J. O., 1998: *Economic Geography*, Wiley.
3. Durand L., 1961: *Economic Geography*, Crowell.
4. Willington D. E., 2008: *Economic Geography*, Husband Press.
5. Clark, Gordon L.; Feldman, M.P. and Gertler, M.S., eds. 2000: The *Oxford*

CC X:Environmental Geography

Unit I: Environmental Geography – Concept and Scope, Environmental contrast (Biotic Abiotic, Global, Continental, Local) Environmental control of (light, Temperature, Water, topography and edaphic factors)

Unit II: Ecosystem – Concept, Structure and Functions, Tropic level, Food Chain, Bio-geo-chemical Cycle (Nitrogen and Carbon), Energy flow in Ecosystem.

Unit III: Environmental Problems in Tropical, Temperate and Polar Ecosystems. Environmental pollution (water and air)

Unit IV: Environmental Programmes and Policies – Major Global & National programme and policies, concept of spaceship earth, earth summit 1992, wildlife act of India 1972, water pollution control act of India 1974, National Environmental tribunal – 1995 of India.

Project (Practical)

Submission of report on any environmental problem of global, national and local level by individual student.

Text Book:

1. Santra, S.C *Environmental Science*
2. Singh S., 1997: *Environmental Geography,* Prayag Pustak Bhawan. Allahabad.

Reference Book:

1. Chandna R. C., 2002: *Environmental Geography*, Kalyani, Ludhiana.
2. Cunninghum W. P. and Cunninghum M. A., 2004: *Principals of Environmental Science: Inquiry and Applications*, Tata Macgraw Hill, New Delhi.
3. Goudie A., 2001: *The Nature of the Environment*, Blackwell, Oxford.
4. Miller G. T., 2004: *Environmental Science: Working with the Earth,* Thomson BrooksCole, Singapore.

5. Odum, E. P. et al, 2005: *Fundamentals of Ecology,* Ceneage Learning India.

CC XI:Regional Planning and Development

Unit I: Definition of Region, Evolution and Types of Regional planning: Formal, Functional, and Planning Regions, Need for Regional Planning; Characteristics of an Ideal Planning Region

Unit II: Delineation of Planning Region; Approaches and Methods, Planning Regions of India

Unit III: Theories and Models for Regional Planning: Growth Pole Model of Perroux; Myrdal, Hirschman, Rostow.

Unit IV: Policies and Programs for Rural and Regional Development Planning in India, Concept of Human development Index

Project (Practical)

Submission of project report on any topic from the course

Text Book

1. Chand, Mahesh and V. K. Puri: Regional Planning
2. Mishra R. P : Regional Planning, Concept Publishers, New Delhi

Reference Book:

1. Friedmann J. and Alonso W. (1975): *Regional Policy - Readings in Theory and Applications*, MIT Press, Massachusetts.
2. Haynes J., 2008: *Development Studies*, Polity Short Introduction Series.
3. Peet R., 1999: *Theories of Development*, The Guilford Press, New York.
4. UNDP 2001-04: *Human Development Report,* Oxford University Press.
5. World Bank 2001-05: *World Development Report,* Oxford University Press, New

CC X II:Remote Sensing and GIS

Unit I: Remote Sensing and GIS: Definition and Components, Platforms and Types, Advantages of Remote Sensing, Limitation of Remote Sensing & Principle of Remote Sensing

Unit II: Aerial Photography and Satellite Remote Sensing: Principles, Types and Geometry of Aerial Photograph; EMR Interaction with Atmosphere and Earth Surface; Satellites and Types of Sensors.

Unit III: GIS Data Structures: Types (spatial and Non-spatial), Raster and Vector Data Structure, GPS elements and Uses.

Unit IV: Manual Image Interpretation and Analysis: Image Elements, Land use/ Land Cover Mapping from Satellite Images.

Project (Practical)

A project file consisting of two exercises will be done from aerial photos and satellite images (scale, orientation and interpretation) or 3 exercises on using any GIS Software on above mentioned themes - or

Submission of project report on any topic from the course

Record & Viva-voce carries 10% of marks

Text Book

1. Lillesand T. M., Kiefer R. W. and Chipman J. W., 2004: *Remote Sensing and Image Interpretation*, Wiley. (Wiley Student Edition).

Reference Book:

1. Bhatta , B. (2008) Remote Sensing and GIS, Oxford University Press, New Delhi.
2. Campbell J. B., 2007: *Introduction to Remote Sensing*, Guildford Press
3. Chauniyal, D. (2010) Sudur Samvedana Avam Bhaugolik Suchna Pranali, Sharda Pustak Bhawan, Allahabad.
4. Jensen, J. R. (2005) Introductory Digital Image Processing: A Remote Sensing Perspective, Pearson Prentice-Hall.
5. Joseph, G. 2005: *Fundamentals of Remote Sensing*, United Press India.

CC X III:Geography of India

Unit I: Physiographic Divisions, soil and vegetation, climate (characteristics and classification)

Unit II: Population: Distribution, Demographic structure, trend of population growth

Unit III: Mineral and power resources distribution and utilisation of iron ore, coal, petroleum, Natural gas;

Unit IV: Agricultural production and distribution of rice and wheat, industrial development: automobile, Information technology, Iron & Steel, Cotton and Textile Industry

Practical

Class Record:

1. Population density map of India by Choropleth
2. Graphical presentation of economic data
3. Pie chart showing occupational structure of India
4. Population pyramid
5. Practical record and viva-voce (10% of marks)

Text Book

1. Sharma, T.C. (2013) Economic Geography of India. Rawat Publication, Jaipur
2. Khullar, D. R. India: A Comprehensive Geography

Reference Book:

1. Deshpande C. D., 1992: *India: A Regional Interpretation*, ICSSR, New Delhi.
2. Mandal R. B. (ed.), 1990: *Patterns of Regional Geography – An International Perspective. Vol. 3 – Indian Perspective*.
3. Sharma, T. C. 2003: India - Economic and Commercial Geography. Vikas Publ., New Delhi.
4. Singh R. L., 1971: *India: A Regional Geography*, National Geographical Society of India.
5. Singh, Jagdish 2003: *India - A Comprehensive & Systematic Geography*, Gyanodaya Prakashan, Gorakhpur.
6. Spate O. H. K. and Learmonth A. T. A., 1967: *India and Pakistan: A General and Regional Geography*, Methuen.

CC XIV: Disaster Management

Unit I: Concept of Hazards, Disasters, Natural and man made hazards, Types of hazards, Concept of disaster management, Vulnerability and risk.

Unit II: Disaster management cycle, Pre disaster management, During disaster management, Post Disaster review and management, Prevention, mitigation, preparedness, Adaptation.

Unit III: Detail study of nature and characteristics of hazards: Flood, Cyclone, Drought, Earthquake. Manmade hazards – Industrial and Fire.

Unit IV: Indigenous community based disaster preparedness. Role of NDMA, NIDM, NDRF, OSDMA & ODRAF, Disaster working system. Role of NGOs and GOs in disaster management.

Practical

Project work – Preparation of a report on a specific hazard/ disaster

Text books

1.Singh, Savindar (2009): Disaster Management

Reference books:

1. Mishra B.J : Natural hazards and disaster management
2. Sundar I & Sezuiyan T : Disaster management
3. Verma : Encyclopedia of Disaster management
4. Eye Publication : Vulnerable India
5. Sinha. A. – Disaster management, United Press
6. Singh R.B – Risk Assessment and Vulnerability analysis.

DISCIPLINE SPECIFIC ELECTIVE

DSE I:Population Geography

Unit I: Defining the Field – Nature and Scope; Sources of Data with special reference to India (Census, Vital Statistics and NSS).

Unit II: Population Size, Distribution and Growth – Determinants and Patterns; Theories of Growth – Malthusian Theory and Demographic Transition Theory.

Unit III: Population Dynamics: Fertility, Mortality and Migration – Measures, Determinants and Implications.

Unit IV: Population Composition and Characteristics – Age-Sex Composition; Rural and Urban Composition; Literacy.

Unit V: Contemporary Issues – Ageing of Population; Declining Sex Ratio; HIV/AIDS, Population Problems.

Project (Practical)

Submission of Project report on any topic from the course

Text book

1. Chandna R. C. and Sidhu M. S., 1980: *An Introduction to Population Geography*, Kalyani Publishers.

Reading List:

2. Barrett H. R., 1995: *Population Geography*, Oliver and Boyd.
3. Bhende A. and Kanitkar T., 2000: *Principles of Population Studies*, Himalaya Publishing House.
4. Clarke J. I., 1965: *Population Geography*, Pergamon Press, Oxford.
5. Jones, H. R., 2000: *Population Geography,* 3rd ed. Paul Chapman, London.
6. Lutz W., Warren C. S. and Scherbov S., 2004: *The End of the World Population Growth in the 21st Century*, Earthscan.
7. Newbold K. B., 2009: *Population Geography: Tools and Issues*, Rowman and Littlefield Publishers.
8. Pacione M., 1986: *Population Geography: Progress and Prospect*, Taylor and Francis.
9. Wilson M. G. A., 1968: *Population Geography*, Nelson.
10. Panda B P (1988): Janasankya Bhugol, M P Hindi Granth Academy,Bhopal
11. Maurya S D (2009) Jansankya Bhugol, Sharda Putak Bhawan, Allahabad
12. Chandna, R C (2006), Jansankhya Bhugol, Kalyani Publishers, Delhi

DSE II:Resource Geography

Unit I: Natural Resource: Concept, Classification and Techniques

Unit II: Distribution, Utilization of Land Resource and Water Resources

Unit III: Distribution, Utilisation, of Forest and Energy Resources

Unit IV: Problem and management of Land Resources, Water Resources, Forest Resources, Energy Resources

Unit V: Appraisal and Conservation and Natural Resources (Water, Forest and Land)

Project(Practical)

Submission of project report on any topic from the course

Text book

1. Singh, R.L. 1988 (Reprint) — India: A Regional Geography

Reading List:

1. Cutter S. N., Renwich H. L. and Renwick W., 1991: *Exploitation, Conservation,Preservation: A Geographical Perspective on Natural Resources Use*, John Wiley and Sons, New York.
2. Gadgil M. and Guha R., 2005: *The Use and Abuse of Nature: Incorporating This Fissured Land: An Ecological History of India and Ecology and Equity*, Oxford University Press. USA.
3. Holechek J. L. C., Richard A., Fisher J. T. and Valdez R., 2003: *Natural Resources: Ecology, Economics and Policy*, Prentice Hall, New Jersey.

4. Jones G. and Hollier G., 1997: *Resources, Society and Environmental Management*, Paul Chapman, London.
5. Klee G., 1991: *Conservation of Natural Resources*, Prentice Hall, Englewood.
6. Mather A. S. and Chapman K., 1995: *Environmental Resources*, John Wiley and Sons, New York.
7. Mitchell B., 1997: *Resource and Environmental Management*, Longman Harlow, England.
8. Owen S. and Owen P. L., 1991: *Environment, Resources and Conservation*, Cambridge University Press, New York.
9. Rees J., 1990: *Natural Resources: Allocation, Economics and Policy*, Routledge. London.

DSE III:Urban Geography

Unit I: Urban geography: Introduction, nature and scope; history of urbanization, Urban Morphology

Unit II: Trends and Patterns of Urbanization in developed and developing countries, Christaller Theory.

Unit III: Functional classification of cities: Quantitative and Qualitative Methods, Umland, Morphology of Urban Settlement & Urban Sphere of Influence.

Unit IV: Urban Issues: problems of housing, slums, civic amenities (water and transport), Air Pollution and Noise Pollution

Unit V: Case studies of Delhi, Mumbai, Kolkata, Chennai and Chandigarh with reference to land use & Urban Issues.

Practical

Class Record: Each student will submit a record containing five exercises:

1. Drawing of Proportionate Wheel diagram to show Urban land use.
2. Traffic flow Diagram.
3. Drawing of Point symbol map of a town (any civic facility)
4. Drawing of area map of a town showing major residential or market zone
5. Practical record and viva-voce (10% of marks)

Text books

1. Ramachandran R (1989): Urbanisation and Urban Systems of India, Oxford University Press, New Delhi

Reading List:

1. Fyfe N. R. and Kenny J. T., 2005: *The Urban Geography Reader*, Routledge.
2. Graham S. and Marvin S., 2001: *Splintering Urbanism: Networked Infrastructures, Technological Mobilities and the Urban Condition*, Routledge.
3. Hall T., 2006: *Urban Geography*, Taylor and Francis.
4. Kaplan D. H., Wheeler J. O. and Holloway S. R., 2008: *Urban Geography*, John Wiley.
5. Knox P. L. and McCarthy L., 2005: *Urbanization: An Introduction to Urban Geography*, Pearson Prentice Hall New York.
6. Knox P. L. and Pinch S., 2006: *Urban Social Geography: An Introduction*, Prentice-Hall.
7. Pacione M., 2009: *Urban Geography: A Global Perspective*, Taylor and Francis.
8. Sassen S., 2001: *The Global City: New York, London and Tokyo*, Princeton University Press.
9. Ramachandran R (1989): Urbanisation and Urban Systems of India, Oxford University Press, New Delhi
10. Ramachandran, R., 1992: *The Study of Urbanisation*, Oxford University Press, Delhi
11. Singh, R.B. (Eds.) (2001) Urban Sustainability in the Context of Global Change, Science Pub., Inc., Enfield (NH), USA and Oxford & IBH Pub., New Delhi.
12. Singh, R.B. (Ed.) (2015) Urban development, challenges, risks and resilience in Asian megacities. Advances in Geographical and Environmental Studies, Springer

Geography DSE IV
DISSERTATION/ PROJECT WORK

A project report may be given in view of discipline specific papers. It is considered as a special course involving application of knowledge solving exploring a real life situation and difficult problem.

GENERIC ELECTIVE
GE I: Geography of India

Unit I: Physical: Physiographic Divisions, soil and vegetation, climate (characteristics and classification)
Unit II: Population: Distribution and growth, Structure
Unit III: Economic: Mineral and power resources distribution and utilisation of iron ore, coal, Petroleum, gas; agricultural production and distribution of rice and wheat, industrial development: automobile and Information technology
Unit IV: Social: Distribution of population by race, caste, religion, language, tribes
Unit V: Transport in India: Road, Rail and Airways

Practical

Project: Submission of Project report on any topic from the course

Text books

1. Sharma, T.C. (2013) Economic Geography of India. Rawat Publication, Jaipur
2. Khullar, D. R. India: A Comprehensive Geography

Reading List:

1. Deshpand C. D., 1992: India: A Regional Interpretation, ICSSR, New Delhi
2. Johnson, B. L.C., ed. 2001. Geographical Dictionary of India, Vision Books, New Delhi
4. Sdyasuk Galina and P. Sengupta (1967): Economic Regionalisation of India, Census of India

GE II: Geography of Odisha

Unit I: Physiographic of Odisha, Drainage
Unit II: Climate, Soil, Natural Vegetation
Unit III: Agriculture: (a) Production and Distribution of Rice, Pulses, Oil seeds;
(b) Agricultural Problems and Prospects
Unit IV: Minerals and power recourses:
(a) Distribution of Iron Ore, Bauxite, Coal
(b)Iron and steel industry, Aluminum Industry, Cotton Textile
Unit V: (a) Population: Distribution and Growth
(b) Transport: Roadways & Railways

Practical

Unit I: Drawing Population Density map of Odisha
Unit II: Bar diagram showing major rice producing districts in Odisha
Unit III: Identification of Iron ore and Bauxite region in Odisha
Unit IV: Drawing of Major rivers in Odisha
Unit IV: Practical Record and Viva-voce (10% of marks)

Text books

1. Sinha, B. N. - Geography of Odisha

Reading List:

1. Roy, G. C.- Geography of Odisha

GE III:Climatology

Unit I: Atmospheric Composition and Structure – Variation with Altitude, Latitude and Season.
Unit II: Insolation and Temperature – Factors and Distribution, Heat Budget, Temperature Inversion.
Unit III: Atmospheric Pressure and Winds – Planetary Winds, Forces affecting Winds, General Circulation, Jet Streams.
Unit IV: Atmospheric Moisture – Evaporation, Humidity, Condensation, Fog and Clouds, Precipitation ,Types, Stability and Instability.
Unit V: Cyclones – Tropical Cyclones, Extra Tropical Cyclones, Monsoon - Origin and

Mechanism.

Practical

1. Drawing & Use of weather instruments- Six maximum & Minimum Thermometer, Aneroid Barometer, Rain Gauge.
2. Interpretation of Weather Map, Drawing of Climograph.
3. Record & Viva-Voce carries 10% of marks

Text books

1. Lal, D S (2006): Jalvayu Vigyan, Prayag Pustak Bhavan, Allahabad

Reading List -

2. Barry R. G. and Carleton A. M., 2001: *Synoptic and Dynamic Climatology*, Routledge, UK.
3. Barry R. G. and Corley R. J., 1998: *Atmosphere, Weather and Climate*, Routledge, New York.
4. Critchfield H. J., 1987: *General Climatology*, Prentice-Hall of India, New Delhi
5. Lutgens F. K., Tarbuck E. J. and Tasa D., 2009: *The Atmosphere: An Introduction to Meteorology*, Prentice-Hall, Englewood Cliffs, New Jersey.
6. Oliver J. E. and Hidore J. J., 2002: *Climatology: An Atmospheric Science*, Pearson Education, New Delhi.
7. Trewartha G. T. and Horne L. H., 1980: *An Introduction to Climate*, McGraw-Hill.
8. Gupta L S(2000): Jalvayu Vigyan, Hindi Madhyam Karyanvay Nidishalya, Delhi Vishwa Vidhyalaya, Delhi
9. Vatal, M (1986): Bhautik Bhugol, Central Book Depot, Allahabad
10. Singh, S (2009): Jalvayu Vigyan, Prayag Pustak Bhawan, Allahabad

GE IV:Human Geography

Unit I: Introduction: Defining Human Geography; Major Themes; Contemporary Relevance

Unit II: Space: Cultural Regions;

Unit III: Society: Race, Religion and Language of World

Unit IV: Population: Population Growth and Distribution; Population Composition; Demographic Transition Theory

Unit V: Settlements: Types of Rural Settlements; Types of Urban Settlements; Trends and Patterns of World Urbanization

Project(Practical)

Interaction with a community and report on socio cultural status

Text Book

Hussain, Majid (2012) Human Geography. Rawat Publications, Jaipur

Reading List:

1. Hassan, M.I. (2005) Population Geography, Rawat Publications, Jaipur
2. Daniel, P.A. and Hopkinson, M.F. (1989) The Geography of Settlement, Oliver & Boyd, London.
3. Johnston R; Gregory D, Pratt G. et al. (2008) The Dictionary of Human Geography, Blackwell Publication.
4. Jordan-Bychkov et al. (2006) The Human Mosaic: A Thematic Introduction to Cultural Geography. W. H. Freeman and Company, New York.
5. Kaushik, S.D. (2010) Manav Bhugol, Rastogi Publication, Meerut.
6. Maurya, S.D. (2012) Manav Bhugol, Sharda Pustak Bhawan. Allahabad.
7. Hussain, Majid (2012) Manav Bhugol. Rawat Publications, Jaipur

GEOGRAPHY -PASS

Semester	Course	Course Name
I	DSC-I DSC-I Practical	Geography of India
II	DSC-II DSC-II Practical	Geography of Odisha
III	DSC-III DSC-III Practical	Climatology
IV	DSC-IV DSC-IV Practical	Human Geography
V	DSE-I DSE-I Practical	Population Geography
VI	DSE-II DSE-II Practical	Resource Geography

GEOGRAPHY PASS

DESCIPLINE SPECIFIC CORE

DSC I: Geography of India

Unit I: Physical: Physiographic Divisions, soil and vegetation, climate (characteristics and classification)

Unit II: Population: Distribution and growth, Structure

Unit III: Economic: Mineral and power resources distribution and utilisation of iron ore, coal, petroleum, gas; agricultural production and distribution of rice and wheat, industrial development: automobile and Information technology

Unit IV: Social: Distribution of population by race, caste, religion, language, tribes

Unit V: Transport in India: Road, Rail and Airways

Practical

Project: Submission of Project report on any topic from the course

Text books

1. Mandal R. B. (ed.), 1990: Patterns of Regional Geography- An International Perspective, Vol. 3 Indian Perspective

Reading List:

1. Deshpand C. D., 1992: India: A Regional Interpretation, ICSSR, New Delhi
2. Johnson, B. L.C., ed. 2001. Geographical Dictionary of India, Vision Books, New Delhi
3. Mandal R. B. (ed.), 1990: Patterns of Regional Geography- An International Perspective, Vol. 3 Indian Perspective.
4. Sdyasuk Galina and P. Sengupta (1967): Economic Regionalisation of India, Census of India

DSC II: Geography of Odisha

Unit I: Physiographic of Odisha, Drainage

Unit II: Climate, Soil, Natural Vegetation

Unit III: Agriculture: (a) Production and Distribution of Rice, Pulses, Oil seeds;
(b) Agricultural Problems and Prospects

Unit IV: Minerals and power recourses:
(a) Distribution of Iron Ore, Bauxite, Coal
(b)Iron and steel industry, Aluminum Industry, Cotton Textile

Unit V: (a) Population: Distribution and Growth
(b) Transport : Roadways & Railways

Practical

Unit I: Drawing Population Density map of Odisha

Unit II: Bar diagram showing major rice producing districts in Odisha

Unit III: Identification of Iron ore and Bauxite region in Odisha

Unit IV: Drawing of Major rivers in Odisha

Unit IV: Practical Record and Viva-voce (10% of marks)

Text books

1. Sinha, B. N. - Geography of Odisha

Reading List:

1. Roy, G. C.- Geography of Odisha

DSC III: Climatology

Unit I: Atmospheric Composition and Structure – Variation with Altitude, Latitude and Season.

Unit II: Insolation and Temperature – Factors and Distribution, Heat Budget, Temperature Inversion.

Unit III: Atmospheric Pressure and Winds – Planetary Winds, Forces affecting Winds, General Circulation, Jet Streams.

Unit IV: Atmospheric Moisture – Evaporation, Humidity, Condensation, Fog and Clouds, Precipitation Types, Stability and Instability.

Unit V: Cyclones – Tropical Cyclones, Extra Tropical Cyclones, Monsoon - Origin and Mechanism.

Practical

1. Drawing & Use of weather instruments- Six maximum & Minimum Thermometer, Aneroid Barometer, Rain Gauge.
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4. Lutgens F. K., Tarbuck E. J. and Tasa D., 2009: *The Atmosphere: An Introduction to Meteorology*, Prentice-Hall, Englewood Cliffs, New Jersey.
5. Oliver J. E. and Hidore J. J., 2002: *Climatology: An Atmospheric Science*, Pearson Education, New Delhi.
6. Trewartha G. T. and Horne L. H., 1980: *An Introduction to Climate*, McGraw-Hill.
7. Gupta L S(2000): Jalvayu Vigyan, Hindi Madhyam Karyanvay Nidishalya, Delhi Vishwa Vidhyalaya, Delhi
8. Lal, D S (2006): Jalvayu Vigyan, Prayag Pustak Bhavan, Allahabad
9. Vatal, M (1986): Bhautik Bhugol, Central Book Depot, Allahabad
10. Singh, S (2009): Jalvayu Vigyan, Prayag Pustak Bhawan, Allahabad

DSC IV: Human Geography

Unit I: Introduction: Defining Human Geography; Major Themes; Contemporary Relevance

Unit II: Space: Cultural Regions;

Unit III: Society: Race, Religion and Language of World

Unit IV: Population: Population Growth and Distribution; Population Composition; Demographic Transition Theory

Unit V: Settlements: Types of Rural Settlements; Types of Urban Settlements; Trends and Patterns of World Urbanization

Project (Practical)

Interaction with a community and report on socio cultural status

Text books

1. Chandna, R.C. (2010) Population Geography, Kalyani Publisher.

Reading List:

1. Chandna, R.C. (2010) Population Geography, Kalyani Publisher.
2. Hassan, M.I. (2005) Population Geography, Rawat Publications, Jaipur
3. Daniel, P.A. and Hopkinson, M.F. (1989) The Geography of Settlement, Oliver & Boyd, London.
4. Johnston R; Gregory D, Pratt G. et al. (2008) The Dictionary of Human Geography, Blackwell Publication.
5. Jordan-Bychkov et al. (2006) The Human Mosaic: A Thematic Introduction to Cultural Geography. W. H. Freeman and Company, New York.
6. Kaushik, S.D. (2010) Manav Bhugol, Rastogi Publication, Meerut.
7. Maurya, S.D. (2012) Manav Bhugol, Sharda Pustak Bhawan. Allahabad.
8. Hussain, Majid (2012) Manav Bhugol. Rawat Publications, Jaipur

DSE I: Population Geography

Unit I: Defining the Field – Nature and Scope; Sources of Data with special reference to India (Census, Vital Statistics and NSS).

Unit II: Population Size, Distribution and Growth – Determinants and Patterns; Theories

of Growth – Malthusian Theory and Demographic Transition Theory.

Unit III: Population Dynamics: Fertility, Mortality and Migration – Measures, Determinants and Implications.

Unit IV: Population Composition and Characteristics – Age-Sex Composition; Rural and Urban Composition; Literacy.

Unit V: Contemporary Issues – Ageing of Population; Declining Sex Ratio; HIV/AIDS, Population Problems.

Project (Practical)

Submission of Project report on any topic from the course

Text book

1. Chandna R. C. and Sidhu M. S., 1980: *An Introduction to Population Geography*, Kalyani Publishers.

Reading List:

1. Barrett H. R., 1995: Population Geography, Oliver and Boyd.
2. Bhende A. and Kanitkar T., 2000: Principles of Population Studies, Himalaya Publishing House.
3. Chandna R. C. and Sidhu M. S., 1980: An Introduction to Population Geography, Kalyani Publishers.
4. Clarke J. I., 1965: Population Geography, Pergamon Press, Oxford.
5. Jones, H. R., 2000: Population Geography, 3rd ed. Paul Chapman, London.
6. Lutz W., Warren C. S. and Scherbov S., 2004: The End of the World Population Growth in the 21st Century, Earthscan.
7. Newbold K. B., 2009: Population Geography: Tools and Issues, Rowman and Littlefield Publishers.
8. Pacione M., 1986: Population Geography: Progress and Prospect, Taylor and Francis.
9. Wilson M. G. A., 1968: Population Geography, Nelson.
10. Panda B P (1988): Janasankya Bhugol, M P Hindi Granth Academy,Bhopal
11. Maurya S D (2009) Jansankya Bhugol, Sharda Putak Bhawan, Allahabad
12. Chandna, R C (2006), Jansankhya Bhugol, Kalyani Publishers, Delhi

DSE II: Resource Geography

Unit I: Natural Resource: Concept, Classification and Techniques

Unit II: Distribution, Utilization of Land Resource and Water Resources

Unit III: Distribution, Utilisation, of Forest and Energy Resources

Unit IV: Problem and management of Land Resources, Water Resources, Forest Resources, Energy Resources

Unit V: Appraisal and Conservation and Natural Resources (Water, Forest and Land)

Project (Practical)

Submission of project report on any topic from the course

Text book

1. Singh, R.L. 1988 (Reprint) ― India: A Regional Geography

Reading List:

1. Cutter S. N., Renwich H. L. and Renwick W., 1991: *Exploitation, Conservation, Preservation: A Geographical Perspective on Natural Resources Use*, John Wiley and Sons, New York.
2. Gadgil M. and Guha R., 2005: The Use and Abuse of Nature: Incorporating This Fissured Land: An Ecological History of India and Ecology and Equity, Oxford University Press. USA.
3. Holechek J. L. C., Richard A., Fisher J. T. and Valdez R., 2003: Natural Resources: Ecology, Economics and Policy, Prentice Hall, New Jersey.
4. Jones G. and Hollier G., 1997: Resources, Society and Environmental Management, Paul Chapman, London.
5. Klee G., 1991: Conservation of Natural Resources, Prentice Hall, Englewood.
6. Mather A. S. and Chapman K., 1995: Environmental Resources, John Wiley and Sons, New York.
7. Mitchell B., 1997: Resource and Environmental Management, Longman Harlow, England.
8. Owen S. and Owen P. L., 1991: Environment, Resources and Conservation, Cambridge University Press, New York.
9. Rees J., 1990: Natural Resources: Allocation, Economics and Policy, Routledge.London.

Geography SEC-I : Disaster Management

Unit I: Concept of Hazards, Disasters, Natural and man made hazards, Types of hazards, Concept of disaster management, Vulnerability and risk.

Unit II: Disaster management cycle, Pre disaster management, During disaster management, Post Disaster review and management, Prevention, mitigation, preparedness, Adaptation.

Unit III: Detail study of nature and characteristics of hazards: Flood, Cyclone, Drought, Earthquake. Manmade hazards – Industrial and Fire.

Unit IV: Indigenous community based disaster preparedness. Role of NDMA, NIDM, NDRF, OSDMA & ODRAF, Disaster working system. Role of NGOs and GOs in disaster management.

Project (Practical) – Preparation of a report on a specific hazard/ disaster

Text books

1.Singh, Savindar (2009): Disaster Management

Reference books:

1. Mishra B.J : Natural hazards and disaster management
2. Sundar I & Sezuiyan T : Disaster management
3. Verma : Encyclopedia of Disaster management
4. Eye Publication : Vulnerable India
5. Sinha. A. – Disaster management, United Press
6. Singh R.B – Risk Assessment and Vulnerability analysis.

Training programs required for under graduate faculty

1. R.S. & G.I.S. with practical modules – 21days
2. Advance cartographic & statistical techniques and its application in Geography.
3. Research methodology and field work in Geography.

Laboratory Equipments Required

1. Desktop - 10
2. Print set - 2
3. Plan meter -
4. Rota meter -
5. Toposheets -
6. Satellite image-
7. Aerial photograph-
8. Stereoscope
9. Parallax Bar
10. Tracing Table
11. GPS (Garmin) - 5
12. Clinometers Compass

Student Project

1. Environment
2. Rural Development
3. Urban studies
4. Natural Hazards