COURSES OF STUDIES

FOR

THREE YEAR DEGREE COURSE

IN

ARTS HONOURS

DEPARTMENT OF GEOGRAPHY

Choice Based Credit System(CBCS)

First & Second Semester Examination – 2019-20

Third & Fourth Semester Examination – 2020-21

Fifth & Sixth Semester Examination – 2021-22

GOVERNMENT AUTONOMOUS COLLEGE,
PHULBANI, KANDHAMAL

SYLLABI FOR CBCS COURSE

Sem	CORE COURESE (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	CORE-I	AECC-I			GE-IA
	CORE-II				
II	CORE-III	AECC-II			GE-1B
	CORE -IV				
III	CORE-V		AEEC-I (SEC-I)		GE-2A
	CORE-VI				
	CORE-VII				
IV	CORE-VIII		AEEC-II (SEC-II)		GE-2B
	CORE-IX				
	CORE-X				
V	CORE-XI			DSE-I	
	CORE-XII			DSE-II	
VI	CORE-XIII			DSE-III	
	CORE-XIV			DSE-IV / Project	

YEAR & SEMESTER-WISE PAPERS & CREDITS AT A GLANCE

Three-Year (6-Semester) CBCS Programme (B.A. Hons) (Geography Department)				
Yr.	Sl.No.	Course Structure	Code	Credit Points
FIRST YEAR		**SEMESTER-I**		
	1	Geomorphology	C-1.1	4+2
	2	Cartography	C-1.2	4+2
		SEMESTER-II		
	3	Human Geography	C-2.1	4+2
	4	Climatology	C-2.2	4+2
	5	Geography of India	GE-2.3	4+2
	6	EVS (For Commerce)	AECC-2.4	6
SECOND YEAR		**SEMESTER-III**		
	7	Oceanography	C-3.1	4+2
	8	Statistical Methods in Geography	C-3.2	4+2
	9	Geography of Odisha	C-3.3	4+2
		SEMESTER-IV		
	10	Evolution of Geographical Thought	C-4.1	4+2
	11	Economic Geography	C-4.2	4+2
	12	Environmental Geography	C-4.3	4+2
	13	Human Geography	GE-4.4	4+2
FINAL YEAR		**SEMESTER-V**		
	14	Regional Planning and Development	C-5.1	4+2
	15	Remote Sensing & GIS	C-5.2	4+2
	16	Population Geography	DSE-5.3	4+2
	17	Resource Geography	DSE-5.4	4+2
		SEMESTER-VI		
	18	Geography of India	C-6.1	4+2
	19	Disaster Management	C-6.2	4+2
	20	Urban Geography	DSE-6.3	4+2
	21	Project Work / Field Work and Research Methodology	DSE-6.4	6 / 4+2

Notes:

- C- Core Course
- GE- Generic Elective Course
- DSE- Discipline Specific Elective Course
- AECC- Ability Enhancement Compulsory Course
- AEEC- Ability Enhancement Elective Course (Skill Based)
- For a 6 credit course, the total teaching hours are: Minimum- 50 Hours, Maximum-65 Hours

SEMESTER-I

C-1.1 : GEOMORPHOLOGY

Full Marks – 100
Mid Sem – 15/1hr
End Sem Theory – 60/3 hrs
End Sem Practical – 25/3 hrs

THEORY

UNIT - I:

Geomorphology: Meaning, Nature & Scope, Internal Structure of the Earth, Isostasy (Airy and Pratt's view), Rocks-Types and Characteristics, Types of Folds and Faults

UNIT - II:

Earth Movements: Continental Drift, Plate Tectonics, Types of Folds and Faults, Earthquakes and Volcanoes (Types, distribution and associated Landforms). Geosynclinal theory and stages of mountain building and Convection current theory

UNIT - III:

Geomorphic Processes: Types & characteristics of Weathering & Mass Wasting, Cycle of Erosion & evolution of Landforms of Davis and Penck's evolutionary theory)

UNIT - IV:

Geomorphic agents and landforms: (Erosional and Depositional landforms of Fluvial, Karst, Aeolian, Glacial and Coastal origin)

PRACTICAL

1. Drawing of relief features using contour lines-Mountain, Plateau, valleys, escarpments and their profiles, construction and use of serial, projected and super-imposed profiles,
2. Use of Planimeter and Rotameter in measurements on maps, Longitudinal and transverse profile of a river, Drainage Pattern and drainage Density
3. Interpretation of simple geological Maps (Introducing the concepts of Dip, Strike, Bedding Plane, Unconformity, Dykes, Folds and Faults).
4. Practical Record and Viva-voce (10 marks)

Text Books:

1. Singh, S (2009): Physical Geography, Geomorphology, Prayag Pustak Publications, Allahabad

Reading Lists:

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

C-1.2 : CARTOGRAPHY

Full Marks – 100
Mid Sem – 15/1hr
End Sem Theory – 60/3 hrs
End Sem Practical – 25/3 hrs

THEORY

UNIT - I: Cartography-Nature and scope

i. Scientific basis of Cartography, needs of map making, characteristics of maps,
ii. Cartography as a science of human communication
iii. Branches of Cartography, Scope of cartography

UNIT - II: Basic Geodesy, Scale – Concept and application

i. Spherical Earth, Ellipsoidal Earth. Geoid Earth
ii. Geographical Coordinates (Latitude and Longitude), Graticules
iii. Scale, Construction of types of Scales (Plain, Comparative and Diagonal Scale)

UNIT - III: Map Projections

i. Meaning and Use, Brief Historical aspect.
ii. Transformation of area, Distance and Direction
iii. Simple Cylindrical Projection, Conical Projection with one standard projection

UNIT - IV: Slope Analysis and Geological Map Gradient and slope

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

PRACTICAL

1. Construction and use of Graphical, RF & Statement Scale, Diagonal Scale
2. Grid Reference System, Latitude, Longitude, International Date Line, Date and Time based on GMT & IST)
3. Construction of Map Projections: Simple Cylindrical, Simple conical Projection with one and two standard parallels, Polyconic , Gnomonic and Mercator's
4. Cartograms of one, two and three dimensions–Simple and Complex bars, circle and sphere diagram, block diagrams.
5. Drawing of Choropleth and isopleths maps, relief and slope maps
6. Practical record and viva-voce

Text Books:

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:

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

SEMESTER-II

C-2.1 : HUMAN GEOGRAPHY

Full Marks – 100
Mid Sem – 15/1hr
End Sem Theory – 60/3 hrs
End Sem Practical – 25/3 hrs

THEORY

UNIT - I:

Introduction: Defining Human Geography: Nature, scope and Contemporary
Relevance, Man-nature Relationship: Major racial groups and their characteristics

UNIT - II:

World distribution of major racial groups, language and religion, Cultural realms of the world

UNIT - III:

Demographic Characteristics of population: Population Composition (Male & Female, Sex Ratio, Age and Sex, Occupational Structure, Population Density), Factor affecting population distribution, Trend of World Population Growth, Demographic Transition Theory, Population Problems in developed and under developed world.

UNIT - IV:

Settlements: Types and pattern of Rural and urban Settlements; concept of urban area, towns and cities, Size Class and Functional Classification of towns and Trend of Urbanization of the world

PRACTICAL

1. Drawing of age sex pyramid of developed, developing and under developed countries
2. Drawing of population distribution maps using symbols–Simple and multiple dots, circles and spheres, choropleth maps of population density distribution
3. Drawing of Pie Diagram (Using population data of occupational structure, population composition)
4. Trend of population growth, growth of urban population and settlements
5. Practical records and viva –voce

Text Book:

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

Reference Books:

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

C-2.2 : CLIMATOLOGY

Full Marks – 100
Mid Sem – 15/1hr
End Sem Theory – 60/3 hrs
End Sem Practical – 25/3 hrs

THEORY

UNIT - I:

Composition and Structure of the atmosphere, Weather and Climate : Elements and Factors, Insolation and Heat Budget of the Earth, World distribution of Temperature –Factors of Distribution, Temperature Inversion.

UNIT - II:

Atmospheric Pressure and Winds – Pressure Belts and Planetary Winds, Periodic and local winds, Factors affecting general circulation of wind, corriolis effect, Jet Stream.

UNIT - III:

Humidity: relative and absolute, Forms of Condensation, types of clouds, types of precipitation, classification of climate of Koppen and Thonrthwait.

UNIT - IV:

Concept of air mass, classification, characteristics, distribution and modification, thunderstorms and tornado, Tropical Cyclones, Temperate Cyclones, weather forecasting.

PRACTICAL

1. Introduction to use of simple weather observation instruments: Thermometer, Barometer, hygrometer, anemometer, wind vane, Rain Gauge, Stevenson Screen, Interpretation of weather maps
2. Drawing of Climograph and Hythergraph, Wind rose diagram.
3. Drawing of isopleth maps : isotherms, isobars and isohyets
4. Spatial and temporal distribution of rainfall using choropleth techniques and trend graphs
5. Record & Viva-Voce carries 10 marks

Text Books:

1. Lal, D S (2006): Climatology, Prayagn Pustak Bhavan, Allahabad

Reading List:

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

GE-2.3 : GEOGRAPHY OF INDIA

Full Marks – 100
Mid Sem – 15/1hr
End Sem Theory – 60/3 hrs
End Sem Practical – 25/3 hrs

THEORY

UNIT - I:

Physiographic Divisions of India, soil and vegetation, climate (characteristics and classification)

UNIT - II:

Population: Distribution and growth, Demographic structure, Distribution of population by race, religion, language and tribes, urbanisation

UNIT - III:

Mineral and power resources: distribution and utilisation of iron ore, coal, Petroleum, Natural gas, Nuclear Minerals: Irrigation, Cropping pattern, Production & distribution of rice, wheat, Tea, Coffee

UNIT - IV:

Industrial development: Iron and steel, Aluminum, Automobile and Information technology Transport in India: Road, Rail and Airways, Waterways

PRACTICAL

1. Study and interpretation of topographic Maps
2. Cartograms – Pair-Bar diagram, complex bar, wheel diagram
3. Maps drawing –Simple dot maps, Multiple dot maps
4. Practical record and viva-voce

Text Books:

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

Reading List:

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

AECC-2.4 : ENVIRONMENTAL STUDIES (FOR COMMERCE STREAM)

Full Marks – 100
Mid Sem – 20/1 hr
End Sem – 80/3 hrs

UNIT – I

The Environment: The Atmosphere, Hydrosphere, Lithosphere, Biosphere, Ecology, Ecosystem, Biogeochemical Cycle (Carbon Cycle, Nitrogen Cycle), Environment Pollution: Air Pollution, Water Pollution, Soil Pollution, Radiation Pollution

UNIT – II

Population Ecology: Individuals, Species, Pollution, Community, Control Methods of Population, Urbanization and its effects on Society, Communicable Diseases and its Transmission, Non-Communicable Diseases

UNIT – III

Environmental Movements in India: Grass root Environmental movements in India, Role of women, Environmental Movements in Odisha, State Pollution Control Board, Central Pollution Control Board

UNIT – IV

Natural Resources: Conservation of Natural Resources, Management and Conservation of Wildlife, Soil Erosion and Conservation, Environmental Laws: Water Act, 1974, Air Act, 1981, The Wildlife (Protection) Act, 1972, Environment Protection, 1986, Natural Disasters and their Management

Books Recommended:

- Dash MC and Mishra PC, Man and Environment, McMillan, London.
- Mishra PC and Das MC, Environment and Society, McMillan, London.
- Odeem EP, Fundamentals of Ecology, Natraj Publication.
- Mishra DD, Fundamental Concept in Environmental Studies, S. Chand, New Delhi.
- Asthana DK and Asthana Meera, A Text book of Environmental Studies, S. Chand, New Delhi.
- Bharucah Erach, Textbook for Environmental Studies, Universities Press India Pvt. Ltd., Hyderabad.

SEMESTER-III

C-3.1 : OCEANOGRAPHY

Full Marks – 100
Mid Sem – 15/1hr
End Sem Theory – 60/3 hrs
End Sem Practical – 25/3 hrs

THEORY

UNIT - I:

Bottom Relief of the Oceans: Continental shelf, slope, deep sea plain, ocean deeps, mid oceanic ridges, relief features of the Atlantic, Indian and Pacific Ocean

UNIT - II:

Origin of ocean water, Temperature and salinity of ocean -distribution and determinants, T-S Diagram Ocean Deposits: classification and Distribution.

UNIT - III:

Movement of Ocean water- Waves, Currents and Tides: Types and characteristics, factors associated with the origin of ocean currents and their impacts, Ocean currents of the Atlantic, Indian and Pacific ocean

UNIT - IV:

Coral Reefs and atoll: Types, Theories of Origin (Subsidence theory of Darwin and Dana, Glacial Control theory of Louis Agassiz), Marine resources

PRACTICAL

1. Interpretation of Topographical Maps.
2. Demarcation of catchment basins and drainage networks, stream ordering and identification and interpretation of drainage patterns.
3. Enlargement and reduction of maps: Graphical and instrumental, use of pantographs
4. Practical records and viva –voce

Text Books:

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

Reference Books:

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

C-3.2 : STATISTICAL METHODS IN GEOGRAPHY

Full Marks – 100
Mid Sem – 15/1hr
End Sem Theory – 60/3 hrs
End Sem Practical – 25/3 hrs

THEORY

UNIT - I:

Use of Data in Geography: Spatial and attribute data, Geographical Data Matrix, Types and Sources of Data (Discrete and grouped, primary and secondary), Scales of Measurement of data (Nominal, Ordinal, Interval, Ratio).Distribution of Data: Normal and Bi-nomial

UNIT - II:

Descriptive Statistics: Frequency distribution (grouped and ungrouped data), measures of Central Tendency (Mean, Median and Mode), Types of Sampling-Random, stratified, systematic and purposive

UNIT - III:

Measures of Dispersion (Variance, Mean Deviation, Standard Deviation and Coefficient of Variation. Chi-square test

UNIT - IV:

Measures of Association:, Product moment correlation, Rank correlation, test of significance, coefficient of determination and linear regression.

PRACTICAL

1. Drawing of histogram, frequency curve and ogive in grouped and discrete data
2. Calculation & Drawing of graphs showing mean, median, mode in grouped & discrete data
3. Calculation of mean deviation, standard deviation, coefficient of variation,
4. Practical records and viva –voce

Text Books:

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 Books:

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

C-3.3 : STATISTICAL METHODS IN GEOGRAPHY

Full Marks – 100
Mid Sem – 15/1hr
End Sem Theory – 60/3 hrs
End Sem Practical – 25/3 hrs

THEORY

UNIT - I:

Physiography of Odisha, River System, 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 and production of Iron Ore, Bauxite, Chromite, Coal
(b) Industrialization in Odisha – Problems and prospects, Iron and steel industry, Aluminum Industry, Textile, thermal power plants

UNIT - IV:

(a) Population: Distribution and Growth, distribution of tribes and tribal population
(b) Urbanization-Growth of urban population and urban centers
(b) Transport: Roadways & Railways

PRACTICAL

1. Rainfall distribution of Odisha using choropleth techniques (State &District/ District & block)
2. Temperature / rainfall distribution using isopleth techniques giving point level data of important observation centers
3. Drawing of time series graphs to depict decadal growth of population/ urban population
4. Cartographic representation of socio-economic data (One, two three dimensional)
5. Practical records and viva –voce

Text Book:

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

Reference Book:

- Roy, G. C.- Geography of Odisha

SEMESTER-IV

C-4.1 : EVOLUTION OF GEOGRAPHICAL THOUGHT

Full Marks – 100
Mid Sem – 15/1hr
End Sem Theory – 60/3 hrs
End Sem Practical – 25/3 hrs

THEORY

UNIT - I:

Geographical concepts of ancient and mediaval period: Contributions of Greek, Roman & Indian and Arab scholars.

UNIT - II:

Modern geographical thought: Contributions of Alexander Von Humboldt, Carl Ritter, Ratzel, Vidal De La Blache and Mackinder.

UNIT - III:

Dichotomy in Geography– Environmental Determinism and Possibilism, Systematic and Regional Geography, Ideographic and Nomeothetic, Physical and Human Geography.

UNIT - IV:

Recent Trends in development of geography– Quantitative Revolution in Geography, Behavioural approach in Geography, radicalism in Geography, Recent changes in methods and approaches to geography.

PRACTICAL

1. Introduction to and use of survey Instruments: Prismatic Compass, Leveling, Theodolite /Total Station,
2. Methods of Surveying: Radiation, Intersection, Resection Traversing (Close and Open)
3. Use of GPS / DGPS in observation of coordinate values of a number of points and preparing an outline map of an area by interpolation
4. Preparation and uses of questionnaire and schedule in a socio economic survey
5. Practical records and viva –voce

Text Book:

1. Evolution of Geographical Thought- Majid Hussain

Reference Books:

- Dikshit R. D., 1997: Geographical Thought: A Contextual History of Ideas, Prentice– Hall India.
- Hartshone R., 1959: *Perspectives of Nature of Geography*, Rand Mac Nally and Co.
- Martin Geoffrey J., 2005: *All Possible Worlds: A History of Geographical Ideas*, Oxford.
- Holt-Jensen A., 2011: *Geography: History and Its Concepts: A Students Guide*, SAGE.
- Kapur A., 2001: *Indian Geography Voice of Concern*, Concept Publications.

C-4.2 : ECONOMIC GEOGRAPHY

Full Marks – 100
Mid Sem – 15/1hr
End Sem Theory – 60/3 hrs
End Sem Practical – 25/3 hrs

THEORY

UNIT - I:

Meaning and scope of economic geography, classification of economic activities, Factors affecting location of economic activity with special reference to agriculture and industry, Von Thunen Theory of location of agricultural activity and Weber's theory of Industrial Location.

UNIT - II:

Primary economic activities: Types and problems, (Subsistence farming, shifting cultivation, forestry and fishing, mining and quarrying), agricultural regions of the world.

UNIT - III:

Secondary economic activities: Manufacturing (Cotton Textile, Iron and Steel), Industrial Regions of the world: Special Economic Zones and its significance.

UNIT - IV:

Tertiary economic activities: Transport- Roads and Railways, Air and Water ways, Trade and commerce

PRACTICAL

1. Determination of agricultural efficiency (Kendal and Bhatia method) and to show on maps.
2. Drawing of Isotims, Isodapanes and industrial location based on Weber's theory.
3. Traffic flow diagram and travel time maps (Isochrones).
4. Practical records and viva –voce

Text Books:

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

Reference Books:

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

C-4.3 : ENVIRONMENTAL GEOGRAPHY

Full Marks – 100
Mid Sem – 15/1hr
End Sem Theory – 60/3 hrs
End Sem Practical – 25/3 hrs

THEORY

UNIT - I:

Environmental Geography – Concept and Scope, Types and Characteristics of environment:
Biotic, abiotic and cultural, Environmental contrast (Global, Continental, Local) Environmental control and concept of tolerance (Light, Temperature, Water, Topography and Edaphic factors)

UNIT - II:

Ecosystem – Concept, Structure and Functions, Trophic level, food Chain and food web, Biogeo-chemical Cycle (Nitrogen and Carbon), Energy flow in Ecosystem.

UNIT - III:

Concept of Biome, Major biomes of the world and their characteristics: Equatorial, Subtropical, Temperate and Polar, Nature and characteristics of environmental pollution of water and air

UNIT - IV:

Environmental degradation; causes and consequences, Environmental conservation methods, programmes and policies in India, Role of International agencies (UNO,UNEP,UNDP, IUCN in environmental management, concept and strategies of sustainable development, Green Tribunal and its functions in India.

PRACTICAL

Project Work :

Submission of a Project Report on any environmental problem of global/national/local significance

Text Books:

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

Reference Books:

- Chandna R. C., 2002: *Environmental Geography*, Kalyani, Ludhiana.
- Cunninghum W. P. and Cunninghum M. A., 2004: *Principals of Environmental Science: Inquiry and*
- *Applications*, Tata Macgraw Hill, New Delhi.
- Goudie A., 2001: *The Nature of the Environment*, Blackwell, Oxford.
- Miller G. T., 2004: *Environmental Science: Working with the Earth,* Thomson Brooks Cole, Singapore.
- Odum, E. P. et al, 2005: *Fundamentals of Ecology,* Ceneage Learning India.

GE-4.4 : HUMAN GEOGRAPHY

Full Marks – 100
Mid Sem – 15/1hr
End Sem Theory – 60/3 hrs
End Sem Practical – 25/3 hrs

THEORY

UNIT - I:

Meaning and scope of Human Geography; Major Themes; Contemporary Relevance and subfields, Development of human geography

UNIT - II:

Major races of mankind, their characteristics and distribution, Cultural Realms of the world; Religion and Language of World

UNIT - III:

World distribution of population, world Population Growth,, Population Composition; Demographic Transition Theory

UNIT - IV:

Types & Patterns of Rural Settlements; Urban Settlements; Definition, size and functional classification, characteristics, Trends and Patterns of World Urbanization

PRACTICAL

1. Population distribution by multiple dots and population density
2. Decadal Population Growth- Time series graphs, bar diagrams
3. Pie Diagram showing occupational structure and population composition
4. Population Projection by A.P and GP method
5. Practical Record and Viva voce

Text Book:

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

Reading List:

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

SEMESTER-V

C-5.1 : REGIONAL PLANNING AND DEVELOPMENT

Full Marks – 100
Mid Sem – 15/1hr
End Sem Theory – 60/3 hrs
End Sem Practical – 25/3 hrs

THEORY

UNIT - I:

Concept of a Region, Types of region: Formal, Functional and Planning Region, Need for Regional Planning, Evolution of Regional planning in India during five year plans, Characteristics of an Ideal Planning Region

UNIT - II:

Delineation of Planning Regions; Approaches and Methods, Regional disparity and imbalances in India, 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, Welfare Programs: IRDP, DPAP, Planning for backward regions, TDA and ITDP, planning for National Capital Region, Urban Area Programs, Concept and application of Human development Index in planning and development

PRACTICAL

1. Transport network analysis –Alfa, Beta, Gama indices
2. Nearest neighbor analysis
3. Mapping regional Disparity based on socio-economic data
4. Mapping levels of development based on socio-economic data
5. Practical record and viva-voce

Text Books:

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

Reference Books:

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

C-5.2 : REMOTE SENSING AND GIS

Full Marks – 100
Mid Sem – 15/1hr
End Sem Theory – 60/3 hrs
End Sem Practical – 25/3 hrs

THEORY

UNIT - I:

Remote Sensing: Definition and Components, EMS and EMR, Wave and Particle theory of EMR, Types of platforms and sensors, Advantages and limitation of Remote Sensing, Energy interaction with Atmosphere and Earth Surface features (Water, soil and vegetation)

UNIT - II:

Aerial Photography, Principles of stereo vision, Geometry of Aerial Photographs, Image elements and visual interpretation of satellite images.

UNIT - III:

GIS: definition and components, Types of GIS Data (Spatial and attribute), Raster and Vector Data models, Special functions of GIS, GPS elements and its uses.

UNIT - IV:

Application of RS & GIS in land use and land cover mapping, Application in cartography and map making, Mapping of water resources and Natural Vegetation

PRACTICAL

1. Stereoscopic vision using stereo cards and identification of objects from cards
2. Feature identification from aerial photographs using Pocket stereoscope/Mirror stereoscope
3. Feature identification from satellite imageries using visual interpretation
4. Identification and mapping of water bodies from satellite imageries
5. Digitization of Odisha state/block /district map and drawing of few point, line and polygon features

Text Book

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

Reference Books:

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

DSE-5.3 : POPULATION GEOGRAPHY

Full Marks – 100
Mid Sem – 15/1hr
End Sem Theory – 60/3 hrs
End Sem Practical – 25/3 hrs

THEORY

UNIT - I:

Defining the Field, Nature and Scope of population geography; Sources of population data with special reference to India (Census, Vital Statistics and NSS), Population problems and issues.

UNIT - II:

Population Size, Distribution and Growth – Factors and Determinants, Theories of Growth –Malthusian Theory and Demographic Transition Theory.

UNIT - III:

Determinants of Population Growth: Fertility, Mortality and Migration-Measures, determinants and implications of fertility, mortality and migration.

UNIT - IV:

Population Composition and Characteristics – Age-Sex, Rural-Urban, Literacy, Occupational structure, Contemporary population issues–Ageing of Population; Declining Sex Ratio; HIV/AIDS, Trend of urbanization and related Problems.

PRACTICAL

1. Population projection: AP, GP and R.G India method, calculation and graphical display
2. Drawing of triangular diagram and Lorenz curve
3. Construction of compound and superimposed pyramids
4. Calculation and presentation of population growth Rate, infant and neonatal mortality rate, maternal mortality ratio based on supplied data
5. Practical record and Viva-Voce

Text book:

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

Reading List:

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

DSE-5.4 : RESOURCE GEOGRAPHY

Full Marks – 100
Mid Sem – 15/1hr
End Sem Theory – 60/3 hrs
End Sem Practical – 25/3 hrs

THEORY

UNIT - I:
Natural Resources: Concept, Types, Classification, and Functional Theory of Resources

UNIT - II:
Distribution and Utilization of Land Resources, Water Resources, Forest resources and Energy Resources and mineral resources.

UNIT - III:
Problems in exploitation, depletion and degradation of resources, Methods of conservation and management of Land, Water, Forest, mineral & Energy Resources

UNIT - IV:
Resource scarcity hypothesis , Concept and approach towards sustainable development of resources

PRACTICAL

1. Simple Correlation and interpretation of correlation coefficient
2. Test of significance of correlation coefficient
3. Rank Correlation
4. Simple Linear Regression, Drawing of scattergram and regression line
5. Practical record and viva-voce

Text book:

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

Reading List:

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

SEMESTER-VI

C-6.1 : GEOGRAPHY OF INDIA

Full Marks – 100
Mid Sem – 15/1hr
End Sem Theory – 60/3 hrs
End Sem Practical – 25/3 hrs

THEORY

UNIT - I:
Triple tectonic divisions, Physiography of the Himalayas, Indo-Gangetic Plains, Peninsular India, Climate of India : Weather characteristics of SW and NE Monsoon, soil and natural vegetation

UNIT - II:
Population Distribution, Demographic structure, trend of population growth and urbanization, Distribution of major tribal groups of India, India's population problems and prospects

UNIT - III:
Distribution and utilisation of iron ore, nuclear minerals, coal, petroleum, natural gas, Factors of location and development of automobile, IT, Iron & Steel and Cotton Textile industries, Industrial regions of India

UNIT - IV:
Types of Irrigation in India, characteristics of Indian Agriculture, cropping pattern, production and distribution of rice and wheat, Tea and Coffee, problems of Indian Agriculture

PRACTICAL

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

Text Books:

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

Reference Books:

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

C-6.2 : GEOGRAPHY OF INDIA

Full Marks – 100
Mid Sem – 15/1hr
End Sem Theory – 60/3 hrs
End Sem Practical – 25/3 hrs

THEORY

UNIT - I:

Concept of Hazards and Disasters, Natural and manmade hazards, Types of hazards, Concept of Vulnerability and risk, prevention, mitigation and management.

UNIT - II:

Disaster management cycle, Pre disaster planning, During disaster management, Post Disaster planning and development, community based disaster preparedness, Role of various stake holders (NGO, GO, NDMA, NIDM, NDRF, ODRAF and OSDMA) in disaster management.

UNIT - III:

Detail study of nature, characteristics and management of natural hazards: Flood, Cyclone, Drought, Earthquake, Tsunami and Land Slide

UNIT - IV:

Man made hazards and disasters, causes and impacts; Fire hazards, industrial hazards and nuclear hazards, Salient features of India's disaster management policy.

PRACTICAL

Project work – Preparation of a case study report on a specific hazard / disaster based on literature review and or field work

Text books:

1. Singh, Savindar (2009): Disaster Management

Reference books:

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

DSE-6.3 : URBAN GEOGRAPHY

Full Marks – 100
Mid Sem – 15/1hr
End Sem Theory – 60/3 hrs
End Sem Practical – 25/3 hrs

THEORY

UNIT - I:

Urban geography: Introduction, nature and scope; history of urbanization, Trends and Patterns of Urbanization in developed, developing countries, world and India.

UNIT - II:

Functional classification of cities: Quantitative and Qualitative Methods, Christaller Theory, Morphology of Urban Settlements & Urban Sphere of Influence and umland, concept of CBD, rural-urban fringe.

UNIT - III:

Theories of urban growth, Urban Issues: problems of housing, slums, civic amenities (water and transport), Air Pollution and Noise Pollution,

UNIT - IV:

Case studies of Delhi, Mumbai, Kolkata, Bhubaneswar and Chandigarh with reference to city planning and Urban Issues.

PRACTICAL

1. Functional classification of towns
2. Projection of urban population
3. Delimitation of C.B.D and umland
4. Gravity and population potential model.
5. Practical Record and Viva-Voce (10 marks)

Text books:

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

Reading List:

- Fyfe N. R. and Kenny J. T., 2005: *The Urban Geography Reader*, Routledge.
- Graham S. and Marvin S., 2001: *Splintering Urbanism: Networked Infrastructures, Technological Mobilities and the Urban Condition*, Routledge.
- Hall T., 2006: *Urban Geography*, Taylor and Francis.
- Kaplan D. H., Wheeler J. O. and Holloway S. R., 2008: *Urban Geography*, John Wiley.
- Knox P. L. & McCarthy L., 2005: *Urbanization: An Introduction to Urban Geography*, Prentice Hall NY.
- Sassen S., 2001: *The Global City: New York, London and Tokyo*, Princeton University Press.
- Ramachandran R (1989): Urbanisation and Urban Systems of India, Oxford University Press, New Delhi
- Ramachandran, R., 1992: *The Study of Urbanisation*, Oxford University Press, Delhi
- 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.
- Singh, R.B. (Ed.) (2015) Urban development, challenges, risks and resilience in Asian megacities. Advances in Geographical and Environmental Studies, Springer

DSE-6.4 : FIELD WORK AND RESEARCH METHODOLOGY

Full Marks – 100
Mid Sem – 15/1hr
End Sem Theory – 60/3 hrs
End Sem Practical – 25/3 hrs

THEORY

Aim of the Course:

To introduce research aptitude among young geographers.

Objectives of the Course:

* To enable students to develop a general understanding of the methodology of research in geography.
* To strengthen the need of interdisciplinary research.
* To inculcate the role of Case Study analysis in the methodology of geography.
* To understand the value of Field Work and Primary Data in geographical research.

UNIT - I : Fundamentals of Research Literacy

a) Meaning and objectives of research; types of research (Historical, Case Study, Descriptive and Experimental),
b) Significance of Research, Ethics in Research and Plagiarism,

c) Role and Utility of Fieldwork in Geography,
d) Sources & Types of Data Collection (Reconnaissance, Primary & Secondary)

UNIT - II: Approaches to Research

a) Approach and Methods of Geographic Research,
b) Ex-post facto, Laboratory Experiments,
c) Field Study and Experiments, Field Survey Research,
d) Evaluation Research and Action Research.

UNIT - III: Methods and Field Techniques

a) Field Techniques in Geography, Selection of Appropriate Technique, Observation (Participant / Non Participant),
b) Preparation of Questionnaires and Schedules (Open / Closed / Structured / Non-Structured);
c) Participatory Rapid Appraisal and Focus Group Discussion
d) Content Analysis

UNIT - IV: Preparation of a Research Report

a) Designing the Research Report (Documentation Structure, Layout, Fonts, Setting of Maps, Diagrams, Tables, Appendices, Bibliography and Reference)
b) Review of Literature and Different Methods of In-text and End of Paper Citation,
c) Style of Citation in Science and Social Science Research (Books, Journals, Reports, Thesis, News Items, Web Sources)

PRACTICAL

1. Preparation of a Observation Schedule (Participant / Non Participant) and Questionnaire (Open / Closed / Structured / Non-Structured);
2. Preparation of a Guide Line for Focus Group Discussion and PRA
3. Field Testing of Questionnaire and FGD-PRA guidelines t on a village level socio-economic study.
4. Preparation of a Research Report
5. Viva Voce

Note:

i. Each student will prepare an individual report based on primary and secondary data collected during field work.
ii. Duration of the field work should not exceed one week.
iii. The word count of the report should be around 5000 excluding figures, tables, photographs, maps, references and appendices.
iv. One copy of the report on A4 size paper should be submitted in soft binding.

Main Books:

1. Majid Hussain (1994), Methodology of Geography, Anmol Publication, New Delhi.
2. K.L. Narasimha Murthy (1999) ,Geographical Research , Concept Publishing Company, New Delhi

Reference Books:

❖ Research Methodology - Methods and Techniques, Revised Edited by C.R. Kothari (2004), New Age International Publishers, New Delhi.
❖ Quantitative Social Research Methods by Kultar Singh (2007), Sage Publication.
❖ Social Survey Methods by Paul Nicholas (2009), Oxfarm Publishers Delhi.

OR

DSE-6.4 : DISSERTATION / PROJECT WORK

Full Marks – 100
End Sem Project– 100

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

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