

# **COURSES OF STUDIES**

**FOR**

**THREE YEAR DEGREE**

**COURSE IN**

**ARTS HONOURS**

**DEPARTMENT OF GEOGRAPHY**

**Choice Based Credit System (CBCS)**

First & Second Semester Examination – 2022-23

Third & Fourth Semester Examination – 2023-24

Fifth & Sixth Semester Examination – 2024-25



**GOVERNMENT AUTONOMOUS COLLEGE, PHULBANI,  
KANDHAMAL**

### **DISTRIBUTION OF MARKS**

<b>Paper with Practical</b>	
<b>Mid Sem(15Marks)</b>	
Two questions to be answered carrying 1 mark each	2X1 mark = 2marks
Two questions to be answered carrying 1.5 marks each	2X1.5 marks = 3marks
Two questions to be answered carrying 2 mark each	2X2 marks = 4marks
One question to be answered carrying 6 mark each	1X6 marks = 6marks
<b>End Sem(60Marks)</b>	
Eight questions to be answered carrying 1 mark each	8X1 mark = 8marks
Eight questions to be answered carrying 1.5 mark each	8X1.5 marks = 12marks
Eight questions to be answered carrying 2 mark each	8X2 marks = 16marks
Four questions to be answered carrying 6 mark each	4X6 marks = 24marks
<b>Paper without Practical</b>	
<b>Mid Sem(20Marks)</b>	
Three questions to be answered carrying 1 mark each	3X1 mark = 3marks
Two questions to be answered carrying 2 mark each	2X2 marks = 4marks
Two questions to be answered carrying 3 mark each	2X3 marks = 6marks
One question to be answered carrying 7 mark each	1X7 marks = 7marks
<b>End Sem(80Marks)</b>	
Twelve questions to be answered carrying 1 mark each	12X1 mark = 12marks
Eight questions to be answered carrying 2 mark each	8X2 marks = 16marks
Eight questions to be answered carrying 3 mark each	8X3 marks = 24marks
Four questions to be answered carrying 7 mark each	4X7 marks = 28marks

**SYLLABI FOR CBCS COURSE**

Sem	CORE COURSE (14)	Ability Enhancement Compulsory Course (AECC)(2)	Ability Enhancement Elective Course (AECC)(2) (Skill Based)	Elective: Discipline Specific DSE(4)	Elective: Generic (GE) (4)
I	CORE-I	AECC- IAECC-III(EV-I)			GE-IA
	CORE-II				
II	CORE-III	AECC- IIAECC-III(EV-II)			GE-1B
	CORE-IV				
III	CORE-V	AECC-III(EV-III)	SEC-I		GE-2A
	CORE-VI				
	CORE-VII				
IV	CORE-VIII	AECC-III(EV-IV)	SEC-II		GE-2B
	CORE-IX				
	CORE-X				
V	CORE-XI	AECC-III(EV-V)		DSE-I	
	CORE-XII			DSE-II	
VI	CORE-XIII	AECC-III(EV-VI)		DSE-III	
	CORE-XIV			DSE-IV /Project	

## YEAR & SEMESTER-WISE PAPERS & CREDITS AT A GLANCE

<b>Three-Year (6-Semester) CBCS Programme (B.A. Hons) (Geography Department)</b>				
Yr.	Sl.No.	Course Structure	Code	Credit Points
<b>FIRST YEAR</b>	<b>SEMESTER-I</b>			
	1	Geomorphology	C-1.1	4+2
	2	Cartography	C-1.2	4+2
	3			
	4			
	5	Ethics & Values (Unit-I)	AECC-1.5	1
	<b>SEMESTER-II</b>			
	6	Human Geography	C-2.1	4+2
	7	Climatology	C-2.2	4+2
	8	Geography of India	GE-2.3	4+2
9	EVS (For Commerce)	AECC-2.4	4	
10	Ethics & Values (Unit-II)	AECC-2.5	1	
<b>SECOND YEAR</b>	<b>SEMESTER-III</b>			
	11	Oceanography	C-3.1	4+2
	12	Statistical Methods in Geography	C-3.2	4+2
	13	Geography of Odisha	C-3.3	4+2
	14			
	15			
	16	Ethics & Values (Unit-III)	AECC-3.6	1
	<b>SEMESTER-IV</b>			
	17	Evolution of Geographical Thought	C-4.1	4+2
	18	Economic Geography	C-4.2	4+2
	19	Environmental Geography	C-4.3	4+2
	20	Human Geography	GE-4.4	4+2
21				
22	Ethics & Values (Unit-IV)	AECC-4.6	1	
<b>FINAL YEAR</b>	<b>SEMESTER-V</b>			
	23	Regional Planning and Development	C-5.1	4+2
	24	Remote Sensing & GIS	C-5.2	4+2
	25	Population Geography	DSE-5.3	4+2
	26	Resource Geography	DSE-5.4	4+2
	27	Ethics & Values (Unit-V)	AECC-5.5	1
	<b>SEMESTER-VI</b>			
	28	Geography of India	C-6.1	4+2
	29	Disaster Management	C-6.2	4+2
	30	Urban Geography	DSE-6.3	4+2
31	Project Work / Field Work and Research Methodology	DSE-6.4	6 / 4+2	
32	Ethics & Values (Unit-VI)	AECC-6.5	1	

**Notes:**

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

## **PROGRAMME OUTCOMES(POs)**

After completion of the Bachelor Degree in Geography, the course is geared to cater the following objectives:

**PO1:**Students will understand the spatio-temporal interactions of the physical, human and environmental components, which are often complex and dynamic.

**PO2:**Students will learn socio-cultural, political, economic and physical characteristics at global, regional and local level.

**PO3:**Students will be enhanced with skill and application in various disciplinary theories, methodologies

**PO4:**Students will develop their analytical and critical thinking that leads to develop their scientific attitude..

**PO5:**Students will be ensured that the geographical knowledge is essential and it is self-directed.

## **PROGRAMME SPECIFIC OUTCOMES(PSOs)**

Programme specific Outcomes of the Bachelor Degree in Geography are:

**PSO1:**Develop the leadership attitude to work both as an individual and also in team in identifying problems and challenges, and find out possible solutions.

**PSO2:**In the field surveys, students are exposed to a detailed understanding of socio- economic, geo-economic and cultural dimensions of the people.

**PSO3:**Students are trained in handling modern computer based technologies such as RS and GIS, so that they can apply their knowledge.

**PSO4:**Students' development courses and research shall develop the ability of the students' to analyze and develop the critical thinking.

**PSO5:**The syllabus is oriented towards job opportunities and future prospects for the students, through which, the students can be guided to various competitive exams like NET-JRF, Civil service exams.

## SEMESTER-I

### C-1.1: GEOMORPHOLOGY

Full Marks – 100  
MidSem–15/1hr  
End Sem Theory – 60/3 hrs  
EndSemPractical–25/3hrs

#### Learning Objective

1. To provide knowledge on the processes going on the surface of the Earth.
2. To enable students for analytical thinking on Geomorphology

#### Course Outcome

1. Understand the functioning of Earth systems in real time and analyze how the natural and anthropogenic operating factors affect the development of land forms
2. Distinguish between the mechanisms that control these processes, assess the roles of structure, stage and time in shaping the land forms, interpret geomorphological maps and apply the knowledge in geographical research

#### THEORY

##### UNIT-I:

Geomorphology: Meaning, Nature & Scope, Internal Structure of the Earth, Isostasy (Airy and Pratt's view), 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 Convective 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)

#### 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
- ❖ Tikka, 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  
MidSem – 15/1hr  
End Sem Theory – 60/3 hrs  
EndSem Practical – 25/3hrs

### Learning Objective

1. Involve students with practical understanding on cartography

### Course Outcome

1. Read and prepare maps.
2. Comprehend locational and spatial aspect so the earth surface use and importance of maps for regional development and decision making.

## THEORY

### UNIT- I: Cartography-Nature and scope

- i. 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 Isopleth 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  
MidSem–15/1hr  
End Sem Theory – 60/3 hrs  
EndSem Practical – 25/3hrs

#### Learning Objective

1. To recognize various aspects of human life and interrelation with geography.

#### Course Outcome

1. Know the changing human and cultural land scape at different levels.
2. Understand patterns and processes of population growth and its implications.
3. Appreciate the nature and quality of human Landscapes

### THEORY

#### UNIT- I:

Introduction: Defining Human Geography: Nature, scope and Contemporary Relevance, Man-nature Relationship

#### 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, Population Density), Factor affecting population distribution, Trend of World Population Growth, Demographic Transition Theory, Population Problems in developed and underdeveloped world.

#### UNIT-IV:

Settlements: Types and pattern of Rural and urban Settlements; 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 underdeveloped 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 chengleong
- ❖ 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  
MidSem–15/1hr  
End Sem Theory – 60/3 hrs  
EndSemPractical–25/3hrs

### Learning Objective

1. To establish a strong foundation on climatology with focusing on all the elements of atmosphere and resultant processes

### Course Outcome

1. Understand the elements of weather and climate and its impacts at different scale
2. Comprehend the climatic aspects and its bearing on planet earth.
3. Understand the mechanisms and genesis of various climatological disasters

## THEORY

### UNIT- I:

Composition and Structure of the atmosphere, Insolation and Heat Budget of the Earth, World distribution of Temperature, Factors of Distribution and Temperature Inversion

### UNIT-II:

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

### UNIT-III:

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

### 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 Horn 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  
MidSem – 15/1hr  
End Sem Theory – 60/3 hrs  
EndSem Practical – 25/3hrs

### Learning Objective

1. To teach students about the physical, climatological, demography, mineral reserves of India and utilizing them in a sustainable manner.

### Course Outcome

1. Understand the physical profile of the country.
2. Study the resource endowment and its spatial distribution and utilization for sustainable development.
3. Synthesize and develop the idea of regional dimensions.

## 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, urbanization.

### UNIT-III:

Mineral and power resources: distribution and utilization 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-Bardiagram, complex bar, wheel diagram
3. Map 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:*

- ❖ Deshpande, 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 & DISASTER MANAGEMENT (FOR COMMERCE STREAM)**

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

### **UNIT– I (Environment)**

The Environment: The Atmosphere, Lithosphere, Hydrosphere, Biosphere Ecosystem: Energy flow in the ecosystem  
Biogeochemical Cycle: Water Cycle, Carbon Cycle, Nitrogen Cycle  
Pollution: Water Pollution, Air Pollution, Soil Pollution, Radiation Pollution, Industrial Pollution, Light Pollution, Sound Pollution  
Environmental Laws: Water Act 1974, Air Act 1981, the Wildlife Protection Act 1972, The Environment Protection Act 1986, The Forest Conservation Act 1980

### **UNIT– II (Climate Change & Sustainable Development)**

Population Ecology: Individuals, Species, Population, Community Human Population Growth, Population Control Methods Urbanization and its effects on Society  
Climate Change : Causes, effect, Global Warming, Carbon footprint and environmental protection  
Step taken towards sustainable development: Ban of single-use plastics, Automobile Scrapping Policy, Promotion of Electrical Vehicles.  
Brief idea on Sustainable Development: Goals (SDGs), Agenda 21 of Rio Earth Summit

### **UNIT– III (Disaster Management)**

Disaster Management : Types of disasters (Natural and Man-made) and their causes and effect  
Vulnerability Assessment and Risk Analysis: Vulnerability to various disasters (Flood, Cyclone, Earthquake, Heat waves and Lightning)  
Institutional Framework: Institutional arrangements for disaster management (National Disaster Management Authority (NDMA), State Disaster Management Authority (SDMA), District Disaster Management Authority (DDMA), National Disaster Response Force (NDRF) and Odisha Disaster Rapid Action Force (ODRAF) Preparedness Measures: Disaster Management Cycle, Early warning System, Pre-Disaster and Post-Disaster Preparedness, Strengthening of SDMA and DDMA, Community Preparedness, Stakeholder participation, Corporate Social Responsibility (CSR)  
Survival Skills: Survival Skills adopted during and after disaster (Flood, Fire, Earthquake, Cyclone, and Lightning)

### **UNIT– IV**

Brief idea on Epidemics and Pandemics  
Non-communicable diseases with special reference to cardiovascular diseases, Cancer, Diabetes, Hypertension and Obesity and their prevention  
Communicable diseases with special reference to Covid-19, Flu, Hepatitis, AIDS and Tuberculosis and their transmission  
Dynamics of Disease Transmission: Mode of transmission (Direct/Indirect), Events after infection: Immunity (Active vs Passive, Innate vs Acquired, Herd Immunity), Incubation Period  
Prevention of Epidemics/Pandemics Diseases: Preventing Measures (Quarantine, Sanitization, Personal Protective measures such as hand washing and use of protective devices, Vaccination); Control Measures (Surveillance, Isolation, Contact Tracing)  
Life Style management: Diet, Physical Exercise, Yoga and sleeping habit  
Role of Different Sectors in Managing Health Disaster: Role of Government (Centre and State), Community, Civil Society, Student mass, NGOs

### **Books Recommended:**

- ❖ Asthana DK and Asthana M : A Text Book of Environmental Studies, S.Chand, New Delhi.
- ❖ Bharucha E : A Text Book of Environmental Studies, New Delhi, UGC.
- ❖ Dash MC and Mishra PC: Man and Environment, McMillan, London.
- ❖ Disaster Management and Mitigation Plan, 2013 of Dept. of Health & Family Welfare, Govt. of Odisha\*
- ❖ Mishra DD: *Fundamental Concept in Environmental Studies*, S. Chand, New Delhi.
- ❖ National Policy on Disaster Management, 2009\*
- ❖ National Disaster Management Plan, 2019\*
- ❖ Odeem EP, *Fundamentals of Ecology*, Natraj Publications.
- ❖ State Disaster Management Plan, 2019 of Government of Odisha\*
- ❖ Standard Operating Procedure (SOP) issued by Govt. of India and Govt. of Odisha on Public Health Management in the websites [www.mohfw.gov.in](http://www.mohfw.gov.in) and [health.odisha.gov.in](http://health.odisha.gov.in)\*
- ❖ The Disaster Management Act, 2005 of Government of India\*

[Note: Star (\*) marked Reference, published by the State as well as Central Government are available in the open sources]

## SEMESTER-III

### C-3.1: OCEANOGRAPHY

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

#### Learning Objective

1. To create a deeper understanding on oceanic landforms and processes with their global distribution keeping challenges encountered in the past and future scenario of the ocean lives

#### Course Outcome

1. Understand the oceanic process and Availability of resources
2. Understand the evolution of various oceanic topography and features.
3. Know various process related to oceanic circulation and effect on globe

### THEORY

#### UNIT- I:

Bottom Relief of the Oceans: Continental shelf, slope, deep seaplain, ocean deeps, midoceanic 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 deposits

### 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  
MidSem – 15/1hr  
End Sem Theory – 60/3 hrs  
EndSem Practical – 25/3hrs

### Learning Objective

1. To introduce inferential and descriptive statistics with uses in research methodology

### Course Outcome

1. Understand the basics of data collection and processing for the meaningful outcomes.
2. Comprehend the representation and interpretation of the results.
3. Put into practice results obtained in representation as well as day-to-day life

## THEORY

### UNIT-I:

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

### 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, coefficient of determination and linear regression.

## PRACTICAL

1. Drawing of histogram, frequency curve and ogive in grouped and discrete data
2. Calculation & Drawing of graph 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: GEOGRAPHY OF ODISHA

Full Marks – 100

**Learning Objective**

1. To study the physical, economic and social geography of Odisha..

**Course Outcome**

1. Students will lean in to the physiography, drainage, climate and agricultural scenario of Odisha
2. Know the industrial and mineral availability in Odisha with knowing the natural vegetation intensity.
3. Students will understand the natural hazards and vulnerability of Odisha against the multi-hazards (Covid-19 included) Understand the demography and spatial distribution of various tribes in Odisha

**THEORY**

**UNIT- I:**

Physiography of Odisha, River System, Climate, Soil, Natural Vegetation

**UNIT-II:**

Agriculture: (a) Production and Distribution of Rice, Pulses, Oilseeds; (b) Agricultural Problems and Prospects

**UNIT-III:**

Minerals and power resources:

- 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
- c. 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 graph 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

## C-4.1: EVOLUTION OF GEOGRAPHICAL THOUGHT

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

### Learning Objective

1. To make students to understand about the past, present and future of Geography.

### Course Outcome

1. Distinguish the paradigms in geography discipline through time
2. Understand the geographical thinking in different regions of the world
3. Appreciate the past and future trends of world geography in general and Indian geography in particular

### THEORY

#### UNIT- I:

Geographical concepts of ancient and medieval 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, Physical and Human Geography.

#### UNIT-IV:

Recent Trends in development of geography – Quantitative Revolution in Geography, Behavioural approach in 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 use 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.
- ❖ Hartshorn R., 1959: *Perspectives of Nature of Geography*, Rand MacNally 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 Student's Guide*, SAGE.
- ❖ Kapur A., 2001: *Indian Geography Voice of Concern*, Concept Publications.

## C-4.2: ECONOMIC GEOGRAPHY

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

### Learning Objective

1. To introduce various dimensions of economic geography with respect to global record

### Course Outcome

1. The students will be acquainted with various dimension of economic geography.
2. Students will dig into resource geography, agricultural geography, industrial geography and transport geography

### THEORY

#### UNIT- I:

Meaning and scope of economic geography, classification of economic activities, 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 Waterways

**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**  
**MidSem – 15/1hr**  
**End Sem Theory – 60/3 hrs**  
**EndSem Practical – 25/3hrs**

**Learning Objective**

1. Various dimensions of the ecosystems, their spatial distribution. Anthropogenic interventions and resultant impacts on various ecosystems.
2. Understanding of environmental governance

**Course Outcome**

1. Detailed exposure to the concept of ecosystem, processes, theories and concepts. In-depth knowledge of anthropogenic interventions and impacts, conservation strategies and planning. Evaluation and achievement of different environmental programs, policies and legislations

**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 (UNEP, 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.
- ❖ Cunningham W.P. and Cunningham 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*, Cengage Learning India.

## GE-4.4: HUMAN GEOGRAPHY

Full Marks – 100

MidSem – 15/1hr

End Sem Theory – 60/3 hrs

EndSem Practical – 25/3hrs

**Learning Objective**

1. To recognize various aspects of human life and interrelation with geography

**Course Outcome**

1. Know the changing human and cultural landscape at different levels.
2. Understand patterns and processes of population growth and its implications. Appreciate the nature and quality of human Landscapes

### THEORY

**UNIT- I:**

Meaning and scope of Human Geography; Major Themes; Contemporary Relevance and subfields

**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 Vivavoce

**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  
MidSem – 15/1hr  
End Sem Theory – 60/3 hrs  
EndSem Practical – 25/3hrs

### Learning Objective

1. The objective of the course is to develop the knowledge about regional attributes, classification and approaches and theories involved in regional planning and development

### Course Outcome

1. Identify completion of course, the students will have the ability to Notable lagging regions and solutions for their overall development
2. Have comprehensive understanding regarding the different regions and application of different models and theories for integrated regional development
3. Select appropriate indicators for the measurement of socio-economic and regional development.

## 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

### 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, 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 level 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

### Learning Objective

1. The objective of the course is to align the students with the modern ways of capturing remotely sensed data and techniques to use in real life.
2. The objective of the course is to familiarize students with the GIS and its application in Geographical analysis.

### Course Outcome

1. Know about various remote sensing platforms, sensors, satellites and data products. Know the fundamental concept remote sensing technology and physics of Electro Magnetic Radiation (EMR) & EM
2. Understand the aspects related to satellites and digital image processing (image enhancement, contrast manipulation, image classification) with the application of RADAR and LIDAR
3. Understand various components and principles of GIS
4. Learn GIS data types and acquisition to construct the thematic maps using different digital layers. Have comprehensive understanding application of GIS for the construction of maps and their use the development planning

## **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  
MidSem – 15/1hr  
End Sem Theory – 60/3 hrs  
EndSem Practical – 25/3hrs

### Learning Objective

1. To enhance the knowledge regarding population and population related problems of World and India

### Course Outcome

1. Students understand the population growth and pattern of World and India.
2. Understand the various problems and analyze problems.
3. Suggest the measures for eradication of the problems.

## 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 21<sup>st</sup> 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): *Jansankhya Bhugol*, MP Hindi Granth Academy, Bhopal
- ❖ Maurya SD (2009) *Jansankhya Bhugol*, Sharda Putak Bhawan, Allahabad
- ❖ Chandna, RC (2006), *Jansankhya Bhugol*, Kalyani Publishers, Delhi

**Full Marks – 100**  
**MidSem–15/1hr**  
**End Sem Theory – 60/3 hrs**  
**EndSemPractical–25/3hrs**

**Learning Objective**

1. To acquire the knowledge of Resource, resource problems and sustainability of the resource.

**Course Outcome**

1. Understand the utility, functionality and Applicability of resources.
2. Understand the theories of Resources.

**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, NY
- Rees J., 1990: *Natural Resources: Allocation, Economics and Policy*, Routledge, London.

## SEMESTER-VI

### C-6.1: GEOGRAPHY OF INDIA

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

#### Learning Objective

1. To teach the students about the geography of India about the physical, climatological, demography and mineral reserves and utilities for sustainable development

#### Course Outcome

1. Understand the physical profile of the country
2. Study the resource endowment and its spatial distribution and utilization for sustainable development
3. Synthesise and develop the idea of regional dimensions

### 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: DISASTER MANAGEMENT



## DSE-6.3: URBAN GEOGRAPHY

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

### Learning Objective

1. The objective of the course is to provide an understanding of the planning of settlements and communities. Urban planners are also responsible for planning the efficient transportation of goods, resources, people and waste; the distribution of basic necessities such as water and electricity.

### Course Outcome

1. Understand the concept of urban hierarchies, the patterns of urbanization in developed and developing countries, the ecological processes of urban growth; urban fringe; city- region.
2. Analyze the models on city structure and identify the problems of housing, slums and civic activities

## 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)

### **Textbooks:**

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: FIELDWORK AND RESEARCH METHODOLOGY

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

### Learning Objective

1. This course attempts to introduce the student's to the basic knowledge related to geographical field research design.
2. The course examines the questions related to data collection, methods and its analysis. It also critically evaluates the dissertation based on field survey/To encourage students for pursuing research in the Graduation level.

### Course Outcome

1. The students will be able to understand basic concepts of field research methods and research design in geography.
2. The students will be able to do fieldwork through practical experience and get skills of data collection methods and processing and analysis of obtained data.
3. The students will be able to write dissertation based on fieldwork on given topic. While preparing their dissertation students will be advised regularly by the Guides and will be submitting their collected data and analysis.
4. This dissertation will show a student's knowledge on research methodology and application of remote sensing and GIS in real world.

## 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, Role and Utility of Fieldwork in Geography,
- c) 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/NonParticipant),
- 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/NonParticipant) 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 guideline on a village level socio-economic study.
4. Preparation of a Research Report

**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 papers 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), Oxford Publishers Delhi.

**OR**

**DSE-6.4: DISSERTATION /PROJECTWORK**

**Full Marks 100**  
**EndSem 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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