COURSES OF STUDIES

FOR

THREE YEAR DEGREE COURSE

IN

ARTS HONOURS

DEPARTMENT OF GEOGRAPHY

Choice Based Credit System(CBCS)

First & Second Semester Examination – 2016-17

Third & Fourth Semester Examination – 2017-18

Fifth & Sixth Semester Examination – 2018-19

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				
	CORE-II				
II	CORE-III	EVS (Commerce Stream)			GE-2 (Minor-2)
	CORE -IV				
III	CORE-V				
	CORE-VI				
	CORE-VII				
IV	CORE-VIII		SEC-2 *(Subject specific Skill)*		GE-4 (Minor-2)
	CORE-IX				
	CORE-X				
V	CORE-XI			DSE-1	
	CORE-XII			DSE-2	
VI	CORE-XIII			DSE-3	
	CORE-XIV			DSE-4 (Project)	

SEC-1 : To be offered by English Department.
SEC-2 : This is a subject specific skill to be offered by the respective Department.
GE : Minor-1 and Minor-2 is to be decided by the college Based on Subject.

QUESTION PATTERN FOR MID SEM

Mid Semester Examination	Full Marks	No. of Short Answer type Questions (2 marks each) (Compulsory)	No. of Long Answer type Questions (8 marks each)	No. of Long Answer type Questions (12marks each)
Practical Subject	20	6	1	*
Non-Practical Subject	20	4	*	1
Non-Practical Subject	10	1	1	*

QUESTION PATTERN FOR END SEM

End Semester Examination	Full Marks	GROUP – A	GROUP - B									
		No. of Short Answer type Questions (2 marks each) (Compulsory)	No. of Long Answer type Questions (8 marks each)					No. of Long Answer type Questions (12marks each)				
Units-->		All Units	I	II	III	IV	V	I	II	III	IV	V
Non-Practical Subject	80	10	*	*	*	*	*	1	1	1	1	1
Practical Subject	50	5	1	1	1	1	1	*	*	*	*	*
Non-Practical Subject	40	4	1	1	1	1	*	*	*	*	*	*
Practical Subject	20	2	1	1	*	*	*	*	*	*	*	*

- There is no alternative questions (choice) in Group-A questions (Short Answer type questions). All questions are compulsory.
- There is internal alternative questions (choice) in each number in Group-B questions (Long Answer type questions). Examinee has to answer one questions out of two alternative questions from each number.
- There is little deviation in question pattern of AECC-1.4 (Eng Communication) & AEEC-3.5 (Soft Skills). Details regarding question pattern of concerned subject is given at appropriate place.)
- The duration of Mid Sem exam of each paper is 1 hour irrespective of Full marks.
- The duration of End Sem exam of each paper is 3 hours for 80 marks/50 marks/40 marks & 2 hours for 20 marks.

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	6
	2	Cartographic Techniques (Practical)	C-1.2	6
	3	Environmental Studies	AECC-1.4	2
		SEMESTER-II		
	4	Climatology	C-2.1	6
	5	Thematic Cartography (Practical)	C-2.2	6
	6	Industrial Geography/Other related discipline	GE-2.3	6
SECOND YEAR		**SEMESTER-III**		
	7	Environmental Geography	C-3.1	6
	8	Economic Geography	C-3.2	6
	9	Field Work and Research Methodology (Practical)	C-3.3	6
		SEMESTER-IV		
	10	Evolution of Geographical Thought	C-4.1	6
	11	Human Geography	C-4.2	6
	12	Statistical Methods in Geography (Practical)	C-4.3	6
	13	Disaster Management/Other related discipline	GE-4.4	6
	14	Research Methods (Practical)	AEEC-4.5	2
FINAL YEAR		**SEMESTER-V**		
	15	Geography of India	C-5.1	6
	16	Remote Sensing and GIS (Practical)	C-5.2	6
	17	Population Geography	DSE-5.3	6
	18	Hydrology and Oceanography	DSE-5.4	6
		SEMESTER-VI		
	19	Regional Planning and Development	C-6.1	6
	20	Disaster Management based Project Work (Practical)	C-6.2	6
	21	Urban Geography	DSE-6.3	6
	22	Project Work	DSE-6.4	6

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
- For a 2 credit course, the total teaching hours are: Minimum- 20 Hours, Maximum-30 Hours

SEMESTER-I

C-1.1 : GEOMORPHOLOGY

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

UNIT-I :
Geomorphology: Nature and Scope.

UNIT-II :
Earth: Interior Structure and Isostasy.

UNIT-III :
Earth Movements: Plate Tectonics, Types of Folds and Faults, Earthquakes and Volcanoes.

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

UNIT-V :
Landforms formed by Running water, Glacier, Underground Water, Wind

Suggested Readings :

1. Bloom A. L., 2003: *Geomorphology: A Systematic Analysis of Late Cenozoic Landforms*, Prentice-Hall of India, New Delhi.
2. Bridges E. M., 1990: *World Geomorphology*, Cambridge University Press, Cambridge.
3. Christopherson, Robert W., (2011), Geosystems: *An Introduction to Physical Geography,* 8 Ed., Macmillan Publishing Company
4. Kale V. S. and Gupta A., 2001: *Introduction to Geomorphology*, Orient Longman, Hyderabad.
5. Knighton A. D., 1984: *Fluvial Forms and Processes*, Edward Arnold Publishers, London.
6. Richards K. S., 1982: *Rivers: Form and Processes in Alluvial Channels*, Methuen, London.
7. Selby, M.J., (2005), *Earth's Changing Surface,* Indian Edition, OUP
8. Skinner, Brian J. and Stephen C. Porter (2000), *The Dynamic Earth: An Introduction to physical Geology,* 4th Edition, John Wiley and Sons
9. Thornbury W. D., 1968: *Principles of Geomorphology*, Wiley.
10. Wooldridge W. S. and Morgan R. S., 1959: *An Outline of Geomorphology: The*

C-1.2 : CARTOGRAPHIC TECHNIQUES (PRACTICAL)

Full Marks - 100
End Sem Practical – 100/6 hrs

UNIT-I :
Cartography – Nature and Scope.

UNIT-II :
Scales – Concept and application; Graphical Construction of Plain, Comparative and Diagonal Scales.

UNIT-III :
Map Projections – Classification, Properties and Uses; Graphical Construction of Polar Zenithal Stereographic, Gnomonic, Orthographic Projection, Simple Cylindrical & Cylindrical equal area Projection, Conical Projection, Cone standard & Two standard parallel)

UNIT-IV :
Topographical Map – Interpretation of a Mountain area with the help of Cross and Longitudinal Profiles.

UNIT-V :
Slope Analysis – Wentworth's method.

Practical Record: A Project File in pencil, comprising one exercise *each*, on scale, map projection, interpretation of topographic sheet and slope analysis.

Suggested Readings :

1. Anson R. and Ormelling F. J., 1994: *International Cartographic Association: Basic Cartographic Vol.* Pregmen Press.
2. Gupta K.K. and Tyagi, V. C., 1992: *Working with Map*, Survey of India, DST, New Delhi.
3. Loxton J., 1980: *Practical Map Production*, John Wiley.
4. Mishra R.P. and Ramesh, A., 1989: *Fundamentals of Cartography*, Concept, New Delhi.
5. Monkhouse F. J. and Wilkinson H. R., 1973: *Maps and Diagrams*, Methuen, London.
6. Rhind D. W. and Taylor D. R. F., (eds.), 1989: *Cartography: Past, Present and Future*, Elsevier, International Cartographic Association.
7. Robinson A. H., 2009: *Elements of Cartography*, John Wiley and Sons, New York.
8. Sharma J. P., 2010: *Prayogic Bhugol*, Rastogi Publishers, Meerut.
9. Singh R. L. and Singh R. P. B., 1999: *Elements of Practical Geography*, Kalyani Publishers.
10. Steers J. A., 1965: *An Introduction to the Study of Map Projections*, London.

AECC-1.4 : ENVIRONMENTAL STUDIES

(FOR COMMERCE STREAM)

Full Marks –50
Mid Sem – 10/1 hr
End Sem– 40/3hrs

UNIT-I :

Concept of environment : Ecology; Ecosystem; types and components of the ecosystem. Ecological adaptations of plants and animals

UNIT-II :

Functional aspects of ecosystem : Trophic level, food chain, food web, energy flow in the ecosystem, ecological pyramids, Biogeochemical cycles: Water cycle and Nitrogen cycle

UNIT-III :

Environmental Pollution: Source, causes and concept of air, water, noise, soil, pollution, Sewage & Sewage treatment, green house effect, Acid rain, Ozone layer depletion

UNIT-IV :

Conservation of Natural Resources : Resources, renewable & non renewable resources; soil, soil erosion and its conservation; Forest, deforestation; afforestation, conservation of Forest

Suggested Readings :

1. Shukla, R.S and Chandel, P.S : Plant Ecology and soil science, S. Chand & Company Ltd, New Delhi
2. Sharma, P.D. : Ecology and Environment, Rastogi Publication, Meerut.
3. Singh, J.S. Singh, S.P and Gupta, R.S (2006). Environmental Science, Kalyani Publishers, New Delhi

SEMESTER-II

C-2.1 : CLIMATOLOGY

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

UNIT-I :

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

UNIT-II :

Insolation and Temperature – Factors and Distribution, Heat Budget, Temperature Inversion.

UNIT-III :

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

UNIT-IV :

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

UNIT-V :

Cyclones – Tropical Cyclones, Extra Tropical Cyclones, Monsoon - Origin and Mechanism.

Suggested Readings :

1. Anthes R. A., Panofsky H. A., Cahir J. J. and Rango A., 1978: *The Atmosphere*, Columbus.
2. Barry R. G. and Carleton A. M., 2001: *Synoptic and Dynamic Climatology*, Routledge, UK.
3. Barry R. G. and Corley R. J., 1998: *Atmosphere, Weather and Climate*, Routledge, New York.
4. Batten L. J., 1979: *Fundamentals of Meteorology*, Prentice-Hall Inc., Englewood Cliffs, New Jersey.
5. Boucher K., 1975: *Global Climates*, Halstead Press, New York.
6. Critchfield H. J., 1987: *General Climatology*, Prentice-Hall of India, New Delhi
7. Lutgens F. K., Tarbuck E. J. and Tasa D., 2009: *The Atmosphere: An Introduction to Meteorology*, Prentice-Hall, Englewood Cliffs, New Jersey.
8. Oliver J. E. and Hidore J. J., 2002: *Climatology: An Atmospheric Science*, Pearson Education, New Delhi.
9. Thompson D. R. and Perry A. (eds.), 1997: *Applied Climatology: Principles and Practice*, Routledge, USA and Canada.
10. Trewartha G. T. and Horne L. H., 1980: *An Introduction to Climate*, McGraw-Hill.

C-2.2 : THEMATIC CARTOGRAPHY (PRACTICAL)

Full Marks - 100
End Sem Practical – 100/6 hrs

UNIT-I :

Maps – Classification and Types; Principles of Map Design.

UNIT-II :

Diagrammatic Data Presentation – Line, Bar and Circle.

UNIT-III :

Thematic Mapping Techniques – Properties, Uses and Limitations; Areal Data -- Choropleth, Dot, Proportional Circles; Point Data – Isopleths.

UNIT-IV :

Cartographic Overlays – Point, Line and Areal Data.

UNIT-V :

Climograph, Hythergraph, Ergograph

Practical Record: A Thematic Atlas with ink should be prepared on a specific theme with five plates of any state in India.

Suggested Readings :

1. Cuff J. D. and Mattson M. T., 1982: *Thematic Maps: Their Design and Production*, Methuen Young Books
2. Dent B. D., Torguson J. S., and Holder T. W., 2008: *Cartography: Thematic Map Design* (6th Edition), Mcgraw-Hill Higher Education
3. Gupta K. K. and Tyagi V. C., 1992: *Working with Maps*, Survey of India, DST, New Delhi.
4. Kraak M.-J. and Ormeling F., 2003: *Cartography: Visualization of Geo-Spatial Data*, Prentice-Hall.
5. Mishra R. P. and Ramesh A., 1989: *Fundamentals of Cartography*, Concept, New Delhi.
6. Monkhouse F. J. and Wilkinson H. R., 1973: *Maps and Diagrams*, Methuen, London.
7. Sharma J. P., 2010: *Prayogic Bhugol*, Rastogi Publishers, Meerut.
8. Singh R. L. and Singh R. P. B., 1999: *Elements of Practical Geography*, Kalyani Publishers.
9. Slocum T. A., Mcmaster R. B. and Kessler F. C., 2008: *Thematic Cartography and Geovisualization* (3rd Edition), Prentice Hall.
10. Tyner J. A., 2010: *Principles of Map Design*, The Guilford Press.

GE-2.3 : INDUSTRIAL GEOGRAPHY/OTHER RELATED DISCIPLINE

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

UNIT-I :

Nature, Scope and Subject Matter of Industrial Geography

UNIT-II :

Types, Geographical Characteristics and Location of Industries: Small and Medium Enterprises, Coal and Iron, Tertiary Industries, Rural based Industries

UNIT-III :

Mega Industrial Complexes: National Capital Region, Mumbai-Pune Industrial Region, Bengaluru-Tamil Nadu Industrial Region and Chota Nagpur Industrial Region

UNIT-IV :

Impact of Industrialisation in India: Environmental; Social and Economic

UNIT-V :

Industrial Policy of India

SEMESTER-III

C-3.1 : ENVIRONMENTAL GEOGRAPHY

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

UNIT-I :

Environmental Geography – Concept and Scope

UNIT-II :

Human-Environment Relationships – Historical Progression, Adaptation

UNIT-III :

Ecosystem – Concept, Structure and Functions

UNIT-IV :

Environmental Problems in Tropical, Temperate and Polar Ecosystems

UNIT-V :

Environmental Programmes and Policies – Global, National and Local levels

Suggested Readings :

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

4. Miller G. T., 2004: *Environmental Science: Working with the Earth,* Thomson Brooks Cole, Singapore.
5. MoEF, 2006: *National Environmental Policy-2006,* Ministry of Environment and Forests, Government of India.
6. Odum, E. P. et al, 2005: *Fundamentals of Ecology,* Ceneage Learning India.
7. Singh S., 1997: *Environmental Geography,* Prayag Pustak Bhawan. Allahabad.
8. UNEP, 2007: *Global Environment Outlook: GEO4: Environment For Development,* United Nations Environment Programme.

C-3.2 : ECONOMIC GEOGRAPHY

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

UNIT-I :

Introduction: Concept and classification of economic activity

UNIT-II :

Factors Affecting location of Economic Activity with special reference to Agriculture, Industry and Services (Weber's theory*)

UNIT-III :

Primary Activities: Subsistence and Commercial agriculture, forestry, fishing and mining.

UNIT-IV :

Secondary Activities: Manufacturing (Cotton Textile, Iron and Steel), Concept of Manufacturing Regions, Special Economic Zones and Technology Parks.

UNIT-V :

Tertiary Activities: Transport, Trade and Services.

* (theories relating to agriculture and services have been dealt in other papers)

Suggested Readings :

1. Alexander J. W., 1963: *Economic Geography*, Prentice-Hall Inc., Englewood Cliffs, New Jersey.
2. Coe N. M., Kelly P. F. and Yeung H. W., 2007: *Economic Geography: A Contemporary Introduction*, Wiley-Blackwell.
3. Hodder B. W. and Lee Roger, 1974: *Economic Geography*, Taylor and Francis.
4. Combes P., Mayer T. and Thisse J. F., 2008: *Economic Geography: The Integration of Regions and Nations*, Princeton University Press.
5. Wheeler J. O., 1998: *Economic Geography*, Wiley..
6. Durand L., 1961: *Economic Geography*, Crowell.
7. Bagchi-Sen S. and Smith H. L., 2006: *Economic Geography: Past, Present and Future*, Taylor and Francis.
8. Willington D. E., 2008: *Economic Geography*, Husband Press.
9. Clark, Gordon L.; Feldman, M.P. and Gertler, M.S., eds. 2000: The *Oxford Handbook of Economic Geography*, Oxford University Press, Oxford and New York.

C-3.3 : FIELD WORK AND RESEARCH METHODOLOGY (PRACTICAL)

Full Marks - 100
End Sem Practical – 100/6 hrs

UNIT-I :

Field Work In Geographical Studies – Role, Value and Ethics of Field-Work

UNIT-II :

Defining the Field and Identifying the Case Study – Rural / Urban / Physical / Human /Environmental.

UNIT-III :

Field Techniques – Merits, Demerits and Selection of the Appropriate Technique; Observation (Participant / Non Participant), Questionnaires (Open/ Closed / Structured / Non-Structured);Interview with Special Focus on Focused Group Discussions; Space Survey (Transects and Quadrants, Constructing a Sketch)

UNIT-IV :

Use of Field Tools – Collection of Material for Physical and Socio-Economic Surveys.

UNIT-V :

Designing the Field Report – Aims and Objectives, Methodology, Analysis, Interpretation and Writing the Report.

Practical Record

1. Each student will prepare an individual report based on primary and secondary data collected during field work.
2. The students / teachers can opt to take students in or outside the NCR, depending upon, problem to be studied.
3. The duration of the field work should not exceed 10 days.
4. The word count of the report should be about **8000 to 12,000** excluding figures, tables, photographs, maps, references and appendices.
5. One copy of the report on A 4 size paper should be submitted in soft binding.

Suggested Readings :

1. Creswell J., 1994: *Research Design: Qualitative and Quantitative Approaches* Sage Publications.
2. Dikshit, R. D. 2003. The Art and Science of Geography: Integrated Readings. Prentice-Hall of India, New Delhi.

3. Evans M., 1988: "Participant Observation: The Researcher as Research Tool" in *Qualitative Methods in Human Geography*, eds. J. Eyles and D. Smith, Polity.
4. Mukherjee, Neela 1993. Participatory Rural Appraisal: Methodology and Application. Concept Publs. Co., New Delhi.
5. Mukherjee, Neela 2002. Participatory Learning and Action: with 100 Field Methods. Concept Publs. Co., New Delhi
6. Robinson A., 1998: "*Thinking Straight and Writing That Way*", in *Writing Empirical Research Reports: A Basic Guide for Students of the Social and Behavioural Sciences*, eds. by F. Pryczak and R. Bruce Pryczak, Publishing: Los Angeles.
7. Special Issue on "Doing Fieldwork" *The Geographical Review* 91:1-2 (2001).
8. Stoddard R. H., 1982: *Field Techniques and Research Methods in Geography*, Kendall/Hunt.
9. Wolcott, H. 1995. The Art of Fieldwork. Alta Mira Press, Walnut Creek, CA.

SEMESTER-IV

C-4.1 : EVOLUTION OF GEOGRAPHICAL THOUGHT

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

UNIT-I :
Paradigms in Geography

UNIT-II :
Pre-Modern – Early Origins of Geographical Thinking with reference to the Classical and Medieval Philosophies.

UNIT-III :
Modern – Evolution of Geographical Thinking and Disciplinary Trends in Germany, France, Britain, United States of America.

UNIT-IV:
Debates – Environmental Determinism and Possibilism, Systematic and Regional, Ideographic and Nomeothetic.

UNIT-V:
Trends – Quantitative Revolution and its Impact, Behaviouralism, Systems Approach, Radicalism, Feminism; Towards Post Modernism – Changing Concept of Space in Geography, Future of Geography.

Suggested Readings :

1. Arentsen M., Stam R. and Thuijis R., 2000: *Post-modern Approaches to Space*, ebook.
2. Bonnett A., 2008: *What is Geography?* Sage.
3. Dikshit R. D., 1997: Geographical Thought: A Contextual History of Ideas, Prentice-Hall India.
4. Hartshone R., 1959: *Perspectives of Nature of Geography*, Rand MacNally and Co.
5. Holt-Jensen A., 2011: *Geography: History and Its Concepts: A Students Guide*, SAGE.
6. Johnston R. J., (Ed.): *Dictionary of Human Geography*, Routledge.
7. Johnston R. J., 1997: *Geography and Geographers, Anglo-American Human Geography since 1945*, Arnold, London.
8. Kapur A., 2001: *Indian Geography Voice of Concern*, Concept Publications.
9. Martin Geoffrey J., 2005: *All Possible Worlds: A History of Geographical Ideas*, Oxford.
10. Soja, Edward 1989. *Post-modern Geographies,* Verso, London. Reprinted 1997: Rawat Publ., Jaipur and New Delhi.

C-4.2 : HUMAN GEOGRAPHY

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

UNIT-I :
Definition, Nature, Scope, Major Subfields, Contemporary Relevance.

UNIT-II :
Space and Society: Cultural Regions; Race; Religion and Language

UNIT-III :
Population: Population Growth and Demographic Transition Theory, Application in India;

UNIT-IV :
Population Distribution; Population Composition (Age, Gender, Race and Religion).

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

Suggested Readings :

1. Carr M : Patterns and change in human Geography
2. Debli H J : Human Geography Culture, Society and Space
3. Leong and Morgan : Human and Economic Geography
4. Majid Hussain : Human Geography
5. Knowel and warring : Economic and Social Geography made simple

C-4.3 : STATISTICAL METHODS IN GEOGRAPHY (PRACTICAL)

Full Marks - 100
End Sem Practical – 100/6 hrs

UNIT-I :

Use of Data in Geography: Geographical Data Matrix, Significance of Statistical Methods in Geography; Sources of Data, Scales of Measurement (Nominal, Ordinal, Interval, Ratio).

UNIT-II :

Tabulation and Descriptive Statistics: Frequencies (Deciles, Quartiles), Cross Tabulation, Central Tendency (Mean, Median and Mode, Centro-graphic Techniques, Dispersion (Standard Deviation, Variance and Coefficient of Variation).

UNIT-III :

Sampling: Purposive, Random, Systematic and Stratified.

UNIT-IV :

Theoretical Distribution: Probability and Normal Distribution.

UNIT-V :

Association and Correlation: Rank Correlation, Product Moment Correlation, and Simple Regression,

Suggested Readings :

1. Berry B. J. L. and Marble D. F. (eds.): *Spatial Analysis – A Reader in Geography*.
2. Ebdon D., 1977: *Statistics in Geography: A Practical Approach*.
3. Hammond P. and McCullagh P. S., 1978: *Quantitative Techniques in Geography: An Introduction,* Oxford University Press.
4. King L. S., 1969: *Statistical Analysis in Geography*, Prentice-Hall.
5. Mahmood A., 1977: *Statistical Methods in Geographical Studies,* Concept.
6. Pal S. K., 1998: *Statistics for Geoscientists*, Tata McGraw Hill, New Delhi.
7. Silk J., 1979: *Statistical Concepts in Geography*, Allen and Unwin, London.
8. Spiegel M. R.: Statistics, *Schaum's Outline Series.*
9. Yeates M., 1974: *An Introduction to Quantitative Analysis in Human Geography*, McGraw Hill, New York.

GE-4.4 : DISASTER MANAGEMENT/OTHER RELATED DISCIPLINE

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

UNIT-I :

Disasters: Definition and Concepts: Hazards, Disasters; Risk and Vulnerability; Classification

UNIT-II :

Disaster in India: (a) Flood: Causes, Impact, Distribution and Mapping; Landslide: Causes, Impact, Distribution and Mapping; Drought: Causes, Impact, Distribution and Mapping

UNIT-III :

Disaster in India: (b) Earthquake and Tsunami: Causes, Impact, Distribution and Mapping; Cyclone: Causes, Impact, Distribution and Mapping; Manmade disasters: Causes, Impact, Distribution and Mapping

UNIT-IV :

Response and Mitigation to Disasters: Mitigation and Preparedness, NDMA and NIDM; Indigenous Knowledge and Community-Based

UNIT-V :

Disaster Management; Do's and Don'ts During Disasters.

Suggested Readings :

1. Frampton C., Hardwick and McNaught, 1999: *Causes, Consequences and Management of Disasters*, Hodder and Stoughton, London.
2. Frank W. L., 1986: *The Violent Earth*, Croom Helm, London.
3. Goel S. L., 2001: *Encyclopaedia of Disaster Management*, Vol. 1, 2 and 3, Deep and Deep Publications, New Delhi.
4. Kapur A., 2010: *Vulnerable India: A Geographical Study of Disasters*, Sage Publication, New Delhi.
5. Keith S., 2002: *Environmental Hazards: Assessing Risk and Reducing Disaster*, Routeledge, London.
6. Keller E. A. and Blodgett R. H., 2006: *Natural Hazards: Earth's Processes as Hazards, Disasters and Catastrophe*, Prentice Hall, New Jersey.

7. Singh R. B. (ed.), 2006: *Natural Hazards and Disaster Management: Vulnerability and Mitigation*, Rawat Publications, New Delhi.
8. UN and WMO, 2002: *Living with Risk: A Global Review of Disaster Reduction Initiatives, International Strategy for Disaster Reduction*, (ISDR), WMO and UN Publication.
9. Wisner B., Blaike P., Cannon T. et al., 1994: *At Risk: Natural Hazards, People's Vulnerability and Disasters*, Routledge, London.

SEC-4.5 : RESEARCH METHODS (PRACTICAL)

Full Marks - 50
End Sem Practical – 50/3 hrs

UNIT-I :

Geographic Enquiry: Definition and Ethics; Framing Research Questions, Objectives and Hypothesis; Literature Review; Preparing Sample Questionnaire

UNIT-II :

Data Collection: Type and Sources of Data; Methods of Collection; Input and Editing

UNIT-III :

Data Analysis: Qualitative Data Analysis; Quantitative Data Analysis; Data Representation Techniques

UNIT-IV :

Structure of a Research Report: The Preliminaries; The Text; References and Citations

Suggested Readings :

1. Creswell J., 1994: *Research Design: Qualitative and Quantitative Approaches* Sage Publications.
2. Dikshit, R. D. 2003. The Art and Science of Geography: Integrated Readings. Prentice-Hall of India, New Delhi.
3. Evans M., 1988: "Participant Observation: The Researcher as Research Tool" in *Qualitative Methods in Human Geography*, eds. J. Eyles and D. Smith, Polity.
4. Mukherjee, Neela 1993. Participatory Rural Appraisal: Methodology and Application. Concept Publs. Co., New Delhi.
5. Mukherjee, Neela 2002. Participatory Learning and Action: with 100 Field Methods. Concept Publs. Co., New Delhi
6. Robinson A., 1998: "*Thinking Straight and Writing That Way*", in *Writing Empirical Research Reports: A Basic Guide for Students of the Social and Behavioural Sciences*, eds. by F. Pryczak and R. Bruce Pryczak, Publishing: Los Angeles.
7. Special Issue on "Doing Fieldwork" *The Geographical Review* 91:1-2 (2001).
8. Stoddard R. H., 1982: *Field Techniques and Research Methods in Geography*, Kendall/Hunt.
9. Wolcott, H. 1995. The Art of Fieldwork. Alta Mira Press, Walnut Creek, CA.

SEMESTER-V

C-5.1 : GEOGRAPHY OF INDIA

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

UNIT-I :

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

UNIT-II :

Population: Distribution and growth

UNIT-III :

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

UNIT-IV :

Social: Distribution of population by race, caste, religion, language, tribes and their correlates

UNIT-V :

Regionalisation of India: Physiographic (Spate and R. L. Singh), Socio – cultural (Sopher and A. Ahmed), Economic (Sengupta).

Suggested Readings :

1. Deshpande C. D., 1992: *India: A Regional Interpretation*, ICSSR, New Delhi.
2. Johnson, B. L. C., ed. 2001. *Geographical Dictionary of India*. Vision Books, New Delhi.
3. Mandal R. B. (ed.), 1990: *Patterns of Regional Geography – An International Perspective. Vol. 3 – Indian Perspective*.
4. Sdyasuk Galina and P Sengupta (1967): *Economic Regionalisation of India*, Census of India
5. Sharma, T. C. 2003: India - Economic and Commercial Geography. Vikas Publ., New Delhi.

6. Singh R. L., 1971: *India: A Regional Geography*, National Geographical Society of India.
7. Singh, Jagdish 2003: *India - A Comprehensive & Systematic Geography*, Gyanodaya Prakashan, Gorakhpur.
8. Spate O. H. K. and Learmonth A. T. A., 1967: *India and Pakistan: A General and Regional Geography*, Methuen.
9. Tirtha, Ranjit 2002: *Geography of India,* Rawat Publs., Jaipur & New Delhi.
10. Bose, A. *et. al*. eds, 2001: *Population in India's Development, 1947-2000,* Vikas, New Delhi.
11. Pathak, C. R. 2003: *Spatial Structure and Processes of Development in India*. Regional Science Assoc., Kolkata.

C-5.2 : REMOTE SENSING AND GIS (PRACTICAL)

Full Marks - 100
End Sem Practical – 100/6 hrs

UNIT-I :

Remote Sensing and GIS: Definition and Components, Development, Platforms and Types,

UNIT-II :

Aerial Photography and Satellite Remote Sensing: Principles, Types and Geometry of Aerial Photograph; Principles of Remote Sensing, EMR Interaction with Atmosphere and Earth Surface; Satellites (Landsat and IRS) and Sensors.

UNIT-III :

GIS Data Structures: Types (spatial and Non-spatial), Raster and Vector Data Structure

UNIT-IV :

Image Processing (Digital and Manual) and Data Analysis: Pre-processing (Radiometric and Geometric Correction), Enhancement (Filtering); Classification (Supervised and Un-supervised), Geo-Referencing; Editing and Output; Overlays

UNIT-V :

Interpretation and Application of Remote Sensing and GIS: Land use/ Land Cover, Urban Sprawl Analysis; Forests Monitoring

Suggested Readings :

1. Burrough P. A. and McDonnell R. A., 2000: *Principles of Geographical Information Systems–Spatial Information Systems and Geostatistics,* Oxford University Press.
2. Chang K.-T., 2009: *Introduction to Geographic Information Systems,* McGraw-Hill.
3. Clarke K. C., 2001: *Getting Started with Geographic Information Systems*, Prentice Hall.
4. DeMers M. N., 2000: *Fundamentals of Geographic Information Systems*, John Wiley & Sons.
5. French, G. T. 1996, Understanding the GPS: An Introduction to the Global Positioning System, Geo Research Inc.
6. Heywood I., Cornelius S. and Carver S., 2006: *An Introduction to Geographical Information Systems*, Prentice Hall.
7. Schuurman N., 2004: *GIS – A Short Introduction,* Blackwell.

DSE-5.3 : POPULATION GEOGRAPHY

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

UNIT-I :

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

UNIT-II :

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

UNIT-III :

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

UNIT-IV :

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

UNIT-V :

Contemporary Issues – Ageing of Population; Declining Sex Ratio; HIV/AIDS.

Suggested Readings :

1. Barrett H.R., 1995: *Population Geography*, Oliver and Boyd.
2. Bhende A. and Kanitkar T., 2000: *Principles of Population Studies*, Himalaya Publishing House.
3. Chandna R.C. and Sidhu M. S., 1980: *An Introduction to Population Geography*, Kalyani Publishers.
4. Clarke J.I., 1965: *Population Geography*, Pergamon Press, Oxford.
5. Jones H.R., 1990: *Population Geography*, Sage.
6. Jones, H.R., 2000: *Population Geography,* 3rd ed. Paul Chapman, London.
7. Lutz W., Warren C.S. and Scherbov S., 2004: *The End of the World Population Growth in the 21st Century*, Earthscan
8. Newbold K.B., 2009: *Population Geography: Tools and Issues*, Rowman and Littlefield Publishers.
9. Pacione M., 1986: *Population Geography: Progress and Prospect*, Taylor and Francis.

10. Peters G.L. and Larkin R.P., 1979: *Population Geography – Problems, Concepts and Prospects*, Kendall Hunt Publication Co.
11. Wilson M.G.A., 1968: *Population Geography*, Nelson.

DSE-5.4 : HYDROLOGY AND OCEANOGRAPHY

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

UNIT-I :

Hydrological Cycle: Systems approach in hydrology, human impact on the hydrological cycle; Precipitation, interception, evaporation, evapo-transpiration, infiltration, ground-water, run off and over land flow; Hydrological input and output.

UNIT-II :

River Basin and Problems of Regional Hydrology: Characteristics of river basins, basin surface run-off, measurement of river discharge; floods and droughts.

UNIT-III :

Water Resource Problems and Management: water demand and supply, water quality, interstate water dispute, water Rights, institutional and financial constraints, eco-hydrological consequences of environmental degradation.

UNIT-IV :

Ocean Floor Topography and Oceanic Movements – Waves, Currents and Tides.
Ocean Salinity and Temperature – Distribution and Determinants.

UNIT-V :

Coral Reefs and Marine Deposits and Ocean Resources: Types and Theories of Origin; Biotic, Mineral.

Suggested Readings :

1. Anikouchine W. A. and Sternberg R. W., 1973: *The World Oceans: An Introduction to Oceanography*, Prentice-Hall.
2. Garrison T., 1998: *Oceanography*, Wordsworth Company, Belmont.
3. Gerald S., 1963: *General Oceanography: An Introduction*, John Willey & Sons, New York.
4. Kershaw S., 2000: *Oceanography: An Earth Science Perspective*, Stanley Thornes, UK.
5. King C.A.M., 1962: *Oceanography for Geographers*, Edward Arnold.
6. Pinet P.R., 2008: *Invitation to Oceanography* (Fifth Edition), Jones and Barlett Publishers, USA, UK and Canada.
7. Sharma R.C. and Vatal M., 1980: *Oceanography for Geographers*, Chaitanya Publishing House, Allahabad.
8. Stowe K., 1987: *Essentials of Ocean Science*, John Wiley &Sons, New York.
9. Sverdrup K.A. and Armbrust, E.V., 2008: *An Introduction to the World Ocean*, McGraw Hill, Boston.
10. Thurman H.V., 1996: *Essentials of Oceanography*, Prentice-Hall, New Jersey.

SEMESTER-VI

C-6.1 : REGIONAL PLANNING AND DEVELOPMENT

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

UNIT-I :

Definition of Region, Evolution and Types of Regional planning: Formal, Functional, and Planning Regions and Regional Planning; Need for Regional Planning; Types of regional Planning.

UNIT-II :

Choice of a Region for Planning: Characteristics of an Ideal Planning Region; Delineation of Planning Region; Regionalization of India for Planning (Agro Ecological Zones)

UNIT-III :

Theories and Models for Regional Planning: Growth Pole Model of Perroux; Growth Centre Model in Indian Context; Myrdal, Hirschman, Rostow and Friedmann; Village Cluster

UNIT-IV :

Changing Concept of Development, Concept of underdevelopment; Efficiency-Equity Debate
Measuring development: Indicators (Economic, Social and Environmental)

UNIT-V :

Global Pattern of Development: inter-regional variations; Human development: International, interstate comparison of India.

Suggested Readings :

1. Bhalla A.S., 1992: *Uneven Development in the Third World: A Study of India and China*, Macmillan, London.
2. Bhat, L.S., 1976: *Micro Level Planning in India*, K.B. Pub. New Delhi.
3. Dreze J. and Sen A., 1996: *Indian Development: Select Regional Perspectives,* Oxford University Press.
4. Hall, Peter 1992: *Urban and Regional Planning*, Routledge, London.

5. Misra R.P. (ed), 1980: *Regional Planning Concepts, Techniques, Policies and Case Studies*, Vikas Publishing, Delhi.
6. Misra R.P., Sundaram K.V. and Prakasa Rao V.L.S., 1974: *Regional Development Planning in India A New Strategy*, Vikas Publishing, Delhi.
7. Sharma H.S and Chattopadhyaya S., 1998: *Sustainable Development: Issues and Case Studies*, Concept Publishing, Delhi
8. Sundaram K.V., 1980: *Decentralised Multilevel Planning: Principles and Practices (Asian and African Experiences)*, Concept Publishing, Delhi.
9. Yugandhar, B.N. and Mukherjee, Amitava (eds.) 1991: *Readings in De-centralised Planning (with special reference to District Planning),* 2 vols. Concept Publs. Co., New Delhi.
10. Misra, R.P. & Misra, K. eds. 1998: *Million Cities of India,* Sustainable Development Foundation, New Delhi.

C-6.2 : DISASTER MANAGEMENT BASED PROJECT WORK (PRACTICAL)

Full Marks - 100
End Sem Practical – 100/6 hrs

The Project work Report based on any two field based case studies among following disasters and one disaster preparedness plan of respective college or locality:

1. Flood
2. Drought
3. Cyclone
4. Earthquake
5. Landslides
6. Human Induced Disasters: Fire Hazards, Chemical, Industrial accidents

DSE-6.3 : URBAN GEOGRAPHY

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

UNIT-I :

Urban geography: Introduction, nature and scope; history of urbanisation

UNIT-II :

Patterns of urbanisation in developed and developing countries

UNIT-III :

Functional classification of cities: Quantitative and Qualitative Methods

UNIT-IV :

Urban Issues: problems of housing, slums, civic amenities (water and transport)

UNIT-V :

Case studies of Delhi, Mumbai, Kolkata and Chennai with reference to Urban Issues

Suggested Readings :

1. Fyfe N.R. and Kenny J.T., 2005: *The Urban Geography Reader*, Routledge.
2. Graham S. and Marvin S., 2001: *Splintering Urbanism: Networked Infrastructures, Technological Mobilities and the Urban Condition*, Routledge.
3. Hall T., 2006: *Urban Geography*, Taylor and Francis.
4. Kaplan D.H., Wheeler J.O. and Holloway S.R., 2008: *Urban Geography*, John Wiley.
5. Knox P.L. and McCarthy L., 2005: *Urbanization: An Introduction to Urban Geography*, Pearson Prentice Hall New York.
6. Knox P.L. and Pinch S., 2006: *Urban Social Geography: An Introduction*, Prentice-Hall.
7. Pacione M., 2009: *Urban Geography: A Global Perspective*, Taylor and Francis.
8. Sassen S., 2001: *The Global City: New York, London and Tokyo*, Princeton University Press.
9. Ramachandran, R (1989): Urbanisation and Urban Systems of India, Oxford University Press, New Delhi
10. Ramachandran, R., 1992: *The Study of Urbanisation*, Oxford University Press, Delhi

DSE-6.4 : PROJECT REPORT

Full Marks - 100
End Sem Project – 100

Introducing Research Component in Under-Graduate Courses

Project work/Dissertation is considered as a special course involving application of knowledgein solving / analyzing /exploring a real life situation / difficult problem.

Topics to be announced by the HOD.

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