

Choice Based Credit System B.A./B.Sc. (Honours) Geography Syllabus Annual Pattern (Revised-2018-19 onwards)

Year	CORE COURSE (14)	Skill Enhancement Course(SEC) (2)	Elective: Discipline Specific DSE(4)	Elective: Generic (GE) (4) (Optional)
1 st	1. Geomorphology GEOGH101CC 2. Cartographic Techniques (Practical) GEOGH102CC-P 3. Human Geography GEOGH103CC 4. Thematic Cartography GEOGH104CC-P 5. Environmental Geography GEOGH105CC			6. Disaster Management GEOGH106EG OR Geography of Tourism GEOGH107EG 7. Spatial Information Technology GEOGH108EG OR Regional Development GEOGH109EG
2 nd	1. Climatology GEOGH201CC 2. Statistical Methods in Geography(Practical) GEOGH202CC-P 3. Geography of India GEOGH203CC 4. Economic Geography GEOGH204CC	5. Remote Sensing (Practical) GEOGH205SEC-P Or Advanced Spatial Statistical Techniques GEOGH206SEC-P 6. Geographical Information System(Practical) GEOGH207SEC-P Or Research Methods (Practical) GEOGH208SEC-P		8. Climate Change: Vulnerability and Adaptation GEOGH209EG OR Rural Development GEOGH210EG 9. Industrial Geography GEOGH211EG OR Sustainable Development GEOGH212EG
3 rd	1. Regional Planning and Development GEOGH301CC 2. Remote Sensing and GIS (Practical) GEOGH302CC-P 3. Evolution of Geographical Thought GEOGH303CC 4. Disaster Management Based Project Work (Practical) GEOGH304CC-P 5. Field Work and Research Methodology (Practical) GEOGH305CC-P		6. Population Geography GEOGH305EDS1 OR Resource Geography GEOGH306EDS1 7. Urban Geography GEOGH307EDS2 OR Agricultural Geography GEOGH308EDS2 8. Geography of Health and Well Being GEOGH309EDS3 OR Political Geography GEOGH310EDS3 9. Hydrology and Oceanography GEOGH311EDS4 OR Social Geography GEOGH312EDS4	

B.A. /B.Sc. (Honours) Geography

Note: Practical paper will not have tutorials.

Core Courses

First Year

1. Geomorphology
2. Cartographic Techniques (Practical)
3. Human Geography
4. Thematic Cartography (Practical)
5. Environmental Geography

Second Year

1. Climatology
2. Statistical Methods in Geography (Practical)
3. Geography of India
4. Economic Geography

Third Year

1. Regional Planning and Development
2. Remote Sensing and GIS (Practical)
3. Evolution of Geographical Thought
4. Disaster Management based Project Work (Practical)
5. Field Work and Research Methodology (Practical)

Skill Enhancement Course (any 2)

Second Year

1. Remote Sensing (Practical)
Or
Advanced Spatial Statistical Techniques
2. Geographical Information System (Practical)
OR
Research Methods (Practical)

Elective Generic Papers (any four)

FIRST YEAR

1. Disaster Management
Or
Geography of Tourism
2. Spatial Information Technology
Or
Regional Development

SECOND YEAR

3. Climate Change: Vulnerability and Adaptation
Or
Rural Development
4. Industrial Geography
Or
Sustainable Development

Elective: Discipline Specific DSE Papers (Any Four)

THIRD YEAR

1. Population Geography
Or
Resource Geography
2. Urban Geography
Or
Agricultural Geography
3. Geography of Health and Wellbeing
Or
Political Geography
4. Hydrology and Oceanography
Or
Social Geography

B.A./B.Sc.(Honours) Geography

CORE COURSES

1. GEOMORPHOLOGY- GEOGH101CC

Course Code	GEOGH101CC		
Credits-6	L	T	P
	65	25	0
Course Type	Core		
Lectures to be Delivered	90		

Continuous Comprehensive Assessment (CCA) Pattern: Maximum Marks Allotted: 30

Mid Term Test* (Marks)	Class Test/ Tutorials/Assignments (Marks)	Quiz/Seminars (Marks)	Attendance (Marks)	Total Marks
15	5	5	5	30
Total	5	5	5	

* The pattern of examination for conducting the Mid Term Test will be same as prescribed for annual examination.

Annual Examination System:

Maximum Marks Allotted	Minimum Pass Marks	Time Allotted
70	28	3.00 Hrs

Paper Setting Scheme (Theory Paper)

Section	No of Questions	Syllabus Coverage	Nature of Questions and Answers	Questions to be Attempted	Maximum Marks
A	10	Complete	Objective Type	10(1 mark each)	10
	4	Complete	Short answer type (25-50 words)	4 (3 marks each)	12
B	2	Unit I	Choice based Long answer type	1(12 marks each)	12
C	2	Unit II	Choice based Long answer type	1(12 marks each)	12
D	2	Unit III	Choice based Long answer type	1(12 marks each)	12
E	2	Unit IV	Choice based Long answer type	1(12 marks each)	12
TOTAL					70

Course Content and Credit Scheme

Unit	Topic	Allotted Time (Hours)		
		L	T	P
I.	Introduction Geomorphology: Definition, Nature and Scope. Interior Structure of the Earth, Theory of Isostasy: Airy and Prentiss's Views	20	7	0
II.	Earth Movements Continental Drift, Plate Tectonics, Types of Folds and Faults, Earthquakes and Volcanoes.	15	6	0
III.	Geomorphic Processes: Weathering, Mass Wasting, Cycle of Erosion (Davis and Penck).	15	6	0
IV.	Evolution of Landforms (Erosional and Depositional): Fluvial, Karst, Aeolian, Glacial,	15	6	0
Total Hours		65	25	0

L-Lecture, T-Tutorial and P-Practical and Practices

Reading List

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

2. CARTOGRAPHIC TECHNIQUES: PRACTICAL GEOGH102CC-P

Course Code	GEOGH102CC-P		
Credits-6	L	T	P
	25	0	130(65)*
Course Type	Core		
Lectures to be Delivered	90		

Continuous Comprehensive Assessment (CCA) Pattern: Maximum Marks Allotted: 30

Mid Term Test* (Marks)	Class Test/ Tutorials/Assignments (Marks)	Quiz/Seminars (Marks)	Attendance (Marks)	Total Marks
15	5	5	5	30
Total	15	5	5	

* The pattern of examination for conducting the Mid Term Test will be same as prescribed for the annual examination (practical paper).

Marks Allocation Scheme Annual Practical (AP) Examination System:

Particulars	Maximum Marks	Minimum Pass Marks	Time Allotted
Written Lab Work	10	08	3.00 Hrs
Practical Record*	5		
Viva-Voce	5		
Total	20		

***Note:** Use of non-programmable calculators and map stencils are allowed in the examination hall. The practical record may be evaluated on the parameters of Punctuality, Neatness, Entirety and indexing

Paper Setting Scheme for Written Lab Work#

Section	No of Questions	Syllabus Coverage	Nature of Questions and Answers	Questions to be Attempted	Maximum Marks
A	10	Complete	Objective Type	10 (1 mark each)	10
	4	Complete	Short answer type (25-50 words)	4 (3 marks each)	12
B	2	Unit I	Choice based Long answer type	1 (7 marks each)	7
C	2	Unit II	Choice based Long answer type	1 (7 marks each)	7
D	2	Unit III	Choice based Long answer type	1 (7 marks each)	7
E	2	Unit IV	Choice based Long answer type	1 (7 marks each)	7
Total					50

Note: It is mandatory that paper setting of written lab work for annual practical (AP) will be done by the university.

Course Content and Credit Scheme

Unit	Topic	Allotted Time (Hours)		
		L	T	P
I.	Introduction Cartography – Nature and Scope. History of Cartography	6	0	10(5)*
II.	Scales Concept and application Graphical Construction of Plain, Comparative and Diagonal Scales.	6	0	30(15)*
III.	Map Projections Graphical Construction of Polar Zenithal Stereographic, Bonne's and Mercator's Projections, and Universal Transverse Mercator (UTM) Projection properties and uses	7	0	40(20)*
IV.	Topographical Map Interpretation of a Mountain area with the help of Cross and Longitudinal Profiles. Slope Analysis –Wentworth's method	6	0	50(25)*
	Total Hours	25	0	130 (65)*

L-Lecture, T-Tutorial and P-Practical and Practices

* As per the weightage assigned to the P (Practical and Practices) category in the CBCS regulations 2 hours practical work has been treated equal to 1 credit hour.

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

Reading List

1. Anson R. and Ormeling F.J., 1994: *International Cartographic Association: Basic Cartographic Vol.* Pergamon Press.
2. Gupta K.K. and Tyagi, V. C., 1992: *Working with Map*, Survey of India, DST, New Delhi.
3. Mishra R.P. and Ramesh, A., 1989: *Fundamentals of Cartography*, Concept, New Delhi.
4. Monkhouse F.J. and Wilkinson H.R., 1973: *Maps and Diagrams*, Methuen, London.
5. Rhind D.W. and Taylor D.R. F., (eds.), 1989: *Cartography: Past, Present and Future*, Elsevier, International Cartographic Association.
6. Robinson A.H., 2009: *Elements of Cartography*, John Wiley and Sons, New York.
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. Sarkar, A. (2015) *Practical geography: A systematic approach*. Orient Black Swan Private Ltd., New Delhi
10. Singh R.L. & Rana P B Singh (1991) *Prayogtmak Bhugol ke Mool Tatva*, Kalyani Publishers, New Delhi
11. Sharma, J.P. (2010) *Prayogtmak Bhugol ki Rooprekha*, Rastogi Publications, Meerut
12. Singh, R.L. & Dutta, P.K. (2012) *Prayogtmak Bhugol*, Central Book Depot, Allahabad

3. HUMAN GEOGRAPHY- GEOGH103CC

Course Code	GEOGH103CC		
Credits-6	L	T	P
	65	25	0
Course Type	Core		
Lectures to be Delivered	90		

Note: CCA & annual examination (AE) scheme is same as in Paper GEOGH101CC

Course Content and Credit Scheme

Unit	Topic	Allotted Time (Hours)		
		L	T	P
I	Introduction Definition, Nature, Major Sub-fields, Contemporary Relevance of Human Geography	20	7	0
II	Space and Society Cultural Regions of the world Human Races: Classification(Griffith Taylor) and world distribution Major Religions of the world and distribution Major languages of the world and distribution	15	6	0
III	Population World Population Distribution, density and growth, Demographic Transition Theory.	15	6	0
IV	Settlements Types and Patterns of Rural Settlements Classification of Urban settlements Trends and Patterns of World Urbanization	15	6	0
	Total Hours	65	25	0

L-Lecture, T-Tutorial and P-Practical and Practices

Reading List

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

4. THEMATIC CARTOGRAPHY-Practical- GEOGH104CC-P

Course Code	GEOGH104 CC-P		
Credits-6	L	T	P
	25	0	130(65)*
Course Type	Core		
Lectures to be Delivered	90		

Note: CCA and AE scheme is same as in GEOGH102CC-P

Course Content and Credit Scheme

Unit	Topic	Allotted Time (Hours)		
		L	T	P
I.	Introduction Maps–Classification and Types Principles of Map Design.	6	0	10(5)*
II.	Diagrammatic Data Presentation Line, Bar and Circle.	6	0	30(15)*
III.	Thematic Mapping Techniques Properties, Uses and Limitations: Areal Data--Choropleth, Dot, Proportional Circles; Point Data, Isopleth.	7	0	40(20)*
IV.	Cartographic Overlays Point, Line and Areal Data. Thematic Maps– Preparation and Interpretation.	6	0	50(25)*
	Total Hours	25	0	130 (65)*

L-Lecture, T-Tutorial and P-Practical and Practices

* As per the weightage assigned to the P (Practical and Practices) category in the CBCS regulations 2 hours practical work has been treated equal to 1 credit hour.

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

Reading List

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. Sharma J. P., 2010: *Prayogic Bhugol*, Rastogi Publishers, Meerut.
7. Singh R.L. and Singh R.P.B., 1999: *Elements of Practical Geography*, Kalyani Publishers.
8. Slocum T. A., McMaster R.B. and Kessler F. C., 2008: *Thematic Cartography and Geovisualization* (3rd Edition), Prentice Hall.
9. Tyner J. A., 2010: *Principles of Map Design*, The Guilford Press.
10. Sarkar, A. (2015) *Practical geography: A systematic approach*. Orient Black Swan Private Ltd., New Delhi
11. Singh, L.R. & Singh R. (1977): *Manchitra or Prayogamek Bhugol*, Central Book Depot, Allahabad
12. Bhopal Singh R. L. and Dutta P. K. (2012) *Prayogamek Bhugol*, Central Book Depot, Allahabad

5. Environmental Geography- GEOGH105CC

Course Code	GEOGH105CC		
Credits-6	L	T	P
	65	25	0
Course Type	Core		
Lectures to be Delivered	90		

Note: CCA & AE scheme is same as in Paper GEOGH101CC

Unit	Topic	Allotted Time (Hours)		
		L	T	P
I.	Definition and Scope of Environmental Geography Meaning and Components of Environment Ecosystem– Concept, components and Functions	20	7	0
II.	Human-Environment Relationship Environmental determinism and Possibilism Biomes- Definition, Mountain and Desert Regions	15	6	0
III.	Environmental Problems Their Causes Impacts and Management Air and water Pollution Biodiversity Loss	15	6	0
IV.	Environmental Management Initiatives in India Environmental Protection Act, 1982, Environmental Policy of India(2006) Chipko Movement	15	6	0
	Total Hours	65	25	0

Reading List

1. Chandna R. C., 2002:*Environmental Geography*, Kalyani, Ludhiana.
2. Cunningham W.P. and Cunningham 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. Singh, R.B. (Eds.) (2009) *Biogeography and Biodiversity*. Rawat Publication, Jaipur
5. Miller G. T., 2004: *Environmental Science: Working with the Earth*, Thomson Brooks Cole, Singapore.
6. MoEF, 2006: *National Environmental Policy-2006*, Ministry of Environment and Forests, Government of India.
7. Singh, R.B. and Hietala, R. (Eds.) (2014) *Livelihood security in Northwestern Himalaya: Case studies from changing socio-economic environments in Himachal Pradesh, India*. Advances in Geographical and Environmental Studies, Springer
8. Odum, E. P. et al, 2005: *Fundamentals of Ecology*, Ceneage Learning India.
9. Singh S., 1997: *Environmental Geography*, Prayag Pustak Bhawan. Allahabad.
10. UNEP, 2007: *Global Environment Outlook: GEO4: Environment For Development*, United Nations Environment Programme.
11. Singh, M., Singh, R.B. and Hassan, M.I. (Eds.) (2014) *Climate change and biodiversity: Proceedings of IGU Rohtak Conference, Volume 1*. Advances in Geographical and Environmental Studies, Springer
12. Singh, R.B. (1998) *Ecological Techniques and Approaches to Vulnerable Environment*, New Delhi, Oxford & IBH Pub..
13. Singh, Savindra 2001. *Paryavaran Bhugol*, Prayag Pustak Bhawan, Allahabad. (in Hindi)

1. CLIMATOLOGY- GEOGH201CC

Course Code	GEOGH201CC		
Credits-6	L	T	P
	65	25	0
Course Type	Core		
Lectures to be Delivered	90		

Note: CCA & AE scheme is same as in Paper GEOGH101CC

Course Content and Credit Scheme

Unit	Topic	Allotted Time (Hours)		
		L	T	P
I.	Introduction Atmospheric Composition and Structure–Variation with Altitude, Latitude and Season. Insolation and Temperature–Factors and Distribution, Heat Budget, Temperature Inversion.	20	7	0
II.	Atmospheric Pressure and Winds Planetary Winds, Forces affecting Winds ,General Circulation, Jet Streams, Monsoon-Origin and Mechanism.	15	6	0
III.	Atmospheric Moisture Evaporation, Humidity, Condensation ,Fog and Clouds, Precipitation Types, Stability and Instability; Climatic Regions(Koppen)	15	6	0
IV.	Airmass and Atmospheric Disturbances Airmass meaning source region and Classification Tropical Cyclones, Extra Tropical Cyclones	15	6	0
	Total Hours	65	25	0

L-Lecture, T-Tutorial and P-Practical and Practices

Reading List

1. Barry R. G. and Carleton A.M.,2001:*Synoptic and Dynamic Climatology* ,Routledge ,UK.
2. Barry R. G. and Corley R. J., 1998:*Atmosphere, Weather and Climate*, Routledge, New York.
3. Critchfield H.J.,1987: *General Climatology*, Prentice-Hall of India, New Delhi
4. Lutgens F. K., Tarbuck E. J. and Tasa D., 2009:*The Atmosphere: An Introduction to Meteorology*, Prentice-Hall ,Englewood Cliffs, New Jersey.
5. Oliver J.E. and Hidore J. J.,2002: *Climatology: An Atmospheric Science*, Pearson Education ,New Delhi.
6. Trewartha G.T. and Horne L. H., 1980:*An Introduction to Climate*, McGraw-Hill.
7. Gupta LS(2000):*Jalvayu Vigyan*, Hindi Madhyam Karyanvay Nidishalya, Delhi Vishwa Vidhyalaya, Delhi
8. Lal, D S(2006):*Jalvayu Vigyan*, Prayag Pustak Bhavan, Allahabad
9. Vatal, M(1986):*Bhautik Bhugol*, Central Book Depot, Allahabad
10. Singh, S(2009):*Jalvayu Vigyan*, Prayag Pustak Bhawan, Allahabad

2. STATISTICAL METHODS IN GEOGRAPHY (Practical)- GEOGH202CC-P

Course Code	GEOGH202CC-P		
Credits-6	L	T	P
	25	0	130(65)*
Course Type	Core		
Lectures to be Delivered	90		

Note: CCA and AE scheme is same as in GEOGH102CC

Course Content and Credit Scheme

Unit	Topic	Allotted Time (Hours)		
		L	T	P
I.	Introduction Use of Data in Geography: Geographical Data Matrix, Significance of Statistical Methods in Geography; Sources of Data, Scales of Measurement (Nominal, Ordinal, Interval, Ratio).	6	0	10(5)*
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).	6	0	30(15)*
III.	Sampling: Purposive, Random, Systematic and Stratified. Theoretical Distribution: Probability and Normal Distribution.	7	0	40(20)*
IV.	Association and Correlation Rank Correlation, Product Moment Correlation, and Simple Regression, Residuals from regression	6	0	50(25)*
	Total Hours	25	0	130 (65)*

L-Lecture, T-Tutorial and P-Practical and Practices

* As per the weightage assigned to the P (Practical and Practices) category in the CBCS regulations 2 hours practical work has been treated equal to 1 credit hour.

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

- Construct a data matrix of about (10x10) with each row representing an areal unit (districts or villages or towns) and about 10 columns of relevant attributes of the areal units.
- Based on the above table, a frequency table, measures of central tendency and dispersion would be computed and interpreted for any two attributes.
- Histograms and frequency curve would be prepared **on the entire dataset** and attempt to fit a normal curve and interpreted for one or two variables.
- From the data matrix a sample set (20Percent) would be drawn using, random-systematic and stratified methods of sampling and locate the samples on a map with a short note on methods used.
- Based on of the samples et and using two relevant attributes, a scatter and regression line would be plotted and residual from regression would be mapped with a short interpretation.

Reading List

- Berry B. J. L. and Marble D. F. (eds.): *Spatial Analysis–A Reader in Geography*.
- Ebdon D., 1977:*Statisticsin Geography: A Practical Approach*.
- Hammond P. and McCullagh P.S., 1978:*QuantitativeTechniquesinGeography:AnIntroduction*, Oxford University Press.
- KingL.S., 1969:*StatisticalAnalysisinGeography*, Prentice-Hall.
- Mahmood A., 1977:*StatisticalMethods in Geographical Studies*, Concept.
- Pal S. K.,1998:*Statistics for Geoscientists*, Tata McGraw Hill, New Delhi.
- Sarkar, A. (2013) *Quantitative geography: techniques and presentations*. Orient Black Swan Private Ltd., New Delhi
- SilkJ.,1979:*StatisticalConceptsinGeography*, Allen and Unwin, London.
- Spiegel M.R.: *Statistics, Schaum's Outline Series*.
- YeatesM.,1974:*An Introduction to Quantitative Analysis in Human Geography*, McGraw Hill, NewYork.
- Shinha,Indira (2007)*Sankhyiki bhugol*. Discovery Publishing House, New Delhi

3. GEOGRAPHY OF INDIA- GEOGH203CC

Course Code	GEOGH203CC		
Credits-6	L	T	P
	65	25	0
Course Type	Core		
Lectures to be Delivered	90		

Note: CCA & AE scheme is same as in Paper GEOGH101CC

Course Content and Credit Scheme

Unit	Topic	Allotted Time (Hours)		
		L	T	P
I.	Physical Make up Characteristics and classification of Physiographic Divisions, soil and vegetation, climate	20	7	0
II.	Population Growth, Distribution and Density of Population at national level since 1901 Factors affecting population distribution and density Ethnic Composition: Major racial groups, tribal groups and linguistic groups, their classification and characteristics	15	6	0
III.	Economic Mineral and power resources distribution and utilization of iron ore, coal, petroleum, Natural gas agricultural production and distribution of rice and wheat Major Industrial region of India	15	6	0
IV.	Basis of Regionalization of India Physiographic (R.L.Singh), Socio –cultural (Sopher), Economic (Sen Gupta)	15	6	0
	Total Hours	65	25	0

L-Lecture, T-Tutorial and P-Practical and Practices

Reading List

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. Pathak, C.R. 2003: *Spatial Structure and Processes of Development in India*. Regional Science Assoc., Kolkata.
11. Tiwari, R.C. (2007) *Geography of India*. Prayag Pustak Bhawan, Allahabad
12. Sharma, T.C. (2013) *Economic Geography of India*. Rawat Publication, Jaipur

4. Economic Geography- GEOGH204CC

Course Code	GEOGH204CC		
Credits-6	L	T	P
	65	25	0
Course Type	Core		
Lectures to be Delivered	90		

Note: CCA & AE scheme is same as in Paper GEOGH101CC

Course Content and Credit Scheme

Unit	Topic	Allotted Time (Hours)		
		L	T	P
I.	Introduction Nature and scope of Economic Geography Concept and classification of economic activity	20	7	0
II.	Relationship between Economic activities and Environment Theories of Economic activity Von Thunen theory and Weber's theory	15	6	0
III.	Primary & Secondary Activities Subsistence and commercial Agriculture and mining. Manufacturing (Cotton Textile ,Iron and Steel),	15	6	0
IV.	Tertiary Activities and Contemporary issues Major Oceanic Routes: Atlantic, Pacific and Indian Ocean Concept of Manufacturing Regions, Special Economic Zones and Technology Parks.	15	6	0
	Total Hours	65	25	0

L-Lecture, T-Tutorial and P-Practical and Practices

Reading List

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:*EconomicGeography:AContemporaryIntroduction*, Wiley-Blackwell.
3. HodderB.W.andLeeRoger,1974:*EconomicGeography*, 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-SenS.andSmithH.L.,2006:*Economic Geography: Past, Present and Future*, Taylor and Francis.
8. WillingtonD.E.,2008:*EconomicGeography*,HusbandPress.
9. Clark,GordonL.;Feldman,M.P.andGertler,M.S.,eds.2000:*TheOxford*

1. Regional Planning and Development- GEOGH301CC

Course Code	GEOGH301CC		
Credits-6	L	T	P
	65	25	0
Course Type	Core		
Lectures to be Delivered	90		

Note: CCA & AE scheme is same as in Paper GEOGH101CC

Course Content and Credit Scheme

Unit	Topic	Allotted Time (Hours)		
		L	T	P
I.	Introduction 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.	20	7	0
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)	15	6	0
III.	Theories and Models for Regional Planning Growth Pole Model of Perroux; Growth Centre Model in Indian Context; Myrdal, Hirschman, Rostow and Friedmann	15	6	0
IV.	Changing Concept of Development Concept of under development; Efficiency-Equity Debate Measuring development :Indicators (Economic, Social and Environmental);Concept of Human development Index.	15	6	0
	Total Hours	65	25	0

L-Lecture, T-Tutorial and P-Practical and Practices

Reading List

1. Blij H.J.De, 1971: *Geography: Regions and Concepts*, John Wiley and Sons.
2. Claval P.I, 1998: *An Introduction to Regional Geography*, Blackwell Publishers, Oxford and Massachusetts.
3. Friedmann J. and Alonso W. (1975): *Regional Policy-Readings in Theory and Applications*, MIT Press, Massachusetts.
4. Gore C. G., 1984: *Regions in Question: Space, Development Theory and Regional Policy*, Methuen, London.
5. Gore C. G., Köhler G., Reich U-P. and Ziesemer T., 1996: *Questioning Development; Essays on the Theory, Policies and Practice of Development Intervention*, Metropolis-Verlag, Marburg.
6. Haynes J., 2008: *Development Studies*, Polity Short Introduction Series.
7. Johnson E.A.J., 1970: *The Organization of Space in Developing Countries*, MIT Press, Massachusetts.
8. Peet R., 1999: *Theories of Development*, The Guilford Press, New York.
9. UNDP 2001-04: *Human Development Report*, Oxford University Press.
10. World Bank 2001-05: *World Development Report*, Oxford University Press, New

2. Remote Sensing and GIS (Practical)- GEOGH303CC

Course Code	GEOGH303CC-P		
Credits-6	L	T	P
	25	0	130(65)*
Course Type	Core		
Lectures to be Delivered	90		

Note: CCA and AE scheme is same as in GEOGH102CC-P

Course Content and Credit Scheme

Unit	Topic	Allotted Time (Hours)		
		L	T	P
I.	Introduction RemoteSensingandGIS:DefinitionandComponents,Development,PlatformsandTypes,	6	0	10(5)*
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.	6	0	30(15)*
III.	GIS Data Structures Types(spatial and Non-spatial),Raster and Vector Data Structure	7	0	40(20)*
IV.	Image Processing (Digital and Manual)and Data Analysis Pre-processing(Radiometric and GeometricCorrection),Enhancement(Filtering);Classification(SupervisedandUn-supervised), Geo-Referencing; Editing and Output; Overlays InterpretationandApplicationofRemoteSensingandGIS:Landuse/LandCover,UrbanSprawl Analysis; Forests Monitoring	6	0	50(25)*
	Total Hours	25	0	130 (65)*

L-Lecture, T-Tutorial and P-Practical and Practices

* As per the weightage assigned to the P (Practical and Practices) category in the CBCS regulations 2 hours practical work has been treated equal to 1 credit hour.

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

Reading List

1. Campbell J. B.,2007: *Introduction to Remote Sensing*, Guildford Press.
2. Jensen J. R.,2004: *Introductory Digital Image Processing: A Remote Sensing Perspective*, Prentice Hall.
3. Joseph,G.2005:*Fundamentals of Remote Sensing*, United Press India.
4. LillesandT.M.,KieferR.W.andChipmanJ.W.,2004:*RemoteSensingandImageInterpretation*, Wiley.(Wiley Student Edition).
5. Nag P. and Kudra, M., 1998: *Digital Remote Sensing*, Concept, New Delhi.
6. Rees W. G., 2001: *Physical Principles of Remote Sensing*, Cambridge University Press.
7. Singh R.B. and Murai S., 1998:*Space-informatics for Sustainable Development*, Oxford and IBH Pub.
8. Wolf P. R. and Dewitt B.A., 2000:*ElementsofPhotogrammetry:WithApplicationsinGIS*,McGraw- Hill.
9. Sarkar ,A.(2015)Practical geography: A systematic approach. Orient Black Swan Private Ltd., New Delhi

3. Evolution of Geographical Thought - GEOGH303CC

Course Code	GEOGH303CC		
Credits-6	L	T	P
	65	25	0
Course Type	Core		
Lectures to be Delivered	90		

Note: CCA & AE scheme is same as in Paper GEOGH101CC

Course Content and Credit Scheme

Unit	Topic	Allotted Time (Hours)		
		L	T	P
I.	Introduction Meaning nature and scope of geography A brief introduction to emergence of geography as scientific discipline Contribution of Greeks and Romans	20	7	0
II.	Modern– Evolution of Geographical Thinking and Disciplinary Trends in Germany, France , Britain, United States of America.	15	6	0
III.	Debates–Environmental Determinism and Possibilism, Systematic and Regional	15	6	0
IV.	Trends – Quantitative Revolution, Behaviouralism, Systems Approach, Radicalism, Feminism;	15	6	0
	Total Hours	65	25	0

L-Lecture, T-Tutorial and P-Practical and Practices

Reading List

1. Arentsen M.,StamR.andThuijjsR.,2000:*Post-modernApproachestoSpace*,ebook.
2. Bhat, L.S. (2009) *Geography in India (Selected Themes)*. Pearson
3. Bonnett A., 2008:*WhatisGeography?*Sage.
4. Dikshit R.D.,1997: *Geographical Thought: A Contextual History of Ideas*, Prentice–Hall India.
5. Hartshone R., 1959:*Perspectivesof Nature of Geography*, R and Mac Nally and Co.
6. Holt-JensenA.,2011: *Geography: History and Its Concepts: A Students Guide*, SAGE.
7. Johnston R.J.,(Ed.): *Dictionary of Human Geography*, Routledge.
8. JohnstonR.J.,1997:*GeographyandGeographers,Anglo-AmericanHumanGeographysince1945*, Arnold, London.
9. Kapur A.,2001: *Indian Geography Voice of Concern*, Concept Publications.
- 10.Martin Geoffrey J., 2005: *All Possible Worlds: A History of Geographical Ideas*, Oxford.
- 11.Soja,Edward1989.*Post-modernGeographies*, Verso,London.Reprinted1997:RawatPubl.,Jaipur and New Delhi.

4. Disaster Management based Project Work(Practical) - GEOGH304CC-P

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

Course Code	GEOGH304CC-P		
Credits-6	L	T	P
	25	0	130(65)*
Course Type	Core		
Lectures to be Delivered	90		

Note: CCA and AE scheme is same as in GEOGH102CC-P

Course Content and Credit Scheme

Unit	Topic	Allotted Time (Hours)		
		L	T	P
I.	Flood and Flash Flood/ Could	6	0	10(5)*
II.	Cyclone and Hailstorms	6	0	30(15)*
III.	Earthquake and Landslides	7	0	40(20)*
IV.	Human Induced Disasters: Fire Hazards, Road Accident	6	0	50(25)*
	Total Hours	25	0	130 (65)*

L-Lecture, T-Tutorial and P-Practical and Practices

* As per the weightage assigned to the P (Practical and Practices) category in the CBCS regulations 2 hours practical work has been treated equal to 1 credit hour.

Reading List

1. Government of India.(1997)Vulnerability Atlas of India. New Delhi, Building Materials & Technology Promotion Council,Ministry of Urban Development, Government of India.
2. Kapur,A.(2010)VulnerableIndia: A Geographical Study ofDisasters,SagePublication,New Delhi.
3. Modh, S. (2010) Managing Natural Disaster:Hydrological, Marine andGeological Disasters, Macmillan,Delhi.
4. Singh, R.B. (2005) RiskAssessment andVulnerabilityAnalysis, IGNOU, New Delhi.Chapter 1,2 and 3
5. Singh,R.B.(ed.),(2006)NaturalHazardsandDisasterManagement:Vulnerabilityand Mitigation, Rawat Publications, New Delhi.
6. Sinha,A.(2001).DisasterManagement:LessonsDrawnand StrategiesforFuture,New UnitedPress, New Delhi.
7. Stoltman,J.P.etal.(2004)International Perspectives on Natural Disasters, KluwerAcademic Publications.Dordrecht.
8. SinghJagbir(2007) “DisasterManagementFuture ChallengesandOppurtunities”, 2007.Publisher-I.K.InternationalPvt.Ltd.S-25, GreenParkExtension,UphaarCinemaMarket,New Delhi,India (www.ikbooks.com).

5. Field Work and Research Methodology (Practical)- GEOGH305CC-P

Course Code	GEOGH305CC-P		
Credits-6	L	T	P
	25	0	130(65)*
Course Type	Core		
Lectures to be Delivered	90		

Note: CCA and AE scheme is same as in GEOGH102CC-P

Course Content and Credit Scheme

Unit	Topic	Allotted Time (Hours)		
		L	T	P
I.	Introduction Field Work In Geographical Studies–Role, Value, Data and Ethics of Field-Work. Defining the Field and Identifying the Case Study–Rural /Urban/Physical /Human/ Environmental.	6	0	10(5)*
II.	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)	6	0	30(15)*
III.	Use of Field Tools Collection of Material for Physical and Socio-Economic Surveys.	7	0	40(20)*
IV.	Designing the Field Report Aims and Objectives, Methodology, Analysis, Interpretation and Writing the Report.	6	0	50(25)*
	Total Hours	25	0	130 (65)*

L-Lecture, T-Tutorial and P-Practical and Practices

* As per the weightage assigned to the P (Practical and Practices) category in the CBCS regulations 2 hours practical work has been treated equal to 1 credit hour.

Practical Record

1. Each student will prepare an individual report based on primary and secondary data collected during field work.
2. The duration of the field work should not exceed 10 days.
3. The word count of the report should be about **8000 to 12,000** excluding figures, tables, photographs, maps, references and appendices.
4. One copy of the report on A4 size paper should be submitted in soft binding.

Reading List

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 Pubs. Co., New Delhi.
5. Mukherjee, Neela 2002. *Participatory Learning and Action: with 100 Field Methods*. Concept Pubs. 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.
10. Wolcott, H. 1995. *The Art of Fieldwork*. Alta Mira Press, Walnut Creek, CA.

Skill Enhancement Course (Any 2)

5. Remote Sensing (Practical) GEOGH205SEC-P

Course Code	GEOGH205SEC-P		
Credits-4	L	T	P
	15	0	90(45)*
Course Type	Skill Enhancement		
Lectures to be Delivered	60		

Continuous Comprehensive Assessment (CCA) Pattern: Maximum Marks Allotted: 30

Mid Term Test* (Marks)	Class Test/ Tutorials/Assignments (Marks)	Quiz/Seminars (Marks)	Attendance (Marks)	Total Marks
15	5	5	5	30
Total	15	5	5	

* The pattern of examination for conducting the Mid Term Test will be same as prescribed for annual examination (practical paper).

Marks Allocation Scheme annual examination (AP) Practical:

Particulars	Maximum Marks	Minimum Pass Marks	Time Allotted
Written Lab Work	10	8	3.00 Hrs
Practical Record*	05		
Viva-Voce	05		
Total	20		

***Note:** Use of non-programmable calculators and map stencils are allowed in the examination hall. The practical record may be evaluated on the parameters of Punctuality, Neatness, Entirety and indexing

Paper Setting Scheme for Written Lab Work#

Section	No of Questions	Syllabus Coverage	Nature of Questions and Answers	Questions to be Attempted	Maximum Marks
A	10	Complete	Objective Type	10 (1 Mark each)	10
	4	Complete	Short answer type (25-50 words)	4 (3 Marks each)	12
B	2	Unit I	Choice based Long answer type	1(7Marks each)	7
C	2	Unit II	Choice based Long answer type	1(7 Marks each)	7
D	2	Unit III	Choice based Long answer type	1(7 Marks each)	7
E	2	Unit IV	Choice based Long answer type	1(7 Marks each)	7
Total					50

Note: It is mandatory that paper setting of written lab work for annual examination practical (AEP) will be done by the university.

Course Content and Credit Scheme

Unit	Topic	Allotted Time (Hours)		
		L	T	P
I.	Introduction Remote Sensing: Definition and Historical Development; Platforms and Types; Aerial Photography	3	0	10(5)*
II.	Satellite Remote Sensing Principles, EMR Interaction with Atmosphere and Earth Surface; Satellites (Landsat and IRS); Sensors	4	0	20(10)*

III.	Image Processing Pre-processing (Radiometric and Geometric Correction); Enhancement (Filtering); Classification (Supervised and Un-supervised)	4	0	30(15)*
IV.	Satellite Image Interpretation. Application of Remote Sensing: Land Use Land Cover.	4	0	30(20)*
	Total Hours	15	0	90(45)*

L-Lecture, T-Tutorial and P-Practical and Practices

Practical Record: A project file consisting of 5 exercises on using any method on above mentioned themes.

* As per the weightage assigned to the P (Practical and Practices) category in the CBCS regulations 2 hours practical work has been treated equal to 1 credit hour.

Reading List

1. Bhatta, B. (2008) Remote Sensing and GIS, Oxford University Press, New Delhi.
2. Campbell J. B., 2007: *Introduction to Remote Sensing*, Guildford Press
3. Chauniyal, D. (2010) *Sudur Samvedana Avam Bhaugolik Suchna Pranali*, Sharda Pustak Bhawan, Allahabad.
4. Jensen, J. R. (2005) *Introductory Digital Image Processing: A Remote Sensing Perspective*, Pearson Prentice-Hall.
5. Joseph, G. 2005: *Fundamentals of Remote Sensing*, United Press India.
6. Lillesand T.M., Kiefer R.W. and Chipman J.W., 2004: *Remote Sensing and Image Interpretation*, Wiley. (Wiley Student Edition).
7. Li, Z., Chen, J. and Batsavias, E. (2008) *Advances in Photogrammetry, Remote Sensing and Spatial Information Sciences* CRC Press, Taylor and Francis, London
8. Mukherjee, S. (2004) *Textbook of Environmental Remote Sensing*, Macmillan, Delhi.
9. Nag P. and Kudra, M., 1998: *Digital Remote Sensing*, Concept, New Delhi.
10. Singh R.B. and Murai S., 1998: *Space-informatics for Sustainable Development*, Oxford and IBH Pub.

2. Advanced Spatial Statistical Techniques- GEOGH206SEC-P

Course Code	GEOGH206SEC-P		
Credits-4	L	T	P
	15	0	90(45)*
Course Type	Skill Enhancement		
Lectures to be Delivered	60		

Note: CCA and AE scheme is same as in GEOGH102CC-P

Course Content and Credit Scheme

Unit	Topic	Allotted Time (Hours)		
		L	T	P
I.	Introduction Statistics and Statistical Data: Spatial and non-spatial; indices of inequality and disparity (Lorenz Curve) .	3	0	10(5)*
II.	Probability theory Probability density functions with respect to Normal, Binomial and Poisson distributions and their geographical applications.	4	0	20(10)*
III.	Sampling Sampling plans for spatial and non-spatial data, sampling distributions; sampling estimates for large and small samples tests involving means and proportions.	4	0	30(15)*
IV.	Correlation and Regression Analysis: Rank order correlation and product moment correlation; linear regression, residuals from regression, and simple curvilinear regression.	4	0	30(20)*
	Total Hours	15	0	90(45)*

L-Lecture, T-Tutorial and P-Practical and Practices

Note: Any Statistical Software Package (SPSS, MS Excel, R, etc.) may be used for practice.

* As per the weightage assigned to the P (Practical and Practices) category in the CBCS regulations 2 hours practical work has been treated equal to 1 credit hour.

Reading List

1. Bart James E and Gerl M. Barber, 1996: Elementary Statistics for Geographers, The Guilford Press, London.
2. Eldon, D., 1983: Statistics in Geography: A Practical Approach, Blackwell, London.
3. Cressie, N.A.C., 1991: Statistics for Spatial Analysis, Wiley, New York.
4. Gregory, S., 1978: Statistical Methods and the Geographer (4th Edition), Longman, London.
5. Haining, R.P., 1990: Spatial Data Analysis in the Social and Environmental Science, Cambridge University Press, Cambridge.
6. McGrew, Jr. and Cahrls, B.M., 1993: An Introduction to Statistical Problem Solving in Geography, W.C. Brocan Publishers, New Jersey.
7. Mathews, J.A., 1987: Quantitative and Statistical Approaches to Geography: A Practical Manual Pergamon, Oxford.
8. S.K., 1998: Statistics for Geoscientists: Techniques and Applications, Concept Publishing Company, New Delhi.
9. Wei, W.S., 1990: Time Series Analysis: Variate and Multivariate Methods, Addison Wesley Publishing.
10. Yeates, Mauris, 1974: An Introduction to Quantitative Analysis in Human Geography, McGrawhill, New York.

6. Geographical Information System (Practical)- GEOGH207SEC-P

Course Code	GEOGH207SEC-P		
Credits-4	L	T	P
	15	0	90(45)*
Course Type	Skill Enhancement		
Lectures to be Delivered	60		

Note: CCA and AE scheme is same as in GEOGH102CC-P

Course Content and Credit Scheme

Unit	Topic	Allotted Time (Hours)		
		L	T	P
I.	Introduction Meaning and Scope of GIS Components of GIS History of Geographic Information System(GIS)	3	0	10(5)*
II.	Data Types GIS Data Structures: Types (spatial and Non-spatial) Raster and Vector Data	4	0	20(10)*
III.	Spatial referencing system Concept of Georeferencing Editing and attribute data integration	4	0	30(15)*
IV.	GIS based Exercises on Geo-referencing, Subsetting, Extraction of Land Use/Land Cover layers of any area and thematic mapping	4	0	30(20)*
	Total Hours	15	0	90(45)*

L-Lecture, T-Tutorial and P-Practical and Practices

Practical Record: A project file consisting of 5 exercises on using any GIS Software on above mentioned themes.

* As per the weightage assigned to the P (Practical and Practices) category in the CBCS regulations 2 hours practical work has been treated equal to 1 credit hour.

Reading List

1. Bhatta, B. (2010) Analysis of Urban Growth and Sprawl from Remote Sensing, Springer, Berlin Heidelberg.41
2. Burrough, P.A., and McDonnell, R.A. (2000) Principles of Geographical Information System-Spatial Information System and Geo-statistics. Oxford University Press
3. Chauniyal, D.D. (2010) Sudur Samvedanevam Bhogolik Suchana Pranali, Sharda Pustak Bhawan, Allahabad
4. Heywoods, I., Cornelius, S. and Carver, S. (2006) An Introduction to Geographical Information system. Prentice Hall.
5. Jha, M.M. and Singh, R.B. (2008) Land Use: Reflection on Spatial Informatics Agriculture and Development, New Delhi: Concept.
6. Nag, P. (2008) Introduction to GIS, Concept India, New Delhi.
7. Sarkar, A. (2015) Practical geography: A systematic approach. Orient Black Swan Private Ltd., New Delhi
8. Singh, R.B. and Murai, S. (1998) Space Informatics for Sustainable Development, Oxford and IBH, New Delhi.

4. Research Methods (Practical) - GEOGH208SEC-P

Course Code	GEOGH208SEC-P		
Credits-4	L	T	P
	15	0	90(45)*
Course Type	Skill Enhancement		
Lectures to be Delivered	60		

Note: CCA and AE scheme is same as in GEOGH102CC-P

Course Content and Credit Scheme

Unit	Topic	Allotted Time (Hours)		
		L	T	P
I.	Geographic Enquiry Concept, Framing Research Questions, Objectives and Hypothesis; Literature Review	3	0	10(5)*
II.	Data Collection Type and Sources of Data; Methods of Collection; Preparing Sample Questionnaire	4	0	20(10)*
III.	Data Analysis Data Tabulation Data Analysis (Qualitative and Quantitative) Data Representation Techniques (Maps and Diagrams)	4	0	30(15)*
IV.	Structure of a Research Report Abstract, Main Text; References and Bibliography	4	0	30(20)*
	Total Hours	15	0	90(45)*

L-Lecture, T-Tutorial and P-Practical and Practices

* As per the weightage assigned to the P (Practical and Practices) category in the CBCS regulations 2 hours practical work has been treated equal to 1 credit hour.

Reading List

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. Misra, R.P. (2002) *Research Methodology*, Concept Publications, New Delhi.
5. Mukherjee, Neela 1993. *Participatory Rural Appraisal: Methodology and Application*. Concept Pubs. Co., New Delhi.
6. Mukherjee, Neela 2002. *Participatory Learning and Action: with 100 Field Methods*. Concept Pubs. Co., New Delhi
7. 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.
8. Special Issue on "Doing Fieldwork" *The Geographical Review* 91:1-2 (2001).
9. Stoddard R.H., 1982: *Field Techniques and Research Methods in Geography*, Kendall/Hunt.
11. Wolcott, H. 1995. *The Art of Fieldwork*. Alta Mira Press, Walnut Creek, CA.
12. Yadav, H. (2013) *Shodh Pravidhi Evam Matratamak Bhugol*, Raja Publications, Delhi.

Elective Discipline Specific (any four)

9. Population Geography- GEOGH305EDS1

Course Code	GEOGH305EDS1		
Credits-6	L	T	P
	65	25	0
Course Type	Discipline Specific Elective		
Lectures to be Delivered	90		

Note: CCA & AE scheme is same as in Paper GEOGH101CC

Course Content and Credit Scheme

Unit	Topic	Allotted Time		
		L	T	P
I.	Introduction Definition, Nature and Scope of population geography Sources of Data with special reference to India (Census, Vital Statistics and National Sample Survey Organization (NSSO).	20	7	0
II.	Population Size, Distribution and Growth – Determinants and Patterns. Theories of Growth – Malthusian Theory and Demographic Transition Theory.	15	6	0
III.	Population Dynamics Fertility, Mortality and Migration – Measures, Determinants and Implications. Population Composition and Characteristics – Age-Sex Composition; Rural and Urban Composition; Literacy.	15	6	0
IV.	Contemporary Issues Ageing of Population; Declining Sex Ratio; Rural Depopulation.	15	6	0
	Total Hours	65	25	0

L-Lecture, T-Tutorial and P-Practical and Practices

Reading List

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

Resource Geography- GEOGH306EDS1

Course Code	GEOGH306EDS1		
Credits-6	L	T	P
	65	25	0
Course Type	Discipline Specific Elective		
Lectures to be Delivered	90		

Note: CCA & AE scheme is same as in Paper GEOGH101CC

Course Content and Credit Scheme

Unit	Topic	Allotted Time (Hours)		
		L	T	P
I.	Natural Resource: Concept its Different Classification.	20	7	0
II.	Distribution, Utilisation, Problems and Management: Land Resources Water Resources Forests Resources	15	6	0
III.	Natural Resources Appraisal Depletion and Degradation of Natural Resources, Causes and Impacts (Land Water and Forest)	15	6	0
IV.	Uses and Misuse of Natural Resources Conservation of Natural Resources Sustainable Resource Development	15	6	0
	Total Hours	65	25	0

L-Lecture, T-Tutorial and P-Practical and Practices

Reading List

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

7. Urban Geography- GEOGH307EDS2

Course Code	GEOGH307EDS2		
Credits-6	L	T	P
	65	25	0
Course Type	Discipline Specific Elective		
Lectures to be Delivered	90		

Note: CCA & ESE scheme is same as in Paper GEOGH101CC

Course Content and Credit Scheme

Unit	Topic	Allotted Time (Hours)		
		L	T	P
I.	Introduction Urban geography: Definition, nature and scope Patterns of Urbanisation in developed and developing countries	20	7	0
II.	Classification of cities Functional classification of cities: Quantitative and Qualitative Methods	15	6	0
III.	Urban Issues Problems of housing, slums, civic amenities (water and transport) Concept of Smart Cities	15	6	0
IV.	Case studies Delhi, Kolkata and Chandigarh with reference to Land use and Urban Issues	15	6	0
	Total Hours	65	25	0

L-Lecture, T-Tutorial and P-Practical and Practices

Reading List

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

Agricultural Geography- GEOGH308EDS2

Course Code	GEOGH308EDS2		
Credits-6	L	T	P
	65	25	0
Course Type	Discipline Specific Elective		
Lectures to be Delivered	90		

Note: CCA & AE scheme is same as in Paper GEOG 0101 CC

Course Content and Credit Scheme

Unit	Topic	Allotted Time (Hours)		
		L	T	P
I.	Introduction Definition, nature and scope Land use/ land cover: Concept and classification.	20	7	0
II.	Determinants of Agriculture Physical, Technological and Institutional	15	6	0
III.	Agricultural Systems of the World Whitley's classification of Agricultural region Agricultural Land use model of Von Thuenen, its modification and relevance.	15	6	0
IV.	Agricultural Regions of India Agro-climatic and Agro-ecological Regions. Agricultural Revolutions in India: Green, White and Blue	15	6	0
	Total Hours	65	25	0

L-Lecture, T-Tutorial and P-Practical and Practices

Reading List

1. Basu, D.N., and Guha, G.S., 1996: *Agro-Climatic Regional Planning in India*, Vol. I & II, Concept Publication, New Delhi.
2. Bryant, C.R., Johnston, T.R., 1992: *Agriculture in the City Countryside*, Belhaven Press, London.
3. Burger, A., 1994: *Agriculture of the World*, Aldershot, Avebury.
4. Grigg, D.B., 1984: *Introduction to Agricultural Geography*, Hutchinson, London.
5. Ilbery B.W., 1985: *Agricultural Geography: A Social and Economic Analysis*, Oxford University Press.
6. Mohammad, N., 1992: *New Dimension in Agriculture Geography*, Vol. I to VIII, Concept Pub., New Delhi.
7. Roling, N.G., and Wagerutgers, M.A.E., (ed.) 1998: *Facilitating Sustainable Agriculture*, Cambridge University Press, Cambridge.
8. Shafi, M., 2006: *Agricultural Geography*, Doring Kindersley India Pvt. Ltd., New Delhi
9. Singh, J., and Dhillion, S.S., 1984: *Agricultural Geography*, Tata McGraw Hill, New Delhi.
10. Tarrant J.R., 1973: *Agricultural Geography*, David and Charles, Devon.

8. Geography of Health and Well-being- GEOGH309EDS3

Course Code	GEOGH309EDS3		
Credits-6	L	T	P
	65	25	0
Course Type	Discipline Specific Elective		
Lectures to be Delivered	90		

Note: CCA & AE scheme is same as in Paper GEOGH101CC

Course Content and Credit Scheme

Unit	Topic	Allotted Time (Hours)		
		L	T	P
I.	Introduction Perspectives on Health: Definition; linkages with environment, development and health; Driving forces in health and environmental trends: population dynamics, urbanization, poverty and inequality.	20	7	0
II.	Environmental Quality and Health Human activities and its implication on environment: Land use and agricultural development; industrialization; transport and energy.	15	6	0
III.	Exposure and Health Risks Air pollution; household wastes; water; housing; workplace. Health and Disease as related to Environmental Context with special reference to India.	15	6	0
IV.	Climate Change and Human Health Changes in climate system – heat and cold and its impact on Human being. Biological disease agents: food production and nutrition	15	6	0
	Total Hours	65	25	0

L-Lecture, T-Tutorial and P-Practical and Practices

Reading List:

1. Akhtar Rais (Ed.), 1990: Environment and Health Themes in Medical Geography, Ashish Publishing House, New Delhi.
2. Avon Joan L. and Jonathan A Patzed. 2001: Ecosystem Changes and Public Health, Baltimin, John Hopling Unit Press (ed).
3. Bradley, D., 1977: Water, Wastes and Health in Hot Climates, John Wiley Chichester.
4. Christaler George and Hristopoles Dionissios, 1998: Spatio Temporal Environment Health Modelling, Boston Kluwer Academic Press.
5. Cliff, A.D. and Peter, H., 1988: Atlas of Disease Distributions, Blackwell Publishers, Oxford.
6. Gatrell, A., and Loytonen, 1998: GIS and Health, Taylor and Francis Ltd, London.
7. Hardham T. and Tannav M., (eds): Urban Health in Developing Countries; Progress, Projects, Earthgoan, London.
8. Murray C. and A. Lopez, 1996: The Global Burden of Disease, Harvard University Press.
9. Moeller Dadewed., 1993: Environmental Health, Cambridge, Harvard Univ. Press.
10. Phillips, D. and Verhasselt, Y., 1994: Health and Development, Routledge, London.
11. Tromp, S., 1980: Biometeorology: The Impact of Weather and Climate on Humans and their Environment, Heydon and Son.

Political Geography- GEOGH310EDS3

Course Code	GEOGH310EDS3		
Credits-6	L	T	P
	65	25	0
Course Type	Discipline Specific Elective		
Lectures to be Delivered	90		

Note: CCA & AE scheme is same as in Paper GEOGH101CC

Course Content and Credit Scheme

Unit	Topic	Allotted Time (Hours)		
		L	T	P
I.	Introduction Concept, Nature and Scope. Attributes of State–Frontiers, Boundaries, Shape, Size, Territory and Sovereignty, Concept of Nation, State and Nation State Geopolitics	20	7	0
II.	Electoral Geography Geography of Voting, Geographic Influences on Voting pattern, Geography of Representation, Gerrymandering.	15	6	0
III.	Political Geography of Resource Conflicts Water Sharing Disputes, Disputes and Conflicts Related to Forest Rights and Minerals.	15	6	0
IV.	Politics of Displacement Issues of relief, compensation and rehabilitation with reference to Dams and Special Economic Zones	15	6	0
	Total Hours	65	25	0

L-Lecture, T-Tutorial and P-Practical and Practices

Reading List

1. Agnew J., 2002: *Making Political Geography*, Arnold.
2. Agnew J., Mitchell K. and Toal G., 2003: *A Companion to Political Geography*, Blackwell.
3. Cox K. R., Low M. and Robinson J., 2008: *The Sage Handbook of Political Geography*, Sage Publications.
4. Cox K., 2002: *Political Geography: Territory, State and Society*, Wiley-Blackwell
5. Gallaher C., et al, 2009: *Key Concepts in Political Geography*, Sage Publications.
6. Glassner M., 1993: *Political Geography*, Wiley.
7. Jones M., 2004: *An Introduction to Political Geography: Space, Place and Politics*, Routledge.
8. Mathur H. M. and M. M. Cernea (eds.) *Development, Displacement and Resettlement – Focus on Asian Experience*, Vikas, Delhi
9. Painter J. and Jeffrey A., 2009: *Political Geography*, Sage Publications.
10. Taylor P. and Flint C., 2000: *Political Geography*, Pearson Education.
11. Verma M. K. (2004): *Development, Displacement and Resettlement*, Rawat Publications, Delhi
12. Hodder-Dick, Sarah J., Lyod and Keith S. McLachlan (1998), *Land Locked States of Africa and Asia* (vo.2), Frank Cass

9. Hydrology and Oceanography- GEOGH311EDS4

Course Code	GEOGH311EDS4		
Credits-6	L	T	P
	65	25	0
Course Type	Discipline Specific Elective		
Lectures to be Delivered	90		

Note: CCA & AE scheme is same as in Paper GEOGH101CC

Course Content and Credit Scheme

Unit	Topic	Allotted Time (Hours)		
		L	T	P
I.	Introduction Hydrological Cycle: human impact on the hydrological cycle; Hydrological input and output: Precipitation, interception, evaporation, evapo-transpiration, infiltration, ground-water, runoff and overland flow.	20	7	0
II.	River Basins and their Problems Characteristics of river basins, basin surface run-off, measurement of river discharge; floods.	15	6	0
III.	Ocean Floor Topography and Oceanic Movements Waves, Currents and Tides. Ocean Salinity and Temperature: Distribution and Determinants.	15	6	0
IV.	Ocean Resources: Coral Reefs Types Theories of Origin Marine Deposits and Classification	15	6	0
	Total Hours	65	25	0

L-Lecture, T-Tutorial and P-Practical and Practices

Reading List

1. Andrew.D. Ward and Stanley, Trimble (2004): Environmental Hydrology, 2nd edition, Lewis Publishers, CRC Press.
2. Karanth, K.R., 1988: Ground Water: Exploration, Assessment and Development, Tata-McGraw Hill, New Delhi.
3. Ramaswamy, C. (1985): Review of floods in India during the past 75 years: A Perspective. Indian National Science Academy, New Delhi.
4. Rao, K.L., 1982: India's Water Wealth 2nd edition, Orient Longman, Delhi.
5. Singh, Vijay P. (1995): Environmental Hydrology. Kluwer Academic Publications, The Netherlands.
6. Anikouchine W. A. and Sternberg R. W., 1973: *The World Oceans: An Introduction to Oceanography*, Prentice-Hall.
7. Garrison T., 1998: *Oceanography*, Wordsworth Company, Belmont.
8. Kershaw S., 2000: *Oceanography: An Earth Science Perspective*, Stanley Thornes, UK.
9. Pinet P.R., 2008: *Invitation to Oceanography* (Fifth Edition), Jones and Barlett Publishers, USA, UK and Canada.
10. Sharma R.C. and Vatal M., 1980: *Oceanography for Geographers*, Chaitanya Publishing House, Allahabad.
11. Sverdrup K.A. and Armbrust, E.V., 2008: *An Introduction to the World Ocean*, McGraw Hill, Boston.
12. Singh, M., Singh, R.B. and Hassan, M.I. (Eds.) (2014) Landscape ecology and water management. Proceedings of IGURohtak Conference, Volume 2. Advances in Geographical and Environmental Studies, Springer

Social Geography- GEOGH312EDS4

Course Code	GEOGH312EDS4		
Credits-6	L	T	P
	65	25	0
Course Type	Discipline Specific Elective		
Lectures to be Delivered	90		

Note: CCA & AE scheme is same as in Paper GEOGH101CC

Course Content and Credit Scheme

Unit	Topic	Allotted Time		
		L	T	P
I.	Introduction Social Geography: Concept, Nature and Scope.	20	7	0
II.	Peopling of India Technology and Occupational Change; Migration.	15	6	0
III.	Social Categories Caste, Class, Religion, Race and Gender and their Spatial distribution in India	15	6	0
IV.	Geographies of Welfare and Well-being Concept and Components– Health care, Housing and Education. Social Geographies of Inclusion and Exclusion ,Slums ,Communal Conflicts and Crime.	15	6	0
	Total Hours	65	25	0

L-Lecture, T-Tutorial and P-Practical and Practices

Reading List

1. Ahmed A., 1999: *Social Geography*, Rawat Publications.
2. Casino V. J.D., Jr., 2009) *Social Geography: A Critical Introduction*, Wiley Blackwell.
3. Cater J. and Jones T., 2000: *Social Geography: An Introduction to Contemporary Issues*, Hodder Arnold.
4. Holt L., 2011: *Geographies of Children, Youth and Families: An International Perspective*, Taylor & Francis.
5. Panelli R., 2004: *Social Geographies: From Difference to Action*, Sage.
6. Rachel P., Burke M., Fuller D., Gough J., Macfarlane R. and Mowl G., 2001: *Introducing Social Geographies*, Oxford University Press.
7. Smith D.M., 1977: *Humangeography: A Welfare Approach*, Edward Arnold, London.
8. Smith D.M., 1994: *Geography and Social Justice*, Blackwell, Oxford.
9. Smith S.J., Pain R., Marston S.A., Jones J.P., 2009: *The SAGE Handbook of Social Geographies*, Sage Publications.
10. Sopher, David (1980): *An Exploration of India*, Cornell University Press, Ithaca
11. Valentine G., 2001: *Social Geographies: Space and Society*, Prentice Hall.

Elective Generic Papers

6. Disaster Management- GEOGH106EG

Course Code	GEOGH106EG		
Credits-6	L	T	P
	65	25	0
Course Type	Discipline Specific Elective		
Lectures to be Delivered	90		

Note: CCA & AE scheme is same as in Paper GEOGH101CC

Course Content and Credit Scheme

Unit	Topic	Allotted Time (Hours)		
		L	T	P
I.	Introduction Disasters: Concepts, Hazards, Risk and Vulnerability Classification of Disaster	20	7	0
II.	Natural Disasters in India Flood, Landslide, Drought, Cyclone, Earthquake and Tsunami: Causes, Impact and Distribution	15	6	0
III.	Human Induced Disasters in India Fire, Road accidents, DID (Development Induced Disasters): Causes, Impact and Distribution	15	6	0
IV.	Response and Mitigation to Disasters: Mitigation and Preparedness, NDMA and NIDM Indigenous Knowledge and Community-Based Disaster Management Do's and Don'ts During and Post Disasters	15	6	0
	Total Hours	65	25	0

L-Lecture, T-Tutorial and P-Practical and Practices

Reading List

1. Government of India. (1997) Vulnerability Atlas of India. New Delhi, Building Materials & Technology Promotion Council, Ministry of Urban Development, Government of India.
2. Kapur, A. (2010) Vulnerable India: A Geographical Study of Disasters, Sage Publication, New Delhi.
3. Modh, S. (2010) Managing Natural Disaster :Hydrological, Marine and Geological Disasters, Macmillan, Delhi.
4. Singh, R.B. (2005) Risk Assessment and Vulnerability Analysis, IGNOU, New Delhi. Chapter 1, 2 and 3
5. Singh, R. B. (ed.), (2006) Natural Hazards and Disaster Management: Vulnerability and Mitigation, Rawat Publications, New Delhi.
6. Sinha, A. (2001). Disaster Management: Lessons Drawn and Strategies for Future, New United Press, New Delhi.
7. Stoltman, J.P. et al. (2004) International Perspectives on Natural Disasters, Kluwer Academic Publications. Dordrecht.

Geography of Tourism- GEOGH107EG

Course Code	GEOGH107EG		
Credits-6	L	T	P
	65	25	0
Course Type	Discipline Specific Elective		
Lectures to be Delivered	90		

Note: CCA & AE scheme is same as in Paper GEOG101CC

Course Content and Credit Scheme

Unit	Topic	Allotted Time (Hours)		
		L	T	P
I.	Introduction Concept nature scope and issues of geography of Tourism Geographical Parameters of Tourism by Robinson.	20	7	0
II.	Type of Tourism Nature Tourism, Cultural Tourism, Medical Tourism, Pilgrimage Tourism	15	6	0
III.	Recent Trends of Tourism International and Regional; Domestic Tourism (India); Eco-Tourism, Sustainable Tourism, Impact of Tourism on Economy; Environment; Society	15	6	0
IV.	Tourism in India Tourism Infrastructure: A Case Study of Himachal Pradesh National Tourism Policy	15	6	0
	Total Hours	65	25	0

L-Lecture, T-Tutorial and P-Practical and Practices

Reading List

1. Dhar, P.N. (2006) International Tourism: Emerging Challenges and Future Prospects. Kanishka, New Delhi.
2. Hall, M. and Stephen, P. (2006) Geography of Tourism and Recreation – Environment, Place and Space, Routledge, London.
3. Kamra, K. K. and Chand, M. (2007) Basics of Tourism: Theory, Operation and Practice, Kanishka Publishers, Pune.
4. Page, S. J. (2011) Tourism Management: An Introduction, Butterworth-Heinemann-USA. Chapter 2.
5. Raj, R. and Nigel, D. (2007) Morpeth Religious Tourism and Pilgrimage Festivals Management: An International perspective by, CABI, Cambridge, USA, www.cabi.org.
6. Tourism Recreation and Research Journal, Center for Tourism Research and Development, Lucknow
7. Singh Jagbir (2014) “Eco-Tourism” Published by - I.K. International Pvt. Ltd. S-25, Green Park Extension, Uphaar Cinema Market, New Delhi, India (www.ikbooks.com).

6.Spatial Information Technology- GEOGH108EG

Course Code	GEOGH108EG		
Credits-6	L	T	P
	65	25	0
Course Type	Discipline Specific Elective		
Lectures to be Delivered	90		

Note: CCA & AE scheme is same as in Paper GEOGH101CC

Course Content and Credit Scheme

Unit	Topic	Allotted Time (Hours)		
		L	T	P
I.	Introduction Definitions, Concept and Historical Development	20	7	0
II.	Spatial Information/Data Web data sources; Registration and projection; Data structures; Data interpolation and modeling.	15	6	0
III.	Working of spatial information system Functions of Spatial information system: Information retrieval; Topological modeling; Networks; Overlay; Data output.	15	6	0
IV.	Application Application of Spatial Information Technology in Geography	15	6	0
	Total Hours	65	25	0

L-Lecture, T-Tutorial and P-Practical and Practices

Reading List

1. C.Esperança and H.Samet, An overview of the SAND spatial databases system, to appear in Communications of the ACM, 1997. <http://www.cs.umd.edu/~hjs/pubs/sandprog.ps.gz>
2. G.Hjaltason and H.Samet, Ranking in Spatial Databases in Advances in Spatial Databases—4th Symposium, SSD'95, M.J.Egenhofer and J.R.Herring, Eds., Lecture Notes in Computer Science 951, Springer-Verlag, Berlin, 1995, 83-95. <http://www.cs.umd.edu/~hjs/pubs/incnear.ps>
3. H. Samet, Spatial Data Structures in Modern Database Systems: The Object Model, Interoperability, and Beyond, W.Kim, Ed., Addison-Wesley/ACM Press, 1995, 361-385. <http://www.cs.umd.edu/~hjs/pubs/kim.ps>
4. H.Samet, Applications of Spatial Data Structures: Computer Graphics, Image Processing, and GIS, Addison-Wesley, Reading, MA, 1990. ISBN 0-201-50300-0.
6. H.Samet, The Design and Analysis of Spatial Data Structures, Addison-Wesley, Reading, MA, 1990. ISBN 0-201-50255-0.
7. H.Samet and W.G.Aref, Spatial Data Models and Query Processing in Modern Database Systems: The Object Model, Interoperability, and Beyond, W.Kim, Ed., Addison-Wesley/ACM Press, 1995, 338-360. <http://www.cs.umd.edu/~hjs/pubs/kim2.ps>
8. C. D. Tomlin, Geographic Information Systems and Cartographic Modeling, Prentice-Hall, Englewood Cliffs, NJ, 1990. ISBN 0-13-350927-3.

Regional Development - GEOGH109EG

Course Code	GEOGH109EG		
Credits-6	L	T	P
	65	25	0
Course Type	Discipline Specific Elective		
Lectures to be Delivered	90		

Note: CCA & AE scheme is same as in Paper GEOGH101CC

Course Content and Credit Scheme

Unit	Topic	Allotted Time (Hours)		
		L	T	P
I.	Introduction Concept of Region, Types of Regions: Formal, Functional and Vernacular Need of Regional Planning	20	7	0
III.	Strategies/Models for Regional Planning Growth Pole Model of Perroux Growth Centre Model in Indian Context	15	6	0
IV.	Problem Regions and Regional Planning Backward Regions and Regional Plans- Special Area Development Plans in India DVC-Its Success Story and the Failures	15	6	0
	Total Hours	65	25	0

L-Lecture, T-Tutorial and P-Practical and Practices

Reading List

1. Adell, Germán (1999) Literature Review: Theories and Models of the Peri-Urban Interface A Changing Conceptual Landscape, Peri-urban Research Project Team, Development Planning Unit, University College London
2. Bhatt, L.S. (1976) Micro Level Planning in India. KB Publication, Delhi
3. Deshpande C.D., 1992: *India: A Regional Interpretation*, ICSSR, New Delhi.
4. Dreze J. and A. Sen, Indian Development: Select Regional Perspectives (Oxford: Oxford University Press, 1996).
5. Ses, Amratya (2000) Development as Freedom. Random House, Toronto
6. Raza, M., Ed. (1988). Regional Development. Contributions to Indian Geography. New Delhi, Heritage Publishers.
7. Rapley, John (2007) Understanding Development: Theory and Practice in the 3rd World. Lynne Rienner, London.
8. Schmidt-Kallert, Einhard (2005) A Short Introduction to Micro-Regional Planning, Food and Agriculture Organization of the United Nations (FAO) at
9. Sdyasuk Galina and P Sengupta (1967): *Economic Regionalisation of India*, Census of India

8.Climate Change: Vulnerability and Adaptation- GEOGH209EG

Course Code	GEOGH209EG		
Credits-6	L	T	P
	65	25	0
Course Type	Elective Generic		
Lectures to be Delivered	90		

Note: CCA & AE scheme is same as in Paper GEOGH101CC

Course Content and Credit Scheme

Unit	Topic	Allotted Time (Hours)		
		L	T	P
I.	Introduction Concept and understanding of Climate Change Green House Gases and Global Warming	20	7	0
II.	Climate Change and Vulnerability Physical Vulnerability Economic Vulnerability Social Vulnerability	15	6	0
III.	Impact of Climate Change on Agriculture and Water Flora and Fauna Human Health	15	6	0
IV.	Adaptation and Mitigation Global Initiatives with Particular Reference to South Asia. National Action Plan on Climate Change; Local Initiatives (Urban Local Bodies, Panchayats)	15	6	0
	Total Hours	65	25	0

L-Lecture, T-Tutorial and P-Practical and Practices

Further Readings

1. IPCC.(2007)ClimateChange2007: Impacts,AdaptationandVulnerability.Contribution ofWorking GroupIItotheFourthAssessmentReport oftheIntergovernmentalPanelon ClimateChange.
2. IPCC (2014)*ClimateChange2014:Impacts,Adaptation,andVulnerability.Part A: Global and SectoralAspects.ContributionofWorking Group IItotheFifth AssessmentReport ofthe IntergovernmentalPanel on Climate Change*CambridgeUniversity Press,Cambridge,United Kingdomand New York, NY, USA.
3. IPCC (2014)*ClimateChange2014:Impacts,Adaptation,andVulnerability.Part B:Regional Aspects.ContributionofWorkingGroupII tothe FifthAssessmentReportoftheIntergovernmental Panel on Climate Change*CambridgeUniversity Press,Cambridge,UnitedKingdomandNew York, NY, USA.
4. Palutikof, J. P., vander Linden, P. J.andHanson, C.E.(eds.), Cambridge University Press, Cambridge,UK.
5. OECD.(2008) *ClimateChange Mitigation:WhatDoweDo?*Organisation andEconomicCo-operation and Development.
6. UNEP.(2007)*GlobalEnvironmentOutlook: GEO4:EnvironmentforDevelopment*,UnitedNations Environment Programme.
7. Singh,M.,Singh,R.B.andHassan,M.I.(Eds.)(2014)*Climatechangeandbiodiversity:Proceedings of IGURohtakConference, Volume 1. Advances in Geographical and Environmental Studies*, Springer
8. Sen Roy, S. and Singh, R.B. (2002)*Climate Variability, Extreme Events and Agricultural Productivityin MountainRegions*,Oxford&IBHPub.,NewDelhi.

Rural Development- GEOGH210EG

Course Code	GEOGH210EG		
Credits-6	L	T	P
	65	25	0
Course Type	Elective Generic		
Lectures to be Delivered	90		

Note: CCA & AE scheme is same as in Paper GEOGH101CC

Course Content and Credit Scheme

Unit	Topic	Allotted Time (Hours)		
		L	T	P
I.	Introduction Defining Development: Inter-Dependence of Urban and Rural Sectors of the Economy Need for Rural Development, Gandhian Approach of Rural Development.	20	7	0
II.	Rural Economic Base Panchayati raj System, Agriculture and Allied Sectors. Area Based Approach to Rural Development: Drought Prone Area Programmes, PMGSY.	15	6	0
III.	Target Group Approach to Rural Development MNREGA, Jan Dhan Yojana Rural Connectivity	15	6	0
IV.	Provision of Services Physical and Socio-Economic Access to Elementary Education And Primary Health Care Microcredit	15	6	0
	Total Hours	65	25	0

L-Lecture, T-Tutorial and P-Practical and Practices

Reading List

1. Gilg A. W., 1985: *An Introduction to Rural Geography*, Edwin Arnold, London.
2. Krishnamurthy, J. 2000: *Rural Development-Problems and Prospects*, Rawat Pubs., Jaipur
3. Lee D. A. and Chaudhri D. P. (eds.), 1983: *Rural Development and State*, Methuen, London.
4. Misra R. P. and Sundaram, K. V. (eds.), 1979: *Rural Area Development: Perspectives and Approaches*, Sterling, New Delhi.
5. Misra, R. P. (ed.), 1985: *Rural Development: Capitalist and Socialist Paths*, Vol. 1, Concept, New Delhi.
6. Palione M., 1984: *Rural Geography*, Harper and Row, London.
7. Ramachandran H. and Guimaraes J. P. C., 1991: *Integrated Rural Development in Asia—Learning from Recent Experience*, Concept Publishing, New Delhi.
8. Robb P. (ed.), 1983: *Rural South Asia: Linkages, Change and Development*, Curzon Press.
9. UNAPDI 1986: *Local Level Planning and Rural Development: Alternative Strategies*. (United Nations Asian & Pacific Development Institute, Bangkok), Concept Pubs. Co., New Delhi.
10. Wanmali S., 1992: *Rural Infrastructure Settlement Systems and Development of the Regional Economy in South India*, International Food Policy Research Institute, Washington, D. C.
11. Yugandhar, B. N. and Mukherjee, Neela (eds.) 1991: *Studies in Village India: Issues in Rural Development*, Concept Pubs. Co., New Delhi.

9. Industrial Geography- GEOGH211EG

Course Code	GEOGH213EG		
Credits-6	L	T	P
	65	25	0
Course Type	Elective Generic		
Lectures to be Delivered	90		

Note: CCA & AE scheme is same as in Paper GEOGH101CC

Course Content and Credit Scheme

Unit	Topic	Allotted Time		
		L	T	P
I.	Introduction Definition, Nature and Scope of Industrial Geography	20	7	0
II.	Types, Geographical Characteristics and Location of Industries Weber's Theory, Small and Medium Industries, Heavy Industries: Coal and Iron based industries, Rural based Industries Foot loose Industry.	15	6	0
III.	Industrial Complexes Mumbai-Pune Industrial Region, Bengaluru-Chennai Industrial Region Chota Nagpur Industrial Region	15	6	0
IV.	Impact of Industrialization in India Environmental, Social, Economic Industrial Policy of India	15	6	0
	Total Hours	65	25	0

L-Lecture, T-Tutorial and P-Practical and Practices

Reading List

- Alexander J. W. (1979). *Economic Geography*, Printice Hall of India Pvt. Ltd., New Delhi.
- Goh Cheng Leong (1997). "Human and economic geography", Oxford University Press, New York.
- Thoman, R.S., Conkling E.C. and Yeates, M.H. (1968). *Geography of Economic Activity*, McGraw Hill Book Company, 1968.
- Miller, E. (1962) *Geography of Manufacturing* Printice Hall-Englewood Cliff, New Jersey
- Gunnar Alexandersson (1967). "Geography of Manufacturing, Prentice Hall, New Jersey
Truman, A. Harishorn, John W. Alexander (2000) " *Economic Geography*", Prentice Hall of India Ltd., New Delhi.
- Singh, Jagdish 2003: *India-A Comprehensive & Systematic Geography*, Gyanodaya Prakashan, Gorakhpur.
- Tirtha, Ranjit 2002: *Geography of India*, Rawat Pubs., Jaipur & New Delhi.
- Pathak, C.R. 2003: *Spatial Structure and Processes of Development in India*. Regional Science Assoc., Kolkata.
- Tiwari, R.C. (2007) *Geography of India*. Prayag Pustak Bhawan, Allahabad
- Sharma, T.C. (2013) *Economic Geography of India*. Rawat Publication, Jaipur

Sustainable Development- GEOGH212EG

Course Code	GEOGH212EG		
Credits-6	L	T	P
	65	25	0
Course Type	Elective GENERIC		
Lectures to be Delivered	90		

Note: CCA & AE scheme is same as in Paper GEOGH101CC

Course Content and Credit Scheme

Unit	Topic	Allotted Time (Hours)		
		L	T	P
I.	Introduction Sustainable Development: Definition, Components, Limitations and Historical Background.	20	7	0
II.	The Millennium Development Goals National Strategies and International Experiences Sustainable Regional Development Need and examples from any two Ecosystems	15	6	0
III.	Inclusive Development Education, Health; Climate Change The role of higher education in sustainability Sustainable Livelihood Model Policies and Global Cooperation for Climate Change	15	6	0
IV.	Sustainable Development Policies and Programmes Rio+20, Financing for Sustainable Development; National Environmental Policy, Clean Development Mechanism (CDM).	15	6	0
	Total Hours	65	25	0

L-Lecture, T-Tutorial and P-Practical and Practices

ReadingList

1. Agyeman, Julian, Robert D. Bullard and Bob Evans (Eds.) (2003) *Just Sustainabilities: Development in an Unequal World*. London: Earthscan. (Introduction and conclusion.)
2. Ayers, Jessica and David Dodman (2010) "Climate change adaptation and development I: the state of the debate". *Progress in Development Studies* 10 (2): 161-168.
3. Baker, Susan (2006) *Sustainable Development*. Milton Park, Abingdon, Oxon; New York, N.Y.: Routledge. (Chapter 2, "The concept of sustainable development")
4. Brosius, Peter (1997) "Endangered forest, endangered people: Environmentalist representations of indigenous knowledge", *Human Ecology* 25: 47-69.
5. Lohman, Larry (2003) "Re-imagining the population debate". *Corner House Briefing* 28.
6. Martínez-Alier, Joan et al (2010) "Sustainable development: Mapping the context, criticisms and future prospects of an emergent paradigm" *Ecological Economics* 69: 1741-1747.
7. Merchant, Carolyn (Ed.) (1994) *Ecology. Atlantic Highlands, N.J.: Humanities Press*. (Introduction, pp 1-25.)
8. Osorio, Leonardo et al (2005) "Debates on sustainable development: towards a holistic view of reality". *Environment, Development and Sustainability* 7: 501-518.
9. Robbins, Paul (2004) *Political Ecology: A Critical Introduction*. Blackwell Publishing.