

CHOICE BASED CREDIT SYSTEM
B.A/B.SC GEOGRAPHY (Regular Course) Syllabus

SEM-I						
Paper Code	Course	Credit	Credit Distribution (L+T+P)	End Semester Marks	Internal Marks	Total Marks
GGY-101R	DSC-1A: Physical Geography	6	4+0+2	60(Th)+20(P)	20	100
Paper-102R	DSC-2A	6	4+0+2	80	20	100
Paper-103R	DSC-3A	6	4+0+2	80	20	100
COMM-104HR	AECC-1: English/Hindi/MIL (Communication)	2	2+0+0	40	10	50
Total		20	20	280	70	350

SEM-II						
Paper Code	Course	Credit	Credit Distribution (L+T+P)	End Semester Marks	Internal Marks	Total Marks
GGY-201R	DSC-1B: General Cartography	6	4+0+2	60(Th)+20(P)	20	100
Paper-202R	DSC-2B	6	4+0+2	80	20	100
Paper-203R	DSC-3B	6	4+0+2	80	20	100
COMM-204HR	AECC-2: Environmental Studies	2	2+0+0	40	10	50
Total		20	20	280	70	350

SEM-III						
Paper Code	Course	Credit	Credit Distribution (L+T+P)	End Semester Marks	Internal Marks	Total Marks
GGY-301R	DSC-1C: Human Geography	6	4+0+2	60(Th)+20(P)	20	100
Paper-302R	DSC-2C	6	4+0+2	80	20	100
Paper-303R	DSC-3C	6	4+0+2	80	20	100
GGY-304HR	SEC-1: Statistical Methods in Geography	2	2+0+0	40	10	50
Total		20	20	280	70	350

SEM-IV						
Paper Code	Course	Credit	Credit Distribution (L+T+P)	End Semester Marks	Internal Marks	Total Marks
GGY-401R	DSC-1D: Geography of India	6	4+0+2	60(Th)+20(P)	20	100
Paper-402R	DSC-2D	6	4+0+2	80	20	100
Paper-403R	DSC-3D	6	4+0+2	80	20	100
GGY-404HR	SEC-2: Research Methodology	2	2+0+0	40	10	50
Total		20	20	280	70	350

SEM-V						
Paper Code	Course	Credit	Credit Distribution (L+T+P)	End Semester Marks	Internal Marks	Total Marks
GGY-501R	DSE-1A: Soil and Bio-Geography	6	4+0+2	60(Th)+20(P)	20	100
GGY-502R	DSE-2A:	6	4+0+2	80	20	100
GGY-503R	GE-1:Disaster Management	6	4+0+2	60(Th)+ 20 (R)	20	100
GGY-504R	SEC-3: Basics of Remote Sensing and GIS (Practical Base)	2	2+0+0	30(Th) + 10(P)	10	50
Total		20	20	280	70	350

SEM-VI						
Paper Code	Course	Credit	Credit Distribution (L+T+P)	End Semester Marks	Internal Marks	Total Marks
GGY-601R	DSE-1B: Social and Political Geography	6	4+0+2	60(Th)+20(P)	20	100
GGY-602R	DSE-2B:	6	4+0+2	80	20	100
GGY-603R	GE-2: Sustainable Development	6	4+0+2	60 (Th)+20(R)	20	100
GGY-604R	SEC-4: Field Techniques and Surveying (Practical Base)	2	0+0+2	20(P) + 20 (R)	10	50
Total		20	20	280	70	350

CHOICE BASED CREDIT SYSTEM
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BODOLAND UNIVERSITY, KOKRAJHAR-783370

Semester	Core Course (12)	Ability Enhancement Compulsory Course (AECC) (2)	Skill Enhancement Course (SEC)(2)	Discipline Specific Elective (DSE)(4)	Generic Elective (GE)(4)
I	DSC-1A: Physical Geography	AECC-1: English/Hindi/MIL (Communication)			
	DSC-2A				
	DSC-3A				
II	DSC-1B: General Cartography	AECC-2: Environmental Studies			
	DSC- 2B				
	DSC-3B				
III	DSC -1C: Human Geography		SEC-1: Statistical Methods in Geography		
	DSC-2C:				
	DSC-3C:				
IV	DSC-1D: Geography of India		SEC-2: Research Methodology		
	DSC-2D:				
	DSC-3D:				
V			SEC-3: Basics of Remote Sensing and GIS (Practical Base)	DSE-1A :Soil and Bio-Geography	GE-1: Disaster Management
				DSE-2A:	
VI			SEC-4: Field Techniques and Surveying (Practical Base)	DSE-1B: Social and Political Geography	GE-2: Sustainable Development
				DSE-2B:	

FIRST SEMESTER

Core Course: DSC-1A: Physical Geography

Total Marks: 100

60(Th) + 20(P) + 20(IA)

Total Credit: 6 (Total Number of Classes: 60)

Unit 1: Field of Geography (10 class)

- Nature and scope of Geography, Physical Geography and Human Geography: Nature, Contents and Interrelationship.
- Earth: Chemical Composition and Interior Structure of the Earth, Geological Time scale; Era, period and epoch.

Unit 2: Basics of Geomorphology (20 class)

- Types of landform – First order, second order and third order, Forces for landform development - endogenetic and exogenetic, Landform development processes- weathering, erosion, transportation and deposition
- Landform development under different conditions – fluvial, arid and glacial
- Cycle concepts in geomorphology Weathering, Mass Wasting, Cycle of Erosion (Davis and Penck).
- Evolution of Landforms (Erosional and Depositional): Fluvial, Aeolian, Glacial, Karst and Coastal.

Unit 3: Climatology and Oceanography (15class)

- Atmosphere: Composition, Structure and Functions
- Elements of Weather: Temperature, Pressure, Wind and Humidity
- Heat Zones, Atmospheric Pressure Belt and Atmospheric Circulation; Mechanism of Monsoon, Jet-stream, El-Nino; Cyclones: Tropical and subtropical
- Koppen's Climatic Classification
- Ocean Basin: Major features of the ocean floor; Coral reefs and atolls: types and factors, coral and volcanic islands;
- Ocean Current and Tides; Ocean currents and their influence.

Unit 4: Practical (15 class)

- Drawing of a representative part from topographical map, such as - Mountain, Plateau, Hills and Ridges, Piedmont, Floodplain, Valley (U-shaped and V-shaped), spurs and their characteristics.
- Relief representation through serial profiles, superimposed profiles, composite profiles and Projected profiles.
- Demarcation of basin and representation of basin relief through profiles, interpretation.
- Drawing and analysis of Average Slope Map by Wentworth's Method
- Drawing and interpretation of rainfall-temperature-humidity graph of tropical, sub-tropical and temperate regions/stations.
- Study of weather condition depicted by Indian Weather maps and prediction of weather conditions for next 48 hours.
- Calculation of average annual rainfall and variability of annual rainfall, and mapping and interpretation thereof.

Books Suggested:

1. Hussain, M., 1989: *Evolution of Geographic Thought*, Rawat Publications, Jaipur
2. Dikshit, R.D., 1997: *Geographical Thoughts: A Contextual History of Ideas*, Printice Hall of India, New Delhi
3. Adhikari, S., 1992: *Geographical Thought*, Chaitanya Pustak Allahabad
4. Abler, R., Adams, J. and Gould, P.P., 1971: *Spatial Organization: the Geographers' View of the World*, Prentice Hall, Englewood Cliff
5. Hussain, M.: *Human Geography*, Rawat Publications, Jaipur 3
6. Brunhes, J., 1920: *Human Geography*, edited by Isaisah Bowman
7. Hartshorne, R., 1939: *The Nature of Geography*, Rand Mckully, Chicago
8. Knox, P.L., 1975: *Social Well-being: A Spatial Perspective*, Oxford University
9. Smith, David M., 1977: *Human Geography: A Welfare Approach*, Edward Arnold, London
10. Chorley, R.J. and Hagget, P. (eds.) 1967: *Models in Geography*, Methuen, London
11. Hartshorne, R., 1959: *Perspective on the Nature of Geography*, Indians edition, Scientific Publishers, Jodhpur
12. Johnston, R.J. (ed): *The Dictionary of Human Geography*, Oxford, Basil, Blackwell
13. Harvey, D., 1969: *Explanation in Geography*, St. Martin Press, New York
14. Dikshit, R.D., 1994: *The Art and Science of Geography*, Printice Hall of India, New Delhi
15. Barry R. G. and Carleton A. M., 2001: *Synoptic and Dynamic Climatology*, Routledge, UK.
16. Barry R. G. and Corley R. J., 1998: *Atmosphere, Weather and Climate*, Routledge, New York.
17. Critchfield H. J., 1987: *General Climatology*, Prentice-Hall of India, New Delhi
18. Lutgens F. K., Tarbuck E. J. and Tasa D., 2009: *The Atmosphere: An Introduction to Meteorology*, Prentice-Hall, Englewood Cliffs, New Jersey.
19. Oliver J. E. and Hidore J. J., 2002: *Climatology: An Atmospheric Science*, Pearson Education, New Delhi.
20. Trewartha G. T. and Horne L. H., 1980: *An Introduction to Climate*, McGraw-Hill.
21. Lal, D. S. (2006): *Jalvayu Vigyan*, Prayag Pustak Bhavan, Allahabad
22. Bloom A. L., 2003: *Geomorphology: A Systematic Analysis of Late Cenozoic Landforms*, Prentice-Hall of India, New Delhi
23. Bridges E. M., 1990: *World Geomorphology*, Cambridge University Press, Cambridge.
24. Christopherson, Robert W., (2011), *Geosystems: An Introduction to Physical Geography*, 8 Ed., Macmillan Publishing Company
25. Kale V. S. and Gupta A., 2001: *Introduction to Geomorphology*, Orient Longman, Hyderabad.
26. Knighton A. D., 1984: *Fluvial Forms and Processes*, Edward Arnold Publishers, London.
27. Richards K. S., 1982: *Rivers: Form and Processes in Alluvial Channels*, Methuen, London.
28. Selby, M.J., (2005), *Earth's Changing Surface*, Indian Edition, OUP
29. Skinner, Brian J. and Stephen C. Porter (2000), *The Dynamic Earth: An Introduction to physical Geology*, 4th Edition, John Wiley and Sons
30. Thornbury W. D., 1968: *Principles of Geomorphology*, Wiley.
31. Gautam, A (2010): *Bhautik Bhugol*, Rastogi Publications, Meerut

DSC-2A

DSC-3A

AECC-1: English/Hindi/MIL
(Communication)

SECOND SEMESTER

Core Course: DSC-1B: General Cartography

Total Marks: 100

60(Th) + 20(P) + 20(IA)

Total Credit: 6 (Total Number of Class: 60)

Unit 1: Field of Cartography (20 class)

- Nature and scope of Cartography, trend of development and present day relevance of Cartography in Geography, traditional and digital cartography.
- The concept of shape, size, coordinate system, latitude and longitude, direction and distance of earth.

Unit 2: Fundamental Concepts in Cartography (20 class)

- Concept of Scale and Application, Map Scale and Types, Scale factor, Conversion of scale, Concept of least count in Vernier Scale.
- Concept of map, map Classification and Types, Thematic maps and their classification, Base map, Principles of Map Design and layout.
- Mapping techniques and generalization principles

Unit 3: Cartography and Data Representation (10 class)

- Concept of Geographical data representation through Chorochromatic, Choroschematic, Isopleths and Choropleth maps.
- Concept of spot heights, Bench Mark, Triangulation stations, Contours and their use in Topographical Maps of India.
- Cartogram and Diagrammatic Data Presentation by Line, Bar and Circle
- Point, Line and Areal Data representation through Cartographic Overlays.

Unit 4: Practical: (10 class)

- Graphical Construction of Plain, Comparative and Diagonal Scale.
- Construction of Thematic Maps with the help of physical and socio-economic geographical data.
- Geographical data representation with the help of Bar diagram, pie chart and Block diagram
- Preparation of Isopleth and Choropleth maps with the help of Geographical Data

Books Suggested:

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 Pryaogatamek Bhugol* , Central Book, Depot, Allahabad
12. Bhopal Singh R L and Duttta P K (2012) *Prayogatama Bhugol*, Central Book Depot, Allahabad.

DSC-2B

DSC-3B

AECC-2: Environmental Studies

THIRD SEMESTER

Core Course: DSC-1C: Human Cartography

Total Marks: 100

60(Th) + 20(P) + 20(IA)

Total Credit: 6 (Total Number of Class: 60)

Unit 1: Nature, Scope and Development of Human Geography (15 Class)

- Meaning, Scope, Branches and Approaches of Human Geography;
- Impact of environment on man; Human adaptation to environment: Eskimo, Masai and Bushman; Mode of living and emerging problems in different environments: cold desert, mountain, plain, hot desert, coastal and riverine lands.
- Evolution of man; Classification of races; Physical Characteristics of major racial (Caucasoid, Mongoloid and Negroid)

Unit 2: Population Geography (20 Class)

- Components of population growth; factors influencing distribution and density of population; Concept of population-resource relationship with reference to optimum population, over population and under population
- Definition, types, and causes and consequences of migration
- Malthus theory of population growth; and Demographic Transition Model.

Unit 3: Settlement Geography (10 Class)

- Meaning and scope of settlement geography.
- Factors influencing origin and growth of rural and urban settlements.
- Morphology and functional characteristics of rural and urban settlements.

Unit 4: Practical (15 Class)

- Mapping of major racial groups in the world.
- Mapping of linguistic and religious regions in the world.
- Trend of world population growth, major population density zones in the world
- Age-Sex pyramid
- Mapping Settlement Types and Pattern
- Determination of Spatial Mean and Median Centres of Settlements

Books Suggested:

1. Huntington, E., 1951: Principles of Human Geography, John Wiley & Sons, Inc, New York
2. Hussain, M., 1994: Human Geography, Rawat Publication, New Delhi.
3. Johnston, R.J. et al (eds.): The Dictionary of Human Geography, Basil Blackwell, Oxford.
4. Leong, G.C. and Morgan, G.C., 1992: Human and Economic Geography, Oxford University Press, Oxford
5. Chandna, R.C., 1986: A Geography of Population, Kalyani Publisher, New Delhi
6. Hagget, P., 1972: Geography: A Modern Synthesis, Harper & Row, New York
7. Strahler, A.N. & A.H. Strahler, 1976: Geography and Man's Environment, John Willey, New York
8. Park, C., 1997: The Environment, Routledge, London
9. Singh, S., 1991: Environmental Geography, Pustak Bhawan, Allahabad
10. Chhokas, K.B., Understanding Environment, Sage Publication.
11. Leong, G.C. and Morgan, G.C., 1992: Human and Economic Geography, Oxford University Press, Oxford
12. Chandna, R.C., 1986: A Geography of Population, Kalyani Publishers, New Delhi 18
13. Clarke, J.I., 1972: Population Geography, Pargamon Press, Oxford
14. Singh, R.L. and Sing, K.N. (eds), 1975: Readings in Rural Settlement Geography, BHU, Varanasi
15. Singh., R.Y., 1994: Geography of Settlement, Rawat Publication, Jaipur & Delhi
16. Zelinsky, W., 1966: A Prologue to Population Geography, Printice-Hall, Englewood Cliffs.
17. Hagget, P., 1972: Geography: A Modern Synthesis, Harper & Row, New York
18. Money, D.C., 1972: Patterns of Settlement, Evan Brothers, London

DSC-2C

DSC-3C

Skill Enhancement Course

Skill Enhancement Course: SEC-1: Statistical Methods in Geography

Total Marks: 50

40 (Th) + 10 (IA)

Total Credit: 2 (Total Number of Class: 30)

Unit 1: Nature of Geographic Data (20 class)

- Use of Data in Geography, Geographical Data Matrix, Significance of Statistical Methods in Geography; Sources of Data, Scales of Measurement (Nominal, Ordinal, Interval, Ratio).
- Tabulation and Descriptive Statistics their use in Geography: Frequencies, Cross Tabulation, Measures of Central Tendency (Mean, Median and Mode) Measures of Dispersion (Range, Quartile deviation, Deciles and Percentile, Mean Deviation, Standard Deviation and Relative Dispersion)

Unit 2: Quantitative Expression of Geographic Data (10 class)

- Use of Sampling Technique in Geography, Method of Sampling (Purposive, Random, Systematic and Stratified)
- Probability and Normal Distribution of Geographic Data
- Correlation and Regression analysis (Karl Pearson and Spearman's Rank method), Regression line and Regression Residuals.

Books Suggested:

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. Sarkar, A. (2013) *Quantitative geography: techniques and presentations*. Orient Black Swan Private Ltd., New Delhi
8. Silk J., 1979: *Statistical Concepts in Geography*, Allen and Unwin, London.
9. Spiegel M. R.: *Statistics, Schaum's Outline Series*.
10. Yeates M., 1974: *An Introduction to Quantitative Analysis in Human Geography*, McGraw Hill, New York.
11. Shinha, I. (2007) *Sankhyikibhugol*. Discovery Publishing House, New Delhi

FOURTH SEMESTER

Core Course: DSC-1D: Geography of India

Total Marks: 100

60 (Th) +20 (P) + 20 (IA)

Total Credit: 6 (Total Number of Class: 60)

Unit 1: Regional Basis of India (20 class)

- Locational entity of India, Strategic location of India,
- Physiographic division of India, Drainage system, Climate, Soil, Natural Vegetation

Unit 2: Social Basis of India (15 class)

- Population distribution, growth and Density of India
- Distribution of population by race, caste, religion, language, tribes and their correlates

Unit 3: Economic Basis of India (15 class)

- Agriculture: Problems of Indian Agriculture, Agricultural modernization and development in India and Agro-climatic regions of India.
- Industry: Development of major industrial sectors in India, industrial backward regions of India and regionalization of Industries throughout the country.
- Distribution and production pattern of major Industries (Iron and steel, cotton textile, petrochemicals, sugar, paper and cement industries), Industrial policies and industrial trade.
- Transport: Roads and railways, air transport, water and pipe transport

Unit 4: Practical: (10 class)

- Mapping of Physiographic, climatic regions and Agricultural regions of India,
- Mapping of major drainage system of India
- Trend of population growth, population density and religious composition of India
- Preparation of Age-Sex pyramid of population data of India
- Distribution pattern of major industries of India.

Book Suggested:

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. Sdyasuk Galina and P Sengupta (1967): *Economic Regionalisation of India*, Census of India
4. Sharma, T. C. 2003: *India - Economic and Commercial Geography*. Vikas Publ., New Delhi.
5. Singh R. L., 1971: *India: A Regional Geography*, National Geographical Society of India.
6. Singh, Jagdish 2003: *India - A Comprehensive & Systematic Geography*, Gyanodaya Prakashan, Gorakhpur.
7. Tirtha, Ranjit 2002: *Geography of India*, Rawat Publs., Jaipur & New Delhi.
8. Pathak, C. R. 2003: *Spatial Structure and Processes of Development in India*. Regional Science Assoc., Kolkata.
9. Tiwari, R.C. (2007) *Geography of India*. Prayag Pustak Bhawan, Allahabad
10. Sharma, T.C. (2013) *Economic Geography of India*. Rawat Publication, Jaipur.

DSC-2D

DSC-3D

Skill Enhancement Course

Skill Enhancement Course: SEC-2: Research Methodology

Total Marks: 50

40 (Th) + 10 (IA)

Total Credit: 2 (Total Number of Class: 30)

.Unit 1: Fundamentals of Research (15 class)

- Concept of Research Definition of research, identification of research problem – major criteria and considerations, Essentials of formulating research questions and hypothesis
- Key methods and skills in Geography - Literacy (Descriptive /Qualitative), Numeracy (Quantitative) and Graphicacy (Cartographic): Their significance, need and limitations
- Sources of geographic data, data processing, analysis and presentation

Unit 2: Field Work in Geographical Studies (15 class)

- Literature Review and Referencing Systems in research - its needs, functions, significance and limitations;
- Introductory idea on use of theory and model in Geography
- Research and field report writing - Guiding principles, reporting components, techniques

Books Suggested:

1. Burrough, P. A. (1998): Principles of Geographical Information Systems for Land Resources Assessment, Oxford University Press.
2. Burrough P. A. and McDonnell R. A., (2000): Principles of Geographical Information Systems–Spatial Information Systems and Geostatistics, Oxford University Press.
3. Chorley, R. J., Hagget, P. (1979): Integrated Models in Geography, Methuen & Co. Ltd., London.
4. Gonjalez, R. C., Woods, R.E. (2000): Digital Image Processing, Addison- Wesley Longman (Singapore), Pvt. Ltd, Delhi-92.
5. Hammond, R. and McCullagh, P. (1965): Statistical Methods in Geographical Studies, Oxford University Press.
6. Jensen J. R., 2004: Introductory Digital Image Processing: A Remote Sensing Perspective, Prentice Hall.
7. Jensen, John R. (2011): Remote Sensing of Environment: An Earth Resource Perspective, Pearson Education India, Noida
8. King, L. J., (1969): Statistical Analysis in Geography, Prentice-Hall.
9. Mahmood, A.: Quantitative Methods in Geography, Rajesh Publications., New Delhi.
10. Mathew, J. A., David, H.J., (2008): Geography: A Very Short Introduction, Oxford, New York
11. Pal S. K., (1998): Statistics for Geoscientists, Tata McGraw Hill, New Delhi.

FIFTH SEMESTER

Discipline Specific Elective: DSE-1A: Soil and Biogeography

Total Marks: 100

60(Th)+20(P)+20(IA)

Total Credit: 6 (Total Number of Class: 60)

Unit 1: Nature and Scope of Soil Geography (15 class)

- Definition and Scope of Soil Geography, Soil Formation, Characteristics and Properties, Soil as life supporting system;
- Soil profile (Soil horizon) – their characteristics and significance; Processes and factors of soil formation;

Unit 2: Soil and Land Management (15 class)

- Physical and Chemical properties of soil: Soil texture, Structure and Moisture, Soil colour, pH value, Organic Matter and NPK.
- Processes and Controlling factors of soil erosion, Various measures of soil conservation,
- Principles of soil classification: Genetic School and USDA

Unit 3: Concepts of Biogeography (15 class)

- Definition and scope of biogeography, Concept and Components of Biosphere, vertical and horizontal limits of biosphere;
- Concept of Ecology and Ecosystem, Types of Ecosystem, Trophic Structure, Food Chain and Food Web, Energy flow in Ecosystem.
- Ecological Aspects of Biogeography: Bio-geo-chemical cycles, concepts of biomes, Ecotone and Community.
- Concept of biodiversity, its types and conservational issues, Nature and distribution of biodiversity in N.E. India and Assam; Man as an agent of environmental/ecological change

Unit 4: Practical (15 class)

- Construction and interpretation of soil profile with the data derived from the field (college campus/ river site/ foot hill, etc.)
- Drawing and interpretation of soil map of India/North East India
- Mapping of vegetation of India/north east India, Representation of soil-vegetation relationship along selected cross-section of India and North-East India Biogeographic regions of the world
- Mapping of the national parks and sanctuaries of India with the major species therein.
- Showing location of the megalopolis, and metropolitan and port cities of the world

Book Suggested:

1. Bunting, B. T., 1967: The Geography of Soil, Hutchinson, London.
2. Foth, H. D. and Turk, L. M. 1972: Fundamentals of Soil Science, John Wiley, New York.
3. GovindaRajan, S. V. and Gopala Rao, H. G., 1978: Studies on Soils of India, Vikas, New Delhi.
4. Goudie, Andrew, 1981: The Human Impact, Basil Blackwell, Oxford.
5. Hussain, M. (ed), 1994: Biogeography (Part I&II), Anmol Publications Pvt. Ltd., New Delhi.
6. Newbiggin: Plant and Animal Geography.
7. Pears, N., 1985: Basic Biogeography. 2nd Edition, Longman, London.
8. Robinson, H., 1982: Biogeography, E.L.B.S., Mc Donald & Evans, London.

DSE-2A

Generic Elective: GE-1: Disaster Management

Total Marks: 100

60 (Th) +20(R) + 20(IA)

Total Credit: 6 (Total Number of Class: 60)

Unit 1: Fundamentals of Disaster Management (12 class)

- Definition and Concepts: Hazards, Disasters; Risk and Vulnerability; Classification of Disaster.
- Concept of Disaster Resilience, Do's and Don'ts During and Post Disasters
- Indigenous Knowledge and Community based Disaster Management.

Unit II: Natural Factors (18 class)

- Disasters in India: (a) Flood: Causes, Impact and Distribution; Landslide: Causes, Impact, and Distribution; Drought: Causes, Impact and Distribution
- Disasters in India: (b) Earthquake and Tsunami: Causes, Impact and Distribution
- Cyclone: Causes, Impact and Distribution
- Major Earthquake, flood and landslide with special reference to North East India

Unit III: Anthropogenic Factors (20 class)

- Manmade disasters: Causes, Impact, Distribution and Mapping
- Urban Flooding, forest fire; Issues, problems and mitigation with special reference to India
- Response and Mitigation to Disasters: Mitigation and Preparedness, National Disaster Management Authority (NDMA) and National Institute of Disaster Management (NIDM)

Unit IV: Project Report (10 class)

- A report on risk and response of Flood, Drought, Forest Fire, Cyclone, Landslide, Earthquake etc.

Book Suggested:

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. (ed.), (2006) Natural Hazards and Disaster Management: Vulnerability and Mitigation, Rawat Publications, New Delhi.
5. Sinha, A. (2001). Disaster Management: Lessons Drawn and Strategies for Future, New United Press, New Delhi.
6. Stoltman, J.P. et al. (2004) International Perspectives on Natural Disasters, Kluwer Academic Publications. Dordrecht.
7. Singh Jagbir (2007) "Disaster Management Future Challenges and Opportunities", Publisher- I.K. International Pvt. Ltd. S-25, Green Park Extension, Uphaar Cinema Market, New Delhi, India (www.ikbooks.com).

**Skill Enhancement Course: SEC-3: Basics of Remote Sensing (RS) and
Geographic Information System (GIS)**

Total Marks: 50

30 (Th) + 10 (Pr) +10 (IA)

Total Credit: 2 (Total Number of Class: 30)

Unit 1: Fundamentals of Remote Sensing and GIS (12 class)

- Remote Sensing and GIS: Definition, Components and Principles, Electro Magnetic Radiation, Interaction with Atmosphere and Earth Surface
- Remote Sensing, Platforms and Types, Global Positioning System (GPS) Principles and application
- Aerial Photography: Types and Geometry of Aerial Photograph, Satellites (Landsat and IRS) and Sensors, Type of resolution.

Unit 2: Geographic Information System (10 class)

- GIS Data Structures: Types (spatial and Non-spatial), Raster and Vector Data Structure
- Elements of Image interpretation and application of Remote Sensing and GIS: Land use/ Land Cover, Urban Sprawl Analysis; Forests Monitoring.

Unit 3: Practical (8 class)

- Geo-Referencing the map/Toposheet, Drawing base map from Satellite imagery/Toposheet,
- Mapping point, line and polygon features, Land use/ Land Cover mapping (Supervised and Un- supervised), Isopleths, Choropleth and Chorochromatic mapping, Proportional mapping,

Books Suggested:

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. Lillesand T. M., Kiefer R. W. and Chipman J. W., 2004: *Remote Sensing and Image Interpretation*, 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.

SIXTH SEMESTER

Discipline Specific Elective: DSE-1B: Social and Political Geography

Total Marks: 100

60(Th)+20(P)+20(IA)

Total Credit: 6 (Total Number of Class: 60)

Unit 1: Situating Social Geography (20 Class)

- Origin, Nature and Scope of Social Geography,
- Concept of Social Space: First, Second and third Space,
- Social Categories: Defining Caste, Class, Religion, Ethnicity and Gender and their Spatial Underpinnings.
- Concepts of Social differentiation and integration and social change.

Unit 2: Political Geography and Geopolitics (20 Class)

- Definition and Scope of Political Geography, Geopolitics;
- State, Nation and Nation State – Concept of Nation, State and Nation State, Attributes of State –Frontiers, Borders, Shape, Size, Territory and Sovereignty, Nation Building, Concepts of Lebensraum, Heartland and Rimland, Colonialism, desalinization and Neocolonialism,

Unit 3: Geography of Welfare and Well-being (10 Class)

- Social Geographies of Inclusion and Exclusion, Slums, Gated Communities, Communal Conflicts and Crime.
- Political Geography of Resource Conflicts – Water Sharing Disputes, Disputes and Conflicts Related to Forest Rights and Minerals, issues of land locked states in Asia and Africa.

Unit 4: Practical (10 Class)

- Mapping Frontiers, buffer zone, boundaries and border zones; boundary problems with reference to India and North East India
- Showing distribution of displaced people of India by using cartograms (with reference to Dams) and Special Economic Zones.

Books Suggested:

1. Ahmed A., 1999: *Social Geography*, Rawat Publications.
2. Casino V. J. D., Jr., (2009) *Social Geography: A Critical Introduction*, Wiley Blackwell.
3. Panelli R., 2004: *Social Geographies: From Difference to Action*, Sage.
4. Sen, Jyotirmoy: A text book of Social and Cultural Geography
5. Taher, M 1994: An Introduction to Social Geography, NEIGS
6. Ahmed, A: 1999 Social Geography, Rawat Publications Jaipur & New Delhi
7. Dikshit, R.D.1982: Political Geography – A Contemporary Perspective, Tata McGraw Hill Publishing Co. Ltd, NewDelhi
8. Carlson: Geography and World Politics
9. Taylor, P. J., 1989: Political Geography, Longman, London
10. Sukhuwal, B.J., 1979: Modern Political Geography of India, Sterling, New Delhi
11. Adhikari 1996: Political Geography, Rawat Publications Jaipur & New Delhi

DSE-2B

Generic Elective: GE-2: Sustainable Development

Total Marks: 100

60 (Th) +20(R) + 20(IA)

Total Credit: 6 (Total Number of Class: 60)

Unit I: Fundamentals of Sustainable Development. (12 class)

- Sustainable Development: Definition, Concept, Components, Limitations and Historical Background.
- Sustainable development and Environment conservation
- The Millennium Development Goals: National Strategies and International Experiences

Unit II: Regional Development (20 class)

- Sustainable Regional Development: Need and examples from different Ecosystems.
- Inclusive Development: Education, Health and Environment in developed and developing countries
- The human right to health; Poverty and disease; The Challenges of Universal Health Coverage; Policies and Global Cooperation for Climate Change

Unit III: Sustainable Development Policies and Programme (18 class)

- Sustainable Development Policies and Programme: The proposal for SDGs at Rio 2012;
- Sustainable Development Goals; Goal-Based Development; Financing for Sustainable Development;
- Principles of Good Governance; National Environmental Policy, Clean Development Mechanism (CDM);

Unit IV: Project Report (10 class)

- A report on the use of modern techniques in agricultural practice and awareness on sustainability.
- A report on Awareness on Solid Waste management and sustainability in nearby area.

Book Suggested:

1. Agyeman, Julian, Robert D. Bullard and Bob Evans (Eds.) (2003) *Just Sustainability: 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.
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 de-growth: 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, pp 1-25.
8. Robbins, Paul (2004) *Political Ecology: A Critical Introduction*. Blackwell Publishing.
9. 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.

Skill Enhancement Course: SEC-4: Field Techniques and Surveying

Total Marks: 50

20 (P) + 20 (R) +10 (IA)

Total Credit: 2 (Total Number of Class: 30)

Unit 1: Map Projection (30 class)

- Definition, need of Map Projection, Principles, Function and Classification of map projection, Choice of Map Projection.
- Graphical Construction of Zenithal group of projection both polar and equatorial case.
- Concept and Principles of Geodetic and Plane Surveying, Principles of triangulation
- Principles and techniques of surveying by Plane Table (Radiation and Intersection Method), Prismatic Compass (Closed Traverse and Open Traverse).
- Principle of Enlargement and Reduction of Maps by Graphical and Instrumental Methods.

Unit 2: Dissertation

- Report on Physical characteristics of the nearby Physiographic features or Socio-Economic characteristics of population groups.

Books Suggested:

1. Campbell, J., 1984: Introductory Cartography, Prentice Hall Inc., Englewood Cliff
2. Misra, R.P. and Ramesh, A., 1995: Fundamentals of Cartography, Concept Publishing Company, New Delhi
3. Robinson, A.H., et al: Elements of Cartography, John Wiley & Sons, New York
4. Raisz, E. : Principles of Cartography, McGraw Hills, London
5. Kenetkar, T.P. and Kulkarni, S.U.: Surveying and Levelling, Vol. I & II, VidyarthiGrithaPrakashan, Pune
6. Kellaway, G.P.: Map Projection, Methuen & Co., London
7. Steers, J.A., 1965: An Introduction to the Study of Map Projection, University of London, London
8. Bygott, J., An Introduction to Map work and Practical Geography 17
9. Talukder, S., 2008: Introduction to Map Projections, Eastern Book House, Guwahati.
10. Mahmood, A., 1999: Statistical Methods in Geographical Studies, Rajesh Publications, New Delhi.
11. Hammond, R. and McCullagh, P. (1965): Quantitative Techniques in Geography, Clarendon Press, Oxford Sarkar, Ashis, Practical Geography: A Systematic Approach, Orient Longman Pvt. Ltd., Kolkata.
12. Elhance, D.N., 1972: Fundamentals of Statistics, KitabMahal, Allahabad
13. Monkhouse, F.J. & Wilkinson, H.R., 1989: Maps & Diagrams, B.I. Publications, New Delhi
14. Gregory, S., 1963: Statistical Methods and Geographers, Longman, London
15. Singh, R. & Singh, R.: Map Work & Practical Geography, Central Book Depot, Allahabad.
16. Sarkar, Ashis, Practical Geography: A Systematic Approach, Orient Longman Pvt. Ltd., Kolkata.

Abbreviation

DSC: Discipline Specific Core

DSE: Discipline Specific Elective

AECC: Ability Enhancement Compulsory Course

SEC: Skill Enhancement Course

GE: Generic Elective

Th: Theory

P: Practical

IA: Internal Assessment

R: Report

L: Lecture

T: Teaching

Mark Distribution

- | | |
|---|------------|
| 1. Discipline Specific Core Paper (DSC)
Th (60) + P (20) + IA (20) | Total: 100 |
| 2. Discipline Specific Elective paper (DSE)
Th (60) + P (20) + IA (20) | Total: 100 |
| 3. Generic Elective Paper (GE)
Th (60) + R (20) + IA (20) | Total: 100 |
| 4. Skill Enhancement Course Paper (SEC)
i. SEC-1 and SEC-2 : Th (40) + IA (10)
ii. SEC-3 : Th (30) + P(10) + IA (10)
iii. SEC-4 : P (30) + R (10) + IA (10) | Total: 50 |