

UNIVERSITY OF KALYANI

**Syllabus for B.A/B.Sc. (General/ Program) Course
in
Geography**

**According to the
Choice Based Credit System (CBCS)
and
Semester System: I-VI**

WITH EFFECT FROM THE ACADEMIC SESSION

2018-2019

**COURSE STRUCTURE UNDER CHOICE BASED CREDIT SYSTEM FOR B.A. GENERAL/
PROGRAM COURSE IN GEOGRAPHY**

Semester-wise course structure

(6 Credit: 75 Marks)

SEMESTER-I				
Course Code	Course Nature	Course Title	Course wise Class (L+T+P)	Credit
GEO/G/CC/T/01	Core	GEOTECTONICS AND GEOMORPHOLOGY AND SCALE AND CARTOGRAPHY	60L	4
GEO/G/CC/P/01			60P	2
-	Core	As to be offered by other departments	-	6
-	Language Core	Lang 1-1	-	6
-	AECC	Environmental studies	-	2
Total		4 courses	-	20
SEMESTER-II				
Course Code	Course Nature	Course Title	Course wise Class (L+T+P)	Credit
GEO/G/CC/T/02	Core	CLIMATOLOGY, SOIL AND BIOGEOGRAPHY AND SURVEYING AND LEVELLING	60L	4
GEO/G/CC/P/02			60P	2
-	Core	As to be offered by other departments	-	6
-	Language Core	Lang 2-1	-	6
-	AECC	Communicative English/ MIL	-	2
Total		4 courses	-	20
SEMESTER-III				
Course Code	Course Nature	Course Title	Course wise Class (L+T+P)	Credit
GEO/G/CC/T/03	Core	HUMAN GEOGRAPHY AND MAP PROJECTION AND MAP INTERPRETATION	60L	4
GEO/G/CC/P/03			60P	2
-	Core	As to be offered by other departments	-	6
-	Core	Core Lang 1-2	-	6
(GEO/G/SEC/P/01/A or GEO/G/SEC/P/01/B)	SEC	COMPUTER BASICS AND COMPUTER APPLICATIONS OR REMOTE SENSING	60P	2
Total		4 courses	-	20

**COURSE STRUCTURE UNDER CHOICE BASED CREDIT SYSTEM FOR B.A. GENERAL/
PROGRAM COURSE IN GEOGRAPHY**

Semester-wise course structure

(6 Credit: 75 Marks)

SEMESTER-IV				
Course Code	Course Nature	Course Title	Course wise Class (L+T+P)	Credit
GEO/G/CC/T/04	Core	ENVIRONMENTAL GEOGRAPHY AND FIELD WORK	60L	4
GEO/G/CC/P/04			60P	2
-	Core	As to be offered by other departments	-	6
-	Language Core	Core Lang2-2	-	6
(GEO/G/SEC/P/02/A or GEO/G/SEC/P/02/B)	SEC	ADVANCE SPATIAL STATISTICAL TECHNIQUES OR FIELD WORK	60P	2
Total		4 courses	-	20
SEMESTER-V				
Course Code	Course Nature	Course Title	Course wise Class (L+T+P)	Credit
GEO/G/DSE/T/01/A or GEO/G/DSE/T/01/B	DSE	Geography of India or Economic Geography	75L+15T	6
-	DSE	As to be offered by other departments	-	6
GEO/G/GE/T/01	GE (Any discipline other than discipline 1 and 2)	Disaster Management	75L+15T	6
(GEO/G/SEC/P/03/A or GEO/G/SEC/P/03/B)	SEC	FIELD TECHNIQUES AND SURVEY BASED PROJECT REPORT OR COLLECTION, MAPPING AND INTERPRETATION OF CLIMATIC DATA	60P	2
Total		4 courses	-	20
SEMESTER-VI				
Course Code	Course Nature	Course Title	Course wise Class (L+T+P)	Credit
GEO/G/DSE/T/02/A or GEO/G/DSE/T/02/B	DSE	DISASTER MANAGEMENT OR GEOGRAPHY OF TOURISM	75L+15T	6
-	DSE	As to be offered by other departments	-	6
GEO/G/GE/T/02	GE (Any discipline other than discipline 1 and 2)	Sustainable Development	75L+15T	6
(GEO/G/SEC/P/04/A or GEO/G/SEC/P/04/B)	SEC	COLLECTION, MAPPING AND INTERPRETATION OF PEDOLOGICAL DATA OR ROCKS AND MINERALS AND THEIR MEGASCOPIIC IDENTIFICATION	60P	2
Total		4 courses	-	20
Total (All semesters)		24 courses	-	120

N.B.: Core Course (CC) in Geography of Semester I, II, III & IV may be offered as GE Papers for other subjects (both Hons. & General/ Prog. Course).

**COURSE STRUCTURE UNDER CHOICE BASED CREDIT SYSTEM FOR B.Sc. GENERAL/
PROGRAM COURSE IN GEOGRAPHY**

Semester-wise course structure

(6 Credit: 75 Marks)

SEMESTER-I				
Course Code	Course Nature	Course Title	Course wise Class (L+T+P)	Credit
GEO/G/CC/T/01	Core	GEOTECTONICS AND GEOMORPHOLOGY AND SCALE AND CARTOGRAPHY	60L	4
GEO/G/CC/P/01			60P	2
-	Core	As to be offered by other departments	-	6
-	Core	As to be offered by other departments	-	6
-	AECC	Environmental studies	-	2
Total		4 courses	-	20
SEMESTER-II				
Course Code	Course Nature	Course Title	Course wise Class (L+T+P)	Credit
GEO/G/CC/T/02	Core	CLIMATOLOGY, SOIL AND BIOGEOGRAPHY AND SURVEYING AND LEVELLING	60L	4
GEO/G/CC/P/02			60P	2
-	Core	As to be offered by other departments	-	6
-	Core	As to be offered by other departments	-	
-	AECC	Communicative English/ MIL	-	2
Total		4 courses	Total	20
SEMESTER-III				
Course Code	Course Nature	Course Title	Course wise Class (L+T+P)	Credit
GEO/G/CC/T/03	Core	HUMAN GEOGRAPHY AND MAP PROJECTION AND MAP INTERPRETATION	60L	4
GEO/G/CC/P/03			60P	2
-	Core	As to be offered by other departments	-	6
-	Core	As to be offered by other departments	-	6
(GEO/G/SEC/P/01/A or GEO/G/SEC/P/01/B)	SEC	COMPUTER BASICS AND COMPUTER APPLICATIONS OR REMOTE SENSING	60P	2
Total		4 courses	-	20

**COURSE STRUCTURE UNDER CHOICE BASED CREDIT SYSTEM FOR B.Sc. GENERAL/
PROGRAM COURSE IN GEOGRAPHY**

Semester-wise course structure

(6 Credit: 75 Marks)

SEMESTER-IV				
Course Code	Course Nature	Course Title	Course wise Class (L+T+P)	Credit
GEO/G/CC/T/04	Core	ENVIRONMENTAL GEOGRAPHY AND FIELD WORK	60L	4
GEO/G/CC/P/04			60P	2
-	Core	As to be offered by other departments	-	6
-	Core	As to be offered by other departments	-	6
(GEO/G/SEC/P/02/A or GEO/G/SEC/P/02/B)	SEC	ADVANCE SPATIAL STATISTICAL TECHNIQUES OR FIELD WORK	60P	2
Total		4 courses	-	20
SEMESTER-V				
Course Code	Course Nature	Course Title	Course wise Class (L+T+P)	Credit
GEO/G/DSE/T/01/A or GEO/G/DSE/T/01/B	DSE	Geography of India or Economic Geography	75L+15T	6
-	DSE	As to be offered by other departments	-	6
GEO/G/GE/T/01	GE (Any discipline other than discipline 1 and 2)	Disaster Management	75L+15T	6
(GEO/G/SEC/P/03/A or GEO/G/SEC/P/03/B)	SEC	FIELD TECHNIQUES AND SURVEY BASED PROJECT REPORT OR COLLECTION, MAPPING AND INTERPRETATION OF CLIMATIC DATA	60P	2
Total		4 courses	-	20
SEMESTER-VI				
Course Code	Course Nature	Course Title	Course wise Class (L+T+P)	Credit
GEO/G/DSE/T/02/A or GEO/G/DSE/T/02/B	DSE	DISASTER MANAGEMENT OR GEOGRAPHY OF TOURISM	75L+15T	6
-	DSE	As to be offered by other departments	-	6
GEO/G/GE/T/02	GE (Any discipline other than discipline 1 and 2)	Sustainable Development	75L+15T	6
(GEO/G/SEC/P/04/A or GEO/G/SEC/P/04/B)	SEC	COLLECTION, MAPPING AND INTERPRETATION OF PEDOLOGICAL DATA OR ROCKS AND MINERALS AND THEIR MEGASCOPIIC IDENTIFICATION	60P	2
Total		4 courses	-	20
Total (All semesters)		24 courses	-	120

N.B.: Core Course (CC) in Geography of Semester I, II, III & IV may be offered as GE Papers for other subjects (both Hons. & General/ Prog. Course).

B.A. / B.Sc. (General/ Program) Course in Geography

SEMESTER-I

CORE COURSE (CC):

CC/01: Geotectonics and Geomorphology and Scale and Cartography 6 Credits

GEO/G/CC/T/01: (Theory): Geotectonics and Geomorphology 4 Credits

1. Lithosphere – Internal Structure of Earth based on Seismic Evidence
2. Weathering: Types and Related Landforms
3. Plate Tectonics and its Associated Landforms
4. Landform Development in Arid Regions
5. Landform Development in Glaciated Regions
6. Development of Fluvial Landforms
7. Fluvial Cycle of Erosion – Davis and Penck
8. Hydrosphere: Hydrological Cycle, Ocean Bottom Relief Features, Tides and Ocean Currents

Reference Books:

- Conserva, H. T., 2004: Illustrated Dictionary of Physical Geography, Author House, USA
- Gabler, R. E., Petersen, J. F., and Trapasso, L. M., 2007: Essentials of Physical Geography (8th Edition), Thompson, Brooks/Cole, USA
- Garrett, N., 2000: Advanced Geography, Oxford University Press
- Goudie, A., 1984: The Nature of the Environment: An Advanced Physical Geography, Basil Blackwell Publishers, Oxford
- Hamblin, W. K., 1995: Earth's Dynamic System, Prentice Hall, NJ
- Husain, M., 2002: Fundamentals of Physical Geography, Rawat Publications, and Jaipur
- Monkhouse, F. J., 2009: Principles of Physical Geography, Platinum Publishers, Kolkata
- Singh, S. 1998: Geomorphology, Prayag Pustak, Allahabad
- Strahler, A. N., and Strahler, A. H., 2008: Modern Physical Geography, John Wiley & Sons, New York
- Thornbury, W. D., 1969: Principles of Geomorphology, Wiley

GEO/G/CC/P/01: (Practical): Scale and Cartography 2 Credits

1. Map Scale: Types and Application
2. Linear and Comparative Scale
3. Representation of Data: Dot, Proportional Circles, Choropleth, Flow Diagram
4. Taylor's Climograph and Hythergraph

Reference Books:

- Dent, B. D., 1999: Cartography: Thematic Map Design, (Vol. 1), McGraw Hill
- Gupta, K. K., and Tyagi, V. C., 1992: Working with Maps, Survey of India, DST, New Delhi
- Mishra, R. P., and Ramesh A., 1989: Fundamentals of Cartography, Concept Publishing
- Robinson, A., 1953: Elements of Cartography, John Wiley
- Sharma, J. P., 2010: Prayogic Bhugol, Rastogi Publishers
- Singh, R. L., and Singh, R. P. B., 1999: Elements of Practical Geography, Kalyani Publishers
- Steers, J. A., 1965: An Introduction to the Study of Map Projections, University of London

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SEMESTER-II

CC/02: Climatology, Soil and Biogeography and Surveying and Levelling 6 Credits

GEO/G/CC/T/02: (Theory): Climatology, Soil and Biogeography 4 Credits

1. Elements of Weather and Climate; Thermal and Chemical Composition and Layering of the Atmosphere
2. Heat Balance, Pressure Belt and Planetary Wind Circulation System
3. Forms of Precipitation and Types of Rainfall
4. Tropical and Temperate Cyclones, Climatic Classification (Koppen)
5. Definition of Soil; Physical and Chemical Properties of Soil (Soil Texture, Colour and pH)
6. Soil Forming Factors; Soil Formation (Podzol and Laterite)
7. Definition of Biosphere and Biogeography; Meaning of Ecology, Ecosystem, Environment, Ecotone, Communities, Habitats and Biotopes
8. Environmental Problems and Management: Air Pollution, Bio-diversity Loss, Solid and Liquid Waste

Reference Books:

- Barry, R. G., and Carleton, A. M., 2001: Synoptic and Dynamic Climatology, Routledge, UK
- Barry, R. G., and Chorley, R. J., 1998: Atmosphere, Weather and Climate, Routledge, New York
- Critchfield, H. J., 1987: General Climatology, Prentice-Hall of India, New Delhi
- Lutgens, F. K., Tarbuck, E. J., and Tasa, D., 2009: The Atmosphere: An Introduction to Meteorology, Prentice-Hall, Englewood Cliffs, New Jersey
- Oliver, J. E., and Hidore, J. J., 2002: Climatology: An Atmospheric Science, Pearson Education, New Delhi
- Trewartha, G. T., and Horne, L. H., 1980: An Introduction to Climate, McGraw

GEO/G/CC/P/02: (Practical): Surveying and Levelling 2 Credits

1. Definition and Classification of Surveying
2. Open and Close Traversing by Prismatic Compass
3. Drawing of Longitudinal Profile by Dumpy Level

Reference Books:

- Singh, R. L., and Singh, R. P. B., 1999: Elements of Practical Geography, Kalyani Publishers
- Sarkar, A., 2015: Practical Geography: A Systematic Approach. Orient Black Swan Private Ltd., New Delhi

B.A. / B.Sc. (General/ Program) Course in Geography

SEMESTER-III

CC/03: Human Geography and Map Projection and Map Interpretation 6 Credits

GEO/G/CC/T/03: (Theory): Human Geography 4 Credits

1. Definition, Nature, Major Subfields, Contemporary Relevance
2. Space and Society: Cultural Regions; Race; Religion and Language
3. Population: Population Growth and Demographic Transition Theory
4. Types of Population Migration with Reference to India
5. World Population Distribution and Composition (Age, Gender and Literacy)
6. Settlements: Types and Patterns of Rural Settlements
7. Classification of Urban Settlements; Functional Classification of Towns

Reference Books:

- Chandna, R. C., 2010: Population Geography, Kalyani Publisher
- Daniel, P.A., and Hopkinson, M. F., 1989: The Geography of Settlement, Oliver & Boyd, London
- Johnston, R., Gregory, D., Pratt, G. et al., 2008: The Dictionary of Human Geography, Blackwell Publication
- Jordan-Bychkov et al., 2006: The Human Mosaic: A Thematic Introduction to Cultural Geography. W. H. Freeman and Company, New York
- Ghosh, S., 2015: Introduction to Settlement Geography. Orient Black Swan Private Ltd., Kolkata

GEO/G/CC/P/03: (Practical): Map Projection and Map Interpretation 2 Credits

1. Simple Conical Projection with One Standard Parallel
2. Cylindrical Equal Area Projection
3. Interpretation of Topographical Maps: relation between Physiography, Drainage and Settlement
4. Interpretation of Weather Maps (Pre-Monsoon, Monsoon and Post Monsoon)

Reference Books:

- Dent, B. D., 1999: Cartography: Thematic Map Design, (Vol. 1), McGraw Hill
- Gupta, K. K., and Tyagi, V. C., 1992: Working with Maps, Survey of India, DST, New Delhi
- Mishra, R. P., and Ramesh, A., 1989: Fundamentals of Cartography, Concept Publishing
- Robinson, A., 1953: Elements of Cartography, John Wiley
- Sharma, J. P., 2010: Prayogic Bhugol, Rastogi Publishers
- Singh, R. L., and Singh R. P. B., 1999: Elements of Practical Geography, Kalyani Publishers
- Steers, J. A., 1965: An Introduction to the Study of Map Projections, University of London

SKILL ENHANCEMENT COURSE (SEC):

SEC/01: Computer Basics and Computer Applications OR Remote Sensing 2 Credits

GEO/G/SEC/P/01/A: (Practical): Computer Basics and Computer Applications 2 Credits

1. Numbering Systems; Binary Arithmetic
2. Data Computation, Storing and Formatting in Spreadsheets: Computation of Rank, Mean, Median, Mode, Standard Deviation, Moving Averages, Derivation of Correlation, Coefficient of Variation , Regression
3. Preparation of Annotated Diagrams and its Interpretation: Scatter Diagram and Histogram
4. Internet Surfing: Generation and Extraction of Information

Reference Books:

- Bartee, T. C., 1977: Digital Computer Fundamental; McGraw Hill
- Blissmer, 1996: Working with MS Word; Houghton Mifflin Co
- Chauhan, S., Chauhan, A., and Gupta, K., 2006: Fundamental of Computer; Firewall Media
- Flake, L. J., McClintock, C. E., and Turner, S., 1989: Fundamental of Computer Education; Wordsworth Pub. Co
- Johnson, S., 2007: Microsoft Power Point 2007; Pearson Paravia Bruno
- Leon, A., and Leon, M., 1999: A Beginners Guide to Computers, Vikas
- Leon, A., and Leon, M., 1999: Introduction to Computer, USB Publishers' Distributors Ltd
- Leon, A., and Leon, M., 1999: Introduction to Computer, USB Publishers' Distributors Ltd
- Malvino, A. P., Leach, D. P., 1981: Digital Principles and Applications; Tata McGraw Hill
- Mano, M. M., and Kime, C. R., 2004: Logic and Computer Design Fundamental; Prentice Hall
- Rajaraman, V., 2003: Fundamentals of Computer, Prentice Hall Publisher
- Rajaraman, V., 2008: Computer Primer; Prentice Hall of India Pvt. Ltd
- Sarkar, A., and Gupta, S. K., 2002: Elements of computer Science, S Chand and Company, New Delhi
- Sarkar, A., and Gupta, S. K., 2002: Elements of Computer Science, S Chand and Company, New Delhi
- Shepard, A., 2007: Perfect Pages; Shepard Publications
- Tyson, H. L., 2007: Microsoft Word 2007 Bible; John Wiley
- Walkenbach, J., 2007: Excel 2007 Bible; John Wiley

OR

GEO/G/SEC/P/01/B: (Practical): Remote Sensing

2 Credits

1. Concepts and Principles of Remote Sensing (RS): Classification of RS Satellites and Sensors
2. Sensor Resolutions and Their Application with reference to IRS and Landsat Missions, Image Referencing Schemes and Data Acquisition
3. Preparation of False Colour Composites (FCC) from IRS LISS-III and Landsat TM, Landsat ETM; Principles of Image Rectification and Enhancement
4. Principles of Image Interpretation and Feature Extraction, Preparation of Inventories of Landuse/ landcover Features from Satellite Images

*A Project File consisting of four exercises on the above themes is to be submitted

Reference Books:

- Bhatta, B., 2008: Remote Sensing and GIS, Oxford University Press, New Delhi
- Campbell, J. B., 2007: Introduction to Remote Sensing, Guildford Press
- Jensen, J. R., 2005: Introductory Digital Image Processing: A Remote Sensing Perspective, Pearson Prentice-Hall
- Joseph, G., 2005: Fundamentals of Remote Sensing, United Press India
- Lillesand, T. M., Kiefer, R. W., and Chipman, J. W., 2004: Remote Sensing and Image Interpretation, Wiley. (Wiley Student Edition)
- Li, Z., Chen, J., and Batsavias, E., 2008: Advances in Photogrammetry, Remote Sensing and Spatial Information Sciences CRC Press, Taylor and Francis, London
- Mukherjee, S., 2004: Textbook of Environmental Remote Sensing, Macmillan, Delhi
- Nag, P., and Kudra, M., 1998: Digital Remote Sensing, Concept, New Delhi
- Singh, R. B., and Murai, S., 1998: Space-informatics for Sustainable Development, Oxford and IBH Pub

B.A. / B.Sc. (General/ Program) Course in Geography

SEMESTER-IV

CC/04: Environmental Geography and Field Work

6 Credits

CORE COURSE (CC):

GEO/G/CC/T/04: (Theory): Environmental Geography

4 Credits

1. Concepts and approaches of Environmental Geography
2. Concept, Structure and Functions of Ecosystem
3. Definition of Biosphere, Meaning of Ecology, Econtone, Habitat, Community, Ecological Niche, Biotopics and Biomes
4. Enviromental Problems and Management: Air and Water Pollution
5. Environmental Programmes and Policies: MAB
6. Wetlands: Ramsar Sites in India
7. Human-Environment Relationship in Mountain and Coastal Regions

GEO/G/CC/P/04: (Practical): Field Work

2 Credits

1. Preparation of Survey Schedule or Questionnaire for Air Pollution and Health Perception Survey
2. Mapping of Wetlands from Topographical Sheet
3. Mapping of Forest from Topographical Sheet

Reference Books:

- Casper J.K. (2010): Changing Ecosystems: Effects of Global Warming. Infobase Pub. New York.
- Hudson, T. (2011): Living with Earth: An Introduction to Environmental Geology, PHI Learning Private Limited, New Delhi.
- Miller, G.T. (2007): Living in the Environment: Principles, Connections, and Solutions, Brooks/ Cole Cengage Learning, Belmont.
- Singh, R.B. (1993): Environmental Geography, Heritage Publishers, New Delhi.
- UNEP (2007) Global Environment Outlook: GEO4: Environment For Development, United Nations Environment Programme. University Press, Cambridge.
- Wright R. T. and Boorse, D. F. (2010): Toward a Sustainable Future, PHI Learning Pvt Ltd, New Delhi.
- 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

SEC/02: (Practical): Advance Spatial Statistical Techniques or Field Work

GEO/G/SEC/P/02/A: (Practical): Advance Spatial Statistical Techniques 2 Credits

1. Differences between Spatial and Non-spatial data, Nearest Neighbour Analysis
2. Concept of probability and Normal Distribution and their geographical application, Skewness (Pearson's Method)
3. Sampling: Sampling plans for spatial and non-spatial data, sampling distributions, sampling estimates for large and small samples tests involving means and proportions
4. Correlation and Regression Analysis: Rank order correlation and product moment correlation; linear regression, residuals from regression
5. Time Series Analysis: Least Squares, Moving mean method, Time series components

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

*A project file consisting of five exercises on the above themes is to be submitted.

Reference Books:

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

OR

GEO/G/SEC/P/02/B: (Practical): Field Work

2 Credits

Students are required to carry out a comprehensive field work in a village/mouza/town/C.D.Block/ drainage basin selecting a particular **research problem**. There should be a clear-cut **Problem background, major Objectives, Methodology and Findings**. The Field Report should be written within 4000 words and the total number of pages in the Field Report should not exceed 30 pages ((A4 Pages) including texts, figures, tables, photographs, maps, references (APA) and appendices.

The fieldwork along with the diagrams and illustrations should be prepared in computer using the standard (Using MS-Word for typing and Excel for calculation and graphs). The cartographic and statistical techniques used in the fieldwork should be at par with the syllabus of the UG Course.

Guidelines for Fieldwork:

The following methods are to be followed for framework:

1. Preparation of questionnaire for assessing the physical/cultural/environment/socio-economic components. A filled-in questionnaire used in the survey should be attached with the report signed by the concerned teacher and the student.
2. Preparation of maps (hand-drawn) with suitable scale and latitude and longitude.
3. Preparation of charts/graphs in MS-Excel and duly labelled.
4. The report should be typed in MS-Word. The font size is fixed at 12 in Times New Roman and the line spacing 1.5.
5. Each field work should have a certificate of authenticity duly signed by the project supervisor.

B.A. / B.Sc. (General/ Program) Course in Geography

SEMESTER-V

DSE/01: Geography of India or Economic Geography **6 Credits**

GEO/G/DSE/T/01/A: (Theory): Geography of India **6 Credits**

1. Physical Setting – Location, Structure and Relief, Drainage, Climate.
2. Population – Size and Growth since 1901, Population Distribution, Literacy, Sex Ratio.
3. Settlement System - Rural Settlement Types and Patterns, Urban Pattern.
4. Resource Base – Livestock (cattle and fisheries), Power (coal, and hydroelectricity), Minerals (iron ore and bauxite).
5. Economy – Agriculture (Rice, Wheat, Sugarcane, Groundnut, Cotton); Industries (Cotton Textile, Iron-Steel, Automobile), Transportation Modes (Road and Rail).

Reference Books:

- Hussain M. (1992): Geography of India, Tata McGraw Hill Education.
- Mamoria C. B. (1980): Economic and Commercial Geography of India, Shiva Lal Agarwala.
- Miller F. P., Vandome A. F. and McBrewster J. (2009): Geography of India: Indo-Gangetic Plain, Thar Desert, Major Rivers of India, Climate of India, Geology of India, Alphascript Publishing.
- Nag P. and Sengupta S. (1992): Geography of India, Concept Publishing.
- Pichamuthu C. S. (1967): Physical Geography of India, National Book Trust.
- Sharma T. C. and Coutinho O. (1997): Economic and Commercial Geography of India, Vikas Publishing.
- Singh Gopal (1976): A Geography of India, Atma Ram.
- Spate O. H. K. and Learmonth A. T. A. (1967): India and Pakistan: A General and Regional Geography, Methuen.
- Rana, Tejbir Singh, 2015, Diversity of India, R.K. Books, Delhi.

OR

GEO/G/DSE/T/01/B: (Theory): Economic Geography **6 Credits**

1. Definition, Approaches and Fundamental Concepts of Economic Geography; Patterns of Development.
2. Locational Theories – Agriculture (Von Thunen) and Industrial (Weber).
3. Primary Activities – Intensive Subsistence Farming, Commercial Grain Farming, Plantation, Commercial Dairy Farming, Commercial Fishing, and Mining (iron ore, coal and petroleum).
4. Secondary Activities – Cotton Textile Industry, Petro-Chemical Industry, Major Manufacturing Regions.
5. Tertiary and Quaternary Activities – Modes of Transportation, Patterns of International Trade, and Information and Communication Technology Industry.

Reference Books:

- Alexander J. W. (1963): Economic Geography, Prentice-Hall Inc., Englewood Cliffs, New Jersey.
- Bagchi-Sen S. and Smith H. L. (2006): Economic Geography: Past, Present and Future, Taylor and Francis.
- Coe N. M., Kelly P. F. and Yeung H. W. (2007): Economic Geography: A Contemporary Introduction, Wiley-Blackwell.
- Combes P., Mayer T. and Thisse J. F. (2008): Economic Geography: The Integration of Regions and Nations, Princeton University Press.
- Durand L., 1961: Economic Geography, Crowell.
- Hodder B. W. and Lee R. (1974): Economic Geography, Taylor and Francis.
- Wheeler J. O. (1998): Economic Geography, Wiley.
- Willington D. E. (2008): Economic Geography, Husband Press.

GEO/G/SEC/P/03: Field Techniques and Survey Based Project Report or Collection, Mapping and Interpretation of Climatic Data 2Credits**GEO/G/SEC/P/03/A: (Practical): Field Techniques and Survey Based Project 2 Credits**

1. Students will prepare a survey based field report in a rural area or an urban area to study specific problems
2. The report should be hand written in candidate's own words (within 2000 words)
3. The total number of pages in the Field Report should not exceed 30 pages including texts, figures, tables, photographs, maps, references (APA) and appendices
4. Preparation of maps (hand-drawn) with suitable scale and latitude-longitude
5. A copy of the bound report, duly signed by the concerned teacher, should be submitted

OR**GEO/G/SEC/P/03/B: (Practical): Collection, Mapping and Interpretation of Climatic Data 2Credits**

1. Sources of climatic data
2. Instruments used for measuring weather elements: Thermometer, Barometer, Hydrometer, Rain gauge and Wind vane
3. Drawing of Temperature-Rainfall Graphs
4. Drawing of Isotherm and Isohyet
5. Preparation of Climograph (Taylor's), Hythergraph and Windrose diagram
6. Interpretation of Indian Daily Weather Map

*A Project File consisting of exercises on the above themes is to be submitted

Generic Elective (GE):

GE/01: Disaster Management

6 Credits

GEO/G/GE/T/01: (Theory): Disaster Management

6 Credits

1. Definition and Concepts: Hazards, Disasters; Risk and Vulnerability; Classification of hazards
2. Disasters in India: (a) Flood: Causes, Impact, Distribution and Mapping; Landslide: Causes, Impact, Distribution and Mapping; Drought: Causes, Impact, Distribution and Mapping
3. Disasters in India: (b) Earthquake and Tsunami: Causes, Impact, Distribution and Mapping; Cyclone: Causes, Impact, Distribution and Mapping.
4. Manmade disasters: Causes, Impact, Distribution and Mapping of Soil erosion and Accidental release of toxic chemicals
5. Response and Mitigation to Disasters: Institutional set up, NDMA and NIDM; Indigenous Knowledge and Community-Based Disaster Management; Do's and Don'ts During and Post Disasters

Reference Books:

- Government of India., (1997): Vulnerability Atlas of India. New Delhi, Building Materials & Technology Promotion Council, Ministry of Urban Development, Government of India.
- Kapur, A. (2010): Vulnerable India: A Geographical Study of Disasters, Sage Publication, New Delhi.
- Modh, S. (2010): Managing Natural Disaster: Hydrological, Marine and Geological Disasters, Macmillan, Delhi.
- Singh Jagbir. (2007): "Disaster Management Future Challenges and Opportunities", 2007. Publisher- I.K. International Pvt. Ltd. S-25, Green Park Extension, Uphaar Cinema Market, New Delhi, India (www.ikbooks.com).
- Singh, R. B. (ed.), (2006): Natural Hazards and Disaster Management: Vulnerability and Mitigation, Rawat Publications, New Delhi.
- Singh, R.B. (2005): Risk Assessment and Vulnerability Analysis, IGNOU, New Delhi. Chapter 1, 2 and 3
- Sinha, A. (2001): Disaster Management: Lessons Drawn and Strategies for Future, New United Press, New Delhi.
- Stoltman, J.P. et al. (2004): International Perspectives on Natural Disasters, Kluwer Academic Publications. Dordrecht.

B.A. / B.Sc. (General/ Program) Course in Geography

SEMESTER-VI

DSE/02: Disaster Management or Geography of Tourism **6 Credits**

GEO/G/DSE/T/02/A: (Theory): Disaster Management **6 Credits**

1. Definition and Concepts: Hazards, Disasters; Risk and Vulnerability; Classification of hazards
2. Disasters in India: (a) Flood: Causes, Impact, Distribution and Mapping; Landslide: Causes, Impact, Distribution and Mapping; Drought: Causes, Impact, Distribution and Mapping
3. Disasters in India: (b) Earthquake and Tsunami: Causes, Impact, Distribution and Mapping; Cyclone: Causes, Impact, Distribution and Mapping.
4. Manmade disasters: Causes, Impact, Distribution and Mapping of Soil erosion and Accidental release of toxic chemicals
5. Response and Mitigation to Disasters: Institutional set up, NDMA and NIDM; Indigenous Knowledge and Community-Based Disaster Management; Do's and Don'ts During and Post Disasters

Reference Books:

- Government of India., 1997: Vulnerability Atlas of India. New Delhi, Building Materials & Technology Promotion Council, Ministry of Urban Development, Government of India.
- Kapur, A., 2010: Vulnerable India: A Geographical Study of Disasters, Sage Publication, New Delhi.
- Modh, S., 2010: Managing Natural Disaster: Hydrological, Marine and Geological Disasters, Macmillan, Delhi.
- Singh Jagbir., 2007: "Disaster Management Future Challenges and Oppurtunities", 2007. Publisher- I.K. International Pvt. Ltd. S-25, Green Park Extension, Uphaar Cinema Market, New Delhi, India (www.ikbooks.com).
- Singh, R. B. (ed.), 2006: Natural Hazards and Disaster Management: Vulnerability and Mitigation, Rawat Publications, New Delhi.
- Singh, R.B., 2005: Risk Assessment and Vulnerability Analysis, IGNOU, New Delhi. Chapter 1, 2 and 3
- Sinha, A., 2001: Disaster Management: Lessons Drawn and Strategies for Future, New United Press, New Delhi.
- Stoltman, J.P. et al., 2004: International Perspectives on Natural Disasters, Kluwer Academic Publications. Dordrecht.

OR

GEO/G/DSE/T/02/B: (Theory): Geography of Tourism

6 Credits

1. Scope and Nature: Concepts and Issues, Tourism, Recreation and Leisure Inter-Relations; Geographical Parameters of Tourism by Robinson
2. Types of Tourism: Nature Tourism, Cultural Tourism, Medical Tourism, Pilgrimage
3. Recent Trends of Tourism: International and Regional; Domestic (India); Eco-Tourism, Sustainable Tourism, Meetings, Incentives, Conventions and Exhibitions (MICE)
4. Impact of Tourism: Economy; Environment; Society
5. Tourism in India: Tourism Infrastructure; Case Studies of Himalaya, Desert and Coastal Areas; National Tourism Policy

Reference Books:

- Dhar, P.N., 2006: International Tourism: Emerging Challenges and Future Prospects. Kanishka, New Delhi.
- Hall, M. and Stephen, P., 2006: Geography of Tourism and Recreation – Environment, Place and Space, Routledge, London.
- Kamra, K. K. and Chand, M., 2007: Basics of Tourism: Theory, Operation and Practise, Kanishka Publishers, Pune.
- Page, S. J., 2011: Tourism Management: An Introduction, Butterworth-Heinemann-USA. Chapter 2.
- Raj, R. and Nigel, D., 2007: Morpeth Religious Tourism and Pilgrimage Festivals Management: An International perspective by, CABI, Cambridge, USA, www.cabi.org.
- 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).
- Tourism Recreation and Research Journal, Center for Tourism Research and Development, Lucknow

GE/02: Sustainable Development

6 Credits

GEO/G/GE/T/02: (Theory): Sustainable Development

6 Credits

1. Sustainable Development: Historical Background, Definition, Components, Limitations
2. Sustainable Regional Development: Need and examples from different Ecosystems
3. Inclusive Development: Education and Health
4. Climate change and sustainable development: Policies and global cooperation
5. Poverty and disease; Human right to health; Challenges of Universal Health Coverage
6. Sustainable Development Policies and Programmes: The proposal for SDGs at Rio+20; Illustrative SDGs; Goal-Based Development
7. Sustainable Development: Financial issues
8. Good Governance for sustainable development
9. National Environmental Policy, Clean development mechanism
10. Sustainable regional resource development and livelihood security

Reference Books:

- Agyeman, Julian, Robert D. Bullard and Bob Evans (Eds.) (2003): Just Sustainabilities: Development in an Unequal World. London: Earthscan. (Introduction and conclusion.)
- 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.
- Baker, Susan (2006): Sustainable Development. Milton Park, Abingdon, Oxon; New York, N.Y.: Routledge. (Chapter 2, “The concept of sustainable development”).
- Brosius, Peter (1997): “Endangered forest, endangered people: Environmentalist representations of indigenous knowledge”, Human Ecology 25: 47-69.
- Lohman, Larry (2003): “Re-imagining the population debate”. Corner House Briefing 28.
- 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.
- Merchant, Carolyn (Ed.) (1994): Ecology. Atlantic Highlands, N.J: Humanities Press. (Introduction, pp 125.)
- Osorio, Leonardo et al (2005): “Debates on sustainable development: towards a holistic view of reality”. Environment, Development and Sustainability 7: 501-518.
- Robbins, Paul (2004): Political Ecology: A Critical Introduction. Blackwell Publishing.
- 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):

SEC/04: Collection, Mapping and Interpretation of Pedological Data or Rocks and Minerals and their Megascopic Identification

2 Credits

GEO/G/SEC/P/04/A: (Practical): Collection, Mapping and Interpretation of Pedological Data

2 Credits

1. Procedure of soil sample collection
2. Preparation of Ternary diagram by using soil texture data
3. Estimation of Soil p^H using soil kit
4. Estimation of Soil organic carbon using soil kit
5. Estimation of available of NPK using soil kit
6. Mapping and interpretation: p^H , NPK and organic carbon

*A Project File consisting of exercises on the above themes is to be submitted

OR

GEO/G/SEC/P/04/B: (Practical): Rocks and Minerals and their Megascopic Identification

2 Credits

1. Types and characteristics of rocks and minerals
2. Megascopic identification of the following rocks and minerals mentioning their identifying characteristics.

Rocks: Granite, Basalt, Dolerite, Shale, Limestone, Sandstone, Gneiss, Slate, Quartzite, Marble

Minerals: Quartz, Feldspar, Mica (Muscovite and Biotite), Calcite, Bauxite, Magnetite, Haematite, Galena, Chalcopyrite