

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

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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
-	DSE	-	-	4
-		-	-	2
-	DSE	As to be offered by other departments	-	6
-	GE (Any discipline other than discipline 1 and 2)	-	-	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
-	-	-	-	4
-		-	-	2
-	DSE	As to be offered by other departments	-	6
-	GE (Any discipline other than discipline 1 and 2)	-	-	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).

- (Detailed Syllabus of Semester IV, V & VI will be published shortly)

**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
-	DSE	-	-	4
-		-	-	2
-	DSE	As to be offered by other departments	-	6
-	GE (Any discipline other than discipline 1 and 2)	-	-	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
-	DSE	-	-	4
-		-	-	2
-	DSE	As to be offered by other departments	-	6
-	GE (Any discipline other than discipline 1 and 2)	-	-	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 MEGASCOPIC 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).

- (Detailed Syllabus of Semester IV, V & VI will be published shortly)

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

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

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

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