Choice Based Credit System (CBCS)

OSMANIA UNIVERSITY
DEPARTMENT OF GEOGRAPHY

UNDERGRADUATE PROGRAMME
(Courses effective from Academic Year 2019-20)

SYLLABUS OF COURSES TO BE OFFERED
# SCHEME FOR CHOICE BASED CREDIT SYSTEM IN
# B.A./B.Sc. PROGRAMME IN GEOGRAPHY

## FIRST YEAR / SEMESTER -I

<table>
<thead>
<tr>
<th>Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>BS101</td>
<td>Elements of Geomorphology</td>
<td>DSC-1A</td>
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<td>BS102</td>
<td>Practical-I: Elements of Mapping and Interpretation</td>
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## SEMESTER-II

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<td>BS201</td>
<td>Elements of Climatology &amp; Oceanography</td>
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<td>BS202</td>
<td>Practical-II:Basic Statistics and weather Map</td>
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## SECOND YEAR / SEMESTER-III

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<td>Human Geography</td>
<td>DSC-1C</td>
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<tr>
<td>BS302</td>
<td>Practical-III:Maps and Diagrams</td>
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<tr>
<td>BS303</td>
<td>Travel And Tourism</td>
<td>SEC-1</td>
<td>2</td>
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<tr>
<td>BS304</td>
<td>Surveying Techniques and Cartography</td>
<td>SEC-2</td>
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<td>Economic Geography</td>
<td>DSC-1D</td>
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<tr>
<td>BS402</td>
<td>Practical-IV:Map Projections</td>
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<td>BS403</td>
<td>Remote Sensing and GPS</td>
<td>SEC-3</td>
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<td>BS404</td>
<td>GIS based Project Report</td>
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<td>BS501</td>
<td>(A) Principles of Remote Sensing</td>
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<td>(B) Geography of India</td>
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<td>BS502</td>
<td>Practical-V: Remote Sensing Lab and Field Survey</td>
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<td>BS503</td>
<td>Climate Change and Disaster Management</td>
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<td>BS602</td>
<td>Practical-VI: GIS Lab</td>
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<td>BS603</td>
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<td>TOTAL Credits</td>
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Total credits= 46

**AECC**: Ability Enhancement Compulsory Course; **SEC**: Skill Enhancement Course; **DSC**: Discipline Specific Course; **DSE**: Discipline Specific Elective; **GE**: Generic Elective;
B.A./B.Sc (Programme) Geography, Osmania University

**Discipline Specific Core (DSC) Course (4 Compulsory Papers)**

**Semester I**
1. Elements of Geomorphology (4 Credits)
   Elements of Mapping and Interpretation (practical) (1 Credit)

**Semester II**
2. Elements of Climatology & Oceanography (4 Credits)
   Basic Statistics and Weather Map (practical) (1 Credit)

**Semester III**
3. Human Geography (4 Credits)
   Maps and Diagrams (practical) (1 Credit)

**Semester IV**
4. Economic Geography (4 Credits)
   Map projections (practical) (1 Credit)

**Discipline Specific Elective (DSE) Papers (2 Compulsory Papers)**

**Semester V**
1. (A) Principles of Remote Sensing (4 Credits)
   (B) Geography of India
2. Remote Sensing Lab and Surveying (practical) (1 Credit)

**Semester VI**
1. (A) Geographical Information System (GIS) (4 Credits)
   (B) Geography of Telangana
2. GIS – Lab (practical) (1 Credit)

**Skill Enhancement Course (SEC)**

**Semester III** : Travel And Tourism (2 Credits)
**Semester III** : Surveying Techniques and Cartography (2 Credits)
**Semester IV** : Remote Sensing and GPS (2 Credits)
**Semester IV** : GIS based Project Report (2 Credits)

**Generic Elective (GE) (1)**

**Semester V**
1. Climate Change and Disaster Management, (4 Credits)

**Semester VI**

**Project Work/ Optional** (4 Credits)
Unit-1: Earth Dynamics

1. Land and Sea: Formation and distribution.
2. Theories: Isostasy, Continental Drift, Plate Tectonics.

Unit-2: Earth Dynamics

4. Weathering and Mass-wasting.

Unit-3: Geomorphology - Processes and Landform Development.


Unit-4: Geomorphology


Basic Texts:


Additional Texts:

(BS102) Practical-I: ELEMENTS OF MAPPING AND INTERPRETATION

(1 Credit)

2. Construction of scale: simple, diagonal and comparative.
3. Relief features of geological landforms and profile drawing (serial, superimposed, projected and composite).
4. Map reading and Interpretation of topographical sheets.

Basic Texts


Additional Texts

SEMESTER -II

(BS201) Paper II:  ELEMENTS OF CLIMATOLOGY & OCEANOGRAPHY  
(4 Credits)

Unit-I:
2. Insolation – Factors influencing the incidence and distribution.
3. Temperature – Horizontal and Vertical Distribution.
4. Pressure – Influencing factors- High and Low Pressure Areas, Global Pressure Belts.

Unit-II:
5. Winds – Local, Periodic and Planetary; El Niño and La Niña.

Unit-III:
9. Submarine relief: Continental Shelf, Continental Slope, Abyssal Plain, Ocean Deeps and Trenches, Mid-Oceanic ridges.

Unit-IV:
12. Waves & Tides: Types and Formation.
13. Ocean Currents: Types and Factors Responsible - Currents of Atlantic, Pacific and Indian Oceans.
15. Marine Resources and their economic significance.

Basic Texts:

(BS202) Practical-II: Basic Statistics and Weather Map  (1 Credit)

1. Sources of data; classification and Tabulation of data.
2. Central Tendencies – Mean, Median and Mode
3. Measures of Dispersion - Mean Deviation and Standard deviation
4. Correlation (Karl Pearson and Spearman).
5. Weather Map: Weather symbols and Interpretation of Indian daily weather maps (July, October and January).

REFERENCES:

SECOND YEAR SYLLABUS OF B.A. / B.Sc. GEOGRAPHY

SEMESTER-III

(BS301) Paper III: HUMAN GEOGRAPHY

(4 Credits)

Unit-I:


Unit-II:

3. Human activities: Primary, Secondary, Tertiary and Quaternary
4. Resources: Classification, Conservation Utilization and Management, Sustainability.

Unit-III:


Unit-IV:

7. Human Migration: Types, Causes and Consequences of Migration, Indian Diaspora

Basic Texts


Additional Texts

(BS302) Practical-III: Maps and Diagrams (1 Credit)

1. Diagrams:
   i. One Dimensional: Line Graph, Poly Graph, Bar Graph, Pyramid Graph, Pie Diagram.
   ii. Two Dimensional: Squares and Rectangles.
   iii. Three Dimensional: Spheres and Blocks. Climatic Diagrams: Climo Graph, Hyther Graph, Wind Rose.

2. Maps:
   i. Thematic Maps: Class intervals, Choropleth, Isopleth, Dot Maps, Flow Maps.

Basic Texts

Additional Texts

SEMESTER-IV
(BS401) Paper IV: ECONOMIC GEOGRAPHY (4 Credits)

Unit-I:
1. Definition, Approaches and Fundamental Concepts; Patterns of Development.
2. Types of Agriculture: Land use, Cropping Pattern and Production, Location Model of Von Thunen.

Unit-II:
4. Fisheries: Major Fishing areas of the World, Production and Trade
5. Forest : Types and Distribution, Forest Products, Wild Life.
6. Minerals: Metallic (Iron Ore, Copper), Non-metallic (Limestone and Mica), Fuel (Coal and Petroleum), Locations and Potentials, Mining and Trade.

Unit-III:
7. Industry: Locational Factors, Weber’s Industrial location theory,
8. Major industries (Iron and Steel, Cotton Textile and Information and Communication Technology Industry.

Unit-IV:
12. WTO and Developing Countries.

Basic Texts

Additional Texts
(BS402) Practical-IV: Map Projections (1 Credit)

1. Constructions and Uses.

**Basic Texts:**


**Additional Texts:**

THIRD YEAR SYLLABUS OF B.A. / B.Sc. GEOGRAPHY

SEMESTER-V

(BS501A) Paper - V: PRINCIPLES OF REMOTE SENSING(4 Credits)

UNIT-I:


UNIT- II:


UNIT- III

8. Cameras: Single Lens, Multiple Lens, Strip and Digital- Films and Filters.

UNIT- IV


Basic Texts:

Additional Texts:
Unit-I

1. Physical Setting – Location, Structure and Relief, Drainage.
2. Climate – Seasons, Mechanism of Monsoons, Droughts and floods.

Unit-II

4. Settlement System - Rural Settlement Types and Patterns, Urban Pattern.

Unit-III

5. Natural Vegetation – Major forest type of India and their distribution.

Unit-IV

7. Resource Base – Livestock (cattle and fisheries), Power (coal, and hydroelectricity), Minerals (iron ore and bauxite).
8. Economy – Agriculture (Rice, Wheat, Sugarcane, Groundnut, Cotton); Industries (Cotton Textile, Iron-Steel, Automobile), Transportation Modes (Road and Rail).

Reading List

(BS502) PRACTICAL -V:
REMOTE SENSING LAB AND FIELD SURVEY TECHNIQUES(1 Credit)

1. Air Photographs and Satellite Imageries: Describing the Marginal Information
2. Air Photo Interpretation: Drawing Flight line, Landuse Mapping, Relief and Drainage Mapping using Stereoscope
6. Plane Table Survey: Intersection method.

**Basic Texts:**

**Additional Texts:**
SEMESTER-VI

(BS 601A) Paper - VII: GEOGRAPHIC INFORMATION SYSTEM (GIS)

(4 Credits)

UNIT -I:

1. GIS: Definition, Contributing Disciplines, Functions, Data Capture / Input, Data Storage, Data Retrieval, Data Analysis, Data Output.
2. Components of Geographic Information Systems: Hardware Components, Software Components, Brain-ware Components and Organizational set up.
3. Data Input and Editing: Data Types, Spatial and Attribute data, Raster and Vector Sources of GIS data.

UNIT- II:

4. Methods of Data input (Keyboard Entry, Digitizing, Scanning), GPS and its Application.
5. Database Management System: Definition and Functions, Data Analysis and Modeling, Data Conversion (Format, Structure, and Medium Conversion).

UNIT- III:

6. Spatial Measurements (Counting, Measuring length and Calculating Area), Reclassification, Buffering (Point, Line, Polygon, Doughnut).
7. Overlay Analysis.

UNIT- IV

10. RS and GIS Integration, GIS Applications (Urban / Agricultural / Landform Studies).

Basic Texts:

Additional Texts:
(BS601B) Paper VIII: (A) Geography of Telangana  (4 Credits)

Unit-I

1. Physical Setting – Location, Structure and Relief, Drainage and Climate.
2. Types of Irrigation - Tanks, Canals and Wells; Major Projects – Nagarjunasagar, Srisailam and Sriram Sagar- Drought Vulnerability, Mission Kakatiya.

Unit-II


Unit-III

5. Natural Vegetation – Major forest types in Telangana and their distribution.
6. Irrigation – Types (Canal, Tank, Well) and Major irrigation projects

UNIT IV

7. Resource Base – Livestock (cattle and fisheries), Power (coal and hydroelectricity), Minerals (iron ore and limestone).
8. Economy – Agriculture (Rice, Cotton, Maize, Groundnut); Industries (Cement, Pharma, Knowledge based-IT&ITES), Transportation Modes (Road and Rail).

REFERENCES:

3. Planning Atlas of Andhra Pradesh, Department of Geography, Osmania University
7. Venkat Ram Reddy and Kosal Ram: Multilevel Planning of Andhra Pradesh, Published by CESS, Hyderabad. Department of Geography
2. Data Mode: Spatial Data (Location: Point, Line, Polygon, Attributes and Temporal), Vector Data Generation, Raster Data Creation, Raster Data Values, Spatial Relations (P to P, P to L, P to A, L to L, L to A, A to A).
4. Raster and Vector GIS Capabilities: Display, Query, Overlay, Buffering.

**Basic Texts:**

**Additional Texts:**
(BS603) : Project work / Optional  (4 Credit)

1. Fieldwork methods and techniques.
4. Based on Physiographic study or socio-economic survey, prepare a critical field-survey report. Photographs and sketches, in addition to maps and diagrams, may supplement the report.

Books Recommended:


The students have to visit a landscape/village/town to conduct Physiographic study/socio-Economic survey. Each student will be required to submit a survey report to be evaluated by external and internal examiner.
Skill Enhancement Course (SEC 1)
Semester III

BS-303: Travel and Tourism (2 Credits)

Unit - I

1. Type of Tourism: Nature Tourism, Cultural Tourism, Medical Tourism, Pilgrimage.
2. Recent Trends of Tourism: International and Regional; Domestic (India); Eco-Tourism, Sustainable Tourism, Meetings, Incentives, Conventions and Exhibitions (MICE).

Unit - II

3. Travel Formalities, Travel Agency and Tour Operation Business – Functions.
4. Tourism in India: Tourism Infrastructure; Case Studies of Himalaya, Desert and Coastal and Heritage; National Tourism Policy.

Reading List
6. Tourism Recreation and Research Journal, Center for Tourism Research and Development, Lucknow
Skill Enhancement Course (SEC 2)
Semester IV

BS-304: Surveying Techniques and Cartography (2 Credits)

Unit - I

3. Plane Table Survey: Intersection method.

Unit - II

4. Maps: Map Scale – Types and Application, Reading Distances on a Map.

Basic Texts:

Additional Texts:
Skill Enhancement Course (SEC 3)
Semester IV

BS-403: Remote Sensing and GPS  (2 Credits)

Unit - I

2. Satellite Remote Sensing: Principles, EMR Interaction with Atmosphere and Earth Surface; Satellites (Landsat and IRS) and Sensors.

Unit - II

4. Global Positioning System (GPS) – Principles and Uses

Reading List

Skill Enhancement Course (SEC 4)

Semester IV

BS-404: GIS based Project Report (2 Credits)

Unit - I

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

Unit - II

3. GIS Data Analysis: Input; Geo-Referencing; Editing and Output; Overlays
4. Application of GIS in Land Use/Land Cover, Urban Sprawl and Forests Monitoring

Reading List

Generic Elective (GE 1)

BS-503: Climate Change and Disaster Management  (4 Credits)

Unit - I

1. Science of Climate Change: Understanding Climate Change; Green House Gases and Global Warming; Global Climatic Assessment- IPCC
2. Climate Change and Vulnerability: Physical Vulnerability; Economic Vulnerability; Social Vulnerability

Unit - II

3. Impact of Climate Change: Agriculture and Water; Flora and Fauna; Human Health
4. Adaptation and Mitigation: Global Initiatives with Particular Reference to South Asia; National Action Plan on Climate Change; Local Institutions (Urban Local Bodies, Panchayats)

Unit – III

1. Disasters: Definition and Concepts: Hazards, Disasters; Risk and Vulnerability;

Unit – IV

4. Response and Mitigation to Disasters: Mitigation and Preparedness, NDMA and NIDM. Indigenous Knowledge and Community-Based Disaster Management; Do’s and Don’ts During Disasters.

Reading List