BHARATHIDASAN UNIVERSITY TIRUCHIRAPPALLI - 620 024.

B.Sc. GEOGRAPHY

CHOICE BASED CREDIT SYSTEM –

LEARNING OUTCOMES BASED CURRICULUM FRAMEWORK (CBCS - LOCF)

(Applicable to the candidates admitted from the academic year 2026-27 onwards)

Sem.	Part	Course	Title	Credit	Exam Hours	Marks		Total
						Int.	Ext.	
I	I	Language Course – I Tamil $ / Other Languages + #		3	3	25	75	100
	II	English Course - I		3	3	25	75	100
	III	Core Course – I (CC)	Earth System Science	5	3	25	75	100
		Core Practical – I (CP)	Map Scales & Relief Feature Representation	4	3	40	60	100
		First Allied Course – I (AC)		4	3	25	75	100
		First Allied Practical (AP)		-	-	-	-	-
	IV	Value Education		2	3	25	75	100
	TOTAL			**21**	-	-	-	**600**
II	I	Language Course - II Tamil $ / Other Languages + #		3	3	25	75	100
	II	English Course - II		3	3	25	75	100
	III	Core Course – II (CC)	Geomorphology	5	3	25	75	100
		Core Practical - II(CP)	Techniques of Terrain Analysis & Mapping	4	3	40	60	100
		First Allied Course – II (AC)		4	3	25	75	100
		First Allied Practical (AP)		2	3	40	60	100
	IV	Environmental Studies		2	3	25	75	100
	TOTAL			**23**	-	-	-	**700**

List of Allied Courses

First Allied Course	Second Allied Course
Statistics	**Geology / Geoinformatics**

SUMMARY OF CURRICULUM STRUCTURE OF UG PROGRAMMES

Sl. No.	Part	Types of the Courses	No. of Courses	No. of Credits	Marks
1.	I	Language Courses	4	12	400
2.	II	English Courses	4	12	400
3.	III	Core Courses	9	45	900
4.		Core Practical	6	24	600
5.		Allied Courses I & II	4	16	400
6.		Allied Practical	2	4	200
7.		Major Based Elective Courses	2	8	200
8.		Project	1	7	100
9.	IV	Non-Major Elective Courses (Practical)	2	4	200
10.		Soft Skills Development	1	2	100
11.		Value Education	1	2	100
12.		Environmental Studies	1	2	100
13.	V	Gender Studies	1	2	100
	Total		**38**	**140**	**3800**

PROGRAMME OBJECTIVE:

1. The B.Sc., Geography program provides a basic over view of physical and cultural geography.
2. The program makes familiar about the geographic terminologies
3. The program upscale the knowledge of India and world regional information
4. The program B.Sc., Geography focused to handle maps published by government of India.
5. The program B.Sc., Geography emphasised with modern techniques like geoinformatics.

PROGRAMME OUTCOMES:

1. The B.Sc., Geography program inculcate the concepts of physical geography and geomorphology.
2. The program makes familiar geography of India
3. The program provides a comprehensive understanding of geography of Tamil Nadu
4. The program B.Sc., Geography make familiar to appreciate and interpret the maps published by Survey of India at different scales.
5. The program B.Sc. Geography give confidence to the students to handle remote sensing data.
6. Geoinfomatics practical courses provided to enhance the employability of the students.

First Year **CORE COURSE I** **Semester I**

EARTH SYSTEM SCIENCE
(Theory)

COURSE OBJECTIVES:

- The course deals about the origin and evolution of earth.
- The learners can understand various relief features of the earth.
- The course describes various processes of dynamic earth.

UNIT – I THE EARTH:

Origin of the Earth - modern theories – Earth's orbital parameters - internal and external heat engines of the Earth - internal processes of earth – earth's internal structure – mantle and core - Earth's crust - isostasy – Earth's magnetism.

UNIT – II ROCKS:

Igneous - sedimentary - metamorphic (origin and Types)- rock cycle.

UNIT – III THE DYNAMIC PLANET:

Continental drift – Wegener's continental drift theory – palaeomagnitism – sea floor spreading – plates and plate motion – diverging, converging and transforming plate boundaries.

UNIT – IV EARTH'S SURFACE RELIEF:

Earth's topography - orders of relief - Earth's hypsometry – stress and strain – fold – fault – orogenesis - features of the sea floor.

UNIT – V EARTHQUAKES AND VOLCANISM:

Earthquakes: causes – seismic waves –measurement of earthquakes – effects – tsunamis – world distribution – plate tectonics and earthquakes – volcanism: types – ejecting materials - distribution of volcanoes – intrusive bodies – types.

UNIT – VI CURRENT CONTOURS (For continuous internal assessment only):

Recent Earthquakes in India and World –A global view of Tsunami-Volcanoes

REFERENCES:

1. K.S iddhatha (2014) The Earth Dynamic Surface, Kisalaya Publication, New Delhi
2. Strahler, A. H. and Strahler, A N., (2001) Modern Physical Geography (4th Edition), John Wiley and Sons, Inc., New York.
3. Bartholomeo, R. B., (1984) Earth Science, Heath and Co., Toronto.
4. Dury, G. H., (1980) The Face of the Earth, London: Penguins.
5. Ernst, W. G., (Ed.) (2000) Earth Systems: Process and Issues, Cambridge University Press, Cambridge.

COURSE OUTCOMES:

On the completion of syllabus students must be able to:

- To understand the theories on evolution of earth and nature.
- Obtain knowledge about the atmosphere, hydrosphere, and lithosphere, including their interaction and interrelationships.
- Acquire knowledge on the direct effect of life on the Earth system directly such as climate change, global warming, usage of natural resources etc.
- Investigate climate changes in the past and advance prediction models, scenarios related with future climate and to develop strategy with sudden climate changes, natural disasters.
- Explore how these interactions change with time through our study of earth system history.

First Year **CORE PRACTICAL I** **Semester I**

MAP SCALE AND RELIEF FEATURE REPRESENTATION

(Practical)

COURSE OBJECTIVES:

- Understanding the methods of construction of map scales.
- Acquiring knowledge on map enlargement and reduction and depiction of landforms by contours.
- Understanding the techniques of climatic diagrams.

Ex. 01: Types of Scale
Ex. 02: Map Scale Determination and Construction
Ex. 03: Map Scale Conversion
Ex. 04: Linear and Areal Measurements on Maps
Ex. 05: Map Reduction and Enlargement
Ex. 06: Determination of Directions and Bearings
Ex. 07: Methods of Relief Representation
Ex. 08: Representation of Elevation Profiles
Ex. 09: Methods of Average Slope Determination
Ex. 10: Gradient and Slope Calculation
Ex. 11: Representing Hypsometric Curves
Ex. 12: Representation of Relief on a Block Diagram

UNIT – VI CURRENT CONTOURS (For continuous internal assessment only):

3D Terrain representation – Sub-marine topography – Digital Elevation Model

REFERENCES:

1. Singh, R.L, (1991) Elements of Practical Geography – Kalyani Publishers, New Delhi.
2. Monk house and Willkinson (1976) Maps and Diagrams, Metuhuen & Co, London.
3. Gobal Singh Map Work and Practical Geography, Vikas Publishing House Pvt Ltd, New Delhi.
4. Worthington, B.D.R. and Robert Gent (1975): Techniques in Map Analysis, Ebenzer Baylis and Sons, USA.
5. Anson, R.W. (Ed.) (1984) Basic Cartography for Students and Technicians, Volume 2, International Cartograhic Association, Elsevier Applied Science Publishers, London.
6. Dorling, D. and David Fairbairn (1997), Mapping: Map of representing the world, Addisson Wesley Longman Ltd., U.K.

COURSE OUTCOMES:

On the completion of syllabus students must be able to:

- Draw and compute map scales of different kinds.
- Measure the distance, areas and find the directions on maps.
- Reduce and enlarge maps of different scales manually to the required size.
- Depict landforms by contours.
- Represent the data related to climate by means of graphs and diagrams.

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First year **CORE COURSE II** **Semester II**

GEOMORPHOLOGY

(Theory)

COURSE OBJECTIVES:

- To introduce the basic concepts geomorphology to the students of geography
- To understand the origin of landforms, Weathering, Erosion and Depositional
- To know the applications of geomorphology is helpful in different fields like civil, mineral and coastal departments.

UNIT – I BASICS:

Meaning, nature, Scope, and development – Basic Concepts, Branches in geomorphology – geological time scale – Endogenic process: Diastrophism and volcanism

UNIT – II EXOGENIC PROCESS:

Weathering –Physical – Chemical – biological (landforms) - Mass Wasting, Drainage: Drainage Patterns - Consequent Drainage, Obsequent Drainage, Antecedent Drainage, Superimposed Drainage – Lakes: Origin – Types

UNIT – III CONCEPTS:

Morphogenetic regions – Concept of cycle of erosion: Davis, Penck - Peneplain and Pediplain –Slope: definition - elements.

UNIT – IV LANDFORMS:

Fluvial, Karst, Glacial (Erosion and Depositional).

UNIT – V LANDFORMS:

Aeolian and Coastal landforms (Erosion and Depositional).

UNIT – VI CURRENT CONTOURS: (For continuous internal assessment only):

Landform's analysis-aerial and satellite data interpretation, Drainage basin morphometric and slope mapping, integrated approach of land and water resource management.

REFERENCES:

1. Dayal, P., (1990). A Text book Geomorphology, Shukla Book Depot, Patna, India.
2. MajidHussain. ed., (1994). Geomorphology, Perspective in Physical Geography series, Anmol Publications Pvt. Ltd., New Delhi.
3. Mukerjee, P.K., (1986). A Text of Geology, The World Press (P) limited, Calcutta.

4. Pitty,A.F., (1982). The Nature of Geomorphology, Methuen and Co. Ltd., London.
5. Rice, R.J., (1986). Fundamentals of Geomorphology, Longman, London.
6. Small, R.J., (1978). The Study of Landforms: A Text book of Geomorphology, Cambridge University Press, New York.
7. Thornbury, W.D., (1954). Principles of Geomorphology, John Wiley and sons, Inc., New York.
8. Worcester, P.G., (1948). A Textbook of Geomorphology, Von Nostrand Reinhold, Company, New York

COURSE OUTCOMES:

On the completion of syllabus students must be able to:

- Describe the morphology of the landscape and related processes in areas influenced by fluvial, glacial, periglacial, aeolian, coastal, and arid systems.
- Describe major scientific ideas and theories about the development of the landscape.
- Critically analyse geomorphological issues in a scientific context at local, regional and global scales.
- Analyze simple geomorphological data from topographic maps as well as aerial photographS
- Identify the major landforms on the Earth's surface and interpret the processes responsible for their genesis.

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First Year **CORE PRACTICAL II** **Semester II**

TECHNIQUES OF TERRAIN ANALYSIS AND MAPPING
(Practical)

COURSE OBJECTIVES:

- Students know about different type of top sheet and its character
- The practical course inculcates critical knowledge of cartographical principles and techniques in map interpretation to the students.
- Students learn to extract features from the top sheet

Ex. 01: Appreciation of SOI Top sheet
Ex. 02: Appreciation of NATMO Maps
Ex. 03: Appreciation of Census Atlas of India
Ex. 04: Appreciation of NBSS & LUP Maps
Ex. 05: Appreciation of Resource Atlas of Tamil Nadu
Ex. 06: Appreciation of GSI Maps

Interpretation for Physical / Cultural features

Ex. 07: Interpretation of SOI 1:2, 50,000 Sheets
Ex. 08: Interpretation of SOI 1" to 1 Mile Sheets
Ex. 09: Interpretation of SOI 1:50,000 Sheets
Ex. 10: Interpretation of SOI 1:25,000 Sheets
Ex. 11: Interpretation of SOI OSM Sheets
Ex. 12: Interpretation of USGS Topographic Maps

UNIT – VI CURRENT CONTOURS: (For continuous internal assessment only):

Advanced Remote Sensing and GIS software's, ArcGIS Pro, AutoCAD Map 3D

REFERENCES:

1. Monkhouse, F.J., and Wilkinson, H.R. (1976): Maps and Diagrams, Metheun & Co., London.
2. Worthington, B.D.R. and Robert Gent (1975): Techniques in Map Analysis, Ebenzer Baylis and Sons, USA.
3. Anson, R.W. (Ed.) (1984) Basic Cartography for Students and Technicians, Volume 2, International Cartograhic Association, Elsevier Applied Science Publishers, London.
4. Dorling, D. and David Fairbairn (1997), Mapping: Map of representing the world, Addisson Wesley Longman Ltd., U.K.
5. Kang-tsung Chang (2002) Introduction to Geographical Information Systems, Tata McGraw-Hill Publishing Company Limited, New Delhi.

COURSE OUTCOMES:

On the completion of syllabus students must be able to:

- Understand the basics of mapping, methods and techniques of mapping.
- Are exposed to real data and software's, such as Survey of India Top sheets and ARCGIS software's.
- Get expertise in Geo-database creation.
- Will understand the importance of Top sheets and can interpret all features that are present it without any assistance.
- Various analysis such as slope analysis, Drainage basin analysis, rain fall variability etc which are major part of geographical study are studied practically, which enhances them to next level of study.