B.Sc. Geography

Syllabus

AFFILIATED COLLEGES

Program Code: 22Q

2023 – 2024 onwards

BHARATHIAR UNIVERSITY

(A State University, Accredited with "A++" Grade by NAAC,
Ranked 21st among Indian Universities by MHRD-NIRF)

Coimbatore - 641 046, Tamil Nadu, India

Program Educational Objective (PEOs)	
The main qualification descriptors for the B.Sc., geography students are to develop the critical evaluation and understanding.	
PEO1	Appreciate the significance of geographical knowledge to everyday life.
PEO2	Inculcate the ability to evaluate and solve geographical problems effectively.
PEO3	Demonstrate the skills in using geographical research tools including spatial statistics, cartography, remote sensing and GIS.
PEO4	Studentshavetodemonstratetheirgeographicalknowledgeacquiredintheclassand apply the same in real world.
PEO5	Based on the field knowledge and advanced technologies, the students should be able to understand the on-going geographical problems in different regions and levels with appropriate pragmatic solutions.

Program Specific Outcomes (PSOs)	
After the successful completion of Geography program, the students are expected to	
PSO1	Understand the relevance of geographical knowledge to everyday life.
PSO2	Getting the ability to communicate geographic information utilizing both lecture and practical exercises.
PSO3	Inculcate the ability to evaluate geographical problems effectively.
PSO4	Recognize the skill development in Geographical studies programme as part of career avenues in various fields like teaching, research and administration.
PSO5	Display an ability to read and understand maps and topographic sheets to look at the various aspects on the space.

Program Outcomes (POs)	
On successful completion of the B. Sc. Geography program	
PO1	Demonstrating the understanding of basic concepts in geography. Display an ability to read and understand maps and topographic sheets to look at the various aspects on the space.
PO2	Recognize the skill development in Geographical studies programme as part of career avenues in various fields like teaching, research and administration. Cultivate ability to evaluate critically the wider chain of network of spatial aspects from global to local level on various time scales as well.
PO3	An understanding of landscape at different levels needsto be discussed and understood for a thorough knowledge of spatial dimensions. To comprehend the dynamic dimensions of human and ecosystem relationships.
PO4	Field based knowledge is essential to understand the ground reality, spatial patterns and processes. Use of statistical tools and techniques is essential for precise and objective geographic analysis and interpretation of complex phenomena.
PO5	Identification of the critical problems and spatial issues form the core of the modern geography for various applications and decision making, including Resources, Environment & Disaster Management, Land Use Planning, and Urban and Regional Development together with Climate Change Mitigation and Adaptation, etc.
PO6	Communication through models, maps, images and other geographical tools form the sound base for the dissemination of geographical information.
PO7	Learning human perception behavior to acquire the geographical knowledge evolved over time is essential to improve decision making process.
PO8	Geographical knowledge needs to be inculcated for application and solutions of the various local, regional and national problems.
PO9	Use of statistical tools and techniques is essential for precise and objective geographic analysis and interpretation of complex phenomena.
PO10	There is a need to understand the specificities of the problems in specific areas for their in depth comprehension and solution.

BHARATHIAR UNIVERSITY: COIMBATORE 641 046
B. Sc. Geography Curriculum (Affiliated colleges)

(For the students admitted during the academic year 2023– 2024 onwards)

Scheme of Examination

Course Code	Title of the Course	Credits	Hours		Maximum Marks		
			Theory	Practical	CIA	ESE	Total
FIRST SEMESTER							
1IT	Language – I	4	6	-	25	75	100
12E	English – I	4	6	-	25	75	100
13A	Core I – Fundamentals of Geomorphology - I	4	5	-	25	75	100
13B	Core II – Geography of India	4	5	-	25	75	100
1AC	Allied: Paper I – Statistics for Geography -I	4	6	-	25	75	100
1FA	Environmental Studies #	2	2	-	-	50	50
	Total	**22**	**30**		**125**	**425**	**550**
SECOND SEMESTER							
21T	Language – II	4	6	-	25	75	100
22E	English – II	2	4	-	25	25	50
	Language Proficiency for Employability http://kb.naanmudhalvan.in/Special:Filepath/Cambridge_Course_Details.pdf	2	2	-	25	25	50
23A	Core III – Fundamentals of Geomorphology - II	4	5	-	25	75	100
23P	Core IV – - Practical - Basics of Map Making	4	-	5	40	60	100
2AC	Allied: Paper II - Statistics for Geography -II	4	6	-	25	75	100
2FB	Value Education – Human Rights #	2	2	-	-	50	50
	Swatch Bharat Summer Internship*	-	-	-	-	-	-
	Total	**22**	**25**	**5**	**150**	**400**	**550**

THIRD SEMESTER							
31T	Language - III	4	6		25	75	100
32E	English - III	4	6	-	25	75	100
33A	Core V - Climatology	4	4	-	25	75	100
33B	Core VI – Population & Settlement	4	4	-	25	75	100
3AC	Allied: III – Elements of Cartography	4	5	-	25	75	100
3ZA	Skill Based Subject – Basics in Computers **(Minimum 2 hrs compulsory lab for a week)**	3	3	-	20	55	75
3FB / 3FC / 3FD	Tamil @ / Advanced Tamil # (OR) Non – Major Elective – I (Yoga for Human Excellence) # / Women's Rights #	2	2	-	-	50	50
	Total	**25**	**30**		**145**	**480**	**625**
FOURTH SEMESTER							
`41T	Language - IV	4	6	-	25	75	100
42E	English - IV	4	6	-	25	75	100
43A	Core VII – Oceanography	4	4	-	25	75	100
43P	Core VIII – Practical – Map Interpretation and Representation of Climatic Data	3	-	3	30	45	75
43Q	Allied: IV – Practical - Cartography	3	-	3	30	45	75
4ZB	Skill Based Subject – Basics of GIS & GPS **(Minimum 2 hrs compulsory lab for a week)**	3	3	-	20	55	75
4FB / 4FE	Tamil @ / Advanced Tamil # (OR) Non – Major Elective – II (General Awareness #)	2	2	-	-	50	50
	NAAN MUTHALVAN-Digital Skills for Employability – Office Fundamentals http://kb.naanmudhalvan.in/Special:Filepath/Microsoft_Course_Details.xlsx	**2**	**2**	-	25	25	50
	Total	**25**	**24**	**6**	**160**	**465**	**625**

FIFTH SEMESTER							
53A	Core IX – Geography of Natural Regions of the World	4	6	-	25	75	100
53B	Core X – Geography of Tamil Nadu	3	6	-	20	55	75
53C	Core XI – Geography of Resources - I	4	6	-	25	75	100
53D	Core XII – Remote Sensing and its Applications in Geography	4	5	-	25	75	100
5EA	Elective – I, Urban Geography	4	4	-	25	75	100
5EB	Skill Based- Subject – Disaster Studies		3	-	20	55	75
	Total	**22**	**30**		**140**	**410**	**550**
SIXTH SEMESTER							
63A	Core XIII – Geography of Resources - II	4	6	-	25	75	100
63B	Core XIV – Environmental Studies and Management	3	6	-	20	55	75
63P	Core XV – Practical - Surveying & Interpretation of Aerial Photos and Satellite Images **(Minimum 2 hrs compulsory lab for a week)**	4	-	5	40	60	100
6EA	Elective –II, Political Geography	4	5	-	25	75	100
6ED	Elective – III, Regional Geography of South East Asia	4	5	-	25	75	100
6ZD	Skill Based Subject – Geography of Tourism	3	3	-	20	55	75
67A	Extension Activities @	2	-	-		50	50
	Other Item Swatch Bharat Internship Scheme - II	2	-	-	-	-	-
	Employability Readiness- Naan Mudhalvan Course	-	-	-	-	-	-
	Total	**24**	**25**	**5**	**140**	**460**	**600**
	Grand total	**140**	**161**	**19**	**860**	**2640**	**3500**

@ No University Examinations. Only Continuous Internal Assessment (CIA) # No ContinuousInternal Assessment (CIA), Only University Examinations.

List of Elective papers (Colleges can choose any one of the paper as Electives)		
Elective – I	**A**	Urban Geography
	B	Natural disasters and Management
	C	Bio-Geography
Elective – II	**A**	Political Geography
	B	Geography of USA
	C	Regional Geography of Middle East
Elective – III	**A**	Regional Geography of Southeast Asia
	B	Geography of Japan
	C	Medical Geography

SCHEME OF VALUATION	
CORE PAPERS	**ELECTIVE PAPERS**
CREDITS – 4; MARKS - 100	CREDITS – 4; MARKS - 100
Marks Distribution:	**Marks Distribution:**
Internal–25 Marks	Internal – 25 Marks
External – 75 Marks	External – 75 Marks

SCHEME OF VALUATION	
SKILL BASED SUBJECT	**NON MAJOR ELECTIVE**
CREDITS – 3; MARKS - 75	CREDITS – 2; MARKS - 50
Marks Distribution:	**Marks Distribution:**
Internal–20 Marks	Internal – NIL
External – 55 Marks	External – 50 Marks

SCHEME OF VALUATION
CORE PRACTICAL SUBJECT
CREDITS – 4; MARKS - 100
Marks Distribution:
Internal–25 Marks
External – 75 Marks

First Semester

Course code	13A	FUNDAMENTALS OF GEOMORPHOLOGY – I	L	T	P	C
Core/ Elective/ Supportive		Core	5	0	0	4
Pre-requisite		Basic knowledge of fundamentals of landforms	Syllabus version		2021-2022	

Course Objectives:

To understand about Landforms its origin and evolution.
To learn about the Geomorphic features in details.

Course Outcomes:

After the completion of course, the students will have ability to:

CO1	Understand the functioning of Earth systems in real time and analyze how the natural and anthropogenic operating factor affects the development of landforms.	K2
CO2	Distinguish between the mechanisms that control these processes	K1
CO3	Assess the roles of structure, stage and time in shaping the landforms interpret geomorphological maps and apply the knowledge in geographical research.	K3
CO4	Interpret geomorphological maps and apply the knowledge in geographical research.	K3
CO5	Assess how different scales of time and space affect geomorphologic processes.	K2

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate;

Unit- I	**Geomorphology**	**18 hours**

Geomorphology – meaning, scope and content - Interior of the Earth – Origin of the Earth and related theories – Geological Time Scale.

Unit- II	**Origin of Continents and Oceans**	**18 hours**

Origin of Continents and Oceans - Continental Drift Theory – Plate Tectonics – Sea Floor Spreading.

Unit- III	**Earthquakes and Volcanoes**	**18 hours**

Earthquakes and Volcanoes: Definition, causes and types- Distribution and effects.

Unit- IV	**Earth movements: Endogenic and Exogenic**	**18 hours**

Earth movements: Endogenic and Exogenic – Diastrophism – Folds - Faults: Types.

Unit- V	**Rocks: Types**	**18 hours**

Rocks: Types - Igneous, Sedimentary and Metamorphic – Soil: Formation and Profile.

	Total lecture hours	**90**

Text Books:

1	Thornbury, W.D., (1984). Principles of Geomorphology, John Wiley and Sons, New York.

Books For Reference:

1	Strahler, A.N. and Strahler A.H., (1992). Modern Physical Geography, John and Wiley Sons, New York.
2	Dayal, P., (1995). Text Book of Geomorphology, Shukla Book Depot, Patna.
3	Savindra Singh, (2002). Geomorphology, Prayag Pustak Bhawan, Allahabad.
4	Das Gupta, A and Kapoor, A.N., (2001). Principles of Physical Geography, S.C. Chand & Company Ltd, New Delhi.
5	Sharma, V.K., (1986). Earth Surface Process and forms, Tata McGraw Hill Publishing Company Ltd, New Delhi.
6	Bloom, Arthur L. (1998), Geomorphology, Pearson Education Pvt. Ltd. Singapore.

Related Online Contents:	
1	https://study.sagepub.com/sites/default/files/01_Gregory_Lewin(web)_Ch-01%20_1.pdf
2	https://en.wikipedia.org/wiki/Geomorphology
Course Designed By: Dr. J. Ganesan	

Mapping with Program Outcomes										
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	S	S	S	S	S	S	S	S	S
CO2	S	S	M	S	S	S	S	M	S	S
CO3	S	M	S	S	L	S	M	S	S	S
CO4	M	S	S	M	S	M	S	S	M	L
CO5	S	S	S	S	S	S	S	S	S	S

S- Strong: M- Medium: L- Low

Course code	13B	GEOGRAPHY OF INDIA	L	T	P	C
Core/ Elective/ Supportive		Core	5	0	0	4
Pre-requisite		Basic knowledge of Geographical place in India	Syllabus version		2021-2022	

Course Objectives:

To understand about the Location and extent - Physical features and Climate of India.
To obtain about Agriculture, Mineral, Industries and Population aspects in India.

Course Outcomes:

After the completion of course, the students will have ability to:

CO1	Understand the physical profile of the country	K2
CO2	Synthesize and develop the idea of regional dimensions.	K1
CO3	Study the resource endowment and its spatial distribution and utilization for sustainable development	K3
CO4	Understand the conserve the mineral resource and distribution	K3
CO5	population distribution variation and growth in India	K2

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate;

Unit- I	Location and Extent	18 hours

Location and Extent – Physical features –Major Physiographic Division – Drainage – Climate – Soil and Natural Vegetation.

Unit- II	Agriculture	18 hours

Agriculture: Irrigation – Types and distribution – Major crops and their distribution: Rice, Wheat, Sugarcane and Cotton - Plantation Crops: Tea and coffee- Green Revolution – Problems of Indian Agriculture.

Unit- III	Minerals	18 hours

Minerals: Iron ore, Copper, Mica, Manganese, Bauxite and Atomic minerals – Power resources: Coal, Petroleum, Natural gas and hydal power – Multi-purpose projects - Atomic Power Stations – Alternative Energy Resources.

Unit- IV	Industries	18 hours

Industries: Distribution and production of major Industries: Cotton and Jute Textiles, Iron and steel, Sugar, Cement, Chemical and Automobile - Major Industrial Regions.

Unit- V	Population	18 hours

Population, Transport and Trade: Population –Growth, density, distribution and problems. Transport: Land, water and air – Foreign trade.

	Total lecture hours	90

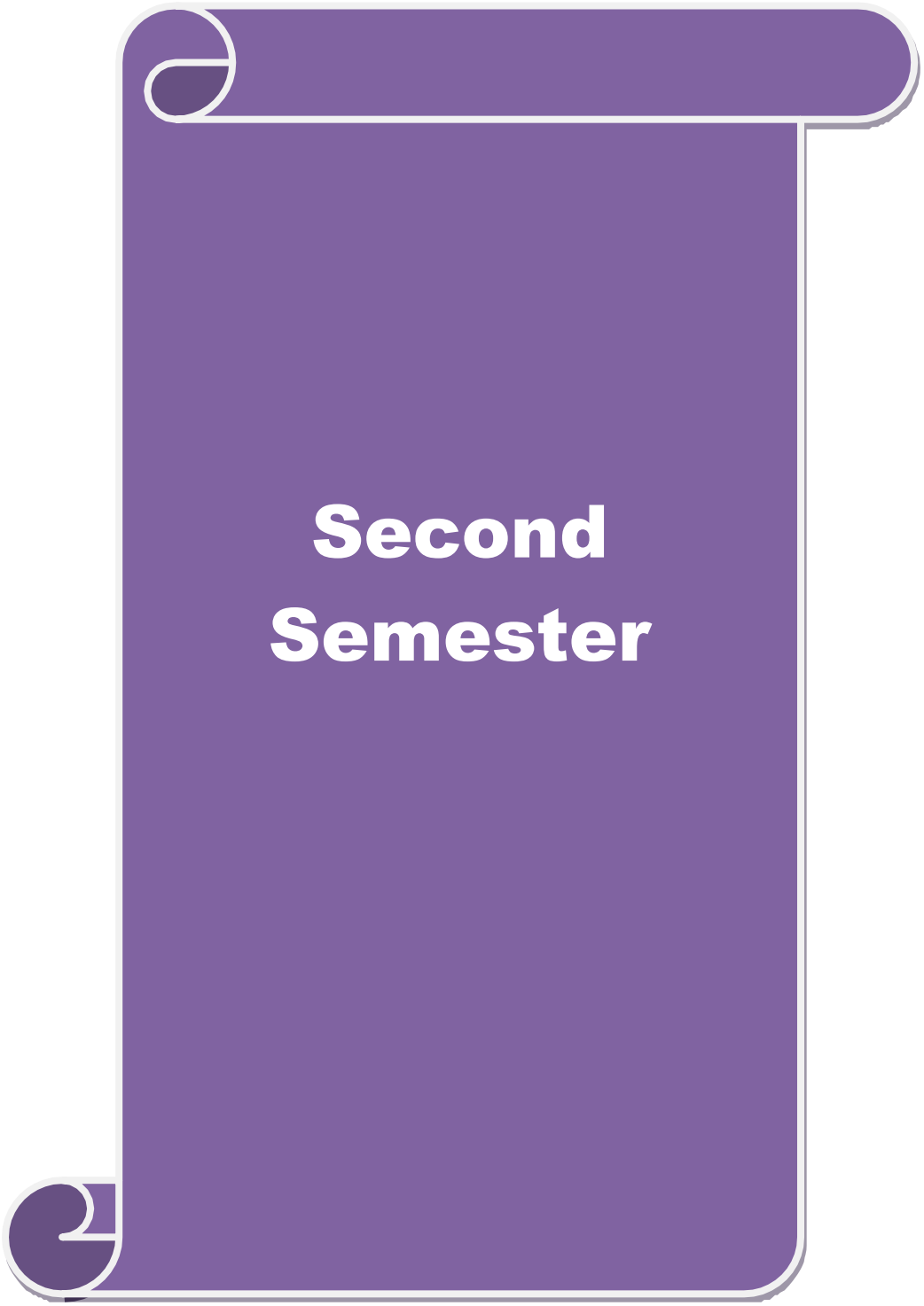
Text Books:

1	Gopal Singh, (1970), A Geography of India, Atnaram & sons, New Delhi.
2	Khullar, D. R., (2010), India – A Comprehensive Geography, Kalyani Publishers, New Delhi.

Books For Reference:	
1	Majid Hussain (2008), Geography of India, Tata McGraw Hill Publishing company Ltd., New Delhi.
2	Pal, Saroj K. (2003), Physical Geography of India – A study in Regional Earth Sciences, Orient Longman Pvt. Ltd. Kolkata.
3	Singh, R.L., (1977), India - A Regional Geography, NGSI, Varanasi.
4	Sharma, T.C., (2003), India – An Economic & Commercial Geography, Vikas Publishing House Pvt. Ltd., New Delhi.
5	Krishnan, M.S. (1982), Geology of India and Burma, CBS Publishers, New Delhi.
6	Mathur, S.M. (1982), Physical Geology of India, National Book Trust, India, New Delhi.
Related Online Contents:	
1	https://en.wikipedia.org/wiki/Geography_of_India
2	https://www.cs.mcgill.ca/~rwest/wikispeedia/wpcd/wp/g/Geography_of_India.htm
Course Designed By: B. Sasikumar	

Mapping with Program Outcomes										
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	S	S	S	S	S	S	S	S	M
CO2	S	S	M	S	S	S	S	M	M	S
CO3	S	M	S	S	L	S	M	L	S	S
CO4	M	S	S	M	S	M	S	S	M	S
CO5	S	S	M	S	L	S	S	M	S	M

S- Strong: M- Medium: L- Low


Second
Semester

Course code	23A	FUNDAMENTALS OF GEOMORPHOLOGY-II	L	T	P	C
Core/ Elective/ Supportive		Core	5	0	0	4
Pre-requisite		Basic knowledge in mountain, plain and plateau of the Earth	Syllabus version		2021-2022	

Course Objectives:

The objective of the course is to familiarize the students with the geomorphic processes. After completing the course, students will be able to understand various landforms of the earth surface.

Course Outcomes:

After the completion of course, the students will have ability to:

CO1	Describe the exogenous and endogenous processes in the landscape, their importance in landform development, and distinguish the mechanisms that control these processes.	K2
CO2	Analyze how variations in climate, tectonics and environment affect the development of landforms.	K1
CO3	Assess how different scales of time and space affect geomorphological processes.	K3
CO4	Explain and apply geomorphological methods used in research today.	K3
CO5	Understand the topographical landforms and morphological changes.	K2

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate;

Unit- I	**Weathering and associated landforms**	**18 hours**

Weathering and associated landforms: Gradational Process: Aggradation and Degradation – Weathering and Mass Wasting – Types – Resultant features.

Unit- II	**Fluvial landscapes**	**18 hours**

Fluvial landscapes: Drainage pattern, Agents of Erosion: Running water – Erosional & Depositional Landforms Concept of Cycle of Erosion by Davis

Unit- III	**Karst landscapes**	**18 hours**

Karst landscapes: Work of Underground Water – Karst Landforms.

Unit- IV	**Glacial and Glaciofluvial landscapes**	**18 hours**

Glacial and Glaciofluvial landscapes: Glaciers – Types – Erosional & Depositional Landforms.

Unit- V	**Aeolian landscapes**	**18 hours**

Aeolian landscapes: Wind – Aeolian Landforms – Wave – Coastal Landforms.

	Total lecture hours **90**

Text Books:

1	Thombury W.D. (1969), Principles of Geomorphology, John Willey and Sons New York.

Books For Reference:

1	Arthur N. Strahler (1989), Physical Geography, Prentice Hall, New Jersey, U.S.A.
2	Worcestor Phillip G.(1972), A Text Book of Geomorphology, East West Edition.
3	Woobridge & Morgan, An Outline of Geomorphology, Longman London.
4	Monkhouse F.J. (1976) Principles of Physical Geography, Hodder & Stroughton, London.

Related Online Contents:	
1	https://study.sagepub.com/sites/default/files/01_Gregory_Lewin(web)_Ch-01%20_1.pdf
2	https://en.wikipedia.org/wiki/Geomorphology
Course Designed By: M. Panneerselvam	

Mapping with Program Outcomes										
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	S	S	S	S	S	M	S	M	S
CO2	S	S	M	S	S	S	S	M	S	S
CO3	S	M	S	S	M	S	M	S	S	M
CO4	S	S	S	M	S	S	S	S	M	S
CO5	S	S	S	S	L	S	S	S	S	L

S- Strong: M- Medium: L- Low

Course code	23P	BASICS OF MAP MAKING - PRACTICAL	L	T	P	C
Core/ Elective/ Supportive		Core	0	0	5	4
Pre-requisite		Basic knowledge of map reading	Syllabus version		2021-2022	

Course Objectives:

To understand about the map scale and Statement and Representative Fraction.
To learn about Enlargement and Reduction of Maps, Contours, Slope and Drainage Basin.

Course Outcomes:

After the completion of course, the students will have ability to:

CO1	Graduate student to prepare the scale and mapping knowledge.	K2
CO2	To understand the student learn map prepare and modify the scale.	K1
CO3	Analyze the real world physical features form the toposheets.	K3
CO4	Construction of the elevation of the mountain prepares toposheets.	K3
CO5	To understand the scale divisions and toposheet knowledge.	K2

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate;

Unit- I	Map Scale	18 hours

Map Scale: Methods of representation of scales – Statement and Representative Fraction. Graphical: Linear and Comparative Scales.

Unit- II	Enlargement and reduction of maps	18 hours

Enlargement and reduction of maps: Square and triangle – Measurement of distance: Thread and Divider - Measurement of area: Square and Strip methods.

Unit- III	Representation of Relief	18 hours

Representation of Relief: Contours: Different methods – Interpolation of contours - Cross- section of selected relief features.

Unit- IV	Profile Drawing	18 hours

Profile Drawing: Serial, Super-imposed, Composite and Projected – Altimetric Frequency Curve.

Unit- V	Record	18 hours

Record – 20 Marks

	Total lecture hours	90

Text Books:

1	Monk house, F.J. and Wilkinson, H.R., (1989), Maps and Diagrams, B.I.Publications, New Delhi.
2	Sethu Rakkayi, S., (2014), Puvippadaviyaloor arimugam, Sree Meenakshi Offsets, Madurai.
3	Singh, R. L., (2005), Elements of Practical Geography, Kalyani Publishers, New Delhi.
4	Gopal singh, (1996), Map work and practical geography, Vikas Publishing House Pvt. Ltd.,

Books For Reference:

1	Khullar, (1997), Practical Geography, Educational Publishers, New Delhi.
2	Zulfequar Ahmad Khan, M. D., (1998), Text Book of Practical Geography, Concept Publishing Company, New Delhi.
3	Pijushkanti Saha and Partha Basu, (2010), Advanced Practical Geography, Books and Allied Pvt. Ltd, Kolkata.

Related Online Contents:	
1	https://ncert.nic.in/ncerts/l/kegy301.pdf
2	https://www.esri.com/industries/k-12/education/~/media/Files/Pdfs/industries/k-12/pdfs/intrcart.pdf
Course Designed By: Dr. J. Ganesan	

Mapping with Program Outcomes										
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	S	S	S	L	S	S	S	S	M
CO2	S	S	M	S	S	S	S	M	M	S
CO3	S	M	S	S	L	S	M	S	S	M
CO4	M	S	S	M	S	M	S	S	M	S
CO5	S	M	M	S	L	S	S	M	S	S

S- Strong: M- Medium: L- Low

Third Semester

Course code	33A	CLIMATOLOGY	L	T	P	C
Core/ Elective/ Supportive		Core	4	0	0	4
Pre-requisite		Basic knowledge of daily weather report observations	Syllabus version		2021-2022	

Course Objectives:

To understand about Atmosphere and its properties and Functions
To learn about the Atmospheric Pressure, Wind, Cloud and Classification.

Course Outcomes:

After the completion of course, the students will have ability to:

CO1	Understand the elements of weather and climate and its impacts at different scales.	K2
CO2	Comprehend the climatic aspects and its bearing on planet earth.	K1
CO3	Understand the climate change and monsoon conditions of the world.	K3
CO4	Understand the foundational concepts of climate change and its impacts.	K3
CO5	To understand the climatic changes from the world.	K2

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate;

Unit- I	Climatology	14 hours

Climatology: Meaning, scope and content – Atmosphere: Composition and Structure –Weather and Climate: Definition and its significances.

Unit- II	Insolation	14 hours

Insolation –Heat balance – Horizontal and vertical distribution of temperature – Factors affecting distribution of temperature.

Unit- III	Atmospheric Pressure	15 hours

Atmospheric Pressure: Vertical and Horizontal - Major Pressure Belts – Winds: Planetary and Local Winds – Monsoon - Atmospheric Moisture: Humidity – Condensation and Clouds.

Unit- IV	Precipitation	14 hours

Precipitation: Snow fall and Rain fall: Types and distribution of rainfall - Air masses: Types – Fronts and it types – Cyclone: Tropical and Temperate.

Unit- V	Climatic Classification	15 hours

Climatic Classification: Need and basis - Koeppen's Classification – El-Nino and La- Nino - Global Warming - Weather forecasting.

	Total lecture hours	72

Text Books:

1	Lal, D.S., (1990). Climatology, Chatianya Publishing House, Allahabad.
2	Tewartha, G.T., (1980). Introduction to Climate, Tata McGraw Hill, New York.
3	Critch field, H.J., (1987). General Climatology, Prentice Hall of India Pvt. Ltd, New Delhi.

Books For Reference:

1	Siddhartha, K., (2005). Atmosphere, Weather and Climate, Kisalaya Publications Pvt. Ltd., New Delhi.
2	Richmond W. Longley (1970). Elements of Meteorology, John Willey & sons inc, New York.
3	Savindra Singh, (2002). Physical Geography, Prayag Pustak Bhawan, Allahabad

Related Online Contents:	
1	https://en.wikipedia.org/wiki/Climatology
2	https://www.environmentalscience.org/climatology
Course Designed By: A. Suresh	

Mapping with Program Outcomes										
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	S	S	S	S	S	S	S	S	S
CO2	S	S	M	S	S	S	S	M	S	S
CO3	S	M	S	S	M	S	M	S	S	M
CO4	S	S	S	M	S	S	S	S	L	S
CO5	S	S	S	S	L	S	M	S	S	M

S- Strong: M- Medium: L- Low

Course code	33B	POPULATION AND SETTLEMENT	L	T	P	C
Core/ Elective/ Supportive		Core	4	0	0	4
Pre-requisite		Knowledge of demographic character	Syllabus version		2021-2022	

Course Objectives:

To understand about the Origin and Development of Settlements, Types and Theories.
To learn about Rural, Urban Settlements and Characteristics.

Course Outcomes:

After the completion of course, the students will have ability to:

CO1	Know the changing human and cultural landscape at different levels.	K2
CO2	Understand patterns and processes of population growth and it implications. Appreciate the nature and quality of human landscapes.	K1
CO3	Examine population dynamics and characteristic with contemporary issues.	K3
CO4	Have sound knowledge of key concept, different components of population.	K3
CO5	Appreciate the nature and quality of human landscapes.	K2

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate;

Unit- I	Population Geography	15 hours

Population Geography: Scope and Content – Factors affecting Population Distribution –Population Distribution of India and World.

Unit- II	Population Growth	15 hours

Population Growth: Factors affecting Population Growth – Demographic Transition – Population Composition and Structure – Fertility and Mortality Rates.

Unit- III	Human Migration	14 hours

Human Migration: Factors – Causes and Consequences –Types – Population theories: Malthus – Ricardo – Optimum and Transitional.

Unit- IV	Settlement Geography	14 hours

Settlement Geography: Site and Situation –Types - Urban Land use Theories: Concentric - Sector – Multiple-Nuclei.

Unit- V	Urban Centers	14 hours

Urban Centers: Growth and Development - Associated Problems – Metropolis, Megalopolis and Conurbation – Functional zones of Coimbatore, Chennai and Delhi.

	Total lecture hours	72

Text Books:

1	Mandal R.B (2009), Urban Geography: A Text Book; Concept Publishing Co., New Delhi.
2	Siddhartha K, (2013), Cities, Urbanisation and Urban Systems, Kisalaya publication Pvt. Ltd New Delhi.

Books For Reference:	
1	Ramachandran .R (1989), Urbanization and Urban Systems in India, Oxford University Press, Delhi 4 .Beaujeau Garnier .J (1966), Geography of Population, Longman Group, London.
2	B.N.Ghosh (1985), Fundamentals of population geography, sterling publishing, New Delhi.
3	Richmond W. Longley (1970). Elements of Meteorology, John Willey & sons Inc., New York.
4	Chandha, R.C (1986), A Geography of population, Concepts, patterns, Kalyani publishers, New Delhi.
5	A Geography of Population, World patterns, John Wiley & sons. New York.
Related Online Contents:	
1	http://ncert.nic.in/ncerts/l/legy110.pdf
2	http://ncert.nic.in/ncerts/l/legy110.pdf
Course Designed By: G. Lisha	

Mapping with Program Outcomes										
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	S	S	M	S	S	S	S	M	S
CO2	M	S	M	S	L	M	S	M	S	M
CO3	S	M	S	S	L	S	L	S	S	M
CO4	M	S	S	M	S	M	S	S	M	S
CO5	S	M	S	S	S	S	M	S	S	S

S- Strong: M- Medium: L- Low

Course code	3AC	ELEMENTS OF CARTOGRAPHY	L	T	P	C
Core/ Elective/ Supportive		Allied	5	0	0	4
Pre-requisite		Basic knowledge of art of mapping work	Syllabus version		2021-2022	

Course Objectives:

The course provides the basic concepts, techniques of cartography. After completion of course the students will understand the art and science of map making.

Course Outcomes:

After the completion of course, the students will have ability to:

CO1	Read and prepare the maps.	K2
CO2	Comprehend locational and spatial aspects of the earth surface.	K1
CO3	Use and importance of maps for regional development and decision-making.	K3
CO4	Understand the types of maps and uses.	K3
CO5	Development of the cartography knowledge form the yearly period.	K2

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate;

Unit- I	**Cartography**	**18 hours**

Cartography: Definition, Scope and Content – Maps: types and uses – Branches of Cartography – Development of Cartography from Ancient to Recent Period.

Unit- II	**Map Scales**	**18 hours**

Map Scales: Determination of Map Scales – Enlargement and Reduction – Direction and Bearing – Co–ordinate System – Projection: Classification and Uses.

Unit- III	**Map data**	**18 hours**

Map data: Collection and Classification –Base map – Complication – Generalization.

Unit- IV	**Map Design and Layout**	**18 hours**

Map Design and Layout: Symbolization – Lettering Styles, Standardization of Names –Mechanics of Map Construction: Drawing Materials, Equipment's and Instruments.

Unit- V	**Thematic and Complex Mapping**	**18 hours**

Thematic and Complex Mapping – Topographic Mapping - Atlas Mapping – Mapping Organizations of India: GSI, SOI- NATMO –Recent trends in Cartography.

	Total lecture hours	**90**

Text Books:

1	Misra, R.P. and Ramesh, A., (2002), Fundamentals of Cartography, Concept Publication Company, New Delhi.
2	Robinson, A.H., (1984), Elements of Cartography, John Wiley, London.

Books For Reference:

1	Monkhouse, F.J. and Wilkinson, H.R., (1989), Maps and Diagrams, B.I.Publications, New Delhi.
2	Sethu Rakkayi, S., (2014), Puvippadaviyaloor arimugam, Sree Meenakshi Offsets, Madurai.
3	Keates, J. S., (1982), Understanding Maps, Longman, London and New York.
4	Erwin Raiz, (1948), General Cartography, McGraw Hill Company., New York
5	Lawrence, G.R.P., (1979), Cartographic Methods, Methuen, London.

Related Online Contents:	
1	https://en.wikipedia.org/wiki/Cartography
2	https://en.wikipedia.org/wiki/Cartographic_design
Course Designed By: B. Sasikumar	

Mapping with Program Outcomes										
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	S	S	S	S	S	S	S	S	S
CO2	S	S	M	S	M	S	S	M	L	M
CO3	S	M	S	S	S	M	M	S	S	S
CO4	M	S	S	M	S	S	S	S	M	S
CO5	S	S	S	S	L	S	M	S	S	M

S- Strong: M- Medium: L- Low

Course code	3ZA	BASICS IN COMPUTER	L	T	P	C
Core/ Elective/ Supportive		Skill Based	3	0	0	3
Pre-requisite		Basic Knowledge in Computer	Syllabus version		2021-2022	

Course Objectives:

Through this course, students should: learn basic principles of using Windows operation system, learn and practice basic keyboarding and mouse use and search engines, and locate www addresses.

Course Outcomes:

After the completion of course, the students will have ability to:

CO1	Basic features of Microsoft Office.	K2
CO2	Improve the basic knowledge for computer operating system.	K1
CO3	The very use full to power point presentation for research work.	K3
CO4	Data analyzed and prepare the chart and table.	K3
CO5	Understand the email and Google uses..	K2

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate;

Unit- I	Meaning of computer	11 hours

Introduction: meaning of computer- history of computer – advantage of computer. – uses of computer – types of computer – parts of computer – computer hardware and software.

Unit- II	MS office	11 hours

MS office: Microsoft word processing – features of word processing – menu and commands – toolbars and button – word formation toolbars – creation documents – saving and documents – printing and documents – paragraph setting – working with tables.

Unit- III	Introduction to MS- excel	11 hours

Introduction to MS- excel – features of ms-excel – spread sheet – work sheet cell – cell pointer – cell adders – parts of ms-excel window – creating excel sheet, functions in excel sheet – chart.

Unit- IV	Microsoft PowerPoint	11 hours

Microsoft PowerPoint: power point basics – create presentation – insert and modify text – insert and edit animation and slide transitions.

Unit- V	The internet: introduction	10 hours

The internet: introduction – internet history – use of internet – World Wide Web - creation an e-mail account– search engines – downloading and uploading.

	Total lecture hours	54

Text Books:

1	Rajaraman. V" Fundamentals of Computers" Prentice Hall India Pvt., Limited, 2004
2	Ram. B," Computer Fundamentals" New Age International Publishers, 2014

Books For Reference:

1	Alexis Leon, Mathews Leon," Introduction to Computers", Leon Techworld.1999
2	Horowitz. E. and Sahani.S, "Fundamentals of Computers Alogrithms" W. H. Freeman & Company
3	Jaiswals. A, Fundamentals of Computer and information Technology today, Wiley Dreamtech India Pvt Ltd

Related Online Contents:	
1	https://www.tutorialspoint.com/basics_of_computers/basics_of_computers_introduction.htm
2	https://en.wikibooks.org/wiki/Computers_for_Beginners/The_Basics
Course Designed By: M. Logamani	

Mapping with Program Outcomes										
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	S	S	S	S	S	S	S	S	S
CO2	S	S	M	S	S	S	S	M	S	M
CO3	S	M	S	S	S	S	M	S	S	S
CO4	M	S	S	M	S	M	S	S	L	M
CO5	S	S	M	S	L	S	S	S	S	S

S- Strong: M- Medium: L- Low

Fourth Semester

Course code	43A	OCEANOGRAPHY	L	T	P	C
Core/ Elective/ Supportive		Core	4	0	0	4
Pre-requisite		Basic knowledge in coastal landforms	Syllabus version		2021-2022	

Course Objectives:

To understand about Major Oceans and Bottom relief Features.
To learn about the Ocean Currents, Ocean Deposits and Conservation of marine resource.

Course Outcomes:

After the completion of course, the students will have ability to:

CO1	Understand the oceanic process and availability of resources.	K2
CO2	Bottom relief of the ocean.	K1
CO3	Oceans temperature and salinity level from the world.	K3
CO4	The ocean wave changes the coastal land forms.	K3
CO5	Understand the valuable mineral resource deposit form the ocean bottom of the relief features.	K2

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate;

Unit- I	Oceanography	15 hours

Oceanography: Definition, scope and content – Oceans and Seas: Extent and Distribution –Surface Configuration of Ocean Floor – Continental Shelf – Continental Slope – Absyssal Plain - Deeps and Trenches.

Unit- II	Bottom relief features	14 hours

Bottom relief features of Pacific, Atlantic and Indian Oceans.

Unit- III	Ocean Temperature and Salinity	15 hours

Ocean Temperature and Salinity: Distribution and factors - Horizontal and Vertical – Factors affecting Temperature and Salinity Distribution.

Unit- IV	Ocean Water Movements	14 hours

Ocean Water Movements: Waves and Tides – Ocean Currents: types - currents of Pacific, Atlantic and Indian Oceans.

Unit- V	Oceans Deposits	14 hours

Oceans Deposits: types – Coral reefs: Formation and Types – Oceans resources and need for Conservation.

	Total lecture hours	72

Text Books:

1	Monkhouse, F.J. and Wilkinson, H.R., (1989), Maps and Diagrams, B.I.Publications, New Delhi.
2	Sethu Rakkayi, S., (2014), Puvippadaviyaloor arimugam, Sree Meenakshi Offsets, Madurai.
3	Singh, R. L., (2005), Elements of Practical Geography, Kalyani Publishers, New Delhi.

Books For Reference:	
1	Gopalsingh, (1996), Map work and practical geography, Vikas Publishing House Pvt.Ltd.,
2	Khullar, (1997), Practical Geography, Educational Publishers, New Delhi.
3	Zulfequar Ahmad Khan, M. D., (1998), Text Book of Practical Geography, Concept Publishing Company, New Delhi.
4	Pijushkanti Saha and Partha Basu, (2010), Advanced Practical Geography, Books and Allied Pvt. Ltd, Kolkata.
Related Online Contents:	
1	https://en.wikipedia.org/wiki/Oceanography
2	https://www.uv.es/hegigui/Kasper/por%20Robert%20H%20Stewart.pdf
Course Designed By: Dr. J. Ganesan	

Mapping with Program Outcomes										
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M	S	S	S	S	S	S	S	S	M
CO2	S	S	M	S	M	S	S	M	S	S
CO3	S	M	S	S	S	S	M	S	S	S
CO4	M	S	S	M	L	M	S	S	M	M
CO5	S	S	S	S	S	S	S	M	S	L

S- Strong: M- Medium: L- Low

Course code	43P	MAP INTERPRETATION AND REPRESENTATION OF CLIMATIC DATA – PRACTICAL	L	T	P	C
Core/ Elective/ Supportive		Core	0	0	4	4
Pre-requisite		Basic Knowledge of map reading and daily weather report observation	Syllabus version		2021-2022	

Course Objectives:

To understand about the Survey of India Topographic sheets, SOI and USGS Maps.
To learn about Indian daily weather report and climatic diagrams.

Course Outcomes:

After the completion of course, the students will have ability to:

CO1	To understand the toposheet practical knowledge.	K2
CO2	Understand sings and symbols real world features.	K1
CO3	Practical knowledge apply daily weather report.	K3
CO4	Analyze the climatic diagrams.	K3
CO5	Understand the climatic data uses.	K2

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate;

Unit- I	**Survey of India Topographic Maps**	**15 hours**

Survey of India Topographic Maps: Conventional Sings and Symbols – Cartographic Appreciation and Interpretation of SOI maps.

Unit- II	**Indian Daily Weather Reports**	**15 hours**

Indian Daily Weather Reports: Sings and Symbols – Station model - Interpretation of Weather Reports.

Unit- III	**Climatic Diagrams and Graphs**	**14 hours**

Climatic Diagrams: Graphs: Taylor's Climograph – Hythergraph and Ergograph.

Unit- IV	**Climatic Diagrams**	**14 hours**

Climatic Diagrams: Rainfall Dispersion – Wind Rose: Simple, Star, Octagonal and Compound.

Unit- V	**Record**	**14 hours**

Record work – 20 Marks

	Total lecture hours	**72**

Text Books:

1	Monkhouse, F.J. and Wilkinson, H.R., (1989), Maps and Diagrams, B.I.Publications, New Delhi.

Books For Reference:

1	Pijushkanti Saha and Partha Basu, (2010). Advanced Practical Geography, Books and Allied (P) Ltd, Kolkata.
2	Zulfequar Ahmad Khan, M. D., (1998). Text Book of Practical Geography, Concept Publishing Company, NewDelhi.
3	Singh, R. L., (2005). Elements of Practical Geography, Kalyani Publishers, New Delhi.
4	Gopal singh, (1996). Map work and practical geography, Vikas Publishing House Pvt. Ltd.,
5	Khullar, (1997). Practical Geography, Educational Publishers, New Delhi.

Related Online Contents:	
1	http://ncert.nic.in/textbook/pdf/legy303.pdf
2	https://ncert.nic.in/textbook/pdf/kegy308.pdf
Course Designed By: M. Panneer selvam	

Mapping with Program Outcomes										
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	S	S	M	S	S	S	S	M	S
CO2	M	S	M	S	S	S	S	M	S	S
CO3	S	M	S	S	M	S	M	S	S	M
CO4	M	S	S	M	S	M	S	S	M	S
CO5	S	M	S	S	L	S	S	M	S	S

S- Strong: M- Medium: L- Low

Course code	43Q	CARTOGRAPHY – PRACTICAL	L	T	P	C
Core/ Elective/ Supportive		Allied	0	0	5	4
Pre-requisite		Basic knowledge of Atlas Reading	Syllabus version		2021-2022	

Course Objectives:

The course provides the basic concepts, techniques of cartography. After completion of course the students will understand the arts and science of map making. The practical course is to provide technical skills in construction of map projection and learn various mapping techniques to the students.

Course Outcomes:

After the completion of course, the students will have ability to:

CO1	Have sound knowledge regarding the classification and elements of maps	K2
CO2	Have proper utilization of maps for the development	K1
CO3	Practical knowledge to develop map construction for feature plan.	K3
CO4	To understand real world mapping practical knowledge.	K3
CO5	Practical knowledge very use full to simple and bar diagrams.	K2

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate;

Unit- I	Map Projections	15 hours

Map Projections: types - Construction, Properties and uses of Conical Projection – One and Two standard Parallel – Bonne's and Polyconic Projection. Construction, properties and uses of Cylindrical Projection – Equi-distant and equal area Projection.

Unit- II	Properties and uses of Zenithal Projection	18 hours

Properties and uses of Zenithal Projection – Equal area, Gnomonic, Stereographic and Orthographic (Polar cases only)

Unit- III	Drawing of Graphs	18 hours

Drawing of Graphs: Line graph: Simple and Multiple – Frequency Curve – Histogram – Lorenz Curve.

Unit- IV	Diagrams	18 hours

Diagrams: Bar diagrams - Simple and Compound – Circle and Sector –Isopleths and Choropleth - Flow Maps.

Unit- V	Record	18 hours

Record – 20 Marks

	Total lecture hours	90

Text Books:

1	Monkhouse, F.J. and Wilkinson, H.R., (1989), Maps and Diagrams, B.I.Publications, New Delhi.
2	SethuRakkayi, S., (2014). Puvippadaviyaloor arimugam, Sree Meenakshi Offsets, Madurai.

Books For Reference:

1	Pijushkanti Saha and Partha Basu, (2010). Advanced Practical Geography, Books and Allied (P) Ltd, Kolkata.
2	Singh, R. L., (2005). Elements of Practical Geography, Kalyani Publishers, New Delhi.
	Gopal singh, (1996). Map work and practical geography, Vikas Publishing House Pvt. Ltd.,
3	Zulfequar Ahmad Khan, M. D., (1998). Text Book of Practical Geography, Concept Publishing Company, New Delhi.

Related Online Contents:	
1	https://www.researchgate.net/publication/325185733_A_Practical_Framework_for_Cartographic_Design
2	https://ncert.nic.in/textbook/pdf/kegy3ps.pdf
Course Designed By: Dr. D.Yuvaraj	

Mapping with Program Outcomes										
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	S	S	S	S	S	S	S	S	M
CO2	S	S	M	S	S	S	S	M	M	S
CO3	S	M	S	S	S	S	M	S	S	L
CO4	M	S	M	M	S	M	S	S	M	S
CO5	S	M	S	S	L	S	S	S	S	M

S- Strong: M- Medium: L- Low

Course code	4ZB	BASICS OF GIS AND GPS	L	T	P	C
Core/ Elective/ Supportive		Skill Based	3	0	0	3
Pre-requisite		Basic Knowledge in computer	Syllabus version		2021-2022	

Course Objectives:

To Maximize the efficiency of decision making and planning.

To Provide efficient means for data distribution and handling.

Course Outcomes:

After the completion of course, the students will have ability to:

CO1	Understand various components and principles of GIS	K2
CO2	Construct the thematic maps using different digital layers	K1
CO3	Apply GIS in various geographical studies	K3
CO4	Have comprehensive understand of GIS for the construction of maps and their use the development planning.	K3
CO5	Have knowledge of using GPS for the accurate location	K2

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate;

Unit- I	**GIS: Definition**	**11 hours**

GIS: Definition - Scope and Development - Components – GIS and Geography.

Unit- II	**GIS Data**	**11 hours**

GIS Data: Spatial and Non–Spatial -Sources of Data – Data Structure: Raster and Vector.

Unit- III	Functions and Organizational Aspects	**11 hours**

Functions and Organizational Aspects: RDBMS – GIS software- Geo-referencing–Digitization- Editing- Data Storage – Analysis – Buffering – Map design and layout.

Unit- IV	**Applications of GIS**	**11 hours**

Applications of GIS - Agriculture – Environment – Urban and Disaster

Unit- V	**GPS**	**10 hours**

GPS: Segments - Errors – Measurement – Uses and Applications.

	Total lecture hours	**54**

Text Books:

1	Ian Heywood, 2009), An Introduction to Geographical Information System, Pearson Education Pvt. Ltd., New Delhi.
2	Peter, A. Burrough Rachael, A. and McDonnell, (1998), Principles of Geographical Information Systems, Oxford University Press Inc., New York.
3	LO, C.P., Albert K.W.Yeung, (2007), Concepts and Techniques of Geographic Information Systems, Prentice-Hall of India, New Delhi.
4	Anji Reddy, M., (2004), Geoinformatics for Environmental Management, BS Publications, Hyderabad.

Books For Reference:	
1	Kang-tsungchang, (2006), Introduction to Geographic Information systems, Tata McGraw –Hill Publishing Company Limited, New Delhi.
2	Kumar, S., (2003), Basics of Remote sensing and GIS, Laxmi publications, New Delhi.
3	Chang, Kang-tsung (2002), Introduction to Geographic Information Systems, Tata McGraw Hills Publishing Company Ltd, New Delhi.
4	Siddique, M.A. (2006), Introduction to Geographical Information Systems, Sharda Pustak Bhawan, Allahabad.
Related Online Contents:	
1	https://en.wikipedia.org/wiki/Geographic_information_system
2	https://en.wikipedia.org/wiki/Global_Positioning_System
Course Designed By: Dr. D.Yuvaraj	

Mapping with Program Outcomes										
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	S	S	S	M	S	S	S	S	M
CO2	S	S	M	S	S	M	L	M	S	S
CO3	S	M	S	S	L	S	M	S	S	M
CO4	M	S	S	M	S	S	S	S	M	S
CO5	S	S	M	S	M	S	S	M	S	S

S- Strong: M- Medium: L- Low

Fifth Semester

Course code	53A	GEOGRAPHY OF NATURAL REGIONS OF THE WORLD	L	T	P	C
Core/ Elective/ Supportive		Core	6	0	0	4
Pre-requisite		Basic knowledge of Atlas Reading	Syllabus version		2021-2022	

Course Objectives:

The objectives of this course are to give an overview of the land, natural vegetation and economy of the different regions of the world, so that the students are aware of world resources.

Course Outcomes:

After the completion of course, the students will have ability to:

CO1	Understand the different geographical natural region form the world	K2
CO2	To understand tropical region natural life and economic level.	K1
CO3	To understand tropical region natural life and economic level.	K3
CO4	Warm temperate region variation of natural resource and climatic conditions.	K3
CO5	Polar regions understand the climate and animal life.	K2

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate;

Unit- I	**Region: Definition**	**22 hours**

Region: Definition – Methods of delineation of regions – Formal and functional regions –Equatorial Regions: Situation – Climate - Natural vegetation – Natural resources and Economic development.

Unit- II	**Tropical Regions**	**22 hours**

Tropical Regions: Situation - Climate - Monsoon – Natural vegetation- Animal life - Natural resources and Economic development.

Unit- III	**Warm Temperate Regions**	**22 hours**

Warm Temperate Regions: Mediterranean: China and steppe: Situation - Climate – Natural vegetation- Animal life – Natural resources and Economic development.

Unit- IV	**Cool Temperate Regions**	**22 hours**

Cool Temperate Regions: West European, Prairie: Situation - Climate – Natural vegetation- Animal life – Natural resources and Economic development.

Unit- V	**Cool Temperate Polar Regions**	**20 hours**

Cool Temperate Polar Regions: Tundra: Situation - Climate – Natural vegetation - Animal life – Natural resources and Economic development.

	Total lecture hours	**108**

Text Books:

1	Singh, R.L., (1971), India: A Regional Geography, NGSI,Varanasi.
2	Dudley Stamp, (1979), the World Regional Geography, Orient Longman Limited, New Delhi.

Books For Reference:	
1	Darshan Singh Manku (1998), A Regional Geography of the world, Kalyani publishers, New Delhi.
2	Goh Cheng Leong (1982), Human & Economic Geography, Oxford University Press, New York.
3	Khanna, K.K. and Gupta, V.K., (1988), Economic and Commercial geography, Sultan Chand and Sons, New Delhi.
Related Online Contents:	
1	http://www.ncert.nic.in/ncerts/l/gess206.pdf
2	https://en.wikipedia.org/wiki/Natural_region
Course Designed By: P. Umasankar	

Mapping with Program Outcomes										
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	S	S	M	S	S	S	S	M	S
CO2	S	S	M	S	L	S	S	M	S	S
CO3	S	M	S	S	M	S	M	S	S	M
CO4	M	S	S	M	S	M	S	S	M	S
CO5	S	S	S	S	S	S	S	M	S	S

S- Strong: M- Medium: L- Low

Course code	53B	GEOGRAPHY OF TAMILNADU	L	T	P	C
Core/ Elective/Supportive		Core	6	0	0	3
Pre-requisite		Basic knowledge of districts and places in Tamilnadu	Syllabus version		2021-2022	

Course Objectives:

To understand about the location, physiography and climate of Tamil Nadu
To learn about agricultural, minerals, industrial and human resources of Tamil Nadu.

Course Outcomes:

After the completion of course, the students will have ability to:

CO1	Understand the physical features and distribution.	K2
CO2	Know the agriculture practices of commercial and plantation crops.	K1
CO3	Evaluate the mineral resource and deposition of region.	K3
CO4	Know the industries types and distribution.	K3
CO5	Understand transport types and population variation in district level.	K2

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate;

Unit- I	**Location and extent**	**22 hours**

Location and extent-Physical divisions–Climate–Rivers-Soils and Natural vegetations.

Unit- II	**Agriculture and Irrigation**	**22 hours**

Agriculture and Irrigation: Types and distribution – Problems – Major crops: Paddy, Sugarcane, Cotton and Groundnut - Plantation crops: Tea, Coffee and Rubber.

Unit- III	**Minerals and Power Resources**	**22 hours**

Minerals and Power Resources: Coal, Iron ore, Petroleum, Atomic and Thermal power - Major Hydal Projects – Non-conventional energy sources: Solar and Wind energy.

Unit- IV	**Industries**	**20 hours**

Industries: Cotton textiles – Cement – Sugarcane – Chemical - Paper and Automobiles.

Unit- V	**Population**	**22 hours**

Population, Transport and Trade: Population Growth and Distribution – Rural and Urban Population – Transport: types – Major Roadways, Railways and Airways – Trade.

	Total lecture hours	**108**

Text Books:

1	Kumaraswamy,V., (2014), Geography of Tamil Nadu, Sakthi Abirami Publishers, Kumbakonam.
2	Kullar, D. R. (2010), India: A Comprehensive Geography, Kalyani Publishers, New Delhi.

Books For Reference:	
1	Gopal Singh (1988), A Geography of India, Atnaram & sons, New Delhi.
2	Ramesh, A and Tiwari, P.S., (1983), Basic Resources Atlas of Tamil Nadu, Dept. of Geography, University of Madras, Chennai.
3	Sharma, T.C. (2003), India: An Economic & Commercial Geography, Vikas Publishing House Pvt. Ltd., New Delhi.
4	Velappan, D., (1986), Economic Development of Tamil Nadu – Emerald Publishers, Chennai.
Related Online Contents:	
1	https://en.wikipedia.org/wiki/Geography_of_Tamil_Nadu
2	http://shodhganga.inflibnet.ac.in/bitstream/10603/83973/6/nayeema_chapter2.pdf
Course Designed By: Dr. B. Sasikumar	

Mapping with Program Outcomes										
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	S	S	S	S	S	S	S	S	S
CO2	S	S	M	S	S	S	S	M	M	S
CO3	S	M	S	S	M	S	M	S	S	M
CO4	M	S	S	M	S	M	S	S	M	S
CO5	S	S	S	S	L	S	S	S	S	S

S- Strong: M- Medium: L- Low

Course code	53C	GEOGRAPHY OF RESOURCES - I	L	T	P	C
Core/ Elective/Supportive		Core	6	0	0	4
Pre-requisite		Basic knowledge in Atlas Reading	Syllabus version		2021-2022	

Course Objectives:

To understand concepts and approaches of natural resource management;
To examine use of various resources and to analyze future prospects,

Course Outcomes:

After the completion of course, the students will have ability to:

CO1	Demonstrate their knowledge of resource and environmental issues.	K2
CO2	Demonstrate their knowledge of the role that geography can play in analyzing resource, environmental degradation and improving resource, environmental management.	K1
CO3	Evaluate the resource and conservation.	K3
CO4	Understand frost resource importance and conservation methods.	K3
CO5	Understand the agriculture resource and crop types.	K2

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate;

Unit- I	**Geography of Resources**	**22 hours**

Geography of Resources: Definition, Scope and Content – Classifications – Characteristic and their distribution – Utilization and Conservation of Resources.

Unit- II	**Soil resources**	**22 hours**

Soil resources: Formation - Soil Profile –Classification and distribution - Fertility, Soil erosion and Soil Conservation.

Unit- III	**Forest Resources**	**22 hours**

Forest Resources: Equatorial – Tropical – Temperate and Polar - Distribution and Economic Importance - Forest Products and Uses.

Unit- IV	**Animal Resources**	**20 hours**

Animal Resources: Livestock - Cattle - Types – Pigs and Poultry – Growth and distribution - Economic Importance.

Unit- V	**Agricultural Resources**	**22 hours**

Agricultural Resources: Factors Influencing Agriculture - World Agricultural Types - Geographical distribution of Rice, Wheat, Cotton and Sugarcane, Tea and Coffee.

	Total lecture hours	**108**

Text Books:

1	Alka Gautham (2013), Geography of resources: Exploration, Conservation and Management, Sharda Pustak Bhavan, New Delhi.
2	Goh Cheng Leong (1987), Human & Economic Geography, Oxford University Press, New York.

Books For Reference:	
1	Alexander J.W., (2006), Economic Geography –Prentice Hall of India Pvt. Ltd. New Delhi.
2	Khanna K.K. and Gupta, V.K., (2004), Economic and Commercial Geography, Sultan Chand and sons, NewDelhi.
3	K. Siddhartha (2004), Economic Geography, Kisalaya Publications Pvt. Ltd.
4	Thomas R.S,(1968),Geography of Economic Activity, McGraw Hill Book Company, New Delhi.
Related Online Contents:	
1	https://www.oxfordbibliographies.com/view/document/obo-9780199874002/obo-9780199874002-0091.xml
2	https://gurukpo.com/Content/BA/Geo_of_Resorce.pdf
Course Designed By: M. Panneer selvam	

Mapping with Program Outcomes										
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	S	S	S	S	S	S	S	S	L
CO2	S	S	M	S	S	S	S	M	S	S
CO3	S	M	S	S	L	S	M	S	S	M
CO4	M	S	S	M	S	M	S	S	M	S
CO5	S	S	S	S	S	S	S	S	S	S

S- Strong: M- Medium: L- Low

Course code	53D	REMOTE SENSING AND ITS APPLICATIONS IN GEOGRAPHY	L	T	P	C
Core/ Elective/Supportive		Core	5	0	0	4
Pre-requisite		Basic knowledge in satellite system	Syllabus version		2021-2022	

Course Objectives:

To understand about the history and types of remote sensing.
To obtain about aerial, satellite remote sensing and recent developments.

Course Outcomes:

After the completion of course, the students will have ability to:

CO1	Appreciate the development and uses of aerial and satellite remote sensing system and navigation satellite systems in India and other nations;	K2
CO2	Understand the basics of EMR and energy interaction in atmosphere and on earth surface features;	K1
CO3	Importance of satellite types and functions	K3
CO4	Understand Indian satellite remote sensing development and achievement.	K3
CO5	Understand the remote sensing application and its uses.	K2

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate;

Unit- I	Remote Sensing	18 hours

Remote Sensing: Definition – Content - Development - Types – Basic Principles - Electromagnetic Spectrum- Energy Interactions – Ideal Remote Sensing System.

Unit- II	Aerial Remote Sensing	18 hours

Aerial Remote Sensing: Air photo – Camera - Film – Scale - Stereoscopic vision – Elements of Air photo interpretation

Unit- III	Satellite Remote Sensing	18 hours

Satellite Remote Sensing: Satellites - Types – Orbit – Resolution – Sensors – Resolution Characteristics of LANDSAT, SPOT and IKONOS.

Unit- IV	Remote Sensing in India	18 hours

Remote Sensing in India: ISRO – NRSC – IRS Satellites: Sensors – Resolution and Applications - Recent Developments.

Unit- V	Applications in Geography	18 hours

Applications in Geography: Water Resources – Forest – Land use - Agriculture – Mineral Exploration – Urban Studies and Planning.

	Total lecture hours	90

Text Books:

1	Lillesand, T.M. and Ralph W. Keifer (2002), Remote Sensing and Image Interpretation, John Wiley & Sons, Inc., New York.
2	Sabins, Jr. (1978), Remote Sensing: Principles and Interpretation, Freeman and Co, San Francisco.
3	Curran, P.J., (1985), Principles of Remote sensing, English Language book society Longmans, London.

Books For Reference:	
1	AnjiReddy, M., (2004), Geoinformatics for Environmental Management, BS Publications, Hyderabad.
2	Chanrda, A.M. and S.K. Ghosh (2006), Remote Sensing and Geographical Information System, Narosa Publishing House, New Delhi.
3	Joseph, George (2003), Fundamental of Remote Sensing, University's Press (India) Pvt. Ltd., Hyderabad.
4	Kumar, S., (2003), Basics of Remote sensing and GIS, Laxmi publications, New Delhi.
Related Online Contents:	
1	https://tudip.com/blog-post/what-is-remote-sensing-and-its-applications/
2	https://www.slideshare.net/RashmiYadav45/remote-sensing-and-its-application
Course Designed By: Dr. D.Yuvaraj	

Mapping with Program Outcomes										
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	S	S	S	S	S	S	S	S	S
CO2	S	S	M	S	S	S	S	M	S	S
CO3	S	M	S	S	M	S	M	S	S	M
CO4	M	S	S	M	S	M	S	S	M	S
CO5	S	S	S	S	L	S	S	M	S	S

S- Strong: M- Medium: L- Low

Course code	5EA	URBAN GEOGRAPHY	L	T	P	C
Core/ Elective/ Supportive		Elective	4	0	0	4
Pre-requisite		Basic knowledge of Urban Environment	Syllabus version		2021-2022	

Course Objectives:

To understand the Nature and Development of Urban Geography.
To familiarize about Urbanization, Urban morphology, Urban theories and problems.

Course Outcomes:

After the completion of course, the students will have ability to:

CO1	Understand the fundamentals and patterns of urbanization process	K2
CO2	Learn the functional classification of cities and Central Place Theory	K1
CO3	Know contemporary problems of pollution, crime, poverty, and slum.	K3
CO4	Study of urban morphology and urban functions with special reference to selected towns need to be encouraged.	K3
CO5	The trends of urbanization form the world.	K2

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate;

Unit- I	Urban Geography	16 hours

Urban Geography: Nature, Scope and Development – Origin and Evolution of Towns - Urbanization: Factors of Urban Growth – World urbanization – Trends of Urbanization in India.

Unit- II	Urban Morphology	14 hours

Urban Morphology: Functional Classification of Towns - Urban Landuse – CBD and its characteristics - Primate City.

Unit- III	Theories and Models	14 hours

Theories and Models: Classical: Burgess, Homer Hoyt, Harris and Ullman – Central Place Theory: Christaller and Losch – Rank Size Rule.

Unit- IV	Urban Expansion	14 hours

Urban Expansion: Vertical and Horizontal – Urban Sprawl – Rural-Urban Fringe – Suburbs – Satellite Town – Conurbation - City region – Umland.

Unit- V	Urban Problems	14 hours

Urban Problems: Slums – Poverty – Crime – Pollution - Water Supply and Transport - Urban Planning: Policies – Town Planning.

	Total lecture hours	72

Text Books:

1	R.B. Mandal (2009), Urban Geography: A Text Book; Concept Publishing Co., NewDelhi.
2	R. Ramachandran (1989), Urbanization and Urban Systems in India, Oxford University Press, Delhi.
3	Majid Hussain (1999), Human Geography, Rawat Publications, Jaipur.
4	Siddhartha K, (2013), Cities, Urbanisation and Urban Systems, Kisalaya publication Pvt. Ltd New Delhi.

Books For Reference:	
1	Nath V. (2007), Urbanisation, Urban Development and Metropolitan Cities in India, Concept Publishing Co. New Delhi.
2	Singh, R. L., (1994). Geography of Settlements, Rawat Publications, New Delhi. Hyderabad.
3	Perpillou, (1967). Human Geography, A.V.H.G. Longman, London.
4	Bala, Raj (1986), Urbanisation in India, Rawat Publishers, Jaipur.
5	Vasant Kumar Bawa (1985), Indian Metropolis, Urbanization Planning and Management, Inter – India Publication, New Delhi.
Related Online Contents:	
1	https://en.wikipedia.org/wiki/Urban_geography
2	http://lcgeography.preswex.ie/uploads/6/9/4/9/6949966/chapter_5_urban_land-use_theories.ppt
Course Designed By: M. Panneer selvam	

Mapping with Program Outcomes										
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	S	S	S	S	S	S	S	S	S
CO2	S	S	M	S	S	S	S	M	S	S
CO3	S	M	S	S	L	S	M	S	S	M
CO4	M	S	S	M	S	S	S	S	M	S
CO5	S	S	S	S	S	S	S	S	S	L

S- Strong: M- Medium: L- Low

Course code	5EB	NATURAL DISASTERS AND MANAGEMENT	L	T	P	C
Core/ Elective/Supportive		Skill Based	3	0	0	3
Pre-requisite		Basic knowledge of risk of disaster	Syllabus version		2021-2022	

Course Objectives:

To understand about the Natural Disasters its Causes and Consequences
To learn about Disaster Management and Mitigation.

Course Outcomes:

After the completion of course, the students will have ability to:

CO1	Understand processes and impact of disaster.	K2
CO2	Understand both the natural and man-made disaster and human negligence in context of environment.	K1
CO3	Write a field work based report on Disaster Management to minimize the disaster risk.	K3
CO4	Know importance of the disaster mitigation and management.	K3
CO5	Know problems of human induce disaster.	K2

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate;

Unit- I	Disasters: Meaning and Classification	11 hours

Disasters: Meaning and Classification – Concepts – Risk and Vulnerability – Disaster Zones of India.

Unit- II	Geological Disasters	11 hours

Geological Disasters: Earthquakes: Intensity and Magnitude - Earthquake Prone Zones - Volcanic eruption - Landslides and Tsunami.

Unit- III	Climatic Disasters	10 hours

Climatic Disasters: Cyclones – Floods – Drought – Avalanche and Frost.

Unit- IV	Human induced Disasters	11 hours

Human induced Disasters: Nuclear and Chemical – Health hazards - Forest fire - Global Warming – Deforestation and Groundwater Depletion.

Unit- V	Disaster Management	11 hours

Disaster Management: Disaster Management Organizations: International – National – State and Local level - NGOs - Disaster Cycle – Preparatory phase – Emergency phase - Rehabilitation and Reconstruction Process – Mitigation and Management.

	Total lecture hours	54

Text Books:

1	Ghosh G.K. (2008) Disaster Management, A.P.H. Publishing Corporation, New Delhi.
2	Saxena, H.M. (1996), Natural Disasters, Wm. C. Brown Publishing Co., New York.

Books For Reference:	
1	Nicholas, K. (1995), Geohazards, Natural and human, Prentice Hall of India, New Delhi.
2	Agarwal, S.K. (2004), Global Warming and Climate Change, A.P.H. Publications, New Delhi.
3	Narayan, B. (2009), Disaster Management. A.P.H. Publishing Corporation, New Delhi.
4	Singh, R. B. (2008), Disaster Management, Rawat Publications. New Delhi.
Related Online Contents:	
1	https://en.wikipedia.org/wiki/Disaster_management_in_India
2	https://en.wikipedia.org/wiki/Disaster
Course Designed By: S. Ravichandiran	

Mapping with Program Outcomes										
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	S	S	S	S	S	S	S	S	S
CO2	S	S	M	S	S	S	L	M	S	S
CO3	S	M	S	S	M	S	M	S	S	M
CO4	M	S	S	M	L	M	S	S	M	S
CO5	S	S	S	S	S	S	S	S	S	S

S- Strong: M- Medium: L- Low

Sixth Semester

Course code	63A	GEOGRAPHY OF RESOURCES –II	L	T	P	C
Core/ Elective/ Supportive		Core	6	0	0	4
Pre-requisite		Basic knowledge of Atlas Reading	Syllabus version		2021-2022	

Course Objectives:

To understand about Natural Recourse, Types, Distribution and its Conservation
To learn about Agricultural, Minerals, Industrial Resources and Transport System.

Course Outcomes:

After the completion of course, the students will have ability to:

CO1	make them aware about the importance of conservation of minerals and energy resources.	K2
CO2	Evaluate the human resource development understand.	K1
CO3	Understand the significance of mineral and power resource need for future planning.	K3
CO4	Know the important of industrial resource.	K3
CO5	Understand world trade and transportation importance.	K2

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate;

Unit- I	Fisheries	20 hours

Fisheries: Fishing: Types – Controlling factors of growth and distribution – Major fishing Ground of the World – Need for Conservation.

Unit- II	Human Resources	22 hours

Human Resources: Distribution - Modern Demographic Pattern – Trends of World Population – Density of Population – Man-land ratio – Optimum, Over and Under Population.

Unit- III	Mineral and Power Resources	22 hours

Mineral and Power Resources: Types – Significances - Distribution and Production of Iron ore, Bauxite, Copper, Manganese, Tin and Mica – Coal, Petroleum, Natural Gas and Atomic power.

Unit- IV	Industrial Resources	22 hours

Industrial Resources: Locational factors - Distribution of Cotton Textile, Iron and Steel – Ship Building – Aircraft – Automobile – Cement and Chemical industries.

Unit- V	Transportation and Trade	22 hours

Transportation and Trade: Types of Transportation – Land, Water and Air – Land: Road and Rail – Water: Inland and Ocean – Air: Domestic and International - Trade: Types - Composition of International Trade, Pattern, Balance of Trade, Recent Trends and Trade Organizations.

	Total lecture hours	108

Text Books:

1	Alka Gautham (2013), Geography of resources: Exploration, Conservation and Management, Sharda Pustak Bhavan, New Delhi.

Books For Reference:	
1	Goh Cheng Leong (1987), Human & Economic Geography, Oxford University Press, New York.
2	Alexander J.W., (2006), Economic Geography –Prentice Hall of India Pvt. Ltd. New Delhi.
3	Khanna K.K. and Gupta, V.K., (2004), Economic and Commercial Geography, Sultan Chand and sons, NewDelhi.
4	K. Siddhartha (2004), Economic Geography, Kisalaya Publications Pvt. Ltd.
5	Thomas R.S,(1968),Geography of Economic Activity, McGraw Hill Book Company, New Delhi.
Related Online Contents:	
1	https://www.oxfordbibliographies.com/view/document/obo-9780199874002/obo-9780199874002-0091.xml
2	https://gurukpo.com/Content/BA/Geo_of_Resorce.pdf
Course Designed By: S. Ravichandiran	

Mapping with Program Outcomes										
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	S	S	S	S	S	S	S	S	M
CO2	S	S	M	S	S	S	S	M	S	S
CO3	S	M	S	S	L	S	M	S	S	L
CO4	M	S	S	M	S	M	S	S	M	S
CO5	S	S	S	S	S	S	S	S	S	S

S- Strong: M- Medium: L- Low

Course code	63B	ENVIRONMENTAL STUDIES AND MANAGEMENT	L	T	P	C
Core/ Elective/Supportive		Core	6	0	0	3
Pre-requisite		Basic knowledge in Environmental problem	Syllabus version		2021-2022	

Course Objectives:

To develop a world population that is aware of and concerned about the environment and its associated problems and which has the knowledge, Skills, attitudes , motivations and commitment to work individually and collectively towards solutions of current problems and prevention.

Course Outcomes:

After the completion of course, the students will have ability to:

CO1	Understand the dynamic interactive relationship between man and environment.	K2
CO2	Have sound understanding on distribution, utilization and management of natural resources at global level.	K1
CO3	Assess of different aspects of flora and fauna provinces.	K3
CO4	Familiarize the dynamics of climate and related theories.	K3
CO5	Understand of Vegetation as an index of climate.	K2

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate;

Unit- I	Environment	22 hours

Environment: Meaning and Scope – Components – Fundamental Concepts – Relationship Geography and Environment - Environmental Geography.

Unit- II	Ecosystem	20 hours

Ecosystem: Meaning – Types – Components – Functioning of Ecosystems – Food chain and Food web.

Unit- III	Natural Hazards	22 hours

Natural Hazards: Meaning and Types - Environmental Degradation - Human Impact on Environment – Deforestation - Soil Erosion – Land Slides - Desertification – Global Warming and Climatic Change.

Unit- IV	Man includes Hazards	22 hours

Man includes Hazards: Pollution: Meaning and types - Land, Water and Air – Waste Management: Urban wastes – Industrial wastes – Medical and Electronic wastes.

Unit- V	Environmental Impact Assessment	22 hours

Environmental Impact Assessment: Meaning and Concept – Case studies of Sardar Sarovar Project and Tehri Dam - Role of Environmental movements in Protecting our Environment.

	Total lecture hours	108

Text Books:

1	Odum .E.P. (1971), Fundamental of Ecology, W.B.Sunders Co, Philadelphia.
2	Peter Hagett (2001), Geography - A. Modern Synthesis, Prentice Hall, London.
3	Savindra Singh (1991), Environmental Geography, Kalyan Publications, New Delhi.

Books For Reference:	
1	Paul R. Ehrlich, Anne H. Ehrlich, and John P. Holdren (1977), Ecoscience: Population, Resources, Environment, Edition3, W. H. Freeman Publishers.
2	Batel, B. (1980) Management of Environment, Wiby Eastern Ltd., New Delhi
3	Centre for Science & Environment: The State of India Environment, A Citizen's Report1982,1985, New Delhi.
Related Online Contents:	
1	https://ncert.nic.in/ncerts/l/jesc116.pdf
2	https://www.ugc.ac.in/oldpdf/modelcurriculum/env.pdf
Course Designed By: M. Panneer selvam	

Mapping with Program Outcomes										
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	S	S	S	S	S	S	S	S	S
CO2	S	S	M	S	S	S	S	M	S	S
CO3	S	M	S	S	L	S	M	S	S	M
CO4	M	S	S	M	S	M	S	S	M	S
CO5	S	S	S	S	S	S	S	L	S	S

S- Strong: M- Medium: L- Low

Course code	63P	SURVEYING AND INTERPRETATION OF AERIAL PHOTOS AND SATELLITE IMAGES – PRACTICAL	L	T	P	C
Core/ Elective/Supportive		Core	0	0	5	4
Pre-requisite		Basic Knowledge of simple calculation techniques	Syllabus version		2021-2022	

Course Objectives:

To understand about basics and uses of land and height measurement survey.
To provide skills to the students to interpret and extract useful information from maps, toposhtees, aerial photographs and satellite images.

Course Outcomes:

After the completion of course, the students will have ability to:

CO1	Conduct proper field work for the collection of primary data to bring out grassroots realities.	K2
CO2	Make use of proper tools and surveying methods for measurement in context of collection and processing of data.	K1
CO3	Prepare a report based on field data.	K3
CO4	Understand the aerial photograph interpretation and ground features detection for feature plan.	K3
CO5	How to interpret satellite imagery and marginal information.	K2

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate;

Unit- I	**Survey**	**15 hours**

Survey: Chain: Open and Closed - Prismatic compass: Open and closed - Plane Table Surveying.

Unit- II	**Height Measurement and Levelling**	**18 hours**

Height Measurement and Levelling: Indian Clinometer, Abney level and Dumpy level – Level Differences and Height Measurement.

Unit- III	**Aerial Photos**	**18 hours**

Aerial Photos: Elements of Visual Interpretation - Marginal information – stereoscopic Vision Test- Interpretation of Aerial Photographs (Physical and Cultural) .

Unit- IV	**Satellite Images**	**18 hours**

Satellite Images: Marginal information - Interpretation of Satellite Images (Physical and Cultural).

Unit- V	**Field**	**18 hours**

Field trip - Minimum 3 days Tehri Dam -

	Total lecture hours	**90**

Text Books:

1 Monkhouse, F.J. and Wilkinson, H.R., (1989), Maps and Diagrams, B.I.Publications, New Delhi.

Books For Reference:	
1	Misra, R.P. and Ramesh, A., (2002). Fundamentals of Cartography, Concept Publication Company, New Delhi.
2	Pijushkanti Saha and Partha Basu, (2010), Advanced Practical Geography, Books and Allied (P) Ltd, Kolkata.
3	Lillesand, T.M. and Kiefer, R.W., (1979), Remote Sensing and Image Interpretation, John Wiley and sons, New York.
4	Sabins, Jr. (1978), Remote Sensing: Principles and Interpretation, Freeman and Co, San Francisco.
Related Online Content:	
1	https://pubs.usgs.gov/gip/AerialPhotos_SatImages/aerial.html
2	https://theconstructor.org/surveying/types-of-chains-surveying/13889/
Course Designed By: Dr. J. Ganesan	

Mapping with Program Outcomes										
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	S	S	S	S	S	S	L	S	S
CO2	S	S	M	S	S	S	S	M	S	S
CO3	S	M	S	S	S	S	M	S	S	S
CO4	M	S	S	M	S	M	S	S	M	S
CO5	S	S	S	S	L	S	S	M	S	M

S- Strong: M- Medium: L- Low

Course code	6EA	POLITICAL GEOGRAPHY	L	T	P	C
Core/ Elective/Supportive		Elective	5	0	0	4
Pre-requisite		Basic knowledge in India political system	Syllabus version		2021-2022	

Course Objectives:

To understand about origin and development Political Geography.
To learn about state, Capitals, Elections and India's Foreign Policy.

Course Outcomes:

After the completion of course, the students will have ability to:

CO1	Learn the concept of nation and state and geo-political theories.	K2
CO2	Understand the different dimensions of electoral geography and resource conflicts.	K1
CO3	Knowledge of politics geography and integration of Indian states, India bilateral relationship with SAARC countries.	K3
CO4	Importance of political study.	K3
CO5	Political rule differ from the world.	K2

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate;

Unit- I	Political Geography	18 hours

Political Geography: Definition, Scope, Content and Development – Geopolitics - State: Categories - Powers and Functions - Nations and Nationalism.

Unit- II	Core Areas	18 hours

Core Areas: Types – Capitals: Types - Morphological classification - Factors of Development, Federal Capitals – New and Neutral Capitals – Capitals in Post -1945 federations.

Unit- III	Boundaries and Frontiers	18 hours

Boundaries and Frontiers: Definition – Classification: Genetic and Functional - Morphological Classification (Buffer Zone – Land locked Countries) – Border Disputes.

Unit- IV	Electoral Geography	18 hours

Electoral Geography: Geography of Elections – Election Campaigning - Voting Pattern - Voters' Participation – Gerry Mandering – Election Commission.

Unit- V	Political Geography of India	18 hours

Political Geography of India: Integration of Indian States: Integration of Sikkim – India's Bilateral Relationship with Pakistan and Sri Lanka – SAARC Countries - India's Foreign Policies.

	Total lecture hours	90

Text Books:

1	Dikshit, R.D. (1982). Political Geography: A contemporary perspective, McGraw Hill Publishing co., New Delhi.
2	Sudeeptha Adhikari, (2004), Political Geography, Rawat publications, New Delhi.
3	Muir, R., (1981). Modern Political Geography, Macmillan, London.

Books For Reference:	
1	Presscott, J.R.V., (1972), Political Geography, Methuen, London.
2	De Blij Harm, J., (1980), Systematic Political Geography, John Wiley and sons, New York.
3	Taylor and Peter (1972), Political Geography, Methuen, London.
4	Cohen Sayl, B., (1973), Geography and Politics in a divided world, OUP, New York.
5	Adhikari, Sudeepta (2008), Political Geography of India, Sharda Pustak Bhawan, Allahabad.
Related Online Content:	
1	https://en.wikipedia.org/wiki/Political_geography
2	https://simple.wikipedia.org/wiki/Political_geography
Course Designed By: B. Sasikumar	

Mapping with Program Outcomes										
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	S	S	S	S	S	S	S	S	S
CO2	S	S	M	S	S	S	S	M	L	S
CO3	S	M	S	S	M	S	M	S	S	M
CO4	M	S	S	M	S	M	S	S	M	S
CO5	S	S	S	S	L	S	S	S	S	S

S- Strong: M- Medium: L- Low

Course code	6ED	REGIONAL GEOGRAPHY OF SOUTH EAST ASIA	L	T	P	C
Core/ Elective/Supportive		Elective	5	0	0	4
Pre-requisite		Basic knowledge in Atlas reading	Syllabus version		2021-2022	

Course Objectives:

To understand about the Extent and Physiography divisions in Mainland of south east Asia.
To obtain about Climatic, Soils, Agriculture and Natural Vegetations of south east Asia.

Course Outcomes:

After the completion of course, the students will have ability to:

CO1	Identify the key environmental differences between the equatorial belts.	K2
CO2	Understand insular Southeast Asia geographical conditions.	K1
CO3	Know about the higher-latitude zone of mainland Southeast Asia.	K3
CO4	Understand the differences influence human settlement and economic development.	K3
CO5	Describe the driving forces behind deforestation and habitat loss in the different regions of Southeast Asia.	K2

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate;

Unit- I	**South East Asia**	**18 hours**

South East Asia: Location and Extent – Physiographic Divisions - Climate – Soils and Natural Vegetation.

Unit- II	**Agriculture**	**18 hours**

Agriculture: Food crops: Rice and Wheat – Commercial crops: Cotton, Jute and Sugarcane – Plantation crops: Tea, Coffee and Rubber.

Unit- III	**Myanmar**	**18 hours**

Myanmar: Physiography – Climate – Drainage - Soils – Vegetation – Agriculture – Minerals – Industries – Population, Transport and Trade.

Unit- IV	**Malaysia and Singapore**	**18 hours**

Malaysia and Singapore: Physiography – Climate – Drainage - Soils – Vegetation – Agriculture – Minerals – Industries – Population, Transport and Trade.

Unit- V	**Indonesia**	**18 hours**

Indonesia: Physiography – Climate – Drainage - Soils – Vegetation – Agriculture – Minerals – Industries – Population, Transport and Trade.

	Total lecture hours	**90**

Text Books:

1	Roger Minshull –Regional –Theory and Practice. Routledge

Books For Reference:

1	George B Cressey, Asia's lands and People. McGraw-Hill Book company
2	Natalia G. Studies in Regional Geography.
3	Naton Ginsburg, John E Bush and others - The pattern of Asia.
4	De Blij Harm, J., (1980), Systematic Political Geography, John Wiley and sons, New York.
5	Duddly Stamp .L. A New Geography of India Burma & Ceylon

Related Online Content:	
1	https://worldgeo.pressbooks.com/chapter/east-and-southeast-asia/
2	https://saylordotorg.github.io/text_world-regional-geography-people-places-and-globalization/s14-southeast-asia.html
Course Designed By: Dr. J. Ganesan	

Mapping with Program Outcomes										
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	S	S	S	L	S	S	S	S	S
CO2	S	S	M	S	S	S	S	M	S	S
CO3	S	M	S	S	M	S	M	S	S	L
CO4	M	S	S	M	S	M	S	S	M	S
CO5	S	S	L	S	S	S	S	M	S	S

S- Strong: M- Medium: L- Low

Course code	6ZD	GEOGRAPHY OF TOURISIM	L	T	P	C
Core/ Elective/ Supportive		Skilled Based	3	0	0	3
Pre-requisite		Basic knowledge in Educational tour	Syllabus version		2021-2022	

Course Objectives:

To understand about the Origin and Development of Tourism Sector and its Types.
To learn about Tourism Management, Organizations and Government Policy.

Course Outcomes:

After the completion of course, the students will have ability to:

CO1	Equip with a basic understanding of nature and scope, trends and patterns of various types of tourisms.	K2
CO2	Have sound knowledge on geographical, environmental and socio-cultural aspects of tourism in Tamilnadu.	K1
CO3	Apply the principle of Geo-tourism and analyze the prospect and problems associated with pilgrimage tourism.	K3
CO4	Know major tourist centre form the world.	K3
CO5	Understand the tourism visa and transport plan.	K2

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate;

Unit- I	**Tourism: Definition**	**11 hours**

Tourism: Definition – Types – History and Development – Economic importance of Tourism.

Unit- II	**Tourism Potentials in India**	**10 hours**

Tourism Potentials in India: Tourist Attractions – Religious – Recreations – Festivals - Sports and Games.

Unit- III	**Tourism Management**	**11 hours**

Tourism Management: Accommodation - Transport facility - Travel Agencies - Publicity and Marketing – Visa and Passport - Tourist Guides.

Unit- IV	**Tourism Organizations**	**11 hours**

Tourism Organizations: International - WTO and PATA - Tourism Organizations in India: ITDC and TTDC – Role and Functions.

Unit- V	**Tourism in Tamil Nadu**	**11 hours**

Tourism in Tamil Nadu: Potential Areas – Major Tourist Centre – Planning and Management – Government Policies.

	Total lecture hours	**54**

Text Books:

1	Bhatia, A. K., (2010), Tourism Development – Principles and Practices, Sterling Publishers Pvt. Ltd., New Delhi.

Books For Reference:	
1	Douglas Pearce (1949), Tourism today – A Geographical analysis, Longman Publications, New York.
2	Khullar, N., (1985), Dynamics of Tourism, Sterling Publishers Pvt. Ltd., New Delhi.
3	Praveen Sethi (1999), Tourism in Developing Countries, Rajat Publications, New Delhi.
4	Bhattacharya, P. (2006), Trend in Tourism Potentiality, Bani Mandir, Guwahati.
Related Online Content:	
1	http://studymaterial.unipune.ac.in:8080/jspui/bitstream/123456789/5997/1/1.%20Tourism%20Geography%20Chapter%201.pdf
2	https://en.wikipedia.org/wiki/Tourism_geography
Course Designed By: Dr. J. Ganesan	

Mapping with Program Outcomes										
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	S	S	S	S	S	S	S	S	S
CO2	S	M	M	S	S	S	M	M	S	S
CO3	S	M	S	S	L	S	M	S	S	M
CO4	M	S	S	M	S	M	S	S	M	S
CO5	S	S	S	S	S	S	S	S	S	S

S- Strong: M- Medium: L- Low

Annexure

BHARATHIAR UNIVERSITY COIMBATORE – 641 046
REGULATIONS FOR UNDERGRADUATE B. Sc. GEOGRAPHY DEGREE COURSE – Semester System
(with effect from 2022-2023)

1. Eligibility for Admission to the Course

Candidate for admission to the first year of the **B. Sc Geography** degree course shall be required to have passed the higher secondary examination (Academic or Vocational) conducted by the Govt. of Tamil Nadu in the relevant subjects or other examination accepter as equivalent there to by the Syndicate, subject to such other conditions as may be prescribed therefore.

2. Duration of the Course

The course shall extend over a period of three years comprising of six semesters with two semesters in one academic year. There shall not be less than 90 working days for each semester. Examination shall be conducted at the end of every semester for the respective subjects.

Course of Study

The course of study for the UG degree course shall consist of the following

a) Part –I

Tamil or any one of the following modern/classical languages i.e. Telugu, Kannada, Malayalam, Hindi, Sanskrit, French, German, Arabic & Urdu. It shall be offered during the first four semesters with one examination at the end of each semester.

b) Part – II :English

The subject shall be offered during the first four semesters with one examination at the end of each semester. During third semester Part II English will be offered as communication skills.

c) Foundation Course

The Foundation course shall comprise of two stages as follows: Foundation Course A : General Awareness (I & II semesters) Foundation Course B : Environmental Studies (III & IV semesters)

The syllabus and scheme of examination for the foundation course A, General awareness shall be apportioned as follows.

From the printed material supplied by the University 75% Current affairs & who is who? -25%. The current affairs cover current developments in all aspects of general knowledge which are not covered in the printed material on this subject issued by theUniversity. The Foundation course B shall comprise of only one paper which shall have Environmental Studies.

d) Part –III

Group A: Core subject – As prescribed in the scheme of examination. Examination will be conducted in the core subjects at the end of everysemester

Group B: allied subjects -2 subjects-4 papers
Examination shall be conducted in the allied subjects at the end of first four semesters.

Group C: application oriented subjects: 2 subjects – 4 papers
The application –oriented subjects shall be offered during the last two semesters of study viz., V and VI semesters. Examination shall be conducted in the subjects at the end of V & VI semesters.

Group D: field work/institutional training
Every student shall be required to undergo field work/institutional training, related to the application-oriented subject for a period of not less than 2 weeks, conveniently arranged during the course of 3rd year. The principal of the college and the head of the department shall issue a certificate to the effect that the student had satisfactorily undergone the field work/institutional training for the prescribed period.

e) Co-Curricular activities: NSS/NCC/Physical education

Every student shall participate compulsorily for period of not less than two years (4 semesters) in any one of the above programmes.

The above activities shall be conducted outside the regular working hours of the college. The principal shall furnish a certificate regarding the student's performance in the respective field and shall grade the student in the five point scale as follows

A-Exemplary
B-very good
C- Good
D- Fair
E-Satisfactory

This grading shall be incorporated in the mark sheet to be issued at the end of the appropriate semester (4th or 5th or 6th semester).

(Handicapped students who are unable to participate in any of the above activities shall be required to take a test in the theoretical aspects of any one of the above 3 field and be graded and certified accordingly).

(Handicapped students who are unable to participate in any of the above activities shall be required to take a test in the theoretical aspects of any one of the above 3 field and be graded and certified accordingly).

3. Requirement to appear for the examinations

a. a candidate will be permitted to appear for the university examinations for any semester if

i) He/she secures not less than 75% of attendance in the number of working days during the semester.

ii) He/she earns a progress certificate from the head of the institution, of having satisfactory completed the course of study prescribed in the subjects as required by these regulations, and

iii) His/her conduct has been satisfactory.
Provided that, it shall be open to the syndicate, or any authority delegated with such powers by the syndicate, to grant exemption to a candidate who has failed to earn 75% of the attendance prescribed, for valid reasons, subject to usual conditions.

b. A candidate who has secured less than 65% but 55% and above attendance in any semester has to compensate the shortage in attendance in the subsequent semester besides, earning the required percentage of attendance in that semester and appear for both semester papers together at the end of the latter semester.

c. A candidate who has secured less than 55% of attendance in any semester will not be permitted to appear for the regular examinations and to continue the study in the subsequent semester. He/she has to rejoin the semester in which the attendance is less than 55%

d. A candidate who has secured less than 65% of attendance in the final semester has to compensate his/her attendance shortage in a manner as decided by the concerned head of the department after rejoining the same course.

4. Restrictions to appear for the examinations

a. Any candidate having arrear paper(s) shall have the option to appear in any arrear paper along with the regular semesterpapers.

b. “Candidates who fail in any of the papers in Part I, II & III of UG degree examinations shall complete the paper concerned within 5 years form the date of admission to the said course, and should they fail to do so, they shall take the examination in the texts/ revised syllabus prescribed for the immediate next batch of candidates. If there is no change in the texts/syllabus they shall appear for the examination in that paper with the syllabus in vogue until there is a change in the texts or syllabus. In the event of removal of that paper consequent to change of regulation and / or curriculum after 5 year period, the candidates shall have to take up an equivalent paper in the revised syllabus as suggested by the chairman and fulfill the requirements as per regulation/ curriculum for the award of the degree.

5. Medium of Instruction and examinations

The medium of instruction and examinations for the papers of Part I and II shall be the language concerned. For part III subjects other than modern languages, the medium of instruction shall be either Tamil or English and the medium of examinations is in English/Tamil irrespective of the medium of instructions. For modern languages, the medium of instruction and examination will be in the languages concerned.

6. Submission of Record Note Books for practical examinations

Candidates appearing for practical examinations should submit bonafide Record Note Books prescribed for practical examinations, otherwise the candidates will not be permitted to appear for the practical examinations. However, in genuine cases where the students, who could not submit the record note books, they may be permitted to appear for the practical examinations, provided the concerned Head of the department from the institution of the candidate certified that the candidate has performed the experiments prescribed for the course. For such candidates who do not submit Record Books, zero (0) marks will be awarded for record note books.

7. Passing Minimum

a. A candidate who secures not less than 40% of the total marks in any subject including the Diploma and Foundation courses (theory or Practical) in the University examination shall be declared to have passed the examination in the subject (theory or Practical).

b. A candidate who passes the examination in all the subjects of Part I, II and III (including the Diploma and Foundation courses) shall be declared to have passed, the whole examination.

8. Improvement of Marks in the subjects already passed

Candidates desirous of improving the marks awarded in a passed subject in their first attempt shall reappear once within a period of subsequent two semesters. The improved marks shall be considered for classification but not for ranking. When there is no improvement, there shall not be any change in the original marks already awarded.

9. Classification of Successful candidates

a. A candidate who passes all the Part III examinations in the First attempt within a period of three years securing 75% and above in the aggregate of Part III marks shall be declared to have passed B.A/ B.Sc./B.Com./B.B.M. degree examination in **First Class with Distinctions**

b. i A candidate who passes all the examinations in Part I or Part II or Part III or Diploma securing not less than 60 per cent of total marks for concerned part shall be declared to have passed that part in **First Class**

ii. A candidate who passed all the examinations in Part I or Part II or Part III or Diploma securing not less than 50 per cent but below 60 per cent of total marks for concerned part shall be declared to have passed that part in **Second Class**

iii. All other successful candidates shall be declared to have passed the Part I or Part II orPart III or Diploma examination in **Third Class**

10. Conferment of the Degree

No candidate shall be eligible for conferment of the Degree unless he / she, Has undergone the prescribed course of study for a period of not less than six semesters in an institution approved by/affiliated to the University or has been exempted from in the manner prescribed and has passed the examinations as have been prescribed there for.

i. Has satisfactory participates in either NSS or NCC or Physical Education as evidenced by a certificate issued by the Principal of theinstitution.

ii. Has successfully completed the prescribed Field Work/ Institutional Training as evidenced by certificate issued by the Principal of the College.

11. Ranking

A candidate who qualifies for the UG degree course passing all the examinations in the first attempt, within the minimum period prescribed for the course of study from the date of admission to the course and secures I or II class shall be eligible for ranking and such ranking will be confined to 10 % of the total number of candidates qualified in that particular branch of study, subject to a maximum of 10ranks. The improved marks will not be taken into consideration for ranking.

12. Additional Degree

Any candidate who wishes to obtain an additional UG degree not involving any practical shall be permitted to do so and such candidate shall join a college in the III year of the course and he/she will be permitted to appear for par III alone by granting exemption form appearing Part I, Part II and common allied subjects (if any), already passed by the candidate. And a candidate desirous to obtain an additional UG degree involving practical shall be [permitted to do so and such candidate shall join a college in the II year of the course and he/she be permitted to appear for Part III alone by granting exemption form appearing for Part I, Part II and the common allied subjects. If any, already passed. Such candidates should obtain exemption from the university by paying a fee of Rs.500/-.

13. Evening College

The above regulations shall be applicable for candidates undergoing the respective courses in Evening Collegesalso.

14. Syllabus

The syllabus for various subjects shall be clearly demarcated into five viable units in each paper/subject.

15. Revision of Regulations and Curriculum

The above Regulation and Scheme of Examinations will be in vogue without any change for a minimum period of three years from the date of approval of the Regulations. The University may revise /amend/ change the Regulations and Scheme of Examinations, if found necessary.

16. Transitory Provision

Candidates who have undergone the Course of Study prior to the Academic Year 2020-2021 will be permitted to take the Examinations under those Regulations for a period of four years i.e. up to and inclusive of the Examination of November 2021 thereafter they will be permitted to take the Examination only under the Regulations in force at that time.

List of Elective papers (Colleges can choose any one of the paper as Electives)		
Elective – I	**A**	Urban Geography
	B	Natural disasters and Management
	C	Bio-Geography
Elective – II	**A**	Political Geography
	B	Geography of USA
	C	Regional Geography of Middle East
Elective – III	**A**	Regional Geography of Southeast Asia
	B	Geography of Japan
	C	Medical Geography

SCHEME OF VALUATION	
CORE PAPERS	**ELECTIVE PAPERS**
CREDITS – 4; MARKS - 100	CREDITS – 4; MARKS - 100
Marks Distribution:	**Marks Distribution:**
Internal–25Marks	Internal – 25 Marks
External – 75 Marks	External – 75 Marks

SCHEME OF VALUATION	
SKILL BASED SUBJECT	**NON MAJOR ELECTIVE**
CREDITS – 3; MARKS - 75	CREDITS – 2; MARKS - 50
Marks Distribution:	**Marks Distribution:**
Internal–20 Marks	Internal – NIL
External – 55 Marks	External – 50 Marks

SCHEME OF VALUATION
CORE PRACTICAL SUBJECT
CREDITS – 4; MARKS - 100
Marks Distribution:
Internal–40 Marks
External – 60 Marks