

GOVERNMENT COLLEGE FOR WOMEN (AUTONOMOUS) KUMBAKONAM

(Common course structure – B.Sc. – 2023 - 2024)

Department : Geography

Programme Code: USGE

SEMESTER – I

Part	Course Type	Course Code	Title of the Course	Hrs/ Week	Credits	Exam Hrs	Marks		
							Int	Ext	Total
I	LC – I	U231T1	Tamil	6	3	3	25	75	100
II	ELC - I	U231E1	English	6	3	3	25	75	100
III	CC – I	U23GC101	Fundamentals of Geomorphology	5	5	3	25	75	100
III	CC – II	U23GC102P	Mapping Techniques - Practical	4	2	3	40	60	100
III	GEC – I	U23GGE1	Cartography	5	5	3	25	75	100
			Tourism and Travel Management						
IV	VE	U231VE	Value education	2	2	3	25	75	100
IV	FC	U23G1FC	Earth and its Systems	2	2	3	25	75	100
			Total	30	22				700

SEMESTER – II

Part	Course Type	Course Code	Title of the Course	Hrs/ Week	Credits	Exam Hrs	Marks		
							Int	Ext	Total
I	LC – II	U232T2	Tamil	6	3	3	25	75	100
II	ELC – II	U232E2	English	6	3	3	25	75	100
III	CC – III	U23GC203	Climatology	5	5	3	25	75	100
III	CC - IV	U23GC204P	Representation of Relief Feature - Practical	4	2	3	40	60	100
III	GEC - II	U23GGE2	Human Geography	5	5	3	25	75	100
			Disaster Studies						
IV	SEC -I	U23G2SE2	Trends in Geography	2	2	3	25	75	100
IV	EVS	U232ES	Environmental Studies	2	2	3	25	75	100
			Total	30	22				700

SEMESTER – III

Part	Course Type	Course Code	Title of the Course	Hrs/ Week	Credits	Exam Hrs	Marks		
							Int	Ext	Total
I	LC – III	U233T3	Tamil	6	3	3	25	75	100
II	ELC - III	U233E3	English	6	3	3	25	75	100
III	CC – V	U23GC305	Oceanography	5	5	3	25	75	100
III	CC – VI		Representation of Socio Economic and Climatic Data - Practical	4	2	3	40	60	100
III	GEC – III	U23GGE3:1	Statistics I	5	5	3	25	75	100
			Economic Geography						
IV	SEC - II	U23G3BG	Basics of GNSS (Entrepreneurship course)	2	2	3	25	75	100
IV	SEC - III		Agricultural Geography	2	2	3	25	75	100
			Total	30	22				700

SEMESTER – IV

Part	Course Type	Course Code	Title of the Course	Hrs/ Week	Credits	Exam Hrs	Marks		
							Int	Ext	Total
I	LC – IV		Tamil	6	3	3	25	75	100
II	ELC - IV		English	6	3	3	25	75	100
III	CC – VII		Geography of India	5	5	3	25	75	100
III	CC – VIII		Interpretation of Toposheets - Practical	4	2	3	40	60	100
III	GEC – IV		Statistical Applications in Geography	5	5	3	25	75	100
			Basics of GIS						
IV	SEC – IV		Population Geography	2	2	3	25	75	100
IV	IDSEC		Remote Sensing & GIS	2	2	3	25	75	100
V	EA		Extension Activity	-	1	-	-	-	100
V	ECC		Social Studies for Competitive Examination	-	2	-	-	-	100
			Total	30	25				900
			Internship/Industrial training*	-	-				

***Internship/industrial training during summer vacation. The credits shall be awarded in Semester V statement of marks.**

SEMESTER – V

Part	Course Type	Course Code	Title of the Course	Hrs/Week	Credits	Exam Hrs	Marks		
							Int	Ext	Total
III	CC – IX		World Regional Geography	6	6	3	25	75	100
III	CC – X		Geography of Tamil Nadu	6	6	3	25	75	100
III	CC – XI		Map Projection and Surveying - Practical <i>with</i>	5	3	3	40	60	100
III	CC – XII		Project and Viva Voce	3	3	3	25	80	100
III	DSE – I		Bio - Geography	4	3	3	25	75	100
			Transport Geography						
III	DSE – II		Settlement Geography	4	3	3	25	75	100
			Geography of Sri Lanka						
IV	SEC – V		Geography of Health	2	2	3	25	75	100
IV	AEC - I		Internship/Industrial training	-	2				100
			Total	30	28				800

SEMESTER – VI

Part	Course Type	Course Code	Title of the Course	Hrs/Week	Credits	Exam Hrs	Marks		
							Int	Ext	Total
III	CC – XIII		Remote Sensing and GIS	6	6	3	25	75	100
III	CC – XIV		Social and Cultural Geography	6	5	3	25	75	100
III	CC - XV		Image Interpretation - Practical	5	3	3	25	75	100
III	DSE – III		Political Geography	4	3	3	40	60	100
			Land Use and Cadastral Surveying						
III	DSE - IV		Geospatial Techniques	4	3	3	25	75	100
			Geography for Competitive Examinations						
IV	SEC – VI		Geography of Resources	2	2	3	25	75	100
IV	AEC - II		Professional competency skill – General Geography for Competitive Examinations	2	2	3	25	75	100
IV	GS		Gender Studies	1	1	3	25		100
			Total	30	25				800

LIST OF GENERIC ELECTIVE COURSE

S.No	Subject Code	Title of the Course
1		Cartography
2		Tourism and Travel Management
3		Human Geography
4		Disaster Studies
5		Statistics I
6		Economic Geography
7		Statistical Applications in Geography
8		Basics of GIS

LIST OF DISCIPLINE SPECIFIC ELECTIVE COURSE

S.No	Subject Code	Title of the Course
1		Bio - Geography
2		Transport Geography
3		Settlement Geography
4		Geography of Sri Lanka
5		Political Geography
6		Land Use and Cadastral Surveying
7		Geospatial Techniques
8		Geography for Competitive Examinations

$1 - IV = 91$
 $V = 28$
 $VI = 25$
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 144
 2 extra
 $\underline{\quad}$
 146

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B.Sc., GEOGRAPHY

Programme Outcomes:

PO1: Disciplinary knowledge: Ability to apply disciplinary knowledge and demonstrate comprehensive knowledge by understanding concepts and providing effective solutions.

PO2: Communication Skills: Enable the students to understand and transfer knowledge both orally and in writing.

PO3: Critical thinking, Problem-solving & Analytical reasoning: Capability to apply analytical skills to analyze and evaluate evidence/arguments, claims, and beliefs based on empirical evidence; formulate coherent arguments; critically evaluate practices, policies, and theories; to solve different kinds of non-familiar problems and to apply one's learning to real-life situations; draw valid conclusions and support them with evidence and examples by following systematic approach.

PO4: Scientific reasoning: A sense of inquiry and capability for asking relevant questions; identifying, synthesizing, and articulating problems.

PO5: Multicultural competence and Environmental sustainability: Acquire knowledge of the values and beliefs of multiple cultures and a global perspective and interact respectfully with diverse groups. Ability to address environmental and sustainability issues.

PO6: Team work & Leadership: Ability to emphasize on accomplishing tasks as a group, setting direction, building a team to achieve the vision and use management skills to guide people to the right destination, smoothly and efficiently.

PO7: Self-directed & Lifelong learning & digital literacy: Ability to acquire and enhance knowledge and skills using ICT through self-paced and self-directed learning and lifelong learning.

Programme Specific Outcomes for B.Sc., Geography

PSO1: Disciplinary Knowledge: Understand the fundamental principles, concepts, and theories related to Geography. Also, exhibit proficiency in performing experiments in the laboratory.

PSO2: Communication skills: Understand theoretical concepts and communicate effectively.

PSO3: Critical Thinking, Problem Solving and Analytical Reasoning: Employ theoretical concepts and critical reasoning ability with physical, mathematical and technical skills to solve problems, acquire data, analyze their physical significance and explore new design possibilities.

PSO4: Scientific Reasoning: Apply scientific methods, collect and analyse data, test hypotheses, evaluate evidence, apply statistical techniques and use computational models.

PSO5: Multicultural competence and Environmental sustainability: Acquiring knowledge on diverse culture and obtain awareness about Environmental sustainability and their impact on Earth.

PSO6: Team work & Leadership: Collaborate with others to acquire knowledge, competitive skills, managerial skills and decision making capacity.

PSO7: Self-directed & Lifelong learning & digital literacy: Set learning goals, manage their own learning, seek out new knowledge and to continuously improve their skills and knowledge, through ongoing learning and professional development and contribute to the growth and development of their field.

SEMESTER-I

COURSE CORE - CC I
FUNDAMENTALS OF GEOMORPHOLOGY
COURSE CODE : U23GC101

Category	Hours			Credits	Marks		
	Lecture	Tutorial	Practical		CIA	External	Total
Theory	5	-	-	5	25	75	100

OBJECTIVES

- To understand scope and content of Geomorphology; and explains the Rocks and types of rocks.
- To Explain the continental drift theory, classify Endogenic and Exogenic forces. Discuss the fold, fault and volcano types.
- To illustrate the factors affecting weathering and its types.
- To compare and classify Glacier and its types and types of land forms.
- To explain the work of wind waves.

Unit : I

Geomorphology – Meaning – Scope and Content (Structure of the earth) – Rocks-Rocks types (Igneous Rock, Metamorphic Rock, and Sedimentary Rock).

Unit : II

Wegener's continental drift theory – Sea floor spreading – Plate tectonics- Earth movements (Endogenic and Exogenic) - Fold and its types – Fault and its types - Earthquake and its types - Types of Volcanoes.

Unit : III

Weathering: Factors affecting Weathering-Types of Weathering Mass Wasting and its types- Agents of Gradation – Normal Cycle of Erosion – Davis cycle (structure, stage, process) Work of Rivers- Erosion –Transportation- Deposition – Erosional and Depositional Land forms.

Unit : IV

Work of Glaciers– Types of Glaciers – Glacial Landforms - Erosional and Depositional Landforms. Underground Water – Water Table – Aquifer- Spring and its types – Karst Landforms – Erosional and Depositional Landforms.

Unit : V

Work of Wind- Erosional Landforms and Depositional Landforms. Work of waves- Erosional landforms- Depositional landforms of Sea waves and Types of coasts.

Reference:

1. Dale F. Ritter, (2011) Process Geomorphology – Waveland Pr Inc Publication
2. Das Gupta, A & Kapoor, A.N. (2001) Principles of Physical Geography, S.C. Chand & Company Ltd. New Delhi.
3. Strahler, A. H. & Strahler, A N. (2001) Modern Physical Geography (4/E), John Wiley and Sons, Inc., New York.
4. Khullar, D.R., (2012) Physical Geography, Kalyani Publishers, New Delhi.
5. Negi B.S. (1993) Physical Geography, S.J. Publications, Meerut.
6. Robert S. Anderson (2010) – Geomorphology: The Mechanics & Chemistry of Landscape, Cambridge University

Expected Course Outcomes:		
On the successful completion of the course, student will be able to:		
1	Recall the meaning, Scope and Content of Geomorphology. Summarise the interior structure of the earth, differentiate the types of rocks their formation, and the Rock cycle, understand the formation of major landforms and Knows the distribution of Land and Sea, Are able to identify the formation and type of rocks.	K1
2	Relates Wegener's continental drift theory, Sea floor spreading, Plate tectonics and Earth movements (endogenic and exogenic) to the formation of mountain, plateau, plains and lakes with its types.	K2
3	Differentiates the weathering process and mass wasting and their types, understands Normal Cycle of Erosion of Davis (structure, stage, process). identifies Work of Rivers.	K3
4	Understands and appreciates the formation of various landforms by Glacier, underground water, Aquifer and karst topography.	K4
5	Understands and appreciates the formation of various landforms formed by wind and waves.	K5,K6
K1- Remember, K2 - Understand, K3 - Apply, K4 - Analyze, K5 - Evaluate, K6 - Create		

MAPPING OF POs WITH COs

CO/PSO	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7
CO1	4	2	4	4	3	2	4
CO2	4	3	4	4	4	3	4
CO3	4	3	4	4	4	3	4
CO4	4	1	4	4	2	2	2
CO5	4	1	4	4	2	2	2

Weighted % of course contribution to each PSO							
Map Course Outcomes (CO) for each Course with Programme Specific Outcomes (PSO) in the 4-Point scale of (Very Strong - 4, Strong - 3, Medium -2 and Low - 1)							

Question Pattern:

Section A		Section B	Section C
2 Multiple Choice question from Each unit (10x1=10)	1 question from each unit (5x2=10)	1 (a & b) question from each unit (5x5=25)	1 question from each unit (3x10=30)


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SEMESTER-I

COURSE CORE - CC II
MAPPING TECHNIQUES - PRACTICAL
COURSE CODE : U23GC102P

Category	Hours			Credits	Marks		
	Lecture	Tutorial	Practical		CIA	External	Total
Practical	-	-	4	2	40	60	100

OBJECTIVES

- To understand the components of Maps and Scale Measurements.
- To illustrate and examine the Representation of Maps.
- To illustrate the direction of Maps.
- To elaborate on the need for conventional signs and symbols in Maps.
- To introduce the mapping techniques applied for enlargement and reduction.

Unit : I

Scales – Representative fraction and Statement of the scale- Types of scales – Plain scales – Time scale – comparative scale - Diagonal scale.

Unit : II

Representation of direction on maps : Directions-True north, Grid, Magnetic north – Magnetic declination.

Unit : III

Bearings – True bearing and magnetic bearing - Latitude and Longitude – International dateline – International Time Calculation.

Unit : IV

Conventional signs and symbols - Measurement of distance (Thread- Divider- Opisometer) and Measurement of area (Graphical and strip method).

Unit : V

Enlargement and Reduction of maps - Combination of Maps.

References:

- I. Bagulia A.M (2006): Practical Geography, Anmol Pyblishers.
- II. Jayachandran, (1964): Practical Geography (Tamil Edition) Tamil Nadu Text Book Society, Chennai.

III. B.S. Negi (1995) Text Book of practical Geography, Kedarnath, Ramnath, Meerut.

IV. Gopal Singh (1996) Map Work Practical Geography, Vikas Publishing House Pvt. Ltd., New Delhi

V. Monk House, F.J. & Wilkinson, H.R. (1973) Maps and Diagrams, Methuen & Co Ltd, London.

Expected Course Outcomes:

On the successful completion of the course, student will be able to:

1	Recalls. Map components – Maps- Types of Map Scale–and Statement of the scale- Types – how it is important to explore their knowledge Representative fraction and Statement of the scale- Types of scales – Plain scales – Pace scale – Time scale.	K1
2	Understanding of facts Representation of direction on maps – Explain the Directions-True north, Grid, Magnetic north – Magnetic declination.	K2
3	Identify the Latitude and Longitude – International dateline – Explain the International Time Calculation.	K3
4	Define the Conventional signs and symbols- calculate the Measurement of distance (Thread- Divider Opisometer) and Measurement of area (Graphical and strip method).	K4
5	Enlargement and Reduction of maps -Combination of Map.	K5,K6
K1- Remember, K2 - Understand, K3 - Apply, K4 - Analyze, K5 - Evaluate, K6 - Create		

MAPPING OF POs WITH COs

CO/PSO	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7
CO1	4	2	1	4	1	1	4
CO2	4	2	1	4	1	1	4
CO3	4	3	4	4	2	4	4
CO4	4	2	4	4	2	4	4
CO5	3	2	2	1	2	1	1
Weighted % of course contribution to each PSO							
Map Course Outcomes (CO) for each Course with Programme Specific Outcomes (PSO) in the 4-Point scale of (Very Strong - 4, Strong - 3, Medium -2 and Low - 1)							

Question Pattern:

Section A	
Essay Type questions	1 question from each unit (5x12=60)

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SEMESTER-I
FOUNDATION COURSE - FC
EARTH AND ITS SYSTEMS
Course Code : U23G1FC

Category	Hours			Credits	Marks		
	Lecture	Tutorial	Practical		CIA	External	Total
Theory	2	-	-	2	25	75	100

OBJECTIVES

- To understand the basic concept of Universe and its origin and the theories of Evolution : Nebula, Kant and Big Bang Theory.
- To understand Earth and Universe- Solar systems , Milky way Galaxy and Black hole theory and Meteorites.
- To explain the Earth Internal Structure the Core, Mantle, Crust and also the Earth's Magnetism.
- To illustrate about the Earth's Size, Rotation and Revolution, causes for Seasons, Eclipses and Solstice.
- To explain the latitude and longitude, Cardinal points, Greenwich Meridian and Indian Standard Time. To given an understanding on the Time calculation.

Unit : I

The Universe and its Origin- Theories of Evolution: Nebula, Kant, and Big Bang Theory.

Unit : II

Earth and Universe - Solar system- Galaxy (Milky way) – Cosmobody - Black hole – Meteorites.

Unit : III

Earth's internal structure – Earth's crust, mantle, and core – Discontinuity- Isostasy – Earth's magnetism.

Unit : IV

Earth and its Size -Earth Rotation and Revolution – Inclination Causes – (Seasons Day and Night) – Summer and Winter Solstice - Eclipse.

Unit : V

Latitudes and Longitudes– Cardinal Points - Greenwich Meridian – Indian Standard time- Time Calculation.

References:

- I. Christopherson, R.W. and Birkeland, G. H. (2012) Geosystems: An Introduction to Physical Geography (8/E), Pearson Education, New Jersey.
- II. Dale F. Ritter, (2011) Process Geomorphology – Waveland PrInc Publication
- III. Das Gupta, A & Kapoor, A.N. (2001) Principles of Physical Geography, S.C. Chand & Company Ltd. New Delhi.
- IV. Ernst, W.G. (2000) Earth Systems: Process and Issues (Ed.), Cambridge University Press.
- V. Gochenleong(2001): Certificate Physical and Human Geography.

Expected Course Outcomes:

On the successful completion of the course, student will be able to:

1	Understands the origin of various theories in geography over the period identifying geographical proven theories on origin of the sun and assess the recent trend in geography.	K1
2	Understands the changes over the universe periodically , distinguish the earth rotation and revolution and its causes explain how day and night cause, evaluates the logic behind the time calculation.	K2
3	Recalls and Understands the size and position of planets, summarise with importance of direction in Geographical location.	K3
4	A evaluate the size and position of planets, summarise with importance of direction in Geographical location(Interactive session with questions).	K4
5	Identifies the earth rotation and revolution and its causes explain how day and night cause,evaluate the logic behind the time calculation discuss the location of Greenwich and calculate the Indian standard time.	K5,K6

K1- Remember, K2 - Understand, K3 - Apply, K4 - Analyze, K5 - Evaluate, K6 - Create

MAPPING OF POs WITH COs

CO/PSO	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7
CO1	4	3	4	4	3	4	4
CO2	4	4	4	4	1	3	4
CO3	4	2	4	4	2	2	2
CO4	4	4	4	4	4	4	4
CO5	4	4	4	4	4	3	3
Weighted % of course contribution to each PSO							

Map Course Outcomes (CO) for each Course with Programme Specific Outcomes (PSO) in the 4-Point scale of (Very Strong - 4, Strong - 3, Medium -2 and Low - 1)

Question Pattern:

Section A	
Essay Type questions	1 question from each unit (5x15=75)

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SEMESTER-II

CORE COURSE – CC III
CLIMATOLOGY
COURSE CODE : U23GC203

Category	Hours			Credits	Marks		
	Lecture	Tutorial	Practical		CIA	External	Total
Theory	5	-	-	5	25	75	100

OBJECTIVES

- To understand the basic concepts and scope of climate and differentiate the weather and climate and assess the composition of atmosphere.
- To classify the Atmospheric Pressure and Winds.
- To illustrate the types of air masses and fronts.
- To elaborate the Atmospheric Moisture and climatic regions.
- To understand the basic concepts of Cyclone and its mechanism.

Unit : I

Scope and Content – Weather and Climate – Climatic Elements- Atmospheric Composition and Structure– Insolation and Temperature: Factors and Distribution, Heat Budget, Temperature Inversion.

Unit : II

Atmospheric Pressure and Winds: Planetary Winds, Forces affecting Winds, General Circulation of Air, Jet Streams.

Unit : III

Air Masses- Classification of Air Masses- Fronts- Classification of Fronts.

Unit : IV

Atmospheric Moisture: Evaporation, Humidity, Condensation, Fog and Clouds, Precipitation Types, Stability and Instability; Climatic Regions.

Unit : V

Cyclones: Tropical Cyclones, Temperate Cyclones, Monsoon - Origin and Mechanism, El Nino – LA Nina.

References:

- Barry, R.G. & Chorley, R.J., (2003) Atmosphere, Weather and Climate, 11th Edition, Routledge.
- Critchfield, H. J., (1987): General Climatology, Prentice-Hall of India, New Delhi
- Das, R.K., (1968): The Monsoons, National Book Trust, New Delhi.
- Das Gupta, A & Kapoor, A.N. (2001) Principles of Physical Geography, S.C. Chand & Company Ltd. New Delhi.

Expected Course Outcomes:

On the successful completion of the course, student will be able to:

1	Recall Climatic elements explain the composition and Structure of the Atmosphere define Insolation examine the Heat Balance compares Horizontal and Vertical Distribution of Temperature.	K1
2	Defines Atmospheric Pressure, Compares Horizontal and Vertical Distribution of Pressure draw the major Pressure Belts Differentiates Planetary Winds, Periodic and Local Winds, Group Activity Make a Model on Major pressure Belts and Planetary winds.	K2
3	Illustrate the formation of Jet Streams summarise the formation of Air Masses and Fronts.	K3
4	Defines and differentiate Humidity (absolute humidity, Relative humidity) explains Fog and its Types identifies Clouds (High, Medium and Low) narrates Forms of precipitation and Types of Rainfall (Convective, Orographic and Cyclonic) discuss and debate on Issues in Global Climate Changes.	K4
5	Draw map for Circulation of Ocean Currents and the distribution Discuss and debate on El Nino – La Nina	K5, K6
K1 - Remember, K2 - Understand, K3 - Apply, K4 - Analyze, K5 - Evaluate, K6 - Create		

MAPPING OF POs WITH COs

CO/PSO	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7
CO1	4	3	4	4	1	1	3
CO2	4	3	4	4	2	1	2
CO3	4	2	3	4	3	1	1
CO4	4	3	2	4	1	1	3
CO5	4	3	4	4	3	4	4
Weighted % of course contribution to each PSO							

Map Course Outcomes (CO) for each Course with Programme Specific Outcomes (PSO) in the 4-Point scale of (Very Strong - 4, Strong - 3, Medium -2 and Low - 1)

Question Pattern:

Section A		Section B	Section C
2 Multiple Choice question from Each unit (10x1=10)	1 question from each unit (5x2=10)	1 (a & b) question from each unit (5X5=25)	1 question from each unit 5 Question (3X10=30)

SEMESTER-II

CORE COURSE – CC IV
REPRESENTATION OF RELIEF FEATURES - PRACTICAL
COURSE CODE : U23GC204P

Category	Hours			Credits	Marks		
	Lecture	Tutorial	Practical		CIA	External	Total
Practical	-	-	4	2	40	60	100

OBJECTIVES

- To enhance techniques applied in the Representation of relief on maps.
- To introduce the mapping techniques applied to interpret contours.
- To enhance techniques applied in the Profiles.
- To enhance the students in gaining knowledge of concepts and components using Drainage basin and stream ordering.
- To get an idea of Calculation of Drainage shape analysis.

Unit : I

Representation of relief on maps: Spot heights, bench mark, triangulation station -layer shading- Hachuring, hill shading and Contours.

Unit : II

Contour section drawing-Types of slopes (Uniform, Concave and Convex)-(Hill-Plateau-Ridge- Escarpment-V-shaped Valley-Waterfalls and Sand dunes).

Unit : III

Profiles (Serial- Super imposed -Projected– Composite).

Unit : IV

Drainage Basin Analysis - Stream Ordering - Strahler's Method.

Unit : V

Drainage Shape Analysis : Simple Method.

References:

1. Jayachandran, (1964): Practical Geography (Tamil Edition) Tamil Nadu Text Book Society, Chennai.
2. King, C. A.M (1966) Techniques in Geomorphology, Edward Arnold, London
3. Gopal Singh (1996) Map Work Practical Geography, Vikas Publishing House Pvt. Ltd., New Delhi.
4. Gopal Singh (1998) Map Work and Practical Geography (4th Edition), Vikas Publishing House, Ahmedabad.
5. Monk House, F.J. & Wilkinson, H.R. (1973) Maps and Diagrams, Methuen & Co Ltd, London.
6. Negi B.S. (1995) Text Book of practical Geography, KedarNath, Ramnath, Meerut.
7. Saha, P. & Basu, P. (2014) Advanced Practical Geography, Books and Allied Ltd., Kolkatta.

LEARNING OUTCOMES:

Expected Course Outcomes:		
On the successful completion of the course, student will be able to:		
1	To understand the Representation of relief on maps, Spot heights, , bench mark, triangulation ,station - layer shading- and calculate the Interpolation of contours.	K1
2	Understands the Contour section drawing - Types of slopes (Uniform, Concave and Convex)-(Hill Plateau-Ridge- Escarpment V-shaped Valley-Waterfalls and Sand dunes).	K2
3	To draw a Profiles (serial- superimposed-projected – composite).	K3
4	To draw a Drainage basin analysis in stream ordering.	K4
5	To understand Drainage shape analysis and its methods.	K5,K6
K1- Remember, K2 - Understand, K3 - Apply, K4 - Analyze, K5 - Evaluate, K6 - Create		

MAPPING OF POs WITH COs

CO/PSO	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7
CO1	4	1	3	1	1	1	4
CO2	4	1	2	2	2	1	3
CO3	4	1	1	3	1	2	1
CO4	4	3	4	2	2	1	1
CO5	4	3	4	3	2	1	1
Weighted % of course contribution to each PSO							
Map Course Outcomes (CO) for each Course with Programme Specific Outcomes (PSO) in the 4-Point scale of (Very Strong - 4, Strong - 3, Medium -2 and Low - 1)							

Question Pattern:

Section A	
Essay Type questions	1 question from each unit (5x12=60)

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SEMESTER-II**SEC - I****TRENDS IN GEOGRAPHY
COURSE CODE : U23G2SE2**

Category	Hours			Credits	Marks		
	Lecture	Tutorial	Practical		CIA	External	Total
Theory	2	-	-	2	25	75	100

OBJECTIVES

- To enhance the students in gaining knowledge of concepts and components using Remote Sensing.
- To get an idea of Aerial Photographs and their uses in topographical mapping.
- To enhance the quality of data collection and uses of images.
- To display the new technology used and analyze spatial data, it combines the advantages of both the Internet and GIS.
- To enrich the knowledge about the data acquired and study of major Satellite Systems in world.

Unit : I

Remote sensing: Components of remote sensing – Electro Magnetic Spectrum - Energy interaction with atmosphere and Earth - Resolutions.

Unit : II

Aerial photography: Types of aerial photography and uses - Stereoscopic - Photogrammetry.

Unit : III

Digital Data: Basic Characteristics of digital image - data type and file format- Data acquisition and interpretation- Use of multiple images.

Unit : IV

Web GIS: components of Web GIS - concept of maps and software -Open source Software— GRASS – ILWIS – Open street map - QGIS - Saga GIS - Map window-cloud GIS.

Unit : V

Major satellite systems: Sensors and data products of IRS, LANDSAT, SPOT, ERS, IKONOS, Quick Bird, ORBVUE, ASTER, MODIS, WORLD VIEW, AVIRIS, CASI, MODIS and Hyperion.

References:

- I. Campbell, J. B., (2007) Introduction to Remote Sensing, Guildford Press, New York.
- II. Jensen, J. R., (2004) Introductory Digital Image Processing: A Remote Sensing Perspective, Prentice Hall, New Jersey.
- III. Joseph, G. (2005) Fundamentals of Remote Sensing, Universities Press, Hyderabad.

LEARNING OUTCOMES:

Expected Course Outcomes:		
On the successful completion of the course, student will be able to:		
1	Defines remote sensing, lists the types of remote sensing, summarize development of Space Programs explores Organizations Associated with Remote Sensing in India and in other Countries. Lists the Sources of Energy, defines Electromagnetic Radiations.	K1
2	Lists the Components of Aerial Camera, differentiates types of Aerial Photographs, examines Marginal Information of Aerial Photographs, summarizes Elements of Photo Interpretation.	K2
3	Define the components of Slope, Aspects, overlay operations and statistical analysis. Understands Vector data – topological and non-topological vector data.	K3
4	Recalls and Understands GIS Integration: Identifies Integration techniques.	K4
5	Appreciate the development and uses of major satellite remote sensing system.	K5, K6
K1- Remember, K2 - Understand, K3 - Apply, K4 - Analyze, K5 - Evaluate, K6 - Create		

MAPPING OF POs WITH COs

CO/PSO	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7
CO1	4	3	2	1	1	1	3
CO2	4	2	3	1	1	1	1
CO3	4	1	4	1	1	4	4
CO4	4	3	4	1	1	2	2
CO5	4	3	3	1	1	3	4
Weighted % of course contribution to each PSO							
Map Course Outcomes (CO) for each Course with Programme Specific Outcomes (PSO) in the 4-Point scale of (Very Strong - 4, Strong - 3, Medium -2 and Low - 1)							

Question Pattern:

Section A	
Essay Type questions	1 question from each unit (5x15=75)


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SEMESTER-III

CORE COURSE – CC V OCEANOGRAPHY COURSE CODE : U23GC305

Category	Hours			Credits	Marks		
	Lecture	Tutorial	Practical		CIA	External	Total
Theory	5	-	-	5	25	75	100

Objective:

- To understand the term Oceanography definition, description of Ocean and Seas, Extent, surface configuration of the Ocean floor. To acquire wide knowledge on Hypsometric curve, Continental Shelf, Continental Slope, Abyssal Plain and Deep, Trenches
- To understand and illustrate on bottom relief of Pacific, Atlantic and Indian Ocean and Composition of sea water.
- To illustrate the distribution of Salinity and factors affecting temperature
- To describe the Circulation of Ocean Movements
- To explain the distribution of Ocean deposits and resources
- Assessment Unit

Unit I

Oceanography: Definition, Oceans and seas - Extent and distribution – Surface configuration of the Ocean floor, Hypsometric curve – Continental shelf – Continental slope – Abyssal Plain – Deep and Trenches.

Unit II

Bottom Relief of the Pacific, Atlantic and Indian Oceans, Sea water – Composition of sea water.

Unit III

Ocean Temperature and Salinity: Distribution and factors – Horizontal and vertical - Factors affecting temperature and salinity distribution.

Unit IV

Ocean Water Movement – Waves – Tides: Types - Ocean Currents: Types - Currents of Pacific, Atlantic and Indian Oceans.

Unit V

Ocean Deposits: Types - Coral Reefs: Formation and types - Ocean resources and need for conservation - National Institute of Ocean Technology (NIOT).

Expected course outcomes

On the successful completion of the course, student will be able to :

1.	Define oceanography, explains distribution of Land and Sea describes the structure.	
2.	Understands composition of the Ocean floor the oceanic crust, Group Activity makes a model of Ocean Bottom relief.	
3.	Describes the composition of sea water list out the factors Governing sea Temperature , illustrate the variation in Temperature distribution (Horizontal and Vertical Distribution) .	

MAPPING OF POs WITH COs

CO/PSO	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7
CO1	4	2	1	1	2	1	3
CO2	4	3	3	3	4	1	4
CO3	4	2	4	4	4	2	2
CO4	4	3	4	4	4	4	4
CO5	4	2	4	4	4	1	4
Weighted % of course contribution to each PSO							
Map Course Outcomes (CO) for each Course with Programme Specific Outcomes (PSO) in the 4-Point scale of (Very Strong - 4, Strong - 3, Medium -2 and Low - 1)							

Question Pattern:

Section A		Section B	Section C
2 Multiple Choice question from Each unit (10x1=10)	1 question from each unit (5x2=10)	1 (a & b) question from each unit (5X5=25)	1 question from each unit (3X10=30)

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SEMESTER-III

CORE COURSE – CC VI REPRESENTATION OF SOCIO ECONOMIC AND CLIMATIC DATA - PRACTICAL COURSE CODE :

Category	Hours			Credits	Marks		
	Lecture	Tutorial	Practical		CIA	External	Total
Practical	-	-	4	2	40	60	100

Objective:

- To understand the representation of Climatic Data.
- To illustrate the Symbols used to interpret the Weather maps.
- To differentiate the Socio-economic data using the different methods of Mapping techniques.
- To elaborate on the different methods and techniques of map representation.
- To summarize diagrammatic representation of mapping techniques using computer.
- Assessment Unit.

Unit I

Weather symbols – Synoptic weather chart - Interpretation of Indian weather report .

Unit II

Representation of climatic data- Climatic graph – Taylor's Climograph – Hyther graph – Ergo graph -Rainfall dispersion diagram.

Unit III

wind rose diagram- simple,Star, Octagonal wind rose diagram and super imposed.

Unit IV

Representation of socio-economic data- Distribution maps – Dot map – Mono- Circle-Square-Sphere.

Unit V

Maps - Isopleth – Choropleth – Choro-schematic – Choro-chromatic - Index of concentration

References:

- SahaPijushkanti (2010): Advanced Practical Geography, Books and Allied pvt Ltd.
- Bagulia A.M (2006):Practical Geography, Anmol Publishers.

III. Zulfequar Ahmed Khan M.D (1997): Text book of Practical Geography, Concept Publishing Company , New Delhi.

IV. <http://youtu.be/2hxUKRo1qQU>

V. <https://youtu.be/gmTXQFwxuLE>

Expected Course Outcomes:		
On the successful completion of the course, student will be able to:		
1	Define the climatic data and its representation in geography. List out its importance climatic data in Geography, and to explore their knowledge to plot graphical representation from climatic and socio economic data for all types of climatic graphs, ergo and hyther graph.	K1,K2
2	Understand the Weather elements. Outline the Temperature. Distinguish the Pressure belts . Illustrate the significance of Wind. Categories the Humidity and classify the types of Rainfall.	K3,K4
3	Understanding of facts and basic concepts of socio economic data to represent the proper distribution maps. Develop the skills to develop apt map for the given data.	K5,K6
4	Understands the Concept of socio economic data to choose apt map to depict. Index of concentration and dispersion diagram has different criteria., hence need to show unique way of drawing maps for each and every particular data. Lorenz curve and Gini coefficient has a close connection with comparing variable with grand total data.	K2,K5
5	Explore the Statistical Methods with connection of geographical study to evaluate the mean and median centre for locational analysis and appreciate the featured criteria elaborately.	K2,K3

K1- Remember, K2 - Understand, K3 - Apply, K4 - Analyze, K5 - Evaluate, K6 - Create

MAPPING OF POs WITH COs

CO/PSO	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7
CO1	4	1	1	1	1	3	2
CO2	4	3	4	1	1	3	1
CO3	4	1	1	2	3	1	1
CO4	4	3	3	1	1	1	1
CO5	4	2	2	1	2	1	1
Weighted % of course contribution to each PSO							

Map Course Outcomes (CO) for each Course with Programme Specific Outcomes (PSO) in the 4-Point scale of (Very Strong - 4, Strong - 3, Medium -2 and Low - 1)

Question Pattern:

Section A	
Essay Type questions	1 question from each unit (5x12=60)

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SEMESTER-III

SEC II BASICS OF GNSS COURSE CODE : U23G3BG

Category	Hours			Credits	Marks		
	Lecture	Tutorial	Practical		CIA	External	Total
Theory	1	-	-	1	20	-	20

Objective:

- The objective of this course is to introduce the basic concepts of Global Navigation Satellite System

Theory:

History of GNSS - Segments of GNSS - GNSS Constellations: GPS, GLONASS, Galileo, BeiDou, IRNSS – Errors in GNSS.

References:

- Agarwal, N. K., (2006). Essentials of GPS, Geodesy and GPS publications, Hyderabad.
- AnjuReddy (2006) Remote Sensing and Geographical Information System Sulthan Bazar Hyderabad.

Learning Outcome:

After the completion of course, the students will have ability to make use of proper tools and surveying methods for ground data collection.

Expected course outcomes		
On the successful completion of the course ,student will be able to :		
1.	History of GNSS - Segments of GNSS - GNSS Constellations: GPS, GLONASS, Galileo, BeiDou, IRNSS – Errors in GNSS.	K1,K2
K1- Remember ,K2 - Understand, K3- Apply,K4- Analysis, K5- Evaluate -,K6 - Create		

MAPPING OF POs WITH COs

CO/PSO	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7
CO1	4	3	4	4	1	4	4
Weighted % of course							

contribution to each PSO							
Map Course Outcomes (CO) for each Course with Programme Specific Outcomes (PSO) in the 4-Point scale of (Very Strong - 4, Strong - 3, Medium -2 and Low - 1)							

Question Pattern:

Section A	
Essay Type questions	3 question from unit (2x10=20)

[Signature]
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SEMESTER III

SEC - III
AGRICULTURAL GEOGRAPHY
COURSE CODE :

Category	Hours			Credits	Marks		
	Lecture	Tutorial	Practical		CIA	External	Total
Theory	2	-	-	2	25	75	100

Objectives:

- To examine the spatial distribution of crops, livestock and other agricultural activities.
- To understand the cropping patterns and livestock combinations that varies in space and time.

Unit I

The origin of Agriculture – Geographical factors influencing Agriculture: Physical, Cultural, Social and Economic factors – Agriculture and soil Erosion and Conservation – Agriculture and Irrigation.

Unit II

Global patterns of farming systems: simple subsistence farming, migratory, sedentary, intensive and extensive, mechanized grain farming, plantation and commercial.

Unit III

Agricultural regions: Methods of Delineation – Agricultural regions of the World – Agricultural region of India characteristic salient.

Unit IV

Major Cereals: Rice, Wheat - Beverage crops: Tea and Coffee – Industrial crops: Cotton and Jute - Cash crops: Sugarcane and Tobacco.

Unit V

Whittlesey's world agricultural classification – Problems and Prospects.

References:

- Morgan W.B. and Munton R.Jc(1971) Agricultural Geography, Methuen, London.

- Majid Hussain (2013), Systematic Agricultural Geography, Inter-India Publications, Delhi.
- Coh Cheng Leong, (1982), Human and Economic Geography, Oxford University Press, New Delhi.
- Misra. R.P.(1986) Agricultural Geography, Heritage Publishers, New Delhi.
- Ali Mohammed (1978) Studies in Agricultural Geography, Rajesh Publications, New Delhi.
- Gregor and Howard F (1979) Geography of Agriculture: Themes in Research Printice Hall, New Jersey.
- Shafi, M., (2006): Agricultural Geography, Doring Kindersley India Pvt. Ltd., New Delhi
- AlkaGautam, 2016, Agricultural Geography, Sharda Pustak Bhavan Allahabad.

Expected course outcomes

On the successful completion of the course ,student will be able to :

1.	After completion of this course students will able to know about the origin of agriculture, geographical factors influencing the agriculture and types of agriculture.	K1,K2,K3
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K1- Remember ,K2 - Understand, K3- Apply,K4- Analysis, K5- Evaluate -,K6 - Create

MAPPING OF POs WITH COs

CO/PSO	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7
CO1	4	1	2	3	4	1	4
CO2	4	3	3	2	4	1	1
CO3	4	2	1	1	3	1	1
CO4	4	1	1	1	4	1	1
CO5	4	1	1	2	2	1	4
Weighted % of course contribution to each PSO							

Map Course Outcomes (CO) for each Course with Programme Specific Outcomes (PSO) in the 4-Point scale of (Very Strong - 4, Strong - 3, Medium -2 and Low - 1)

Question Pattern:

Section A	
Essay Type questions	1 question from each unit (5x15=75)

SEMESTER-IV

**CORE COURSE – CC VII
GEOGRAPHY OF INDIA
COURSE CODE:**

Category	Hours			Credits	Marks		
	Lecture	Tutorial	Practical		CIA	External	Total
Theory	5	-	-	5	25	75	100

Objective:

- To elaborate on the Location and Physiography of India.
- To understand the climate and soil distribution of India.
- To illustrate the agricultural distribution of India and the need for geographical factors for crop production.
- To distinguish the metallic and non metallic minerals, and understand the distribution of Indian Industries.
- To elaborate the distribution of population and transport in India.

Unit I

Location – Frontiers- Neighbouring Countries Physiography -Himalayas, Western Ghats and the Eastern Ghats –Plateau - East Coastal Plain, West coastal plain and Islands - Rivers :Northern (Peninsular) and Southern (Non Peninsular).

Unit II

Climate –Seasons, Monsoons, Rainfall Pattern and Distribution of Rainfall. Soil- Types of Soil - Natural Vegetation- Tropical Forest, Sub Tropical Forest, Evergreen Forest, Mangrove, Thorny Forest

Unit III

Agriculture – Geographical Requirements of Crops – Rice - Wheat – Sugarcane – Cotton - Jute - Tea – Coffee – Rubber - Livestock – Fisheries- Irrigation – Types – Multipurpose Projects.

Unit IV

Minerals – Metallic and Non-Metallic Minerals - Iron – Manganese – Bauxite- Copper- Mica- Illuminate Energy (Hydel, Thermal and Atomic) - Industries- Iron & Steel – Textiles – Paper – Shipbuilding – Locomotives – Cement – Fertilizer- Major Industrial Regions of India.

Unit V

Population – Distribution - Density and growth – Population Problems - Transport – Roadways – Railways – Water ways – Air ways – Ports and Harbors - Trade – Export and Import.

References:

- I. Khullar, D.R. (2014): India a Comprehensive Geography, Kalyani Publishers, Edition 03.
- II. Umesh Kumar (2012): Geography of India, Global Vision pub.
- III. Chandra Vijay Purty (2011) : Geography of India, ABD Publishers.
- IV. Rupali Chatterjee (2010): Geography of India, Global Vision publishers.
- V. <https://www.mapsofindia.com/geography>.
- VI. www.indianmirror.com/geography/geography.html

Expected course outcomes

On the successful completion of the course, student will be able to :

1.	Recall the geographic location and compare the neighbouring countries and compare its strategic importance, classifying the nature and extent of Himalayan ranges, identifying the resource of various elevation, compare the northern perennial and southern non perennial rivers, assess the coastal stretch and its importance, estimate island resource Indian seas and oceans.	K1
2.	Distinguish the concept of climate and weather, explain the intensity of Indian Monsoon, Evaluate the amount and pattern of rainfall, analyse the tropical cyclones over Indian coasts.	K2
3.	The agricultural regions, classifying the food crops and non food crops of India, identifying the cropping pattern and its distribution, assess the production based on rainfall explain the types of irrigation, assess the hydro electric power generation.	K3
4.	Classifying the minerals- metallic and non metallic, estimates the hydel power generation Assess the thermal power and atomic power generation, Analyse the major industrial regions and its importance in economic growth.	K4
5.	Identifies the demography of India, estimate the amount and pattern of rainfall in India, discuss the problems of urbanization, compare the means of transport, understand the strategic importance of sea routes evaluate the imports and exports.	K5, K6

K1- Remember, K2- Understand, K3- Apply, K4- Analysis, K5- Evaluate, K6 - Create

MAPPING OF POs WITH COs

CO/PSO	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7
CO1	4	3	1	1	1	1	1
CO2	4	3	1	3	3	1	1
CO3	4	1	1	2	2	1	1
CO4	4	3	1	3	4	3	4
CO5	4	3	3	1	3	2	1
Weighted % of course contribution to each PSO							
Map Course Outcomes (CO) for each Course with Programme Specific Outcomes (PSO) in the 4-Point scale of (Very Strong - 4, Strong - 3, Medium -2 and Low - 1)							

Question Pattern:

Section A		Section B	Section C
2 Multiple Choice question from Each unit (10x1=10)	1 question from each unit (5x2=10)	1 (a & b) question from each unit (5X5=25)	1 question from each unit (3X10=30)

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[Signature]
 08.01.2026

SEMESTER-IV

CORE COURSE – CC VIII INTERPRETATION OF TOPOSHEETS - PRACTICAL COURSE CODE:

Category	Hours			Credits	Marks		
	Lecture	Tutorial	Practical		CIA	External	Total
Practical	-	-	4	2	40	60	100

Objective:

- To explain conventional signs and symbols for better mapreading
 - Give a practical knowledge about the topographical map interpretation
- Conventional Sign and Symbols**
 - Physical
 - Cultural
 - Marginal Information**
 - Extra Marginal
 - Intra Marginal
 - Inner marginal
 - Appreciation of Indian Topographical Sheets**
 - One Inch to One Mile Sheet
 - 1:50,000
 - OSM Series
 - Interpretation of Physical Features**
 - Mountains and Plateaus
 - Plain and Coastal
 - Interpretation of Cultural Features**
 - Land use / Land cover
 - Settlements and Transport

References:

- Gopal singh, (1996). Map work and practical geography, Vikas Publishing House Pvt.Ltd.
- Khullar, (1997). Practical Geography, Educational Publishers, New Delhi.
- Negi B.S. (1998) Practical Geography Geography, Kedarnath and Ramnath, Meerut.

- Monkhouse, F.J. and Wilkinson, H.R., (1989). Maps and Diagrams, B.I.Publications, New Delhi.
- PijushkantiSaha and ParthaBasu, (2010). Advanced Practical Geography, Books and Allied (P) Ltd, Kolkata.
- Raghunandar Singh (1965), Map Work and Practical Geography, Central Book Depot, Allahabad.
- Singh, R. L., (2005). Elements of Practical Geography, Kalyani Publishers, New Delhi.
- Zulfequar Ahmad Khan, M. D., (1998). Text Book of Practical Geography, Concept Publishing Company, New Delhi.

Expected course outcomes		
On the successful completion of the course ,student will be able to :		
1.	After the completion of course, Student would able to understand various signs and symbols that used in Indian topographical maps and independently interpret physical and cultural features of an area using toposheets.	K1,K2,K3
K1- Remember, K2 - Understand, K3- Apply, K4- Analysis, K5- Evaluate -, K6 - Create		

MAPPING OF POs WITH COs

CO/PSO	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7
CO1	4	1	1	1	1	2	4
CO2	4	1	1	1	1	2	4
CO3	4	1	1	2	2	3	3
CO4	4	2	3	1	2	3	4
CO5	4	2	3	1	2	3	4
Weighted % of course contribution to each PSO							
Map Course Outcomes (CO) for each Course with Programme Specific Outcomes (PSO) in the 4-Point scale of (Very Strong - 4, Strong - 3, Medium -2 and Low - 1)							

Question Pattern:

Section A	
Essay Type questions	1 question from each unit (5x12=60)

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SEMESTER-IV

SEC – IV POPULATION GEOGRAPHY COURSE CODE:

Category	Hours			Credits	Marks		
	Lecture	Tutorial	Practical		CIA	External	Total
Theory	2	-	-	2	25	75	100

Objective:

- The objective is to acquaint the students with demographic characteristics of the world concerning births and deaths patterns, age and sex compositions, migration and population policies.

Unit I

Nature, Scope and Significance of Population Geography – Sources of Population Data: Census, Vital Statistics, Demographic sample surveys, Population Registers, International Reports Problems and prospects.

Unit II

World Population: Determination of Population – Distribution, Density and Growth – Recent Trends of World Population – Demographic Transition.

Unit III

Composition of Population: Age, Sex, Literacy – Measurements of Fertility and Mortality - Occupational Structure.

Unit IV

Migration: Causes and Consequences – Internal and International Migration.

Unit V

Population development and Environment Interrelations – Population Policies.

References:

- G.T.Trewartha (1969) Geography of Population, World Patterns John Wiley and Sons Inc.
- Knox, P. & Marston, S. (2013) Human Geography: Places and Regions in Global Context, 6th Edition, Pearson Education, New Delhi.

- Majid Hussain, (2005), Human Geography, Rawat Publications, New Delhi. 2.
- Negi, B.S. (2002) Human Geography – An Ecological Approach, Kedar Nath Ram Nath, New Delhi.
- Rubenstein, J.H. (2013) Contemporary Human Geography, 2nd Edition, Prentice-Hall, New Jersey.

Expected course outcomes		
On the successful completion of the course, student will be able to :		
1.	Nature, Scope and Significance of Population Geography – Sources of Population Data: Census, Vital Statistics, Demographic sample surveys, Population Registers, International Reports Problems and prospects.	K1
2.	World Population: Determination of Population – Distribution, Density and Growth – Recent Trends of World Population – Demographic Transition.	K2
3.	Composition of Population: Age, Sex, Literacy – Measurements of Fertility and Mortality -Occupational Structure.	K3
4.	Migration: Causes and Consequences – Internal and International Migration.	K4
5.	Population development and Environment Interrelations – Population Policies.	K5, K6
K1- Remember ,K2 - Understand, K3- Apply,K4- Analysis, K5- Evaluate -,K6 - Create		

MAPPING OF POs WITH COs

CO/PSO	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7
CO1	4	3	4	1	1	3	4
CO2	4	1	1	1	1	3	1
CO3	4	1	3	2	2	1	1
CO4	4	2	2	4	3	1	1
CO5	4	3	1	1	3	1	3
Weighted % of course contribution to each PSO							
Map Course Outcomes (CO) for each Course with Programme Specific Outcomes (PSO) in the 4-Point scale of (Very Strong - 4, Strong - 3, Medium -2 and Low - 1)							

Question Pattern:

Section A	
Essay Type questions	1 question from each unit (5X15=75)

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Rolling
1-2026

Category	Hours			Credits	Marks		
	Lecture	Tutorial	Practical		CIA	External	Total
Theory	6	-	-	6	25	75	100

Objective:

- The objective is to acquaint the students with regional characteristics of the world concerning Physical, Agricultural, Transport, Trade of the special region.

Unit I

North America and South America: Political divisions– Physical - Drainage – Soil – Agricultural – Natural Vegetation – Animal Life – Transport and trade - Cultural Aspects.

Unit II

Africa: Political divisions – Physical - Drainage – Soil – Agricultural – Natural Vegetation – Animal Life – Transport and trade Cultural aspects.

Unit III

Australia: Political divisions – Physical - Drainage – Soil – Agricultural – Natural Vegetation – Animal Life – Transport and trade Cultural aspects.

Unit IV

Europe : Political divisions – Physical - Drainage – Soil – Agricultural – Natural Vegetation – Animal Life – Transport and trade Cultural aspects.

Unit V

Asia: Political divisions – Physical - Drainage – Soil – Agricultural – Natural Vegetation – Animal Life – Transport and trade Cultural aspects.

Reference:

- Majid Hussain (2012): World geography, Rawat Publications, 4th Edition.
- Majid Hussain (2011): Concise Geography, Tata Mc Graw Hill Education Private limited, NewDelhi.
- Alka Gautam (2007) :World geography, first edition, Sharda pustakbhawan, Allahabad.
- Gochenleong(2001): Certificate Physical and Human Geography, Oxford university press, New Delhi.

V. World Regional Geography, Global pattern, local lives Third Edition, Lydia Mihelic
Publisher www.whfreeman.com/catalog/pulsipher3e.

VI. examrace.com/.../Geography/.../Regional Geography/Geography Na..

Expected course outcomes		
On the successful completion of the course ,student will be able to :		
1.	Appreciate the knowledge on political division of North America and South America, explain the soil resource and drainage of the region understand the flora and fauna over this latitudes . Develop the in depth knowledge of natural resource and its importance.	K1
2.	Explore the basic facts on African continent of facts and explain the political division and strategy location of the continent classify the resource over the region. Elaborate the drainage pattern and its importance of the continent.	K2
3.	Understands the basic facts on Australian continent, explain the (political division, Physical - Drainage – Soil – Agricultural – Natural Vegetation – Animal Life – Transport and trade Cultural aspects) strategy location of the continent classify the resource over the region.	K3
4.	Appreciate the knowledge on political division of Europe , explain the geographical knowledge such as physical, Drainage soil resource and agricultural aspects of the region understand the flora and fauna over this latitudes.	K4
5.	Define the concepts of political region and Examine the subjective aspects of Asia Physiographic divisions.	K5,K6
K1- Remember ,K2 - Understand, K3- Apply, K4- Analysis, K5- Evaluate -,K6 - Create		

MAPPING OF POs WITH COs

CO/PSO	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7
CO1	4	3	1	1	3	1	4
CO2	4	2	1	1	2	1	1
CO3	4	1	1	1	2	1	1
CO4	4	3	1	2	2	1	4
CO5	4	3	1	1	2	1	3
Weighted % of course contribution to each PSO							

Map Course Outcomes (CO) for each Course with Programme Specific Outcomes (PSO) in the 4-Point scale of (Very Strong - 4, Strong - 3, Medium -2 and Low - 1)

Question Pattern:

Section A		Section B	Section C
2 Multiple Choice question from Each unit (10x1=10)	1 question from each unit (5x2=10)	1 (a & b) question from each unit (5X5=25)	1 question from each unit (3X10=30)

Category	Hours			Credits	Marks		
	Lecture	Tutorial	Practical		CIA	External	Total
Theory	4	-	-	2	25	75	100

OBJECTIVES

- To enrich wide and depth knowledge of Political and Physiography of Tamil Nadu.
- To elaborate the Soil profile, natural vegetation and the significant understanding regarding wild life and bird sanctuaries.

Unit I

Tamil Nadu: Location – Administrative Division - Physiography – - Climate – Rainfall - Distribution of Rainfall- Drainage system..

Unit II

Soils – Types of Soil - Natural Vegetation- Forest and its types - Wild life sanctuaries - Bird sanctuaries- Irrigation - Types - Multipurpose Projects.

Unit III

Distribution of Crops: Food Crops - Paddy, Millets, Pulses - Cash Crops (Sugarcane, Cotton) - Plantation Crops (Tea, Coffee) – Livestock (cattle, sheep and dairying) – Fisheries(Inland and deep sea fishing).

Unit IV

Distribution of Minerals and Industries - Metallic - NonMetallic (Iron, Manganese, Bauxite, Copper, Mica, Energy and power resources) - Agro Based Industries-(Textile, Sugar, Paper) – Cement – Automobile.

Unit V

Population : Distribution – Growth – Density - Population Problems –Transportation- Roadways - Railways- Airports- Ports- Trade (Import and Export)- Special Economic Zones.

References:

1. Basic resources Atlas of Tamil Nadu, (1983), University of Madras.
2. Kumaraswamy, S.V. (2014). Geography of Tamil Nadu (Tamil Edition), SakthiAbiramiPathipagam, Coimbatore.
3. SHBoTN (2004). Statistical Hand Book of Tamil Nadu. Department of Economics and Statistics, Government of Tamil Nadu, Chennai.
4. TNEA (2014). Tamil Nadu – An Economic Appraisal 2011-12 to 2013-14. Department of Evaluation and Applied Research, Chennai.
5. SCROTN (2004). Season and Crop Report of Tamil Nadu for the Agricultural Year 2003-2004. Department of Economics and Statistics, Chennai.

Expected course outcomes

On the successful completion of the course ,student will be able to :

1.	After the completion of course, the students will have a thorough understanding on physical, cultural, economic and demographic aspects of Tamil Nadu	K1,K2
2.	Soils – Types of Soil - Natural Vegetation- Forest and its types- Flora and Fauna -Wild life sanctuaries - Bird sanctuaries.	K2,K4
3.	Distribution of Crops: Food Crops - Paddy, Millets, Pulses, Oilseeds- Cash Crops (Sugarcane, Cotton) - Plantation Crops (Tea, Coffee, Rubber and Spices) – Livestock (cattle, sheep and dairying) – Fisheries(inland and deep sea fishing).	K2,K3
4.	Distribution of Minerals and Industries-Metallic- NonMetallic (Iron, Manganese, Bauxite, Copper, Mica, Energy and power resources) - Agro Based Industries-(Textile, Sugar, Paper) – Cement – Automobile.	K5,K6
5.	Population : Distribution – Growth – Density - Population Problems – Transportation- Roadways - Railways- Airports- Ports- Trade (Import and Export)- Special Economic Zones.	K4, K5

K1- Remember ,K2 - Understand, K3- Apply,K4- Analysis, K5- Evaluate -,K6 - Create

MAPPING OF POs WITH COs

CO/PSO	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7
CO1	4	3	1	1	1	1	1
CO2	4	3	1	3	3	1	1
CO3	4	1	1	2	2	1	1
CO4	4	3	1	3	4	3	4
CO5	4	3	3	1	3	2	1
Weighted % of course contribution to each PSO							

Map Course Outcomes (CO) for each Course with Programme Specific Outcomes (PSO) in the 4-Point scale of (Very Strong - 4, Strong - 3, Medium -2 and Low - 1)

Question Pattern:

Section A		Section B	Section C
2 Multiple Choice question from Each unit (10x1=10)	1 question from each unit (5x2=10)	1 (a & b) question from each unit (5X5=25)	1 question from each unit (3X10=30)



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SEMESTER-V

CC-XI - MAP PROJECTIONS AND SURVEYING - PRACTICAL

COURSE CODE:

Category	Hours			Credits	Marks		
	Lecture	Tutorial	Practical		CIA	External	Total
Practical	-	-	5	2	40	60	100

Objective:

- To acquire the knowledge of Conical Projection
- To get the knowledge of properties of cylindrical projection
- To get depth knowledge to construct international projection and Choice of Projection.
- To acquire the basic knowledge of survey techniques
- To get the knowledge of recent trends in Geographical Applications.

Unit I

Map projection - Construction - Properties and utilities- Conical Projection - One standard Projection - Two standard parallel Projection - Bonne's projection and Polyconic projection.

Unit II

Construction of Cylindrical Projection - Equal area Projection - Equidistant Projection - Mercator's Projection.

Unit III

Zenithal Projection (Polar case) Gnomonic, Stereographic - Orthomorphic world projection - Mollweide - Sinusoidal- International projection - Choice of projection.

Unit IV

Simple Plane table survey-Open and Closed Travers - Clinometer - Dumpy level methods of surveying.

Unit V

Chain (open and closed) - Prismatic compass (open and closed).

References:

- I. Saha, Pijushkanti (2010)"Advanced Practical Geography, Books and Allied pvt Ltd.
- II. Bagulia A.M (2006) : Practical Geography , Anmol Publishers.
- III. Khan, Zulfequar Ahmed M.D (1997):Text book of Practical Geography, Concept

IV. Publishing Company , New Delhi.

V. <https://www.geographyrealm.com/types-map-projections/>

VI. <http://geokov.com/education/map-projection.aspx>

VII. <http://www.radicalcartography.net/index.html?projectionref>

VIII. <http://mathworld.wolfram.com/topics/MapProjections.html>

Expected course outcomes

On the successful completion of the course ,student will be able to :

1.	Recalls the uniqueness of each projection and significance of each projection- lists out types of projections -able to construct Conical One standard Projection and Two standard parallel Projection - the properties and uses of each projection.	K1,2
2.	Appreciates the concept of Zenithal Projection, (Polar case) able to construct Gnomonic, Stereographic and Orthomorphic projections-Recognizes the importance of world projection able to construct Mollweide, Sinusoidal and International projection.	K2,K4
3.	Briefs about Simple methods of surveying Individual candidate is able to do Chain (open and closed) and Prismatic compass (open and closed). Individual candidate is able to do Plane table survey-Open and Closed Travers , Clinometer - Dumpy level.	K2,K3
4.	Aquires knowledge on the use of GPS and their applications in various fields.	K5,K6
5.	Assessment Unit	K4, K5

K1- Remember ,K2 - Understand, K3- Apply,K4- Analysis, K5- Evaluate -,K6 - Create

MAPPING OF POs WITH COs

CO/PSO	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7
CO1	4	1	1	1	1	2	4
CO2	4	1	1	1	1	2	4
CO3	4	1	1	2	2	3	3
CO4	4	2	3	1	2	3	4
CO5	4	2	3	1	2	3	4
Weighted % of course contribution to each PSO							
Map Course Outcomes (CO) for each Course with Programme Specific Outcomes (PSO) in the 4-Point scale of (Very Strong - 4, Strong - 3, Medium -2 and Low - 1)							

Question Pattern:

Section A	
Essay Type questions	1 question from each unit (5X12=60)

V23 GC P512

- c. Materials and Methods
- d. Results and Discussion
- e. Summary and Conclusion
- f. References
- g. Appendices

Category	Hours			Credits	Marks		
	Lecture	Tutorial	Practical		CIA	External x	Total
Practical	1	1	3	3	25	75	100

Prof. Dr. Jang

- *To understand about the various research methods and its applications.*
- *To learn about the collection of data, types, analysis, interpretation and report with suggestion.*
1. The students should select a specific topic from the following broad areas for conducting the Project Work.
 - a. Land Resources
 - b. Land use / Land cover Analysis
 - c. Water Resources
 - d. Disaster Studies
 - e. Climatic Analysis
 - f. Urban Studies
 - g. Pollution and EIA Studies
 - h. Demography and Health Analysis
 - i. Transport and Service Area Analysis
 - j. Social Area Analysis
 - k. Perception Studies
 2. Integration of primary and secondary data may be used, wherever possible.
 3. The students should read Geographical Research Methodology books before conducting the Project Work.
 4. The Project Report should be between 50 and 60 pages.
 5. Sufficient maps, diagrams and graphs and appropriate interpretation should be incorporated in the report.
 6. The Report should be divided as:
 - a. Introduction
 - b. Study Area

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SEMESTER-V

SEC- V
GEOGRAPHY OF HEALTH
COURSE CODE:

U23G5GH

Category	Hours			Credits	Marks		
	Lecture	Tutorial	Practical		CIA	External	Total
Theory	2	-	-	2	25	75	100

OBJECTIVES:

It aims to present the indicators values and characteristics that can be used to describe, compare and contrast the state of health of the population.

Unit I

Perspectives on Health: Definition; linkages with environment, development and health; driving forces in health and environmental trends - population dynamics, urbanization, poverty and inequality.

Unit II

Pressure on Environmental Quality and Health: Human activities and environmental pressure land use and agricultural development; industrialization; transport and energy.

Unit III

Exposure and Health Risks: Air and water pollution; household wastes;; housing; workplace.

Unit IV

Health and Disease Pattern in Environmental Context with special reference to India, Types of Diseases and their regional pattern (Communicable and Lifestyle related diseases).

Unit V

Climate Change and Human Health: Changes in climate system – heat and cold; Biological disease agents; food production and nutrition.

Reference:

- I. Akhtar Rais (Ed.), 1990: Environment and Health Themes in Medical Geography, Ashish Publishing House, New Delhi.

- II. Phillips, D. and Verhasselt, Y., 1994 Health and Development, Routledge, London.
- III. Christaler George and Hristopoles Dionissios, 1998: Spatio Temporal Environment Health Modelling, Boston Kluwer Academic Press.
- IV. Gatrell, A., and Loytonen, 1998: GIS and Health, Taylor and FrancisLtd, London.
- V. Avon Joan L. and Jonathan A Patzed. 2001: Ecosystem Changes andPublic Health, Baltimin, John Hopling Unit Press(ed)

Expected course outcomes

On the successful completion of the course ,student will be able to :

1.	Identify the linkages between the health, environment, exposure and risk.	K1,K2
2.	Understand the key concepts related to health and its driving forces	K2,K4
3.	Exposure and Health Risks: Air and water pollution; household wastes;; housing; workplace.	K2,K3
4.	Health and Disease Pattern in Environmental Context with special reference to India, Types of Diseases and their regional pattern	K5,K6
5.	Climate Change and Human Health: Changes in climate system – heat and cold; Biological disease agents; food production and nutrition.	K4, K5

K1- Remember ,K2 - Understand, K3- Apply,K4- Analysis, K5- Evaluate -,K6 - Create

MAPPING OF POs WITH COs

CO/PSO	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7
CO1	4	4	2	3	3	1	1
CO2	4	2	2	1	4	1	1
CO3	4	2	1	1	4	4	4
CO4	4	1	4	2	4	1	1
CO5	4	3	2	3	4	4	4
Weighted % of course contribution to each PSO							
Map Course Outcomes (CO) for each Course with Programme Specific Outcomes (PSO) in the 4-Point scale of (Very Strong - 4, Strong - 3, Medium -2 and Low - 1)							

Question Pattern:

Section A	
Essay Type questions	1 question from each unit (5X15=75)

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SEMESTER-V

AEC- I

INTERNSHIP/INDUSTRIAL TRAINING

Category	Hours			Credits	Marks		
	Lecture	Tutorial	Practical		CIA	External	Total
Theory	-	-	-	2	-	-	-

EXTRA CREDIT COURSE

INTERNSHIP

SUBJECT CODE: INT Credit: 2 credits (Extra credits)

The curriculum includes the internship for students for 60 hours during the summer vacation after the second semester of all PG programs.

OBJECTIVES

The following are the intended objectives of internship training:

- To enhance the employability skills of the students.
- To expose students to the industrial/Societal environment, which cannot be simulated in the classroom hence creating competent professionals for the industry and other organizations.
- To Provide possible opportunities to learn, understand, and sharpen the real-time technical/managerial skills required at the job.

Duration: 60 hours at the minimum

Period: During the summer vacation which could be completed within the third semester.

S.NO	NAME OF THE STUDENT	REGISTER NO	DESCIPLINE

Assessment:

1. The assessment of the internship will be based on the feedback given by the internship provider and the report submitted by the student by the mentor.
 2. After completion of the internship, the mentor has to make arrangements to get a proper training certificate from the industry/institution.
 3. An abstract for details of the internship in the prescribed format has to be submitted by the departments to the COE on time.
- Two credits are provided for the Internship as extra credits included under the Non-CGPA course for all PG programs.

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U236C613

SEMESTER-V I

CC - XIII - REMOTE SENSING AND GIS

COURSE CODE:

Category	Hours			Credits	Marks		
	Lecture	Tutorial	Practical		CIA	External	Total
Theory	6	-	-	5	25	75	100

OBJECTIVES:

- To have basic knowledge on basics of Remote sensing.
- To elaborate on the fundamentals and significance of Aerial photographs and satellite types.
- To have the deep knowledge on the types of resolution and marginal information of Aerial photos and satellite images.
- To explore the application of Remote sensing.
- To have wide understanding on GNSS, Segments and Satellite tracking.

Unit I

Remote Sensing – Definition and types- History of Remote Sensing in India – Electromagnetic Spectrum, Atmospheric Window – Plat Forms and its types.

Unit II

Resolution: Spectral, Spatial, Radiometric and Temporal- Marginal Information of Aerial Photographs and Satellite Images.

Unit III

Geographical Information System: Definition – Historical development - Components of GIS- data storage and manipulation – data transformation – data output devices.

Unit IV

Spatial and Non- spatial Data, Raster and Vector Data Structure. Comparison of raster and vector data. Geographical coordinate systems of earth: UTM.

Unit V

Application of Remote Sensing and GIS : Land use/ Land cover/ Urban sprawl Agriculture and environment.

References:

1. Siddique M.A.(2006): Introduction to Geographic Information Systems, Sharda Pustak Bhawan, Allahabad.

2. Chandra A.M & S.M.Ghosh, (2006) Remote sensing and Geographical Information System, Alpha Science Int'l limited, New Delhi.

3. Panda B.C(2005): Remote sensing principles and applications, Viva books private limited.

4. Anji Reddy. M. (2001): Remote sensing and Geographical information system, BS publication, Hyderabad.

Expected course outcomes

On the successful completion of the course ,student will be able to :

1.	Define Remote Sensing, describe the Principles of Remote Sensing, memorize the bands in Electromagnetic, Distinguish between Radiation Interaction with Atmosphere and Earth Surface-Interaction, Distinguish between the types of Remote sensing based on platform, Energy sources, Imaging media, regions of Electromagnetic spectrum.	K1
2.	Acquires knowledge about the types of resolutions and information of satellite and aerial photographs.	K2
3.	Define Microwave Remote sensing, differentiate between Passive and Active Microwave Remote Sensing, distinguish between Airborne versus space bore radars correlate the images from SLAR and SAR System	K3
4.	Summarise application of Remote Sensing in Land Cover and Land use mapping, Distinguish Change detection in land use, Water, Forest, Agriculture, Environmental Impact assessment and Urban planning	K4
5.	Introduction of Global Navigation Satellite System(GNSS) gives a wide knowledge about the application of GPS and its uses.	K5, K6

K1- Remember ,K2 - Understand, K3- Apply,K4- Analysis, K5- Evaluate -,K6 - Create

MAPPING OF POs WITH COs

CO/PSO	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7
CO1	4	4	3	3	1	1	1
CO2	4	4	2	2	4	2	4
CO3	4	3	4	2	1	1	1
CO4	4	2	3	3	4	4	4
CO5	4	2	4	4	4	4	4
Weighted % of course contribution to each PSO							

Map Course Outcomes (CO) for each Course with Programme Specific Outcomes (PSO) in the 4-Point scale of (Very Strong - 4, Strong - 3, Medium -2 and Low - 1)

Question Pattern:

Section A	Section B	Section C
2 Multiple Choice question from Each unit (10x1=10)	1 question from each unit (5x2=10)	1 (a & b) question from each unit (5X5=25)
		1 question from each unit (3X10=30)

Prof. Dr. Jyoti

U23GC614

SEMESTER-VI

CC - XIV- SOCIAL AND CULTURAL GEOGRAPHY
COURSE CODE:

Category	Hours			Credits	Marks		
	Lecture	Tutorial	Practical		CIA	External	Total
Theory	5	-	-	5	25	75	100

Objectives:

- To acquire basic knowledge on the social structure and society
- To elaborate the spatial distribution of Ethnicity, Language, Caste and Religion
- To discuss the social welfare and well being
- To distinguish on the races and cultural diffusion of the world
- To assess the Human development indicators and its Index

Unit I

Introduction: Nature and Scope of Social Geography – Concepts of Social Geography -Social Structure (Family, Marriage, Kinship) and Processes - Rural and urban society.

Unit II

Spatial distribution of Ethnicity, Tribe, Dialect, Language, Caste and Religion in the World with special reference to India.

Unit III

Welfare and Social Well being : Quality of Life – Health- Education Economic Status – Gender – Wellbeing of Women.

Unit IV

Cultural geography :Concept of Culture, Evolution of Human beings – Major Races of the world- Culture Interaction and diffusion – Culture Exchange.

Unit V

Measurement of Human Development – Social, Economic and Environmental Indicators – Human Development Index.

References:

1. Jon Anderson, Taylor & Francis. (2021) Understanding Cultural Geography Places and Traces.
2. D.Maurya (2016) Cultural Geography, Sharda pustak bhavan, Allahabad.

3. S. Mohanty (2007) Social and Cultural Geography.
4. Ajjazuddin Ahmad (2004) Social Geography, Rawat Publications, Jaipur.

Expected course outcomes		
On the successful completion of the course ,student will be able to :		
1.	Broadens knowledge of the Concepts of Social Geography	K1,K2
2.	Enhances the knowledge about the Spatial distribution of ethnicity.	K2,K4
3.	Enriches the knowledge about the Social welfare and social well being.	K2,K3
4.	Recalls and memorize the framework of cultural Geography and its importance in Geography, it is important to explore their knowledge in culture of the world in order to map the social map of the world.	K5,K6
5.	Acquires the information about the indicators – social, economic and environmental.	K4, K5
K1- Remember ,K2 - Understand, K3- Apply,K4- Analysis, K5- Evaluate -,K6 - Create		

MAPPING OF POs WITH COs

CO/PSO	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7
CO1	4	2	2	1	1	1	3
CO2	4	2	1	1	1	3	3
CO3	4	2	1	1	4	2	2
CO4	4	4	3	1	1	1	3
CO5	4	2	1	1	4	1	1
Weighted % of course contribution to each PSO							
Map Course Outcomes (CO) for each Course with Programme Specific Outcomes (PSO) in the 4-Point scale of (Very Strong - 4, Strong - 3, Medium -2 and Low - 1)							

Question Pattern:

Section A		Section B	Section C
2 Multiple Choice question from Each unit (10x1=10)	1 question from each unit (5x2=10)	1 (a & b) question from each unit (5x5=25)	1 question from each unit (3x10=30)

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SEMESTER-VI

CC - XV

IMAGE INTERPRETATION - PRACTICAL
COURSE CODE :

U23GC615P

Category	Hours			Credits	Marks		
	Lecture	Tutorial	Practical		CIA	External	Total
Practical	-	-	5	3	40	60	100

Objective:

This practical course will provide skills to the students to interpret and extract useful information from aerial photographs and satellite images.

- Elements of Visual Image Interpretation**
 - Terrain Elements
 - Image Elements
- Interpretation of Aerial Photos**
 - Stereoscopic vision Test
 - Marginal information of Aerial Photos
 - Interpretation of Physical features
 - Interpretation of Cultural features
- Interpretation of Satellite Images**
 - Marginal information of Satellite Images
 - Interpretation of Physical features
 - Interpretation of Cultural features
- Comparative Study**
 - Compare different satellite images of same area
 - Compare images with toposheets
 - Study the temporal changes

Reference:

- Anji Reddy, M. (2008): Textbook of Remote Sensing and Geographic Information System,
- Campbell, J.B. and Wynne, R.H. (1987). Introduction to Remote Sensing. The Guilford Press, New York.
- Jensen, J. R., (2004): Introductory Digital Image Processing: A Remote Sensing Perspective, Prentice Hall Inc., New Jersey.

- Lillesand, T.M. and Kiefer, R.W. (1987). Remote Sensing and Image Interpretation. John Willy and Sons, New York.
- Lueder, D.R. (1959). Aerial Photographic Interpretation- Principles and Applications. McGraw Hill Book Co., New York.
- Negi B.S. (1998) Practical Geography, Kedarnath and Ramnath, Meerut.
- Singh R.L. and Rana P.B. Singh (1998) Elements of Practical Geography, Kalyani Publishers, New Delhi, Ludhians.
- Wolf, P. R. and Dewitt, B. A., (2000): Elements of Photogrammetry: With Applications in GIS, McGraw-Hill

Expected course outcomes		
On the successful completion of the course ,student will be able to :		
1.	After the completion of course, the students will have practical ability to interpret the aerial and satellite images and to extract physical and cultural features for different geographical problems	K1
2.	Interpretation of Aerial Photos	K2,K3
3.	Interpretation of Satellite Images	K2,K3
4.	Compare different satellite images of same area Agriculture, Environmental Impact assessment and Urban planning	K4,K5,K6
K1- Remember ,K2 - Understand, K3- Apply,K4- Analysis, K5- Evaluate -,K6 - Create		

MAPPING OF POs WITH COs

CO/PSO	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7
CO1	4	2	3	2	1	1	1
CO2	4	3	4	2	1	2	3
CO3	4	3	3	2	2	1	1
CO4	4	3	2	2	1	1	1
Weighted % of course contribution to each PSO							
Map Course Outcomes (CO) for each Course with Programme Specific Outcomes (PSO) in the 4-Point scale of (Very Strong - 4, Strong - 3, Medium -2 and Low - 1)							

Question Pattern:

Section A	
Essay Type questions	1 question from each unit (5x12=60)

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SEMESTER- VI

SEC - VI
GEOGRAPHY OF RESOURCES
COURSE CODE:

U2396912

Category	Hours			Credits	Marks		
	Lecture	Tutorial	Practical		CIA	External	Total
Theory	2	-	-	2	25	75	100

Objective:

- The objective of this course is to give an overview of type and distribution of mineral resources, energy resources, industrial resources, trade and transportation at global level. The course will also provide a broader outlook about the availability of renewable and non-renewable resources to the students.

Unit I

Nature and Scope of Geography of Resources Classification Resource – Resources utilization – conservation of resources.

Unit II

Agriculture: Production and Distribution of Rice – Wheat - Cotton – Jute – Sugarcane – Tea - Coffee and Rubber – Life stock –Fishing and Types – Major fishing grounds.

Unit III

Mineral Resources – Iron ore, Bauxite, Gold and Manganese - Power Resources –Coal, Petroleum and Electricity - Non-Convectional energy resources.

Unit IV

Manufacturing Industries: Classification – Distribution of Iron and Steel Industries – Cotton Textiles – Sugar Industries – Chemical - Automobiles - Ship Building and IT Industries.

Unit V

Transportation: Surface – Air- Waterways and Pipelines – International Trade: Pattern of World Trade - Impact of Globalization on Trade.

References:

- Coh Cheng Leong (1982) Economic and Human Geography, Oxford University Press, New Delhi.

- Clawson Marion (Ed) (1964) Natural Resources and International development. New York.
- S.K. Sadhukhan (1994) Economic and Geography an Appraisal of Resources, S.Chand & Co., Chennai.
- K.Khanna & V.K. Gupta (1998) Economic and Commercial Geography Sultan Chand & Sons, New Delhi.
- Alexander, J.W. (1964). Economic Geography. John Wiley & Sons Inc, New York.
- Leong, C.H. and Morgan, G.C. (1982). Economic and Human Geography (2nd Edition). Oxford University Press, Kuala Lumpur.
- Bengtson, N.A. and Royen, W.V. (1935). Fundamentals of Economic Geography. Prentice Hall Inc, New York.
- Thomas, R.S. (1962). The Geography of Economic Activities. McGraw Hill, New York.
- Mather, A.S. and Chapman, K. (1995). Environmental Resources. John Wiley and Sons, New York.

Expected course outcomes

On the successful completion of the course, student will be able to :

1.	After the completion of course, the students will have ability to explain Scope of Geography of Resources.	K1
2.	The production and distribution of agricultural crops.	K2
3.	Understands the facts and ideas of various minerals.	K3
4.	Understands the concept of basic industrial products.	K4
5.	Patterns of major transport types and the impacts of world trade and globalization.	K5, K6
K1- Remember ,K2 - Understand, K3- Apply,K4- Analysis, K5- Evaluate -,K6 - Create		

MAPPING OF POs WITH COs

CO/PSO	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7
CO1	4	2	1	1	2	2	1
CO2	4	1	1	1	3	2	3
CO3	4	1	1	2	2	1	1
CO4	4	3	3	4	4	4	4
CO5	4	3	3	1	4	1	4
Weighted % of course contribution to each PSO							

Dr. B. ANUSUYA M.Sc., M.Phil., Ph.D.,
Assistant Professor & Head

U2396912

Map Course Outcomes (CO) for each Course with Programme Specific Outcomes (PSO) in the 4-Point scale of (Very Strong - 4, Strong - 3, Medium -2 and Low - 1)

Question Pattern:

Section A	
Essay Type questions	1 question from each unit (5X15=75)

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PROFESSIONAL COMPETENCY SKILL -
GENERAL GEOGRAPHY FOR COMPETITIVE EXAMINATIONS

COURSE CODE :

Category	Hours			Credits	Marks		
	Lecture	Tutorial	Practical		CIA	External	Total
Theory	2	-	-	2	25	75	100

OBJECTIVES:

- The acquaint the pupils with living conditions of men in different parts of the globe.
- To enable the pupils to acquire a knowledge of natural resources.
- To develop pupils an understanding of how environment and climatic factors have influenced our life.

UNIT – I

Climatology: Weather and Climate Elements of climate Atmosphere Composition & Structure – Temperature, Pressure, Wind, Humidity – Precipitation.

UNIT – II

Geomorphology : Major Landforms – Mountains, Plateaus and Plains. Erosional and Depositional Features : 1) River , 2) Glacier, 3)Wind.

UNIT – III

Oceanography : Land and Sea Distribution: Relief features of Ocean – Bottom Continental Shelf, Slope, Abyssal plain, Trenches and Deep – Waves, Tides, Currents Deposits.

UNIT – IV

Cartography meaning, Types and uses of maps - Map making - Compilation, generalization and finalization.

UNIT – V

Geography of India: Location - Relief - Climate - Soil - Natural Vegetation - Population and Urbanization.

REFERENCES:

- I. N.Tikka(1998): Physical Geography, Kedar Nath, Ram Nath, Meerut.
- II. P.Dayal(1995): Text book of Geographology, Shukla Book Depot, Patna.

- III. Glen. T, Trewartha and Hom.L.A. An Introduction to Climate, Megrow
- IV. Hill Ltd, Looms New York.
- V. D.S>Lal(1998): Climatology, Chaitanya Publishing House, Allahabad.
- VI. Dr.K.Kumarasamy er.al Climatology (Tamil Edition)
- VII. Critichfieldl. H: General Climatology – Prentice Hall of India Pvt., New Delhi.
- VIII. Savindra Singh: Biogeography.

Expected course outcomes

On the successful completion of the course ,student will be able to :

1.	Students recognize the different motion of the earth and its impact.	K1
2.	Students know about different landforms in and process of natural agents On the earth.	K2
3.	The students can able to discuss atmospheric process and problem and its effects.	K3
4.	They can recognise land and sea distribution and sub marine land features.	K4
5.	Students should be able to understand the geobiochemical process and its process.	K5, K6

K1- Remember ,K2 - Understand, K3- Apply,K4- Analysis, K5- Evaluate -,K6 - Create

MAPPING OF POs WITH COs

CO/PSO	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7
CO1	4	3	4	4	2	3	4
CO2	4	3	3	3	1	2	4
CO3	4	3	4	2	2	3	4
CO4	4	3	4	4	1	1	4
CO5	4	2	3	3	4	4	4
Weighted % of course contribution to each PSO							

Map Course Outcomes (CO) for each Course with Programme Specific Outcomes (PSO) in the 4-Point scale of (Very Strong - 4, Strong - 3, Medium -2 and Low - 1)

Question Pattern:

Section A	
Multiple Choice questions	10 Multiple Choice question from each unit (50X1/5=75)

Prof. Dr. Jyoti

GEC - I
CARTOGRAPHY
COURSE CODE : U23GGE1

Category	Hours			Credits	Marks		
	Lecture	Tutorial	Practical		CIA	External	Total
Theory	5	-	-	5	25	75	100

OBJECTIVES

- To understand the development and history of Cartography, with the types of maps.
- To illustrate and examine the components of Maps.
- To elaborate on the representation of mapping techniques.
- To enrich the development of remote sensing in the cartography.
- To summarize the recent technologies in digital Cartography

Unit : I

Definition - History and Development of Cartography - Maps - Types of Maps based on Scale Purpose, Relief and Thematic Maps Qualitative and Quantitative uses of Maps in Geography.

Unit : II

Components of a Maps - Scale - Direction - Projection- Conventional Signs and Symbols - Lettering, Symbolization.

Unit : III

Techniques of Map Representation - Isopleth - Interpolation of Contours - Mapping of Socio-Economic Data - Dot Maps Circle - Sphere- Square - Choropleth - Choro schematic - Choro Chromatic Maps.

Unit : IV

Development of Remote Sensing - Aerial Photography, Aerial Photo Interpretation- Imageries - Advantage of Digital Maps over Conventional Maps. Satellite

Unit : V

Recent Technologies in Cartography - CAD- GIS- ARC GIS- QGIS - GPS.

References:

- I. Border, D. (1990). *Cartography : Thematic map design*. WCB WMC Brocan Pub
- II. Tyner, Judith. (1992). *Introduction to thematic Cartography*. Prentice Hall, New Jersey.

Expected course outcomes	
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On the successful completion of the course, student will be able to :

1.	Understanding the basic concepts of cartography, scope of the study, its history and development in Geography. It is important to explore student's knowledge in maps and its types. Explore the Purposes in creation of thematic maps, weather maps, special purpose maps and Topographic maps. Acquire the know through shape and size of the earth.	K1
2.	Appreciate the goals of map design. Construct the elements of map design like scale and its types, direction, understanding True north, Grid, magnetic north, and legend. Develop the in depth knowledge of geographic co ordinate system.	K2
3.	Understanding of facts and ideas of representation of physical data through contour diagram, making profiles and block diagrams to get idea of topographical structure. Define the techniques of thematic mapping, and its types of simple, complex and semi) explains and explore the Mapping of terrain (contouring, layer tinting, hill shading, Hachures).	K3
4.	Understands the role of cartography in the development of remote sensing techniques, learns to interpret aerial photograph, satellite imagery and differentiate the digital cartography and traditional cartography.	K4
5.	Learns the recent technologies in Cartography.	K5, K6

K1- Remember ,K2 - Understand, K3- Apply,K4- Analysis, K5- Evaluate -,K6 - Create

MAPPING OF POs WITH COs

CO/PSO	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7
CO1	4	1	1	1	1	3	4
CO2	4	3	3	1	1	2	4
CO3	4	2	4	1	1	4	4
CO4	4	3	2	1	1	1	4
CO5	4	4	4	1	1	4	4
Weighted % of course contribution to each PSO							

Map Course Outcomes (CO) for each Course with Programme Specific Outcomes (PSO) in the 4-Point scale of (Very Strong - 4, Strong - 3, Medium -2 and Low - 1)

Question Pattern:

Section A		Section B	Section C
2 Multiple Choice question from Each unit (10x1=10)	1 question from each unit (5x2=10)	1 (a & b) question from each unit (5X5=25)	1 question from each unit (3X10=30)

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Dr. J. J. J. J. J.

Dr. J. J. J. J. J. M.Sc., M.Phil., Ph.D.,
PROFESSOR & HEAD

SEMESTER-I

GEC- I
TOURISM AND TRAVEL MANAGEMENT
COURSE CODE :

Category	Hours			Credits	Marks		
	Lecture	Tutorial	Practical		CIA	External	Total
Theory	5	-	-	5	25	75	100

Objective:

- To enrich the basic knowledge of the Elucidate the basic concepts.
- To illustrate the history of Tourism in the world.
- To elaborate the Forms of tourism.
- To understand economic and social significance of tourism.
- To understand the distribution and patterns of tourism development.

Unit I

Scope and Content of Tourism – Components: Accessibility, Accommodation, Attraction – Motivation – Seasonality - Types of Tourism: Religious, Cultural, Historical, Recreational, Coastal, Ecological and Medical tourism.

Unit II

Growth of Tourism - History of travel: Ancient, medieval and modern period -Accounts of famous travelers - origin and concept of the annual holiday - Industrial revolution and Development of travel

Unit III

Forms of Tourism: National tourism (Domestic) -International Tourism (Inbound and Outbound Tourism) –New Forms of Tourism: Adventure, Green Tourism, Eco tourism, Health, MICE Tourism, Soft Tourism, Sports Tourism and Rural tourism.

Unit IV

Economic and Social significance of tourism - Impacts of Tourism: Socio Cultural, Economic, and Environmental impacts - Effects on employment - Development of infrastructure - Tourism as a foreign exchange earner

Unit V

Tourism development in India – Tourism in Tamil Nadu - Tourism organizations: ITDC, TTDC, Ministry of Tourism, Ministry of Railways and Civil Aviation departments - An overview of National and International Organizations and Associations: IATO, TAAI, FHAI and WTO.

References:

- Swain and Mishra (2011), "Principles of Tourism", Oxford University Press, New Delhi
- A.K.Bhatia,(2012) "Tourism Development: Principles and Strategies, Sterling Publishers, New Delhi
- Sinha, P.C., (2005), "Tourism Management" Vol. – 4", Anmol Publications, New Delhi.
- Velvet Nelson (2013) – An Introduction to the Geography of Tourism, Rowman& Littlefield Publishers
- Ballabh, A (2005), "Fundamentals of Travel and Tourism", Akansha Publishing House, NewDelhi

Expected course outcomes

On the successful completion of the course ,student will be able to :

1.	Explain the Nature of Tourism, Basic concepts,components of Tourism.	K1,K2
2.	Recall the History of Tourism in Ancient, Medieval and Modern Periods.	K2,K4
3.	Understanding the Elements of tourism – ,Attraction, Accessibility and Amenities.	K2,K3
4.	Understanding the impact of tourism.	K5,K6
5.	Critique tourism practices for their implications locally and globally.	K4, K5

K1- Remember ,K2 - Understand, K3- Apply,K4- Analysis, K5- Evaluate -,K6 - Create

MAPPING OF POs WITH COs

CO/PSO	PSO 1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7
CO1	4	3	1	1	3	3	4
CO2	4	2	1	1	2	1	4
CO3	4	4	1	1	4	4	4
CO4	4	4	2	1	1	4	4
CO5	4	4	1	1	3	1	1
Weighted % of course contribution to each PSO							
Map Course Outcomes (CO) for each Course with Programme Specific Outcomes (PSO) in the 4-Point scale of (Very Strong - 4, Strong - 3, Medium -2 and Low - 1)							

Question Pattern:

Section A		Section B	Section C
2 Multiple Choice question from Each unit (10x1=10)	1 question from each unit (5x2=10)	1 (a & b) question from each unit (5x5=25)	1 question from each unit (3x10=30)

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 Department of Tourism Studies

SEMESTER-II

GEC - II HUMAN GEOGRAPHY COURSE CODE :

Category	Hours			Credits	Marks		
	Lecture	Tutorial	Practical		CIA	External	Total
Theory	5	-	-	5	25	75	100

OBJECTIVES

- To understand the basic concepts of Human Geography and assess the relationship between Man and Environment.
- To elaborate the school of thoughts.
- To discuss the distribution of Major Human Races in World.
- To illustrate the World Major Religions.
- To compare and distinguish the World Major Languages and Language groups

Unit : I

Human Geography – Nature, Scope and Significance of Human Geography – Man and Environment Relationship.

Unit : II

Determinism, Neo Determinism, Possibilism - French – German – British – UK – Humanism – Behaviorism.

Unit : III

Major Human Races in World – Classification of Major Races – Caucasoid - Mongoloid – Negroid – Racial Parameters and indices.

Unit : IV

World Major Religions: Religion distribution – Hinduism - Buddhism – Jainism - Christianity - Islam- Religions in India.

Unit : V

World Major Languages and Language groups – Tamil, Chinese, English – Hindi - Arabic – German- French and Portuguese.

References:

- Chandna, R.C. (2010) Population Geography, Kalyani Publisher, New Delhi.
- Cheng Leong, G. & Morgan, G.C. (1995) Human and Economic Geography, Oxford University Press, Oxford

III. Johnston, R; Gregory, D, Pratt, G. et al. (2008) The Dictionary of Human Geography, Blackwell Publication, New Jersey.

Expected course outcomes		
On the successful completion of the course ,student will be able to :		
1.	Recall the Nature and Scope of Human geography, compare with the other branch of Geography , Understand the significance of Human geography, analyse the Man and environment relationship, explain the theories of population, examine the population data.	K1
2.	Understands the basis of the study of Geography.	K2
3.	Explain the distribution of Major human races in the world, compare World Distribution of Races, analyse Racial parameters and indices(Shape, Skull, Face, Nose, Stature,, examine White (Caucasian), Classifying Asian (Mongoloid), outline the Black(Negroid Group discussion Classification of Races).	K3
4.	Recall the Major Religions, explain Hinduism, Buddhism, Jainism, Christianity, Islam, examine the Religious distribution around the world, compare Languages, Vernacular and Dialectics.	K4
5.	Estimate the distribution of Language groups (Chinese, Spanish, English, Hindi, Arabic German, French and Portuguese	K5, K6
K1- Remember ,K2 - Understand, K3- Apply,K4- Analysis, K5- Evaluate -,K6 - Create		

MAPPING OF POs WITH COs

CO/PSO	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7
CO1	4	1	1	1	4	1	2
CO2	4	3	1	1	4	1	4
CO3	4	4	1	1	1	1	2
CO4	4	3	1	1	1	3	4
CO5	4	4	1	1	1	4	4
Weighted % of course contribution to each PSO							
Map Course Outcomes (CO) for each Course with Programme Specific Outcomes (PSO) in the 4-Point scale of (Very Strong - 4, Strong - 3, Medium -2 and Low - 1)							

Question Pattern:

Section A		Section B	Section C
2 Multiple Choice question from Each unit (10x1=10)	1 question from each unit (5x2=10)	1 (a & b) question from each unit (5x5=25)	1 question from each unit (3x10=30)

SEMESTER-II

GEC - II DISASTER STUDIES COURSE CODE :

Category	Hours			Credits	Marks		
	Lecture	Tutorial	Practical		CIA	External	Total
Theory	5	-	-	5	25	75	100

Objective:

- To enhance the aims to introduce basic concepts of disaster.
- To get an idea of types of disaster.
- To enhance the disaster of India about the Earthquake, Tsunami and Cyclone.
- To display the Human induced disaster.
- To enrich the knowledge about the Response and Mitigation to Disaster.

Unit I

Aim and Scope of Disaster Studies, Risk, Vulnerability and Disasters: Definition and Concepts.

Unit II

Disaster Types: Geological (Earthquakes, Tsunami and Landslide), Meteorological (Cyclone and Heat Wave), Hydrological (Flood and Drought) and Anthropogenic (Accidents and Deforestation)

Unit III

Disasters in India: (a) Causes, Impact, Distribution and Mapping: Flood, Landslide, and Drought, Earthquake, Tsunami and Cyclone.

Unit IV

Human induced disasters: Causes, Impact, Distribution and Mapping.

Unit V

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

References:

- I. Government of India, 1997. Vulnerability Atlas of India. New Delhi, Building Materials & Technology Promotion Council, Government of India.

II. Kapur, A., 2010. Vulnerable India: A Geographical Study of Disasters, Sage Publication, New Delhi. Suggested References

III. Savindra S. and Jeetendra S. (2013) Disaster Management, Pravalika Publications, Allahabad.

IV. NDMA (2011) Disaster Management in India. Ministry of Home Affairs, New Delhi.

V. Carter, N. (1991) Disaster Management: A Disaster Manager's Handbook. Asian Development Bank, Manila.

VI. <http://www.ndma.gov.in/en/> and <http://nidm.gov.in/>

Expected course outcomes

On the successful completion of the course, student will be able to :

1.	Comprehensive basic knowledge of disasters.	K1
2.	List out the Disasters in India Flood, Landslide, and Drought.	K2
3.	List out the Disasters in India Earthquake, Tsunami and Cyclone.	K3
4.	Recall the Human induced disasters	K4
5.	Analysis Response and Mitigation to Disasters.	K5, K6

K1- Remember, K2 - Understand, K3- Apply, K4- Analysis, K5- Evaluate, K6 - Create

MAPPING OF POs WITH COs

CO/PSO	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7
CO1	4	3	4	4	4	4	4
CO2	4	4	4	4	4	4	4
CO3	4	2	2	3	2	4	4
CO4	4	3	4	1	4	4	4
CO5	4	4	4	4	4	4	4
Weighted % of course contribution to each PSO							

Map Course Outcomes (CO) for each Course with Programme Specific Outcomes (PSO) in the 4-Point scale of (Very Strong - 4, Strong - 3, Medium - 2 and Low - 1)

Question Pattern:

Section A	Section B	Section C
2 Multiple Choice question from Each unit (10x1=10)	1 question from each unit (5x2=10)	1 (a & b) question from each unit (5x5=25)
		1 question from each unit (3x10=30)

SEMESTER IV

GEC - III STATISTICS - I COURSE CODE : U23GGE3:1

Category	Hours			Credits	Marks		
	Lecture	Tutorial	Practical		CIA	External	Total
Theory	5	-	-	5	25	75	100

Objective:

- To acquire the basic knowledge of data collection.
- To understand the need of basic statistical methods.
- To get the knowledge diagrammatic representation of statistical methods.
- To explore the basic knowledge of Time series and moving average.
- To acquire the knowledge of statistical analysis.
- Assessment Unit.

Unit I

Nature and Scope of Statistics - Limitation of Statistics - Uses of Statistics in Geography - Collection of data: Primary and Secondary Sources.

Unit II

Classification of Data- Tabulation of data - Frequency distributions - Diagrammatic Representation of Data- Bar, Histogram – Frequency Polygon and Curve - Ogives- Lorenz Curve.

Unit III

Measures of Central Tendency: Mean- (Arithmetic - Geometric and Harmonic), Median, Mode- Properties and Limitations.

Unit IV

Measures of Dispersion: Range- Mean Deviation-Standard Deviation-Rank Correlation Coefficient of Variation.

Unit V

Time Series – Graphical Method – Semi Average – Moving Average.

References:

- I. SahaPijushkanti (2010): Advanced Practical Geography, Books and Allied pvt Ltd.

- II. Bagulia A.M (2006): Practical Geography, Anmol Publishers.

- III. Zulfequar Ahmed Khan M.D (1997): Text book of Practical Geography, Concept Publishing Company, New Delhi.

- IV. <http://www.albert.io/blog/data-collection-methods-statistics/>

- V. <http://sciencing.com/difference-between-cluster-factor-analysis-8175078.html>

Expected course outcomes

On the successful completion of the course ,student will be able to :

1.	Understands the Purposes of data collection and its sources. Sampling is very essential to choose according to the types of data types and the purpose of the study.	K1
2.	Enriched Knowledge on basic statistical techniques such as Measures of Central Tendency, and Measures of Dispersion.	K2
3.	Understands the various Diagrammatic Representation of Data.	K3
4.	Clarity on the time series and other graphical methods.	K4
5.	Understands of facts of hypothesis testing and need of hypotheses in research analysis. Explore the types of hypothesis and its significance and confidence level. Examine the relationship between Parametric and Non-parametric procedures through Chi-square test, 'T' test, 'F' test, Analysis of Variance (ANOVA).	K5, K6

K1- Remember ,K2 - Understand, K3- Apply,K4- Analysis, K5- Evaluate -,K6 - Create

MAPPING OF POs WITH COs

CO/PSO	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7
CO1	4	3	1	1	1	3	4
CO2	4	2	3	1	1	3	4
CO3	4	2	4	1	1	1	4
CO4	4	3	4	1	1	4	4
CO5	4	4	4	1	1	4	4
Weighted % of course contribution to each PSO							
Map Course Outcomes (CO) for each Course with-Programme Specific Outcomes (PSO) in the 4-Point scale of (Very Strong - 4, Strong - 3, Medium -2 and Low - 1)							

Question Pattern:

Section A		Section B	Section C
2 Multiple Choice question from Each unit (10x1=10)	1 question from each unit (5x2=10)	1 (a & b) question from each unit (5x5=25)	1 question from each unit (3x10=30)

SEMESTER-III

GEC - III ECONOMIC GEOGRAPHY COURSE CODE :

Category	Hours			Credits	Marks		
	Lecture	Tutorial	Practical		CIA	External	Total
Theory	5	-	-	5	25	75	100

Objective:

- To recall the Scope and content of Economic Geography and observe the Resource classification.
- To examine the factors of agriculture and to describe the distribution of Crops.
- To differentiate and classify the Mineral Resources and distribution of Power Resources.
- To Compare and distinguish the Industries and Industrial Regions.
- To infer and integrate the transport and major importing and exporting trade.

Unit I

Economic Geography- Definition- Scope and contentthe significance of Economic Geography- Classification of resources – Renewable and NonRenewable Resources - Exhaustible and Inexhaustible resources, Conservation of resources-Major Economic Activity.

Unit II

Agriculture – Factors affecting Agriculture – Agriculture Region - Food crops and Non -food crops – Distribution and Production of Rice, Wheat, Sugarcane, Pulses - Horticultural crops - Fiber crops (Cotton and Jute)- Beverage crops(coffee, tea, cocoa) spices.

Unit III

Mineral Resources- Types of Minerals – Metallic Minerals, Non-Metallic Minerals- Fuel Distribution of minerals Iron ore, copper, Manganese, aluminum, Mica, Gypsum, Limestone Coal, Petroleum, Natural gas Power resources – Hydel power, Thermal, Atomic power, Geothermal energy.

Unit IV

Industries – Localization factors for Industries –Agrobased – (Textile Industry, Cotton, Jute) - Mineral Based-(Iron and Steel, Engineering Industries)-Shipbuilding, Automobile- Chemicals Industries – Fertilizer Industry,Industrial region.

Unit V

Transport and Trade: Transport – Types of Roadways (National Highways, State, District, Express Highway)- Railways (Broad Gauge, Narrow gauge, Meter Gauge)- Waterways and Major Sea Routes. - Trade - National and international – Trade blocs - Major importing and exporting countries.

References:

- Sharma, Siya Ram (2008) :Economic Geography ,Murari Lal Publications.
- Hussain, Ahmad (2006) : Economic Geography, Vishvabharthi Publications.
- Singh.I (2006) :Economic Geography, Alfa publications.

Expected course outcomes

On the successful completion of the course ,student will be able to :

1	Recall the concepts of Economic Geography with its definite scope and content outline the significance of Economic Geography , Infer the importance of resources and its Classification in India and at global level. Extend the explanation of renewable and non-renewable resources. Contrast the Conventional and Nonconventional- Exhaustible and Inexhaustible resources.	K1
2	Understands the Agricultural activities and Factors affecting Agriculture. Define the role of Agriculture in Developmental scenario. Classify the crops in to Food crops and non food crops. Summarize the Distribution and Production of Rice, Wheat, Sugarcane, Pulses Horticultural crops - Fibre crops (Cotton and Jute)- Beverage crops(coffee, tea, cocoa) spices.	K2
3	Recall the Mineral Resources and classify the Types of Minerals Categorize the Metallic Minerals, Non Metallic Minerals.- list out the Distribution of minerals Iron ore, copper, Manganese, aluminum, Mica, Gypsum, Limestone Coal, Petroleum, Natural gas Power resources. Hydel power, Thermal, Atomic power, Geothermal energy at national level.	K3
4	Industries,Localization. Outline the factors for Industries Agro based – (Textile Industry, Cotton, Jute) – List out the Mineral Based industries(Iron and Steel and Engineering Industries). Compare the Shipbuilding, Automobile- Chemicals Industries – Fertilizer Industry.	K4
5	Recall and relate the Transport and Trade: Transport . Compare and Illustrate the Types of Roadways (National Highways, State, District, Express Highway) and Railways (Broad Gauge, Narrow gauge, Meter Gauge). List out the Waterways and Major Sea Routes. Elaborate the Trade National and international. Distinguish the Trade blocs and Major importing and exporting countries of the world.	K5, K6
K1- Remember ,K2 - Understand, K3- Apply,K4- Analysis, K5- Evaluate -,K6 - Create		

MAPPING OF POs WITH COs

CO/PSO	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7
CO1	4	2	1	1	3	1	3
CO2	4	2	3	3	4	1	4
CO3	4	3	1	4	4	4	4
CO4	4	2	2	1	1	2	4
CO5	4	3	3	1	4	2	4
Weighted % of course contribution to each PSO							
Map Course Outcomes (CO) for each Course with Programme Specific Outcomes (PSO) in the 4-Point scale of (Very Strong - 4, Strong - 3, Medium -2 and Low - 1)							

Question Pattern:

Section A		Section B	Section C
2 Multiple Choice question from Each unit (10x1=10)	1 question from each unit (5x2=10)	1 (a & b) question from each unit (5x5=25)	1 question from each unit (3x10=30)

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 K. J. SOMAYAJI ROAD - 512 002.

SEMESTER IV

GEC - IV ^{IN}

STATISTICAL APPLICATIONS FOR GEOGRAPHY
COURSE CODE :

Category	Hours			Credits	Marks		
	Lecture	Tutorial	Practical		CIA	External	Total
Practical	-	-	5	5	40	60	100

Objective:

- To acquire the basic knowledge of data collection.
- To understand the need of basic statistical methods.
- To get the knowledge diagrammatic representation of statistical methods.
- To explore the basic knowledge of Time series and moving average.
- To acquire the knowledge of statistical analysis.

Unit I

Collection of data and formation of statistical tables Importance of cross-tabulation.

Unit II

Measures of Central Tendency: Mean- Median - Mode- Measures of Dispersion: Range- Mean Deviation-Standard Deviation-Rank Correlation Coefficient of Variation.

Unit III

Diagrammatic Representation of Data- Bar, Histogram – Frequency Polygon and Curve - Ogives- Lorenz Curve.

Unit IV

Time Series – Graphical Method – Semi Average – Moving Average.

Unit V

Hypothesis Testing – ‘T’ Test – ‘F’ Test – Chi-Square Test.

References:

- VI. SahaPijushkanti (2010): Advanced Practical Geography, Books and Allied pvt Ltd.
- VII. Bagulia A.M (2006): Practical Geography, Anmol Publishers.
- VIII. Zulfequar Ahmed Khan M.D (1997): Text book of Practical Geography, Concept Publishing Company, New Delhi.

IX. <http://www.albert.io/blog/data-collection-methods-statistics/>

X. <http://sciencing.com/difference-between-cluster-factor-analysis-8175078.html>

Expected course outcomes		
On the successful completion of the course ,student will be able to :		
1.	Understands the Purposes of data collection and its sources. Sampling is very essential to choose according to the types of data types and the purpose of the study.	K1
2.	Enriched Knowledge on basic statistical techniques such as Measures of Central Tendency, and Measures of Dispersion.	K2
3.	Understands the various Diagrammatic Representation of Data.	K3
4.	Clarity on the time series and other graphical methods.	K4
5.	Understands of facts of hypothesis testing and need of hypotheses in research analysis. Explore the types of hypothesis and its significance and confidence level. Examine the relationship between Parametric and Non-parametric procedures through Chi-square test, ‘T’ test, ‘F’ test, Analysis of Variance (ANOVA).	K5, K6
K1- Remember ,K2 - Understand, K3- Apply,K4- Analysis, K5- Evaluate -,K6 - Create		

MAPPING OF POs WITH COs

CO/PSO	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7
CO1	4	1	2	1	1	1	2
CO2	4	2	3	2	1	1	2
CO3	4	3	3	3	1	2	3
CO4	4	3	3	1	2	1	1
CO5	4	2	2	1	2	1	1
Weighted % of course contribution to each PSO							
Map Course Outcomes (CO) for each Course with Programme Specific Outcomes (PSO) in the 4-Point scale of (Very Strong - 4, Strong - 3, Medium -2 and Low - 1)							

Question Pattern:

Section A	
Essay Type questions	1 question from each unit (5x12=60)

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SEMESTER IV

GEC - IV BASICS OF GIS COURSE CODE :

Category	Hours			Credits	Marks		
	Lecture	Tutorial	Practical		CIA	External	Total
Theory	5	-	-	5	25	75	100

OBJECTIVES:

- To acquire the knowledge on the development of GIS
- To distinguish between the significance of Spatial and non-spatial data
- To understand the importance of DBMS
- To update the recent trends on GIS analysis
- To explore the application of GIS and its softwares

Unit I

Geographical Information System: Definition – Historical development - Components of GIS- data storage and manipulation – data transformation – data output devices.

Unit II

Spatial and Non- spatial Data, Raster and Vector Data Structure. Comparison of raster and vector data. Geographical coordinate systems of earth: UTM.

Unit III

DBMS – components - query - digitization – editing – topology – layout preparation.

Unit IV

GIS analysis: Single layer analysis: buffer – interpolation, multilayer analysis: overlay analysis, network analysis, WebGIS(A Basic Introduction).

Unit V

Application of GIS and GIS Softwares; Land use/ Land cover/ Urban sprawl /Agriculture and environment. Disaster; Arc view, Arc GIS, ILWIS, GRASS, QGIS, ENVIS.

References:

1. Chandra A.M&Ghosh.S.K. (2016). *Remote Sensing and Geographic Information System*. Narosa Publishing House.

2. Bhatta, Basudeb (2011). *Remote sensing and GIS*, Oxford University Press/ Radha press New Delhi
3. Siddique, Dr. M.A. (2006). *Introduction to Geographic Information Systems*. Sharda Pustak Bhawan, Allahabad
4. Anand, Dr. P.H. and V. Rajesh Kumar (2003). *Principles of Remote Sensing and GIS*. Sri Venkateswara Publications, Kumbakkonam.

Expected course outcomes		
On the successful completion of the course, student will be able to :		
1.	Recalls maps and its importance in daily life, understand Geography as Spatial science and GIS concepts, define GIS, trace the history and development of GIS, lists the Components of GIS	K1
2.	List Basic Data Models, (Spatial and Non-spatial Data, Raster and Vector Data), compares Advantages and Disadvantages of Raster and Vector GIS	K2
3.	The need and importance of DBMS in the study of GIS	K3
4.	Knowledge on basic introduction of Web GIS	K4
5.	List GIS Software s (CAD- GIS-ARC GIS, ARC VIEW, MAP INFO, GRASS and QGIS) Summarise GIS application (Environmental and National Resources Management, Planning and Engineering, Land Information System, Urban Planning)	K5, K6
K1- Remember ,K2 - Understand, K3- Apply, K4- Analysis, K5- Evaluate -, K6 - Create		

MAPPING OF POs WITH COs

CO/PSO	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7
CO1	4	3	1	1	1	2	2
CO2	4	2	1	2	1	1	4
CO3	4	2	4	4	1	4	4
CO4	4	3	4	3	1	4	4
CO5	4	4	4	2	1	4	4
Weighted % of course contribution to each PSO							
Map Course Outcomes (CO) for each Course with Programme Specific Outcomes (PSO) in the 4-Point scale of (Very Strong - 4, Strong - 3, Medium -2 and Low - 1)							

Question Pattern:

Section A	Section B	Section C
2 Multiple Choice question from Each unit (10x1=10)	1 question from each unit (5x2=10)	1 (a & b) question from each unit (5x5=25)
		1 question from each unit (3x10=30)

SEMESTER - V

DSEC - I
BIO GEOGRAPHY
COURSE CODE :

Category	Hours			Credits	Marks		
	Lecture	Tutorial	Practical		CIA	External	Total
Theory	5 4	-	-	4 3	25	75	100

Objective:

- The purpose of this course is to provide fundamentals of biotic components of the earth and appraise the interrelationships among the living organisms

Unit I

Nature, Scope and Significance of Biogeography – Basic Ecological Principle - Darwin's Theory of Evolution Ecosystem: Types, Components and Functions – Ecotone and Community

Unit II

Origin of Fauna and Flora - Factors Controlling Spatial Distribution: Climate, Topography, Edaphic and Biotic Factors – Desertification: Consequences and Management.

Unit III

Concept of Biomes – Major Biomes: Equatorial Forest – Tropical Grassland – Temperate Grassland and Tropical Deserts.

Unit IV

Biodiversity – Problems of extinction of plant and animal life – Habitat decay and their conservation – Environmental Hazards and biodiversity loss.

Unit V

Conservation of Natural Resources – Management of Environment – Environmental impact Assessment and Strategies – Sustainable development.

References:

- Bhattacharyya, N.N.(2003): Biogeography, Rajesh Publications, New Delhi.
- Clarke, G. L. (1967): Elements of ecology, New York: John Wiley Pub.
- Huggett, R.J. (1998): Fundamentals of Biogeography, Routledge, U.S.A.
- Lapedes, D.N. (1974): Encyclopaedia of Environmental Science (eds.), McGraw Hill.

- Mal, Suraj., and Singh, R.B. (Eds.) (2009): Biogeography and Biodiversity, Rawat Publication, Jaipur
- Nigel Pears – 1985 Basic Biogeography, Longman, London and New York
- Saxena, H.M. – 2010. Environmental Geography, Second Edition, Rawat, Jai
- Robinson. H – Biogeography, ELBS: McDonald and Evana, London – 1982.

Expected course outcomes

On the successful completion of the course, student will be able to :

1.	Understand the factors affecting the growth and distribution of natural vegetation	K1
2.	Assess different aspects of floral and faunal provinces.	K2
3.	Understand the importance of conservation of biosphere and biodiversity	K3
4.	Biodiversity Problems of extinction of plant and animal life – Habitat decay and their conservation Environmental Hazards and biodiversity loss.	K4
5.	Conservation of Natural Resources Management of Environment Environmental impact Assessment and Strategies Sustainable development.	K5, K6

K1- Remember ,K2 - Understand, K3- Apply, K4- Analysis, K5- Evaluate -, K6 - Create

MAPPING OF POs WITH COs

CO/PSO	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7
CO1	4	3	2	3	4	1	3
CO2	4	3	3	1	4	1	2
CO3	4	2	2	3	4	1	4
CO4	4	2	3	4	4	2	4
CO5	4	3	4	3	4	4	4
Weighted % of course contribution to each PSO							
Map Course Outcomes (CO) for each Course with Programme Specific Outcomes (PSO) in the 4-Point scale of (Very Strong - 4, Strong - 3, Medium -2 and Low - 1)							

Question Pattern:

Section A	Section B	Section C
2 Multiple Choice question from Each unit (10x1=10)	1 question from each unit (5x2=10)	1 (a & b) question from each unit (5x5=25)
		1 question from each unit (3x10=30)

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SEMESTER- V

U234GE5:2

DSEC – I
TRANSPORT GEOGRAPHY
COURSE CODE :

Category	Hours			Credits	Marks		
	Lecture	Tutorial	Practical		CIA	External	Total
Theory	54	-	-	4.3	25	75	100

Objective:

- To acquire basic knowledge and Scope of Transport Geography
- To elaborate the Types of Transport
- To discuss the importance of Network Characteristics of transport
- To elaborate on Theories related to freight rate structure
- To illustrate the Transport system in India

Unit I

Nature and Scope of Transport Geography - Importance of Transport - Development of Transport Geography – Associated factors - Transport Development - Physical, Economic, Technology.

Unit II

Types of Transport – Railways, Roads, Airways and Waterways, Pipelines.

Unit III

Network Characteristics – Topology - Graph Theory - Binary Matrix - Measures Of Connectivity and Accessibility.

Unit IV

Theories related to freight rate structure - Bases of Spatial interaction Complementarily - Intervening Opportunity and Transferability.

Unit V

The transport system in India - Role of Transport in Regional development In India - Problems and prospects of Role of Transport in Regional development In India - Urban and Rural Transportation Planning and Management.

References:

- I. Transport and Developing Countries - Hillings, H., Routledge, 1996

- II. Geography of Transportation, Naresh Kumar, Concept Publication, 1991.
- III. White H.P. and Senior 1983 'Transport Geography', Longman, London.
- IV. Transport for the Space Economy: A Geographical Study -Hay, A, Macmillan, 1973.
- V. Transportation Geography: Comments and Readings - Eliot Hurst, M.E., 1971
- VI. https://transportgeography.org/?page_id=40,
- VII. https://www.c-education.psu.edu/geog597i_02/node/814

Expected course outcomes

On the successful completion of the course ,student will be able to :

1.	Understands the Nature and Scope of Transport Geography – Historical development of Transport – Importance of Transport . Examine the approaches to the study of Transport.	K1
2.	Enhances the knowledge on the types of transport	K2
3.	Enriches the knowledge on the application of network analysis	K3
4.	Understanding the Theories related to freight rate structure	K4
5.	Applying acquired knowledge of Transport Systems in India – Road – Railway – Inland Water ways – understand the source Harbors and Ports – Air Transport –Explore the Importance and Major Transport Routes –Analyse the Role of Transport in Regional Development.	K5, K6

K1- Remember ,K2 - Understand, K3- Apply,K4- Analysis, K5- Evaluate -,K6 - Create

MAPPING OF POs WITH COs

CO/PSO	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7
CO1	4	2	3	3	3	2	4
CO2	4	3	4	1	3	2	2
CO3	4	2	1	1	2	2	3
CO4	4	3	2	4	1	3	4
CO5	4	2	3	3	2	1	3
Weighted % of course contribution to each PSO							

Map Course Outcomes (CO) for each Course with Programme Specific Outcomes (PSO) in the 4-Point scale of (Very Strong - 4, Strong - 3, Medium -2 and Low - 1)

Question Pattern:

Section A		Section B	Section C
2 Multiple Choice question from Each unit (10x1=10)	1 question from each unit (5x2=10)	1 (a & b) question from each unit (5x5=25)	1 question from each unit (3x10=30)

SETTLEMENT GEOGRAPHY

COURSE CODE :

U2344E5:3

Category	Hours			Credits	Marks		
	Lecture	Tutorial	Practical		CIA	External	Total
Theory	5	-	-	3	25	75	100

Objective:

- To elaborate on Rural and Urban Settlements
- To understand the Functional classification of towns and villages
- To acquire knowledge on Housing and House Types, Factors influencing house types.
- Assessment Unit

Unit I

Meaning, Nature, scope and development of settlement geography – Settlement: Meaning and Types-Housing and House Types, Factors influencing house type – Relief, Climate, Socio economic and other factors.

Unit II

Rural Settlements : Site – Situation – Types and Pattern, size and spacing and internal morphology of rural settlement.

Unit III

Urban Settlements: Stages of Urban Growth - Site, Situation and Types – Urban Morphology - Rank size Rule.

Unit IV

Migration: Causes of Migration, Types of Migration -Emigration versus Immigration, Laws of Migration.

Unit V

Functional classification of towns - Functional structure of cities, megacities and megapolis in India- Urbanization and Problems.

References:

1. Cole, J.P. and King, C.A.M. (1968). Quantitative Geography: Techniques and Theories in Geography. John Wiley & Sons Inc, New York.
2. Gosh, B.N (1987)– Population Geography, Streling Publications.

3. Singh, R.Y. (2002). Geography of Settlements. Rawat Publication, New Delhi.
4. Chandna, R.C (2012)-Geography of Population, Kalyani Publishers, Ludhiana
5. Maurya, S.D. (2012). Human Geography. Prayag Publications, Allahabad.
6. Debjani Roy (2015)-Population Geography, Books and Allied Private Limited, Kolkata.

Expected course outcomes

On the successful completion of the course ,student will be able to :

1.	Students can able to identify and describe the structure and organization of urban and rural settlements in different regions.	K1,
2.	They can evaluate the function of a city and explain how its services affect its influence the surrounding rural areas.	K2
3.	Migration – Types – Determinants – Major consequences of Migration – understanding the major consequence of migration he Urbanization – CBD: Functions and characteristics -. Understand the urban Morphology: Rural-Urban Fringe. Hierarchy of urban centers - central place theory - Urban Problems - Slums - Urban Planning.	K3
4.	Identifies the different functions of towns and villages, differentiates the structures of cities. Analyses the Functional structure of cities, megacities and mega polis in India.	K4
5	Understands the different Housing and House Types, Factors influencing house type – Relief, Climate, Socio economic and other factors.	K5,K6

K1- Remember ,K2 - Understand, K3- Apply,K4- Analysis, K5- Evaluate -,K6 - Create

MAPPING OF POs WITH COs

CO/PSO	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7
CO1	4	2	2	1	2	1	1
CO2	4	3	2	4	3	2	4
CO3	4	3	3	2	1	2	4
CO4	4	2	2	3	1	1	4
CO5	4	3	3	2	3	3	4
Weighted % of course contribution to each PSO							

Map Course Outcomes (CO) for each Course with Programme Specific Outcomes (PSO) in the 4-Point scale of (Very Strong - 4, Strong - 3, Medium -2 and Low - 1)

Question Pattern:

Section A		Section B	Section C
2 Multiple Choice question from Each unit (10x1=10)	1 question from each unit (5x2=10)	1 (a & b) question from each unit (5x5=25)	1 question from each unit (3x10=30)

Dr. Jyoti

SEMESTER - V

023 GGE5:4

DSEC – II GEOGRAPHY OF SRILANKA COURSE CODE :

Category	Hours			Credits	Marks		
	Lecture	Tutorial	Practical		CIA	External	Total
Theory	4	-	-	3	25	75	100

Objectives:

To study and understand the regional geography of neighbouring country which will help the students to compare and contrast geographies of two countries.

Unit I

Srilanka: Location – Physical Divisions – Climatic Regions – Drainage.

Unit II

Soil and their types – Landuse in Srilanka – Agriculture – Distribution of major food crops, Commercial Crops and Plantation Crops - Agro Climatic Regions of Srilanka.

Unit III

Minerals: – Metallic and Non Metallic and their distribution – Major Industries – Industrial Regions of Srilanka.

Unit IV

Population: Distribution, Density and Growth – Population Composition: Age, Sex, Literacy and Religion.

Unit V

Transportation and Trade: Land, Water and Air Transportation – Principal import and export items – Strategic Cooperation with India.

References:

- I. Wilmore, (1961), Groundwork of Modern Geography, G: BELL Publication.

II. Minshull (1967), Regional Geography, Aldine Publication.

III. Kannah & Gupta (2003), Economic & Commercial Geography, Sultan Chand & Sons Publication, New Delhi.

IV. Surender Singh (2017), Geography, McGraw Hill, India.

V. Majid Hussain, (2017), Indian and World Geography, McGraw Hill, India.

Expected course outcomes		
On the successful completion of the course, student will be able to :		
1.	Explain the human and physical features of Srilanka	K1
2.	Comprehend the trends in socio-economic systems in Srilanka	K2
3.	Minerals: Metallic and Non Metallic and their distribution Major Industries Industrial Regions of Srilanka.	K3
4.	Population: Distribution, Density and Growth, Population Composition: Age, Sex, Literacy and Religion.	K4
5.	Transportation and Trade: Land, Water and Air Transportation, Principal import and export items, Strategic Cooperation with India.	K5, K6
K1- Remember, K2 - Understand, K3- Apply, K4- Analysis, K5- Evaluate, K6 - Create		

MAPPING OF POs WITH COs

CO/PSO	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7
CO1	4	2	3	1	2	1	1
CO2	4	2	3	3	2	1	1
CO3	4	3	4	3	4	4	4
CO4	4	2	1	1	2	1	3
CO5	4	3	4	2	1	1	4
Weighted % of course contribution to each PSO							
Map Course Outcomes (CO) for each Course with Programme Specific Outcomes (PSO) in the 4-Point scale of (Very Strong - 4, Strong - 3, Medium -2 and Low - 1)							

Question Pattern:

Section A		Section B	Section C
2 Multiple Choice question from Each unit (10x1=10)	1 question from each unit (5x2=10)	1 (a & b) question from each unit (5x5=25)	1 question from each unit (3x10=30)

SEMESTER-VI

DSE - III
POLITICAL GEOGRAPHY
COURSE CODE:

U23G9E6:1

Category	Hours			Credits	Marks		
	Lecture	Tutorial	Practical		CIA	External	Total
Theory	4	-	-	2	25	75	100

OBJECTIVES:

- To acquire basic knowledge on the Political Geography
- To elaborate the spatial distribution of Core Areas of Political Geography
- To discuss the importance of Boundaries and Frontiers
- To elaborate on Geography of Elections
- To illustrate the Political Geography of India

Unit I

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

Unit II

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

Unit IV

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

Unit V

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.

References:

1. Dwivedi, R.L. (2014). Fundamentals of Political Geography. Chaitanya Publishing House, Allahabad.

2. Adhikari, Sudeepa. (2009). *Political Geography of India- A Contemporary Perspective*. Sharada Pustak Bhavan, Allahabad.
3. Sudeeptha Adhikari, (2004), Political Geography, Rawat publications, New Delhi.
4. Dikshit, R.D. (1982). Political Geography: A contemporary perspective, McGraw Hill Publishing co., New Delhi.

Expected course outcomes		
On the successful completion of the course ,student will be able to :		
1.	Acquire knowledge on the basic concepts of Political Geography and its importance and scope in Geography, it is important to explore their knowledge in various phases of political Geography.	K1,K2
2.	Enhances the knowledge on Morphological classification - Factors of Development, Federal Capitals.	K2,K4
3.	Understands the facts and ideas of various political areas of our Territory, State, Nation and the world. Acquire through knowledge on frontiers and boundaries.	K2,K3
4.	Understands the concept of electoral Geography. Examine the subjective aspects of electoral divisions of India.	K5,K6
5.	Summarises the knowledge on political geography of India and need for SAARC	K4, K5
K1- Remember ,K2 - Understand, K3- Apply,K4- Analysis, K5- Evaluate -,K6 - Create		

MAPPING OF POs WITH COs

CO/PSO	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7
CO1	4	2	1	1	1	1	4
CO2	4	3	2	1	1	4	4
CO3	4	3	1	4	1	4	4
CO4	4	4	1	1	1	4	3
CO5	4	3	4	1	1	4	4
Weighted % of course contribution to each PSO							
Map Course Outcomes (CO) for each Course with Programme Specific Outcomes (PSO) in the 4-Point scale of (Very Strong - 4, Strong - 3, Medium -2 and Low - 1)							

Question Pattern:

Section A		Section B	Section C
2 Multiple Choice question from Each unit (10x1=10)	1 question from each unit (5x2=10)	1 (a & b) question from each unit (5x5=25)	1 question from each unit (3x10=30)

SEMESTER- VI

DSEC – III

U23GGEB:2

LAND USE AND CADASTRAL SURVEYING

COURSE CODE :

Category	Hours			Credits	Marks		
	Lecture	Tutorial	Practical		CIA	External	Total
Theory	4	-	-	2	25	75	100

Objectives:

- Identify the use Land use classification and importance
- Conduct survey and able classify land uses.

UNIT – I

Land use mapping meaning and scope, approaches to Land use mapping Cadastral mapping uses and methods

UNIT – II

Land use and regulation, Land use and environment, Land use conflict, Land use planning. Cadastral surveying etymology of cadastral surveying ownership and tenure.

UNIT – III

Land use classification Concepts and methods – Land use system in India cadastral mapping in India Land use types.

UNIT – IV

Techniques in Land use survey and mapping land use resource measurements – Techniques of cadastral mapping, procedures and instruments used in cadastral surveying.

UNIT – V

Role of GIS and GPS in Land use and cadastral surveying – Land use classification and remote sensing.

References:

- Freeman T N – Geography and Planning, Hatchinsen University
- Sharan A S – Landuse planning, Essays in Geography
- Chishon – Rural settlements Landuse, Hatchinsen University.

IV. Mandal R B – Land utilization: theory and practice, concept publishing company.

V. AnjyReddy – Remote sensing & GIS.

Expected course outcomes

On the successful completion of the course ,student will be able to :

1.	After the completion of course, the students will have practical ability to interpret the aerial and satellite images and to extract physical and cultural features for different geographical problems	K1
2.	The course will enable students to handle a range of surveying instruments to measure distance, height and angle of physical features on the ground.	K2
3.	Land use classification Concepts and methods – Land use system in India cadastral mapping in India Land use types.	K3
4.	Techniques in Land use survey and mapping land use resource measurements – Techniques of cadastral mapping, procedures and instruments used in cadastral surveying.	K4
5.	Role of GIS and GPS in Land use and cadastral surveying – Land use classification and remote sensing.	K5,K6

K1- Remember ,K2 - Understand, K3- Apply,K4- Analysis, K5- Evaluate -,K6 - Create

MAPPING OF POs WITH COs

CO/PSO	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7
CO1	4	2	1	1	1	3	4
CO2	4	3	4	2	3	1	1
CO3	4	3	4	1	1	1	4
CO4	4	3	4	1	2	4	4
CO5	4	3	4	2	1	1	4
Weighted % of course contribution to each PSO							

Map Course Outcomes (CO) for each Course with Programme Specific Outcomes (PSO) in the 4-Point scale of (Very Strong - 4, Strong - 3, Medium -2 and Low - 1)

Question Pattern:

Section A		Section B		Section C	
2 Multiple Choice question from Each unit (10x1=10)	1 question from each unit (5x2=10)	1 (a & b) question from each unit (5x5=25)	1 question from each unit (3x10=30)		

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SEMESTER-VI

DSEC – IV
GEOSPATIAL TECHNIQUES
COURSE CODE :

U23 GGE6-3

Category	Hours			Credits	Marks		
	Lecture	Tutorial	Practical		CIA	External	Total
Theory	4	-	-	3	25	75	100

Objective:

- To acquire basic knowledge and Scope of Geoinformatics
- To elaborate the sources of Spatial database
- To discuss the importance of Software Sources and methods of acquiring Geo data
- To elaborate on GIS and Spatial Decision Support
- To illustrate the Application of Geo spatial data.

Unit I

Meaning and Scope of Geoinformatics – Science and Technologies involved in producing Maps - Cartography- Remote Sensing- Photogrammetry - Digital Image Processing- Geographical Information System-Global Positioning System- GNSS.

Unit II

Spatial database: Survey of India – NRSC - BHUVAN - NATMO – Geological Survey of India - Census of India –National Informatics Centre - Cadastral maps – open street map – foreign sources of data - Physical surveying - GPS and Total station- GPR.

Unit III

Software Sources and methods of acquiring geodata - user interfaces - application programs - Operating systems - network computing - Information Technology in Remote Sensing - GIS Applications of IT in Cartography - Applications of IT in Real Time GIS.

Unit IV

Spatial Process: Maps as output – Thematic Maps - non-cartographic outputs – spatial multimedia – GIS outputs delivery mechanism - GIS and Spatial Decision Support - map as a decision tool.

Unit V

Application of Geospatial data: Rural Development, Geosciences, agriculture, Forestry, Soil Studies, Meteorology, Military, Transport, Environmental studies, Banking and Health Civil Engineering etc.,

References:

- I. Ian Heywood, Sarah Cornelivs and Steve Carver, An Introduction to Geographical Information System, Pearson Education Pvt .Ltd., New Delhi, 2007.
- II. Lillesand M. Thomas and Ralph W.Kiefer, Remote Sensing and Image Interpretation, John Wiley & Sons, New York, 2007.
- III. LO. C.P., and Albert K.W.Yeung, Concepts and Techniques of Geographic Information Systems, Prentice-Hall of India, New Delhi, 2006.
- IV. Geographic Information Systems and Science. Second Edition. John Wiley, Chichester, 2005.
- V. www.slideshare.net/parabprathamesh/primary-sec

Expected course outcomes		
On the successful completion of the course ,student will be able to :		
1. Recalls and understand the Basic concepts: Definition and History of Remote Sensing – Definition and Types Explains the History of Remote Sensing Photogrammetry - Digital Image Processing- Geographical Information SystemGlobal Positioning System- GNSS.		K1
2. Understanding of Spatial database: Survey of India – NRSC - BHUVAN - NATMO – Geological Survey of India - Census of India.		K2
3. Enriches knowledge on Software Sources and methods of acquiring geodata - user interfaces - application programs.		K3
4. Gains knowledge on the various processes of spatial as map out put in different ways.		K4
5. Identifies the various Applications of Geospatial data: Rural Development, Geosciences, agriculture, Forestry, Soil and so on.		K5,K6
K1- Remember ,K2 - Understand, K3- Apply,K4- Analysis, K5- Evaluate -,K6 - Create		

MAPPING OF POs WITH COs

CO/PSO	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7
CO1	4	3	4	3	4	3	1
CO2	4	3	4	3	4	3	1
CO3	4	3	4	2	1	4	4
CO4	4	3	4	3	1	4	4

Dr. Pragnan
D.R. ANUSUPAM M.Sc. (Ph.D.)
Geography & Geo-IT

Dr. Indira
8.01.2026

CO5	4	3	4	2	1	4	4
Weighted % of course contribution to each PSO							
Map Course Outcomes (CO) for each Course with Programme Specific Outcomes (PSO) in the 4-Point scale of (Very Strong - 4, Strong - 3, Medium -2 and Low - 1)							

Question Pattern:

Section A		Section B	Section C
2 Multiple Choice question from Each unit (10x1=10)	1 question from each unit (5x2=10)	1 (a & b) question from each unit (5x5=25)	1 question from each unit (3x10=30)

SEMESTER - VI

DSEC - IV

GEOGRAPHY FOR COMPETITIVE EXAMINATIONS

COURSE CODE :

U23GGEB:4

Category	Hours			Credits	Marks		
	Lecture	Tutorial	Practical		CIA	External	Total
Theory	5	4	-	3	25	75	100

OBJECTIVES:

- ✓ The acquaint the pupils with living conditions of men in different parts of the globe.
- ✓ To enable the pupils to acquire a knowledge of natural resources.
- ✓ To develop pupils an understanding of how environment and climatic factors have influenced our life.

UNIT - I

General Geography : Solar System – Rotation and Revolution of the Earth, Eclipses, Latitudes and Longitudes, Time zones - International Date Line – Continents and Oceans.

UNIT - II

Geomorphology : Major Landforms – Mountains, Plateaus and Plains. Erosional and Depositional Features : 1) River , 2) Glacier, 3)Wind.

UNIT - III

Climatology: Weather and Climate Elements of climate Atmosphere Composition & Structure – Temperature, Pressure, Wind, Humidity – Precipitation.

UNIT - IV

Oceanography : Land and Sea Distribution: Relief features of Ocean – Bottom Continental Shelf, Slope, Abyssal plain, Trenches and Deep – Waves, Tides, Currents Deposits.

UNIT - V

Biogeography : Meaning, Biosphere as a system, Types and Functions of Ecosystem; Geobiochemical Cycles: Hydrological, Carbon, Oxygen, Nitrogen and Phosphorous Cycles.

REFERENCES:

- IX. N.Tikka(1998): Physical Geography, Kedar Nath, Ram Nath, Meerut.
X. P.Dayal(1995): Text book of Geographology, Shukla Book Depot, Patna.
XI. Glen. T, Trewartha and Hom.L.A. An Introduction to Climate, Megrow

XII. Hill Ltd, Looms New York.

XIII. D.S>Lal(1998): Climatology, Chaitanya Publishing House, Allahabad.

XIV. Dr.K.Kumarasamy et.al Climatology (Tamil Edition)

XV. Critchfield. H: General Climatology – Prentice Hall of India Pvt., New Delhi.

XVI. Savindra Singh: Biogeography.

Expected course outcomes

On the successful completion of the course ,student will be able to :

1.	Students recognize the different motion of the earth and its impact.	K1
2.	Students know about different landforms in and process of natural agents On the earth.	K2
3.	The students can able to discuss atmospheric process and problem and its effects.	K3
4.	They can recognise land and sea distribution and sub marine land features.	K4
5.	Students should be able to understand the geobiochemical process and its process.	K5, K6

K1- Remember ,K2 - Understand, K3- Apply,K4- Analysis, K5- Evaluate -,K6 - Create

MAPPING OF POs WITH COs

CO/PSO	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7
CO1	4	3	4	4	2	3	4
CO2	4	3	3	3	1	2	4
CO3	4	3	4	2	2	3	4
CO4	4	3	4	4	1	1	4
CO5	4	2	3	3	4	4	4
Weighted % of course contribution to each PSO							

Map Course Outcomes (CO) for each Course with Programme Specific Outcomes (PSO) in the 4-Point scale of (Very Strong - 4, Strong - 3, Medium -2 and Low - 1)

Question Pattern:

Section A		Section B	Section C
2 Multiple Choice question from Each unit (10x1=10)	1 question from each unit (5x2=10)	1 (a & b) question from each unit (5x5=25)	1 question from each unit (3x10=30)

Dr. B. ANUSUYA M.Sc., M.Phil., Ph.D.

Dr. B. Anusuya
8.9.2022

SEMESTER - III

INTER DISCIPLINARY COURSE
DISASTER STUDIES
COURSE CODE :

Category	Hours			Credits	Marks		
	Lecture	Tutorial	Practical		CIA	External	Total
Theory	2	-	-	2	25	75	100

Objective:

- The study of this paper aims to introduce basic concepts of disaster to reduce or avoid the potential losses from hazards and kindle the students to provide prompt and appropriate assistance to victims of disaster and help rapid and effective recovery of community

Unit I

Basic Concepts: Hazard, Vulnerability, Risk and Disaster – Trends in Disaster.

Unit II

Disaster Types: Geological (Earthquakes, Tsunami and Landslide), Meteorological (Cyclone and Heat Wave), Hydrological (Flood and Drought) and Anthropogenic (Accidents and Deforestation).

Unit III

Disaster Impacts: Physical, Economic, Social and Environment.

Unit IV

Disaster Risk Management; Prevention and Mitigation –Relief and Recovery – Risk Assessment.

Unit V

Disaster Preparedness: Early Warning System – Disaster Education and Awareness – Community Based Disaster Management.

References:

1. Government of India, 1997. Vulnerability Atlas of India. New Delhi, Building Materials & Technology Promotion Council, Government of India.

2. Kapur, A., 2010. Vulnerable India: A Geographical Study of Disasters, Sage Publication, New Delhi.Suggested References

3. Savindra S. and Jeetendra S. (2013) Disaster Management, Pravalika Publications, Allahabad.

4. NDMA (2011) Disaster Management in India.Ministry of Home Affairs, New Delhi.

5. Carter, N. (1991) Disaster Management: A Disaster Manager's Handbook. Asian Development Bank, Manila.

6. <http://www.ndma.gov.in/en/> and <http://nidm.gov.in/>

Expected course outcomes		
On the successful completion of the course ,student will be able to :		
1.	Understand the concept of disaster risk and the factors that contribute to the vulnerablitiy of populations.	K1
2.	Understand the types of disasters and analyze the underlying causes of disasters, including geological, meterological, environmental and human factors.	K2
3.	Learn the impact of disasters on environment and human life.	K3
4.	Learn the principles of effective disaster response including coordination among government agencies, NGOs and international organizations. Explore strategies for post disaster recovery, including rebuilding infrastructure and addressing the social and psychological impacts of disaster.	K4
5	Explore the importance of hazard mapping, vulnerability assessments and early warning system in disaster risk management.	K5,K6
K1- Remember ,K2 - Understand, K3- Apply,K4- Analysis, K5- Evaluate -,K6 - Create		

MAPPING OF POs WITH COs

CO/PSO	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7
CO1	4	3	3	1	2	1	1
CO2	4	3	4	3	4	2	4
CO3	4	2	3	1	1	4	4
CO4	4	3	4	4	4	4	4
CO5	4	3	4	3	4	4	4
Weighted % of course contribution to each PSO							
Map Course Outcomes (CO) for each Course with Programme Specific Outcomes (PSO) in the 4-Point scale of (Very Strong - 4, Strong - 3, Medium -2 and Low - 1)							

Question Pattern:

Section A	
Essay Type questions	1 question from each unit (5x15=75)

Prof. Jyoti Singh

SEMESTER III

INTER DISCIPLINARY COURSE BASIC GEOGRAPHY FOR NON GEOGRAPHERS COURSE CODE :

Category	Hours			Credits	Marks		
	Lecture	Tutorial	Practical		CIA	External	Total
Theory	2	-	-	2	25	75	100

Objectives:

- To enrich the basic knowledge of the Earth, and its composition, enhance the knowledge of the structure of the atmosphere.
- To explore the different the zones of Ocean with varying water depths, acquire knowledge on the deposits of Ocean.
- To illustrate the Natural regions of the world.
- To elaborate the Evolution of humans and races.
- To understand the distribution and patterns of Population.

Unit I

Earth – Origin, Interior, Age, size, shape of the Earth Rocks and its Types - Atmosphere: Origin and nature, Composition and Structure of the atmosphere.

Unit II

Continental Shelf, Continental Slope, Continental Rise and Trenches - Bottom relief of Ocean – Distribution of Salinity – Ocean Currents – Ocean Deposits- Tides.

Unit III

Regions- Natural regions of the world- Equatorial, Tropical and temperate grasslands, tropical and temperate deserts, Tundra regions.

Unit IV

Evolution of humans – Determinism and Possibilism – Major races of the world- Major religions of the world – Major Languages of the world – Major Tribes of India with Special Reference to TamilNadu.

Unit V

Population Distribution - Density and growth – Population Problems – Migration and its types.

References:

- Thornbury, W. D. (1960): Principles of Geomorphology, John Wiley and Sons, New York.
- Savindra Singh (2002): Physical Geography, PrayagPustakBhawan, Allahabad.

III. D. S. Lal: Climatology. ShardaPustakBhawan.

IV. D. S. Lal: Climatology. ShardaPustakBhawan ,11 , University road Allahabad- 211002
Edition 2003.

Expected course outcomes

On the successful completion of the course ,student will be able to :

1.	Analyse the changes over the universe periodically , distinguish the earth rotation and revolution and its causes explain how day and night cause, Recall Climatic elements explain the composition and Structure of the Atmosphere define Insolation examine the Heat Balance compares Horizontal and Vertical Distribution of Temperature.	K1, K2
2.	Explains distribution of Land and Sea describes the structure and composition of the Ocean floor the oceanic crust, Group Activity makes a model of Ocean Bottom relief.	K2, K4
3.	Develop the in depth knowledge of natural resource and its importance. classify the resources and human intervention and development Applying acquired knowledge marking the region in the map.	K2, K3
4.	Recall the Nature and Scope of Human geography, compare with the other branch of Geography , Understand the significance of Human geography, analyse the Man and environment relationship, examine the population data.	K5, K6
5	Understanding the basic concepts and significance of population geography, scope of the study, its history and development in Geography. It is important to explore student's knowledge in world population distribution.	K5, K6

K1- Remember ,K2 - Understand, K3- Apply,K4- Analysis, K5- Evaluate -,K6 - Create

MAPPING OF POs WITH COs

CO/PSO	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7
CO1	4	2	3	2	1	2	2
CO2	4	2	1	3	2	2	3
CO3	4	3	3	1	4	3	4
CO4	4	4	3	3	1	1	2
CO5	4	3	4	1	1	1	3
Weighted % of course contribution to each PSO							

Map Course Outcomes (CO) for each Course with Programme Specific Outcomes (PSO) in the 4-Point scale of (Very Strong - 4, Strong - 3, Medium -2 and Low - 1)

Question Pattern:

Section A	
Essay Type questions	1 question from each unit (5x15=75)

Prof. Dr. Anuska Singh
Prof. Dr. Anuska Singh M.Sc., M.Phil., Ph.D.

SEMESTER - IV

**NON MAJOR ELECTIVE COURSE
REMOTE SENSING
COURSE CODE :**

Category	Hours			Credits	Marks		
	Lecture	Tutorial	Practical		CIA	External	Total
Theory	2	-	-	2	25	75	100

Objective:

- The objective of this course is to provide fundamentals of remote sensing and Global Positioning System (GPS) for the benefit of their professional carrier.

Unit I

Remote Sensing: Definition, Development, Platforms and Types.

Unit II

Aerial Photography: Principles, Types and Geometry.

Unit III

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

Unit IV

Resolution: Spatial, Spectral, Radiometric and temporal - Earth Observation Satellites, weather Satellites and Marine Observation Satellites.

Unit V

Application of Remote Sensing: Land use/ Land Cover, Agriculture and Disaster Management.

References:

- Campbell, J. B., (2007) Introduction to Remote Sensing, Guildford Press, New York.
- Jensen, J. R., (2004) Introductory Digital Image Processing: A Remote Sensing Perspective, Prentice Hall, New Jersey.
- Joseph, G. (2005) Fundamentals of Remote Sensing, Universities Press, Hyderabad.
- Kumar, Dilip, Singh, R.B. and Kaur, Ranjeet (2019) Spatial Information Technology for Sustainable Development Goals, Springer, Basel.

- Lillesand, T. M., Kiefer, R. W. and Chipman J. W., (2004) Remote Sensing and Image Interpretation, Wiley, New Jersey. (Wiley Student Edition).
- Nag P. and Kudra, M., (1998) Digital Remote Sensing, Concept, New Delhi.
- Rees, W. G., (2001) Physical Principles of Remote Sensing, Cambridge University Press, Cambridge.
- Singh, R. B. and Murai, S., (1998) Space-informatics for Sustainable Development, Oxford and IBH Pub, New Delhi.
- Wolf, P. R. and Dewitt, B. A., (2000) Elements of Photogrammetry: With Applications in GIS, McGraw-Hill, New York.

Expected course outcomes		
On the successful completion of the course ,student will be able to :		
1.	Define Remote Sensing, Distinguish between Radiation Interaction with Atmosphere and Earth Surface-Interaction, Distinguish between the types of Remote sensing based on platform.	K1
2.	Acquires knowledge about the types of resolutions and information of satellite and aerial photographs.	K2
3.	Describe the Principles of Remote Sensing, memorize the bands in Electromagnetic, Energy sources, Imaging media, regions of Electromagnetic spectrum.	K3
4.	Summarise application of Remote Sensing in Land Cover and Land use mapping.	K4
5.	Introduction of Global Navigation Satellite System(GNSS) gives a wide knowledge about the application of GPS and its uses.	K5,K6
K1- Remember ,K2 - Understand, K3- Apply,K4- Analysis, K5- Evaluate -,K6 - Create		

MAPPING OF POs WITH COs

CO/PSO	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7
CO1	4	3	1	1	1	2	3
CO2	4	2	1	1	1	3	4
CO3	4	2	1	1	1	2	3
CO4	4	3	3	3	1	1	4
Weighted % of course contribution to each PSO							
Map Course Outcomes (CO) for each Course with Programme Specific Outcomes (PSO) in the 4-Point scale of (Very Strong - 4, Strong - 3, Medium -2 and Low - 1)							

Question Pattern:

Section A	
Essay Type questions	1 question from each unit (5x15=75)

Dr. Jyoti Singh Ph.D.

SEMESTER - IV

NON MAJOR ELECTIVE COURSE
AGRICULTURAL GEOGRAPHY
COURSE CODE :

Category	Hours			Credits	Marks		
	Lecture	Tutorial	Practical		CIA	External	Total
Theory	5	-	-	5	25	75	100

Objectives:

- To examine the spatial distribution of crops, livestock and other agricultural activities.
- To understand the cropping patterns and livestock combinations that varies in space and time.

Unit I

The origin of Agriculture – Geographical factors influencing Agriculture: Physical, Cultural, Social and Economic factors – Agriculture and soil Erosion and Conservation – Agriculture and Irrigation.

Unit II

Agricultural regions: Methods of Delineation – Agricultural regions of the World – Agricultural region of India characteristic salient.

Unit III

Global patterns of farming systems: simple subsistence farming, migratory, sedentary, intensive and extensive, mechanized grain farming, plantation and commercial.

Unit IV

Major Cereals: Rice, Wheat - Beverage crops: Tea and Coffee – Industrial crops: Cotton and Jute - Cash crops: Sugarcane and Tobacco.

Unit V

Whittlesey's world agricultural classification – Problems and Prospects.

References:

- Morgan W.B. and Munton R.Jc(1971) Agricultural Geography, Methuen, London.
- Majid Hussain (2013), Systematic Agricultural Geography, Inter-India Publications, Delhi.

- Coh Cheng Leong, (1982), Human and Economic Geography, Oxford University Press, New Delhi.
- Misra. R.P.(1986) Agricultural Geography, Heritage Publishers, New Delhi.
- Ali Mohammed (1978) Studies in Agricultural Geography, Rajesh Publications, New Delhi.
- Gregor and Howard F (1979) Geography of Agriculture: Themes in Research Printice Hall, New Jersey.
- Shafi, M., (2006): Agricultural Geography, Doring Kindersley India Pvt. Ltd., New Delhi
- AlkaGautam, 2016, AgiculturalGeography, ShardaPustakBhavan Allahabad.

Expected course outcomes

On the successful completion of the course ,student will be able to :

1.	Explain how different geographical factors influence agricultural practices and productivity.	K1
2.	Understand and apply different methods used to delineate agricultural regions, including physical factors, socio economic factors and technological factors.	K2
3.	Identify and describe the major farming systems practiced around the world, including subsistence, commercial, and mechanized farming systems.	K3
4.	Analyze the global significance of rice and wheat in terms of food security particularly in regions of Asia. They will be able to critically assess the global trade, sustainability and future challenges.	K4
5	Investigate the relevance of Whittlesey's classification in the development of agricultural policies at national and international levels.	K5, K6

K1- Remember ,K2 - Understand, K3- Apply,K4- Analysis, K5- Evaluate -,K6 - Create

MAPPING OF POs WITH COs

CO/PSO	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7
CO1	4	3	2	1	4	1	2
CO2	4	3	3	3	3	1	3
CO3	4	2	2	1	3	1	1
CO4	4	2	1	1	3	1	1
CO5	4	3	3	1	3	4	4
Weighted % of course contribution to each PSO							

Map Course Outcomes (CO) for each Course with Programme Specific Outcomes (PSO) in the 4-Point scale of (Very Strong - 4, Strong - 3, Medium -2 and Low - 1)

Question Pattern:

Section A	
Essay Type questions	1 question from each unit (5x15=75)

GOVT. COLLEGE FOR WOMEN, KUMBakonam
DEPARTMENT OF GEOGRAPHY

2023 - 2026.

GEC I

1. CARTOGRAPHY ✓
2. TOURISM AND TRAVEL MANAGEMENT

GEC II

1. HUMAN GEOGRAPHY ✓ (2023-24)
2. DISASTER STUDIES (2024-25)

GEC III

1. STATISTICS ✓
2. ECONOMIC GEOGRAPHY

GEC IV

1. STATISTICAL APPLICATIONS IN GEOGRAPHY ✓
2. BASICS OF GIS

DSE I

1. BIO GEOGRAPHY ✓
2. TRANSPORT GEOGRAPHY

DSE II

1. SETTLEMENT GEOGRAPHY ✓
2. GEOGRAPHY OF SRI LANKA

DSE III

1. POLITICAL GEOGRAPHY ✓
2. LANDUSE AND CADASTRAL SURVEYING

DSE IV

1. GEOSPATIAL TECHNIQUES ✓
2. PHYSI GEOGRAPHY FOR COMPETITIVE EXAMINATIONS.

M. Jayaram
31/07/2025
HOD OF GEOGRAPHY

Dr. B. ANUSUYA M.Sc., M.Phil., Ph.D.,
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KUMBakonam - 612 002.