#### Under Graduate Programme- B.Sc. GEOGRAPHY

#### Choice Based Credit System (CBCS) Pattern

#### (For the candidates admitted from 2023-24 onwards.)

	<u> </u>	COURSE		Nature			Fyom	Marks		
SEM	PAR	CODE	TITLE OF THE COURSE	of the course	IH	СР	Hrs	CIA	ESE	Total
		23UTAM101	Tamil Course I				3			
	Ι	23UHIN101	Hindi Course I	LAN	6	3		25	75	100
		23UFRE101	French Course I							
	тт	23UGEN101	General English I	ENG	6	3	3	25	75	100
		23UAEN101	Advanced English I	LING	0	5	5		15	100
Ι		23UGE1C01	Core: Fundamentals of	CC	5	1	3	25	75	100
		250011001	Geomorphology	ce	5	-	5		15	100
	III	23UGE1C02	Core: Geography of India	CC	5	4	3	25	75	100
		23UMA1A01	Allied: Statistics for Geography I	GEN	6	4	3	25	75	100
	IV	15UVAL101	Value Education	AEC	2	2	2		50	50
		23UTAM202	Tamil Course II				3	25		
	Ι	23UHIN202	Hindi Course II	LAN	6	3			75	100
		23UFRE202	French Course II							
	п	23UGEN202	General English II	ENG	6	3	3	25	75	100
		23UAEN202	Advanced English II	LING	0	5	5		15	100
п		23UGE2C03	Core: Process Geomorphology	CC	6	4	3	25	75	100
	ш	23UGE2CP1	Core Practical I: Basics of Map Making (I & II Semesters) ( <i>Skill Development</i> )	СР	4	4	3	40	60	100
		23UMA2A02	Allied: Statistics for Geography II	GEN	6	4	3	25	75	100
	IV	21UENS203	Environmental Studies	AEC	2	2	3		50	50
		23UTAM303	Tamil Course III					25		
	Ι	23UHIN303	Hindi Course III	LAN	6	3	3		75	100
		23UFRE303	French Course III							
	п	23UGEN303	General English III	ENG	6	3	3	25	75	100
III		23UAEN303	Advanced English III	LING	0	3	3		15	100
		23UGE3C04	Core: Climatology	CC	5	4	3	25	75	100
	III	23UGE4CP2	Core practical II: Map Analysis ( <i>Skill Development</i> )	CC	2	-	-	40	60	-

			Allied: Fundamentals of					20		
		23UGE3A03	Cartography	DSA	4	4	3	20	55	75
			(Employability skill)							
	ш	2211CE4AD1	Allied Practical: Cartographic		2			20	20	50
	111	23UGE4AP1	(Skill Davalonmant)	DSA	2	-	-		50	30
		2211DT A 201	(Sku Development)							
		23UBTA301				2			75	75
	157	23UATA301	Advanced Tamii I	AEC	2	2	2		75	
	IV	210GEA301						-	75	
		23UGE3SB1	Skill Based (Dept) : General Geography	SEC	3	2	3	25	75	100
		21UNCCWS1	Women Studies	AEC	2	-	2		50	50
		23UTAM404	Tamil Course IV			3		25	75	
	Ι	23UHIN404	Hindi Course IV	LAN	6		3			100
		23UFRE404	French Course IV							
	п	23UGEN404	General English IV	ENG	6	3	3	25	75	100
	11	23UAEN404	Advanced English IV	LINU	0	5	5		15	100
	ш	23UGE4C05	Core: Oceanography and	CC	5	4	3	25	75	100
		250014005	Hydrology ( <i>Employability skill</i> )	ce		-	5		15	100
	III	23UGE4CP2	Core practical II: Map Analysis	CC	2	4	3	40	60	100
		20002.012	(Skill Development)				C			100
IV		I 23UGE4A04	Allied: Cartographic Methods &					20	55	
	III		Map Making	DSA	4	4	3			75
			(Employability skill)							
			Allied Practical: Cartographic							
	III	23UGE4AP1	analysis.	DSA	2	4	3	20	30	50
			(Skill Development)							
		23UBTA402	Basic Tamil II					25	75	
	IV	23UATA402	Advanced Tamil II	AEC	2	2	2			50
		21UNME402	Human Rights					-	75	
	IV	23UGE4SB2	Skill Based (Dept): Geography	SEC	3	2	3	25	75	100
			Through Maps (Skill Development)				_			
	ш	23UGE5C06	Core: World Regional Geography	CC	4	5	3	25	75	100
	111	2211CE5C07	Core: Fundamentals of Remote	CC	4	F	2	25	75	100
V	111	250GE5C0/	Sensing (Employability skill)		4	5	3	23	75	100
	тт	2311GE5C09	Core: Basics of GIS & GNSS	CC	4	5	2	25	75	100
	ш	2300E3C08	(Employability skill)		4	5	5	-	15	100

	III	23UGE6CP3	Core Practical III: Surveying & interpretation of remotely sensed data products.	СС	4	_	-	40	60	-
			(Skill Development and Employability skill)							
	ш	23UGE5E01/ 23UGE5E02	Elective: Regional Geography of Asia / Regional Planning & Development ( <i>Employability skill</i> )	DSE	4	4	3	25	75	100
	ш	23NGE5E02	Non-Major Elective: Introduction to Disaster Management	GE	4	4	3	25	75	100
	IV	23UGE5SB3	Skill Based: Geography of Tourism ( <i>Entrepreneurship skill</i> )	SEC	3	2	3	25	75	100
	IV	23IDSBGE1	GEN	3	2	3	25	75	100	
	Ш	23UGE6C09	Core: Human Geography	CC	5	5	3	25	75	100
	ш	23UGE6C10	Core: Economic Geography of the World	CC	5	5	3	25	75	100
	III	23UGE6C11	Core: Political Geography	CC	5	5	3	25	75	100
	III	23UGE6CP3	Core Practical III: Surveying & interpretation of remotely sensed data products. ( <i>Skill Development and</i> <i>Employability skill</i> )	СС	4	5	3	40	60	100
VI	ш	23UGE6E01/ 23UGE6E02	Elective: Biogeography and Soil Geography Elective: Environmental Geography	DSE	5	4	3	25	75	100
	IV	23UGE6SB4	Skill Based: Disaster Studies (Employability skill)	SEC	3	2	3	25	75	100
	IV	23IDSBGE1	Skill based: Fundamentals of Geography	GEN	3	2	3	25	75	100
		19UCYS605	Cyber Security		2	2	2	-	-	75
	MOC	DCS / SWAYAM	/ NPTEL	-	-	2				
	v	Extension & Co YRC / Sports / 7 Cell / AICUF)	o-curricular Activities (NSS / NCC / RSP /NECTAR/ Chetna Women's			1		-	-	50
		1		180 +2 +2	140 +2 +2				3800 + 50	

IH- Instructional Hours, CP – Credit Points, CIA- Continuous Internal Assessment, ESE- End Semester Examination

	GEOGRAPHY							
			СР	TOTAL MARKS				
1	PART I	Language Course	12	400				
2	PART II	English	12	400				
3	PART III	Core /Allied/ Project/ Practical	95	2100				
4	PART IV	Basic Tamil I /Advanced Tamil I / General Awareness Basic Tamil II / Advanced Tamil II / Human Rights	4	150				
		Skill Based (6 Courses)	12	600				
		Value Education	2	50				
		Environmental Studies	2	50				
5	PART V	Extension & Co-curricular Activities(NSS/NCC/YRC/Sports/ RSP/NECTAR/ Chetna Women's Cell/ AICUF)	1	50				
	Total		140	3800				
		Cyber Security	2	50				
		MOOCS/SWAYAM/NPTEL	2	-				
		Total	140 +2 +2	3800 +50				

#### PART WISE TOTAL MARKS GEOGRAPHY

ABBREVIATIONS	Nature of the Course
LAN	LANGUAGE
ENG	ENGLISH
CC	CORE
GEN	GENERIC (Allied)
DSA	DISCLIPLINE SPECIFIC (Allied)
AEC	ABILITY ENHANCEMENT COURSE
SEC	SKILL ENHANCEMENT COURSE
GE	GENERIC ELECTIVE (NME)
DSE	DISCIPLINE SPECIFIC ELECTIVE

#### VALUE ADDED COURSE

Sl no	Nature of the course	Course Code	Title of the Course	Instruction al hours	Institution offering the course
1	Certificate Course	22CGIS001	Certificate course in Geographical Information System	30	Nirmala College for Women
2	Certificate Course	-	Certificate course in Climate Change and the Global impact	30	Nirmala College for Women & Sri Sakthi Institute of Technology

#### **SEMESTER: I**

#### COURSE CODE: 23UGE1C01

#### TITLE OF THE COURSE: CORE- FUNDAMENTALS OF GEOMORPHOLOGY

#### **COURSE OBJECTIVES:**

- To lay the foundation for the understanding of Physical Geography.
- To help the student to understand the origin of the Earth and the Universe.
- To take the student on a step by step journey in understanding the Earth, from its origin through its evolution highlighting on the forces that have moulded it to its present form and state.

#### **COURSE OUTCOMES:**

After the completion of the course the student will be able to:

CO1	Explain the origin of the universe and the earth and the sequence of the earth's	Kl
	evolution.	
CO2	Understand the structure of the earth, continental drift & its causes.	K2
CO3	Differentiate between earth movements.	K2
CO4	Analyse in detail the occurrence of earthquakes and volcanoes.	K2
CO5	Distinguish rock types based on their formation.	K2

#### **SYLLABUS**

## Credits: 4Instructional hours: 75UNIT – IGEOMORPHOLOGYKl15 hours

Geomorphology: Nature, Scope, Key concepts and Systems approach;

Origin of the Universe, solar system and the earth.

Theories: Big Bang-Gaseous hypothesis-Nebular hypothesis-Planetesimal hypothesis-Tidal hypothesis-Binary star theory-Interstellar Dust hypothesis.

Age of earth- Geological Time Scale.

#### (Beyond the Curriculum: Glacial and Inter-glacial periods)

UNIT – II STRUCTURE AND COMPOSITION OF EARTH K2 15 hours

Composition of the Earth's Interior: Composition and Structure .

Rocks: - Origin, Classification and Characteristics. Rock cycle.

(Self Study- Structure of the earth)

UNIT ·	– III	EARTH MOVEMENTS	-I	K2	15 hours	
	Earth r	novements – Endogenic and I	Exogenic forces			
	Endog	enic forces: Eperogenic and C	Drogenic			
	Folds-l	Parts of fold-Types of fold				
	Faults:	Parts of fault, Types of Fault	t			
UNIT ·	– IV	EARTH MOVEMENTS -	·II	K2	15 hours	
Earthquakes and Volcanoes- Types, distribution and associated landforms.						
	(Self S	tudy- Volcanoes- distribution	n)			
UNIT-	-V IS	SOSTACY & PLATE TECT	FONICS	K2	15 hours	
	Concep	pt of Isostasy				
	Origin	of the Continents and Ocea	ans- Wegner's Cont	inental Drift Theo	ory - Paleo-	
	Magne	tism and Sea Floor Spreading	g			
	Plate T	ectonic Theory; Plate Compo	osition, Plate Movem	ent, Plate Margins	s, Triple	
	Junctio	ons.				

#### TEXT BOOKS:

- Goh Cheng Leong. (2016) Certificate Physical & Human Geography, Oxford University Press, New Delhi
- Dayal.P (2015) Textbook of Geomorphology. Seventh Edition, Sanjay Gupta Rajesh publication, New Delhi
- 3. Savindra Singh. (2008). Geomorphology: Prayag Pustak Bhavan, Allahabad.

#### **REFERENCE BOOKS**:

- Alan Strahler (2016) Introducing Physical Geography (6<sup>th</sup> edition). J. Wiley & sons. New York.
- 2. Billings, M.P. (1971) Structural Geology, Pearson.
- David Mc Connell & David Steer (2016) The Good earth- Introduction to Earth Science. Mc Graw Hill (India) Pvt. ltd., New Delhi
- 4. Frisch, W., Meschede, M., Blakey, R.C. 2011. Plate Tectonics: Continental Drift and Mountain Building, Springer.
- 5. Goudie, A.S. (Ed) 2004. Encyclopaedia of Geomorphology, vol. 1 & 2, Routledge.
- 6. Gregory, K.J., Lewin, J. 2014. The Basics of Geomorphology: Key Concepts, Sage.
- Harvey, A. 2012. Introducing Geomorphology: A Guide to landforms and Processes, Dunedin Academic Press.
- 8. Kale, V.S., Gupta, A. 2001. Introduction to Geomorphology, Orient longman.

- 9. Kearey, P., Klepeis, K.A., Vine, F.J. 2011. Global Tectonics, 3rd ed, Wiley-India.
- 10. Knighton, A.D. 1984. Fluvial Forms and Processes, Edward Arnold.
- 11. Mc Cullagh, P. 1978. Modern Concepts in Geomorphology, Oxford University Press.
- 12. Philip Lake. (2006) Physical Geography. Cambridge University Press, UK
- 13. Selby, M.J. 1986. Earth's Changing Surface, Oxford University Press.
- 14. Strahler A. N. (1965). Introduction to Physical Geography. J. Wiley & Sons. New York
- 15. Thornbury W.D. (1969) Reprint 2015. Principles of Geomorphology. New Age International publishers, New Delhi.
- 16. Woolridge & Morgan. (1986). An outline of Geomorphology. longman. London
- 17. Worcester Philip G. (1969). Text book of Geomorphology. East West Edition

#### **BLENDED LEARNING**

S.No.	Topics	Links	
1	Unit 2	https://www.nationalgeographic.org/encyclopedia/continental-drift/	
	Continental Drift		
2	Plate Tectonics	https://www.nationalgeographic.org/media/plate-tectonics/	
3	Unit 4	https://www.nationalgeographic.org/topics/resource-library-	
	Earth Quake	earthquake/?q=&page=1&per_page=25	
4	Volcanoes	https://www.usgs.gov/natural-hazards/volcano-hazards/about-volcanoes	

#### Mapping of COs with POs and PSOs

	PO 1	PO2	PO3	PO4	PO5	PO6	<b>PO7</b>	PO 8	PO9	POl0	POll	POl2	PSOI	PSO2	PSO3
COl	3	3	3	1	1	3	2	2	1	3	1	3	3	2	3
CO2	3	3	3	1	2	2	1	2	1	3	2	2	3	2	3
CO3	3	3	3	1	2	2	1	2	1	3	2	2	3	2	3
CO4	3	3	3	1	2	2	2	2	1	3	2	2	3	2	3
CO5	3	3	3	1	2	2	1	2	1	3	2	3	3	1	3

**Correlation:** 3 – High; 2 – Medium; 1 - Low **ASSESSMENT TOOLS** 

S. No.	Assessment Method	Frequency of Assessment
1	End Semester Examinations	Once in a semester
2	CIA 1	Once in a semester
3	CIA 2	Once in a semester
4	Model Exam	Once in a semester
5	Assignment (Unit I & II)	Twice in a semester
6	Seminar (Unit III & IV)	Twice in a semester

ſ	7	Group Discussion or Field Studies(Unit V)	Once in a semester
L			

Course designed by: Dr. Jyothirmayi P	Verified by HOD: Dr. Jyothirmayi P
Checked by CDC: Dr.K.Jayanthi	Approved by :
	Principal

#### SEMESTER: I COURSE CODE: 23UGE1C02 TITLE OF THE COURSE: CORE -GEOGRAPHY OF INDIA

#### **COURSE OBJECTIVES :**

- To help students to understand the geographical features of India.
- To throw light on the different physical and human aspects of our country,
- To classify and highlight regions, economic resources and development of India.

#### **COURSE OUTCOMES:**

Credits: 4

After the completion of the course the student will be able to:

CO1	Understand the physical profile of the country	K2
CO2	Study the resource endowment and its spatial distribution and	K2
	utilization for sustainable development	
CO3	Distinguish between the different types of regions based on both physical	K2
	and human characteristics	
CO4	Understand the various spatial patterns of development in India	K2
CO5	Synthesise and develop the idea of regional dimensions	K2

#### **SYLLABUS**

#### **Instructional hours: 75**

UNIT ILOCATION AND PHYSIOGRAPHYK215 hours

Location, Physiographic Divisions of India,

Major Drainage System – Himalayan and Peninsular Rivers.

Climate: factors, seasons & characteristics; Monsoon regime.

Soil; Types and distribution.

Natural Vegetation; Types & distribution

(Beyond the Curriculum : El Nino, La Nina, Southern Oscillation and its relationship with monsoon.)

Plantation crops; Tea & Coffee

Cash Crops; Sugarcane, tobacco, jute, cotton, rubber.

Irrigation; Types & Distribution

Multipurpose river valley projects

Livestock wealth of India - Indian fisheries.

Problems of Indian agriculture; Green Revolution and its effect on Indian Agriculture.

(Self study: Livestock wealth of India)

#### UNIT III POPULATION, TRANSPORT & TRADE K2 15 hours

Population Growth, Distribution and density

Population composition; Race, Caste, Religion, language & Tribal groups.

Population explosion- causes & effects

Transport; Modes & Distribution, Trade.

#### UNIT IV MINERALS & INDUSTRIES K2 15 hours

Mineral and Power Resources: Uses & Distribution; Iron, Bauxite, Mica, Coal,

Petroleum; Hydro-electricity, Thermal and Atomic power.

Industries; factors affecting location.

Distribution of Major Industries; Iron and steel, cotton textile and Sugar Industry,

Automobile and Information Technology industries in India.

Major industrial regions in India

#### (Self study: Major ports in India)

#### UNIT V GEOGRAPHY OF TAMIL NADU K2

Geography of Tamil Nadu: Physical perspectives: Physiographic divisions, Climate, Forest, Soil and Water resources.

15 hours

Resources: Agriculture, mining, industry, transport, industry.

Population: Growth, distribution.

#### **TEXT BOOKS:**

- 1. Majid Hussain (2009), Geography of India, Tata McGraw Hill Publishing company ltd., New Delhi.
- 2. Khullar, D. R., (2010), India A Comprehensive Geography, Kalyani Publishers, New Delhi.

#### **REFERENCES BOOKS:**

- 1. Deshpande, C. D., (1992): India: A Regional Interpretation, ICSSR, New Delhi.
- 2. Douglas, Johnson.,(2009): World Regional Geography, Tenth edition, Pearson Education Inc, New Jersey.
- 3. Johnson, B. L. C., ed. (2001):Geographical Dictionary of India. Vision Books, New Delhi.

- 4. Khullar, D.R. (2014): India: A Comprehensive Geography, Kalyani Publishers, New Delhi.
- Mandal, R. B. (ed.), (1990): Patterns of Regional Geography–An International Perspective. Vol. 3–Indian Perspective.
- 6. Pathak, C. R. (2003): Spatial Structure and Processes of Development in India. Regional Science Assoc., Kolkata.
- 7. Sharma, T.C. (2013): Economic Geography of India. Rawat Publication, Jaipur.
- 8. Singh R. L., (1971): India: A Regional Geography, National Geographical Society of India.
- 9. Singh, Jagdish.,(2003): India A Comprehensive & Systematic Geography,
- Gyanodaya Prakashan, Gorakhpur.
- 10. Singh, R. B. and Prokop, Pawel.,(2016): Environmental Geography of South Asia, Springer, Japan.
- 11. Spate O. H. K. and learmonth A. T. A., (1967): India and Pakistan: A General and Regional Geography, Methuen.
- 12. Tirtha, Ranjit (2002): Geography of India, Rawat Publs., Jaipur & New Delhi.
- L3. Tiwari, R.C. (2007): Geography of India. PrayagPustakBhawan, Allahabad

#### **BLENDED LEARNING**

S.No.	Topics	Links
1	Unit 2	https ://www.india.gov.in/topics/agriculture
	Agriculture in India	
2	Forestry & Fishing in	https://www.britannica.com/place/India/Agriculture-
	India	forestry-and-fishing

#### Mapping of COs with POs and PSOs

	PO	PSO	PSO	PSO											
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
COl	3	3	3	2	3	3	3	1	2	3	2	2	2	2	2
CO2	3	3	1	1	2	3	2	2	1	3	1	2	3	2	2
CO3	3	3	1	1	2	3	2	2	1	3	1	2	3	2	2
<b>CO4</b>	3	3	3	3	2	3	2	2	2	3	1	2	3	3	3
CO5	3	3	1	1	2	3	2	2	1	3	1	3	3	2	3

Correlation: 3 – High; 2 – Medium; 1 - Low

S. No.	Assessment Method	Frequency of Assessment
1	End Semester Examinations	Once in a semester
2	CIA 1	Once in a semester
3	CIA 2	Once in a semester
4	Model Exam	Once in a semester
5	Assignment (Unit I & II)	Twice in a semester
6	Seminar (Unit III & IV)	Twice in a semester
7	Quiz or Field Studies (Unit V)	Once in a semester

Course Designed by: Dr. Jyothirmayi P	Verified by HOD: Dr. Jyothirmayi P
Checked by CDC: Dr.K.Jayanthi	Approved by :
	Principal

#### **SEMESTER: II**

#### COURSE CODE: 23UGE2C03

#### TITLE OF THE COURSE: CORE- PROCESS GEOMORPHOLOGY

#### **COURSE OBJECTIVES :**

- To familiarize the students with the fundamental concepts of the process of landscape evolution.
- To impart the knowledge of the mechanism of landform development resulting from erosion
- To make students understand the cyclic process of landform development.

#### **COURSE OUTCOMES:**

After the completion of the course the student will be able to:

CO1	Understand the general geomorphic process of weathering and mass wasting.	K2
CO2	Explain the different soil forming process and the drainage types and patterns	K2
CO3	Understand the erosional process of rivers and fluvial landform evolution	K2
CO4	Analyse the different features formed by underground water and glaciers.	K2
CO5	Differentiate between the different erosional features formed by wind and	K2
	waves.	

#### SYLLABUS

#### Credits:4

#### **Instructional hours: 90**

#### UNIT I INTRODUCTION TO PROCESSES K2 18 hours

Geomorphic process - an introduction

Exogenic Processes:

Weathering & Mass Wasting: Factors-Types

(Beyond the Curriculum: Ten Fundamental Concepts of Geomorphology)

#### UNIT II SOIL & DRAINAGE K2 18 hours

Soils-Soil formation-Soil Characteristics-Soil Profile-Soil Classification

Drainage: Types and patterns.

(Self Study: Soil profile)

#### UNIT III FLUVIAL LANDFORMS & NORMAL CYCLE OF EROSION K2 18 hours

Gradation-Agents of Gradation-Evolution of landforms

Fluvial- Erosional, Transportational and Depositional landforms formed by work of running water-Concept of Normal Cycle of Erosion (Davis and Penck).

(Self Study: Rivers - depositional features)

UNIT IV KARST AND GLACIAL LANDFORM K2 18 hours

Underground water - Erosional and Depositional landforms formed by underground water.

Glaciers: Erosional, Transportational and Depositional landforms formed by glaciers..

UNIT VAEOLIAN & COASTAL LANDFORMSK218 hoursWind: Aeolian Erosional and depositional landformsWaves: Coastal Erosional and depositional landforms.18 hours

#### **TEXT BOOKS:**

- Goh Cheng Leong. (2016) Certificate Physical & Human Geography. Oxford University Press, New Delhi
- Phani Deka (2006) Geography Physical & Human (2<sup>nd</sup> edition). New Age International publishers, New Delhi.
- 3. Savindra Singh. (2008). Physical Geography. Prayag Pustak Bhavan, Allahabad.

#### **REFERENCE BOOKS**:

- Alan Strahler (2016)Introducing Physical Geography (6<sup>th</sup> edition). J. Wiley & sons. New York
- 2. Bloom A. l., 2003: Geomorphology: A Systematic Analysis of late Cenozoic landforms, Prentice-Hall of India, New Delhi.
- Bridges E. M., 1990: World Geomorphology, Cambridge University Press, Cambridge.
- Christopherson, Robert W., (2011), Geosystems: An Introduction to Physical Geography, 8Ed., Macmillan Publishing Company
- David Mc Connell & David Steer (2016) The Good earth- Introduction to Earth Science. Mc Graw Hill (India) Pvt. ltd., New Delhi
- Dayal P.(2015). Textbook of Geomorphology (7<sup>th</sup>edition). Sanjay Gupta Rajesh publication, New Delhi
- Kale V. S. and Gupta A., 2001: Introduction to Geomorphology, Orient longman, Hyderabad.

- Knighton A. D., 1984: Fluvial Forms and Processes, Edward Arnold Publishers, London.
- 9. Lal D.S. (2009) Physical Geography. Sharda Pustak Bhwan, Allahabad.
- Neyvil Greyner (1985). Investigating Physical Geography. Oxford University Press, Oxford.
- 11. Philip Lake. (2006) Physical Geography. Cambridge University Press, UK
- 12. Richards K. S., 1982: Rivers: Form and Processes in Alluvial Channels, Methuen, London.
- 13. Savindra S. (2000). Geomorphology. Allahabad, India: Prayag Pustak Bhawan
- 14. Selby, M.J., (2005), Earth's Changing Surface, Indian Edition, OUP
- 15. Skinner, Brian J. and Stephen C. Porter (2000), The Dynamic Earth: An Introduction to physical Geology,4th Edition, John Wiley and Sons.
- 16. Thornbury W. D., 1968: Principles of Geomorphology, Wiley.
- 17. Thornbury W.D. (1969) Reprint 2015. Principles of Geomorphology. New Age International publishers, New Delhi.

#### **BLENDED LEARNING**

S.No.	Topics	Links
1	Unit 2	https://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/edu/
	Soils	
2	Watersheds &	https://www.usgs.gov/special-topic/water-science-
	Drainage Basins	school/science/watersheds-and-drainage-basins?qt-
		science_center_objects=0#qt-science_center_objects
3	Drainage networks	http://www.wvca.us/envirothon/pdf/Drainage%20Patterns.pdf
4	Unit 3	https://www.nationalgeographic.org/article/understanding-rivers/
	Rivers	
5	Floodplains	https://www.nationalgeographic.org/encyclopedia/flood-plain/

Mapping of COs with POs and PSOs

	PO	PSO	PSO	PSO											
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
COl	3	3	3	3	2	3	2	2	1	3	1	2	3	1	2
CO2	3	2	3	3	2	3	2	2	1	2	1	2	3	1	2
CO3	3	3	3	3	3	3	2	2	1	3	1	2	3	2	2
CO4	3	2	3	3	2	3	2	2	1	3	1	2	3	2	2
CO5	3	2	3	3	2	3	2	2	1	3	1	2	3	2	2

Correlation: 3 – High; 2 – Medium; 1 - Low

S. No.	Assessment Method	Frequency of Assessment
1	End Semester Examinations	Once in a semester
2	CIA 1	Once in a semester
3	CIA 2	Once in a semester
4	Model Exam	Once in a semester
5	Assignment (Unit I & II)	Twice in a semester
6	Seminar (Unit III & IV)	Twice in a semester
7	Quiz or Field Studies (Unit V)	Once in a semester

Course designed by: Dr. Jyothirmayi P	Verified by HOD: Dr. Jyothirmayi P
Checked by CDC: Dr.K.Jayanthi	Approved by :
	Principal

#### SEMESTER: I & II

#### **COURSE CODE: 23UGE2CPI**

#### TITLE OF THE COURSE: CORE PRACTICAL I - BASICS OF MAP MAKING (Skill Development)

#### (Based on Core courses Process Geomorphology, Allied courses Fundamentals of Cartography and Cartographic Methods & Map making)

#### **COURSE OBJECTIVES :**

- To introduce students about the significance of scales in the map making process.
- To make students understand the concept of changing the map scale and measurement of area.
- To familiarize students with the interpretation of relief features based on the contours.

#### **COURSE OUTCOMES:**

After the completion of the course the student will be able to:

CO1	Construct different types of graphical scales for different units of expression	K3
CO2	Prepare a map for a new scale and measure the area and distance	K3
CO3	Illustrate various relief featured from the cross section of contours.	K3
CO4	Interpret the topography of any given area by drawing relief profile.	K3
CO5	Prepare a record of the practical and report about the places visited in their	K4
	field trip.	

#### SYLLABUS

#### Credits: 4

UNIT I MAP SCALE

#### 12 hours

**Instructional hours: 60** 

Maps & Scales- Meaning & Significance

**K3** 

Types of Scales: – Methods of Representation; Statement, Graphical & Representative Fraction.

Construction of simple / linear scale, comparative scale, diagonal scale and time scale Conversion of Scales

(2 exercises each)

UNIT II ENLARGEMENT AND REDUCTION OF MAPSK3l2 hoursMap Enlargement and Reduction Methods: similar triangle and similar square methods.Measurement of area: Strip & Square methodMeasurement of distance; thread, rotometer, divider.(2 exercises each)

#### UNIT III REPRESENTATION OF RELIEF K3 l2 hours

Representation of relief in maps – Spot heights and interpolation of contours. (2 exercises each)

Representation of important landform features by contours – Uniform/conical hill, uniform depression, concave slope, convex slope, uniform slope, terraced slope, v-shaped valley, gorge, u-shaped valley, hanging valley, knoll, ridge, saddle, escarpment, spur, reentrant, sea-cliff, waterfall, cirque, Plateau, Dissected plateau . (l exercise each)

#### UNIT IV PROFILES K3 l2 hours

Profiles: Introduction and plotting of Cross and longitudinal Profiles- Serial, superimposed projected and composite profile.

Construction and interpretation of relief profiles from Survey of India topographical map

(2 exercises each)

#### UNIT VRECORD AND FIELD TRIP REPORTK412 hours

- 1. Report of the field trip with geo tagged photos and route map
- 2. Record

#### **TEXT BOOKS:**

- 1 Monkhouse, F.J. and Wilkinson, H.R., (1989), Maps and Diagrams, B.I.Publications, New Delhi.
- 2 Singh, R. L., (2005), Elements of Practical Geography, Kalyani Publishers, New Delhi.
- 3 Gopal Singh, (1996), Map work and practical geography, Vikas Publishing House, Mumbai

#### **REFERENCE BOOKS:**

- 1. Ragunandan Singh & Kanuja,(2008): Map work and Practical Geography, Central Book depot Allahabad.
- 2. R.L. Singh (1979), Elements of Practical Geography, KalyaniPublishers, New Delhi.
- 3. Bygott. J. (1955), Mapwork and Practical Geography, University Tutorial Press-London.
- 4. Buch T.W. Maps Topographical and Statistical Maps, Oxford lavender Press London.
- 5. Gopal Singh (2000) Map Work and Practical Geography, Vikas Publishing House pvt. ltd., New Delhi.

	PO	PSO	PSO	PSO											
	l	2	3	4	5	6	7	8	9	10	11	12	1	2	3
CO1	2	1	1	3	3	3	1	2	3	3	3	1	1	3	3
CO2	1	3	3	3	3	2	1	2	3	3	3	2	1	2	3
CO3	1	3	2	3	3	2	1	2	3	3	3	2	1	2	3
CO4	1	3	3	3	2	3	1	2	3	3	3	2	2	2	3
CO5	2	3	3	2	2	3	3	3	3	3	3	3	3	2	3

#### Mapping of COs with POs and PSOs

Correlation: 3 – High; 2 – Medium; 1 - Low

S. No.	Assessment Method	Frequency of Assessment
1	End Semester Examinations	Once in a year
2	CIA 1	Once in a year
3	CIA 2	Once in a year
4	Model Exam	Once in a year
5	Regularity	Once in a year
6	Attendance	Once in a year
7	Record	Once in a year

Course designed by: Dr. Meenakshi P	Verified by HOD: Dr. Jyothirmayi P
Checked by CDC: Dr.K.Jayanthi	Approved by :
	Principal

#### **SEMESTER: III**

#### COURSE CODE: 23UGE3C04

#### TITLE OF THE COURSE : CORE-CLIMATOLOGY

#### **COURSE OBJECTIVES :**

- To understand the weather phenomena
- To understand the dynamics of global climates
- To introduce students to the facets of the consequences of climate change.

#### **COURSE OUTCOMES:**

After the completion of the course the student will be able to:

CO1	Know the structure and composition of atmosphere	Kl
CO2	Explain the pressure belts and wind systems around the world.	K2
CO3	Classify the forms of precipitation and to describe fronts and airmass	K3
<b>CO4</b>	Understand the origin of cyclone and its types and classify climatic regions	K3
CO5	Understand and realize the causes and consequences of climate change	K2

#### SYLLABUS

#### Credits: 4

#### **Instructional hours: 75**

#### UNIT I CLIMATOLOGY KI 15 hours

Introduction to Climatology-Elements of weather & Climate.

Atmosphere – Composition – Structure - Heat balance.

Insolation – factors affecting insolation.

Temperature -Horizontal and vertical distribution – Factors & distribution - Inversion of temperature

(Self Study: Inversion of temperature)

UNIT I	I PRESSURE & WINDS	K2	15 hours								
1	Atmospheric pressure and winds: Measurement – Major pressure belts.										
(	General circulation of the Atmosphere- Hadley's Cell.										
V	Wind system; Factors, - Types – Planetary, Periodic, local -Jet Streams, Torna										
(	Origin and mechanism of Monsoon with special reference to South Asia.										
UNIT I	II MOISTURE & PRECIPITATION	K	B 15 hours								
Ι	Atmospheric Moisture: Humidity; Relativ	ve, absolute ar	nd specific humidity.								
Ι	Evaporation- Condensation – Forms, Clouds – types										
I	Precipitation forms and types of rainfall										

Air masses - types

Fronts – Types

#### UNIT IV CLIMATIC CLASSIFICATION K3 15 hours

Atmospheric disturbances: Cyclones: Tropical Cyclones – Temperate cyclones – Anticyclones

Climatic classification: Koppen's and Thornthwaite

(Self Study: Anticyclones)

#### UNIT V CLIMATE CHANGE K2 15 hours

Climate Change: Causes and Evidences

Greenhouse effect and importance of ozone layer

Global warming: Causes and consequences. (El nino and la nina, sea level rise and extreme events- cold wave)

(Beyond the Curriculum: Radiative Forcing & Climate Feedbacks.)

#### **TEXT BOOKS:**

- 1. Singh, S. (2005), Climatology, Allahabad: Prayag Pustak Bhawan.
- 2. Lal D.S. (2015), Oceanography, Allahabad: Sharada Pustak Mahal

#### **REFERENCE BOOKS:**

- 1. Barry and Chorley, (2003) Atmosphere, Weather and Climate, Routledge, London.
- Craghan M (2003)– Physical Geography: A Self Teaching Guide, John Wiley & Sons, Canada
- 3. Critchfield, (1974), Climatology, Prentice Hall of India, New Delhi.
- Edward Linacre & Bart Geerts (2003) Climate and Weather Explained, Routledge, London
- 5. Gabler R. E, Petersen, J. F, Trapasso L. M and Sack D (2009) Physical Geography, Brooks/Cole, Belmont, USA
- 6. Lake P: Physical Geography, Cambridge University London
- 7. Arthur N Strahler and Allen H Strahler, Modern Physical Geography-Wiley.
- 8. Majid Husain ,(2003) Physical Geography Rawat Publications Jaipur
- 9. Trewartha, G T. & Horn lyle H. (1980), An Introduction To Climate, London: McGraw Hill

#### **BLENDED LEARNING**

S.No. Topics Links
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1	Unit l	https://www.usgs.gov/special-topic/water-science-
	Water Cycle	school/science/atmosphere-and-water-cycle?qt-
		science_center_objects=0#qt-science_center_objects
2	Atmosphere	https://www.nationalgeographic.org/encyclopedia/atmosphere/
3	Temperature	https://www.nationalgeographic.org/encyclopedia/temperature/
4	Unit 5	https://www.nationalgeographic.org/encyclopedia/climate-change/
	Climate Change	

#### Mapping of COs with POs and PSOs

	PO	PSO	PSO	PSO											
	1	2	3	4	5	6	7	8	9	10	11	12	l	2	3
CO1	2	2	3	3	3	2	2	2	1	3	2	1	3	2	2
CO2	3	3	3	2	3	2	2	2	1	3	2	1	3	2	3
CO3	3	3	3	2	3	2	2	2	1	3	2	2	3	2	2
<b>CO4</b>	3	3	3	3	3	2	2	1	1	3	3	2	3	2	3
CO5	3	3	3	2	3	3	2	2	2	3	2	1	3	2	2
CO6	3	3	3	3	3	2	2	3	2	3	3	1	3	2	3

**Correlation:** 3 – High; 2 – Medium; 1 - Low

S. No.	Assessment Method	Frequency of Assessment
1	End Semester Examinations	Once in a semester
2	CIA 1	Once in a semester
3	CIA 2	Once in a semester
4	Model	Once in a semester
5	Assignment (Unit I & II)	Twice in a Semester
6	Seminar (Unit III & IV)	Twice in a Semester
7	Quiz Or Class Participation (Unit V)	Once in a Semester

Course designed by: Sr.Helan Jenifer	Verified by HOD: Dr. Jyothirmayi P
Checked by CDC: Dr.K.Jayanthi	Approved by :
	Principal

#### **SEMESTER: III**

#### **COURSE CODE: 23UGE3A03**

#### TITLE OF THE COURSE: ALLIED - FUNDAMENTALS OF CARTOGRAPHY

(Employability Skills)

#### **COURSE OBJECTIVES :**

- To introduce the basic concepts of cartography.
- To make the student understand the principles of map projections, data types and • methods of data collection.
- To familiarize the students, the procedures, the materials and equipments involved in the construction of map making.

#### **COURSE OUTCOMES:**

**Credits:4** 

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After the completion of the course the student will be able to:

CO1	Explain the types of map and the meaning, scope and content of cartography.	K2
CO2	Understand the concept of map Projection and its relative significance.	K2
CO3	Differentiate the types of geographical data.	K3
CO4	Analyse the concept of map compilation & generalization.	K4
CO5	Outline the map design and layout.	K4

#### **SYLLABUS**

#### **Instructional hours:60**

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#### UNIT – I **12 Hours** CARTOGRAPHY **K2**

Cartography- Meaning & Scope: Artistic leaning and scientific basis of cartography -Cartography as a science of human communication - Earth as a cartographic Problem-Branches of Cartography-History and development of Cartography. 

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UNIT - II	MAP SCALES & PROJECTIONS	K2	12 Hours
Map	s: Meaning of maps, Classification of maps a	nd their use	s.
Map	Scales and their functions-Directions and the	ir functions	
Тур	es of north- Geographic coordinates		
Datu	um – Coordinate systems – geographic and pro	ojected	
Map	Projections including UTM- Classification -	uses, prope	erties, limitations
Cho	ice of a map Projection.		
(Selj	f Study: Types of north)		

#### UNIT – III DATA COLLECTION K3 l2 Hours

Data collection for map making: Sources – Data types –Spatial and attribute data. Methods of data collection

Data processing; Classification – Qualitative and Quantitative data.

(Self Study: Qualitative and Quantitative data)

#### UNIT – IV MAP COMPILATION K4 l2 Hours

Map Compilation and generalization –Different methods used in compilation of maps Base map compilation and problems.

Map generalization – labelling.

## UNIT - VMAP DESIGN & LAYOUTK4l2 HoursMapDesign and lay out- Principles of MapDesign- Theory ofVisualPerception-Different Phases involved- Constraints in Map designing.

Symbolization- lettering & Toponomy.

#### **TEXT BOOKS:**

- 1. Mishra R. P. and Ramesh A., (2002).Fundamentals of Cartography, Concept Publishing, Delhi.
- 2. Robinson A. H., (2006). Elements of Cartography, John willey, London

#### **REFERENCE BOOKS:**

- 1. Dent B. D., (1999) .Cartography: Thematic Map Design, (Vol. 1), McGraw Hill.
- 2. Gupta K. K and Tyagi V. C., (1992)Working with Maps, Survey of India, DST, NewDelhi.
- 3. Lawrence G.R.P (1979). Cartographic methods, Methuen, London.
- Mishra R. P. and Ramesh A., (1989). Fundamentals of Cartography, Concept Publishing, Delhi.
- 5. Monkhouse. F. J. ,(1967). Maps and diagrams, Methuen, London
- 6. Raize, (1982) .Principles of Cartography, Mc Graw Hill & Company, New York.
- 7. Robinson A. H., (1953). Elements of Cartography, John willey, London.
- 8. Singh R. L. and Singh R. P. B., (1999). Elements of Practical Geography, Kalyani Publishers
- Steers J. A., (1965). An Introduction to the Study of Map Projections, University of London

#### **BLENDED LEARNING**

S.No.	Topics	Links
1	<u>Unit 2</u> Map	https://www.nationalgeographic.org/encyclopedia/map/
2	History of Mapping	https://www.gislounge.com/mapping-through-the-ages/
3	<u>Unit 3</u>	https://www.e-education.psu.edu/geog160/node/1908
	Spatial Data	
4	Data types	https://link.springer.com/referenceworkentry/10.1007%2F978-
		<u>0-387-35973-1_743</u>

#### Mapping of COs with POs and PSOs

	PO	РО	PO	PSO	PSO	PSO									
	1	2	3	4	5	6	7	8	9	10	11	12	l	2	3
CO1	2	3	3	3	3	2	1	1	1	3	1	1	3	3	3
CO2	2	3	3	3	3	2	1	1	1	3	1	1	3	3	3
CO3	2	3	3	3	3	2	1	1	1	3	1	1	3	3	3
<b>CO4</b>	2	3	3	3	3	2	1	1	1	3	1	1	3	3	3
CO5	2	3	3	3	3	2	1	1	1	3	1	1	3	3	3

Correlation: 3 – High; 2 – Medium; 1 - Low

S.No.	Assessment Method	Frequency of Assessment
1	End Semester Examinations	Once in a semester
2	CIA l	Once in a semester
3	CIA 2	Once in a semester
4	Model	Once in a semester
5	Assignment (Unit I & II)	Twice in a Semester
6	Seminar (Unit III & IV)	Twice in a Semester
7	Class Participation (Or)	Once in a Semester
	Group Discussion(Unit V)	

Course designed by: Dr. Franchina Mary A	Verified by HOD: Dr. Jyothirmayi P
Checked by CDC: Dr.K.Jayanthi	Approved by :
	Principal

#### **SEMESTER: III**

#### **COURSE CODE: 23UGE3SBI**

#### TITLE OF THE COURSE: SKILL BASED - GENERAL GEOGRAPHY

#### **COURSE OBJECTIVES :**

- To understand the meaning of Geography in depth. •
- To evaluate the motions of earth. •
- To analyze the causes and effects of various geographical phenomena.
- To recognize various geographical sobriquets.

#### **COURSE OUTCOMES:**

After the completion of the course the student will be able to:

CO1	Understand the meaning, of geography, its branches and its themes.	K2
CO2	Explain the shape, size and motions of the earth in relation with occurrence of	K2
	day, night and seasons.	
CO3	Analyze the significance of latitude and longitude and its relation with climate	K3
	zones and time calculation respectively.	
CO4	Examine the causes and effects of various geographical phenomena.	K3
CO5	Describe the basic meaning of various geographical sobriquets.	K2

#### **SYLLABUS**

#### Credits: 2

#### **Instructional hours: 45**

9 hours

#### **UNIT I GEOGRAPHY** (K2) Introduction to Geography- Branches of Geography - Five themes in Geography - Our address in the Universe- Solar System. Relief features of different orders- First, second and third order- explanation of each order relief features. UNIT II MOTIONS OF EARTH (K2) 9 hours Shape and size of the Earth - Motions of the Earth - Rotation and Revolution and effects UNIT III **LATITUDE & LONGITUDE** 9 hours (K3) Parallels and Meridians: Latitudes - Climatic zones; - Longitudes - Basis of time calculation -

International Date line.

(Self Study: Time calculation)

# UNIT IV IMPORTANT GEOGRAPHICAL PHENOMENON(K3) 9 hoursGeographical phenomena: Eclipses, Tides, Geysers & Hot Springs, Aurora Borealis &<br/>Aurora Australis, lightning & thunder, Coral Reefs, Tornadoes.<br/>(Self Study: Eclipses)

#### UNIT V SOBRIQUETS IN GEOGRAPHY (K2) 9 hours

Geographical sobriquets: Detailed explanation of why they are called so : Land of a thousand lakes - Key to the Mediterranean - Gift of the Nile - Land of the midnight sun - Sorrow of China - Land of living Fossils- Land of Maple leaf - Land of Thunderbolt- Roof of the World- - The smoke that thunders- Gate of Tears- Land of Rising Sun- Emerald Isle- Land of Morning Calm- City of Eternal Springs.

#### **TEXT BOOK:**

1. Leong, G.C. (1994). Certificate Physical and Human Geography. India : Oxford Publication

#### **REFERENCE BOOKS :**

- 1. Monkhouse, F. J. (1967). Principle of physical Geography. London: Hodder&Stroghten.
- 2. Savindra, S. (2008). Physical Geography. Allahabad: PrayagPustakBhawan.
- 3. Strahler, A. N. (1968). Physical geography. New York: Wiley.

S.No.	Topics	Links
1	<u>Unit 2</u> Latitude & Longitude	https://www.nationalgeographic.org/activity/introduction-latitude- longitude/
2	<u>Unit 4</u> Solar Eclipse	https://www.nationalgeographic.com/science/space/solar- system/solar-eclipse-article/
3	Tides	https://www.nationalgeographic.org/encyclopedia/tide/
4	Auroras	https://www.nationalgeographic.com/science/space/universe/auroras- heavenly-lights/
5	Tornadoes	https://www.nationalgeographic.com/environment/natural- disasters/tornadoes/

#### **BLENDED LEARNING**

	PO	PSO	PSO	PSO											
	1	2	3	4	5	6	7	8	9	10	11	12	l	2	3
CO1	3	1	1	2	2	1	2	2	1	3	1	2	3	2	2
CO2	3	3	1	3	2	1	1	1	1	3	1	3	3	2	2
CO3	1	2	2	2	2	1	2	2	1	3	1	3	3	2	2
<b>CO4</b>	3	3	2	3	3	1	1	2	2	3	1	2	2	2	3
CO5	3	2	2	3	2	3	1	1	2	3	1	3	3	3	3
CO6	3	1	3	1	2	1	1	2	3	3	3	1	2	3	1

#### Mapping of COs with POs and PSOs

Correlation: 3 – High; 2 – Medium; 1 - Low

S.No.	Assessment Method	Frequency of Assessment
1	End Semester Examinations	Once in a semester
2	CIA 1	Once in a semester
3	CIA 2	Once in a semester
4	Model	Once in a semester
5	Assignment (Unit I & II)	Twice in a Semester
6	Seminar (Unit III & IV)	Twice in a Semester
7	Class Participation (Or) Group	Once in a Semester
	Discussion(Unit V)	

Course designed by: Dr. Sreelakshmy M	Verified by HOD: Dr. Jyothirmayi P
Checked by CDC: Dr.K.Jayanthi	Approved by :
	Principal

#### **SEMESTER: IV**

#### COURSE CODE: 23UGE4C04

#### TITLE OF THE COURSE : CORE- OCEANOGRAPHY AND HYDROLOGY (Employability skill)

#### **COURSE OBJECTIVES:**

- To understand the basic concept of world ocean and its distribution
- To understand the dynamics of ocean water
- To analyse the facets of hydrology.
- To analyse the cyclic movement of surface water in various forms.

#### **COURSE OUTCOMES:**

After the completion of the course the student will be able to:

CO1	Understand the relief of the ocean floor and the its physical components	K2
CO2	Explain the dynamics of ocean water.	K2
CO3	Describe the basic principles of hydrology.	K2
CO4	Analyse the basic causes and effects of flood.	K4
CO5	Apply the knowledge of groundwater resources in its utilization	K2

#### SYLLABUS

### Credits:4Instructional hours: 75hrsUNIT IOCEONOGRAPHYK2I5 hours

Introduction to Oceanography; surface configuration of the ocean floor; Bottom relief of Atlantic, Pacific, and Indian Oceans;

Temperature of Ocean water: horizontal and vertical distribution;

Salinity of Oceanic water: composition, sources and horizontal and vertical distribution. Density of sea water

#### UNIT IICIRCULATION OF OCEAN WATERK215 hours

Circulation of oceanic water: waves, currents, streams, drifts; Currents of Atlantic, Pacific and Indian Ocean;

Tides –Causes and Types; Coral reefs: types & characteristics; Ideal condition for coral formation.

Coastal environment; Marine deposits, Importance of ocean as storehouse of resources.

(Self Study: Coral reefs)

#### UNIT III HYDROLOGY K2 15 hours

Introduction to Hydrology- World's water resources - Hydrologic cycle. Properties of water, Water balance.

Precipitation: Forms and Types.

Evaporation and Evapo-transpiration; factors.

(Beyond the Curriculum: Potential Evapo Transpiration)

# UNIT IVCATCHMENT & GROUNDWATER HYDROLOGYK415 hoursCatchment hydrology: Classification of Streams, stream pattern and stream order.Runoff-factors - Floods and droughts; nature and causes- HydrographsGroundwater; Occurrence and movement of groundwater, Darcy's law governingground water flow , Factors governing ground water flow.Aquifers; Types.(Self Study: Aquifers)

#### UNIT V WATER CONSERVATION K2 15 hours

Water Harvesting: Need and importance of water harvesting.Some ancient water harvesting structures: Qanats, Surangas, Johads, Talabs.Water harvesting techniques: rainwater collection, small dams, runoff enhancement, runoff collection, ponds, tanks, natural and artificial ground water recharge methods.

#### **TEXT BOOKS:**

1. Trujillo Alan P & Thurma Harold V (2016) Essentials of Oceanography, Prentice-Hall of India Pvt.ltd

2. Todd. David K.and Mays larry W (2011), Groundwater Hydrology, Wiley.

#### **REFERENCE BOOKS:**

- John A. Knauss & Newell Garfield (2016) Introduction to Physical Oceanography, Waveland Pr Inc; 3rd edition.
- 2. Siddhartha, K. (2013) Oceanography A Brief Introduction, National Book Trust, New Delhi.
- 3. Garrison Tom, (2011) Essentials of Oceanography. Brooks/ Cole, C.A., USA,. (International Ed.).
- Raghunath H.M (2015) Hydrology: Principles, Analysis, Design, New age International Publishers.
- 5. Raghunath H.M (2007) Groundwater, New Age International Publishers.
- 6. Rao Nandipati Subba (2016) Hydrogeology: Problems with solutions, PHI.

#### 7. Saxena R.N & Gupta D.C (2017), Elements of Hydrology and Groundwater PHI.

#### **BLENDED LEARNING**

S.No.	Topics	Links
1	Unit 2	https://www.nationalgeographic.org/topics/waves/?q=&page=1&per_page=25
	Sea waves	
2	Tides	https://www.nationalgeographic.org/media/earths-tides/
3	Ocean	https://www.noaa.gov/education/resource-collections/ocean-coasts/ocean-
	Currents	<u>currents</u>
4	<u>Unit 4</u>	https://www.usgs.gov/special-topic/water-science-school/science/watersheds-
	Watershed	and-drainage-basins?qt-science_center_objects=0#qt-science_center_objects
5	Runoff	https://www.usgs.gov/special-topic/water-science-school/science/runoff-
		surface-and-overland-water-runoff?qt-science_center_objects=0#qt-
		science_center_objects
6	Aquifers	1. https://www.usgs.gov/special-topic/water-science-school/science/aquifers-
		and-groundwater?qt-science_center_objects=0#qt-science_center_objects
		2. https://www.nationalgeographic.org/encyclopedia/aquifers/

#### Mapping of COs with POs and PSOs

	POl	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	POl0	POll	POl2	PSOl	PSO2	PSO3
CO1	3	1	1	3	1	2	2	1	1	3	1	2	3	1	1
CO2	3	3	1	1	3	2	2	2	1	3	2	2	3	2	1
CO3	3	3	2	2	1	2	2	2	2	3	1	1	3	1	2
<b>CO4</b>		1	2	1	1	2	2	2	2	3	1	2	3	2	1
CO5	3	3	2	2	1	3	2	2	2	3	2	1	3	2	2
CO6	3	1	1	1	1	2	2	3	2	3	3	1	3	1	1

**Correlation:** 3 – High; 2 – Medium; 1 - Low

S.No.	Assessment Method	Frequency of Assessment
1	End Semester Examinations	Once in a semester
2	CIA 1	Once in a semester
3	CIA 2	Once in a semester
4	Model	Once in a semester
5	Assignment (Unit I & II)	Twice in a Semester
6	Seminar (Unit III & IV)	Twice in a Semester
7	Content Writing Or Class Participation(Unit V)	Once in a Semester

Course designed by: Dr. Sreelakshmy M	Verified by HOD: Dr. Jyothirmayi P
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Checked by CDC: Dr.K.Jayanthi	Approved by :
	Principal

#### **SEMESTER: III & IV**

#### COURSE CODE: 23UGE4CP2 TITLE OF THE COURSE: CORE PRACTICAL II - MAP ANALYSIS (Skill Development)

#### (Based on Core course Climatology, Allied courses Fundamentals of Cartography and Cartographic Methods & Map making)

#### **COURSE OBJECTIVES :**

- ✤ To make the student understand the theoretical concepts better.
- ◆ To acquire the ability to interpret the weather map and topographical map.
- ◆ To Understand the dynamic interrelationship between Physical and cultural features.
- ✤ To analyze the measures of Centro graphic distribution and spatial distribution.

#### **COURSE OUTCOMES:**

After the completion of the course the student will be able to:

CO1	Interpret the pressure systems and the resultant weather patterns			
CO2	Interpret Indian toposheet in detail through the Conventional signs and	K3		
	symbols and to create Cartographic Appreciation			
CO3	Interpret the topography of a region with the help of conventional signs and	K3		
	symbols			
CO4	Compute mean, standard distance, and Nearest neighbor analysis for the	K3		
	given area			
CO5	Transfer the diagrammatic representation and results of practical works	K4		
	through a record presentation and preparation of field trip report			

#### Credits:4

#### **Instructional hours: 60**

#### UNIT I

#### 6 hours

**Survey of India Topographical Maps**: Classification, Numbering, Conventional Signs & Symbols, Cartographic appreciation of SOI topographic maps.

(l exercise each)

Interpretation of topographic Maps

(2 exercises each)

#### UNIT II

Thematic Maps: Meaning & Types

Interpretation of NATMO thematic Maps

(2 exercises each)

#### UNIT III

Measures of Centro graphic Distribution.

#### 6 hours

6 hours

Mean Centre, Standard Distance, Median Centre

#### Measure of Spatial Distribution .

Nearest Neighbour Analysis.

(2 exercises each)

#### UNIT IV

#### 6 hours

**Weather Interpretation**: Weather symbols, Representation of atmospheric features: Temperature, pressure and rainfall data by simple line Graph, multiple line graph, simple bar graph, compound bargraph, ergo-graph, windrose diagram, climo-graph and hythergraph.

(2 exercises each)

**Weather maps**: Preparation of weather maps in India; Symbols used in weather maps; Beaufort's Wind Scale- Interpretation of Indian daily weather maps (June/July, October and January).

(l exercise each)

#### UNIT V

- 1. Field trip report with photos and route map
- 2. Record

#### **TEXT BOOKS:**

- 1. Monk house, F.J. and Wilkinson, H.R., (1989), Maps and Diagrams, B.I.Publications, New Delhi.
- 2. Singh, R. L., (2005), Elements of Practical Geography, Kalyani Publishers, New Delhi.
- 3. Gopal Singh, (1996), Map work and practical geography, Vikas Publishing House, Mumbai

#### **REFERENCE BOOKS**

- 1 Singh L. R. (2016) Fundamentals of Practical Geography, Sharda Pustak Bhawan, Allahabad.
- 2 Sarkar, A. (2015) Practical geography: A systematic approach. Orient Black Swan Private ltd., New Delhi.
- 3 Singh Gopal (2012). Map Work and Practical Geography. Vikas Publishing, New Delhi.
- 4 Singh, R.L. (1991) Elements of Practical Geography. Kalyani, New Delhi.
- 5 Monkhouse, F.J. (1982) Maps and Diagrammes. Methuen, 35ondon.

#### Mapping of COs with POs and PSOs

#### 6 hours

	PO l	PO 2	<b>PO</b> 3	<b>PO</b> 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO ll	PO l2	PSO l	PSO 2	PSO 3
CO1	2	3	3	3	3	2	3	3	3	3	3	2	3	2	3
CO2	3	3	3	2	3	3	3	3	3	3	2	3	2	3	3
CO3	3	3	3	2	2	3	3	3	3	3	3	3	3	3	3
CO4	3	3	3	3	3	3	2	2	3	3	2	2	2	3	3
CO5	3	3	3	2	3	3	3	3	3	3	2	3	2	3	3

**Correlation:** 3 – High; 2 – Medium; 1 - Low

#### ASSESSMENT TOOLS

S.No.	Assessment Method	Frequency of Assessment
1	End Semester Examinations	Once in a year
2	CIA 1	Once in a year
3	CIA 2	Once in a year
4	Model	Once in a year
5	Regularity	Once in a year
6	Attendance	Once in a year
7	Record	Once in a year

Course Designed by: Dr. Sreelakshmy M	Verified by HOD: Dr. Jyothirmayi P
Checked by CDC: Dr.K.Jayanthi	Approved by :
	Principal

#### **SEMESTER: IV**
#### COURSE CODE: 23UGE4A04

# TITLE OF THE COURSE: ALLIED - CARTOGRAPHIC METHODS AND MAP MAKING (Employability Skill)

#### **COURSE OBJECTIVES :**

- To make the student understand the procedures and techniques of map design.
- To develop a skill among the students to prepare maps, keeping in view the principle of cartography and also user requirements.
- To apprise the student with latest trends in the development of cartography as a tool in mapping thematic and quantitative data to facilitate spatial analysis.

#### **COURSE OUTCOMES:**

After the completion of the course the student will be able to:

CO1	Explain the basic concepts and techniques of map making.	K2
CO2	Distinguish Qualitative and Quantitative maps.	K2
CO3	Understand various methods of map reproduction techniques.	K2
CO4	Understand the recent developments in digital cartography and recall the map makers of India.	K2
CO5	Know and classify the sources of data for digital cartography.	K3

#### SYLLABUS

# Credits: 4 Instructional hours:60

# UNIT I MECHANICS OF MAP CONSTRUCTION K2 l2 hours

Mechanics of map Construction: Drawing materials, surfaces, equipment and instruments.

Methods of mapping the terrain, weather and climatic data and socio-economic data.

UNIT II THEMATIC MAPPING	K2	l2hours
Thematic Maps: Simple and Complex Thematic maps		

Qualitative Maps: Choroschematic and chorochromatic Maps.

Quantitative Maps: Dot map, Isopleth, choropleth Map.

Problems of Thematic Mapping

Constructing maps for the Children, Visually challenged and Neo-literates

(Self Study: Choroschematic and chorochromatic Maps)

#### UNIT III MAP REPRODUCTION K2

12 hours

Map Reproduction. **Reproduction Process-**Duplicating process: Stencil, Blue print, and Silk Screen print, Xerox. Printing Process: Woodblock, Etching, lithography, Dot Matrix print, laser print, Inkjet print and 3D printing. Map cataloguing and marketing. UNIT IV SOURCES OF MAP DATA **K2** 12 hours Sources of data for digital Cartography- spatial and attribute data. Spatial data- Maps, Toposheets, Satellite Image and Aerial photographs- comparison these - Maps as a Data source - Representation of Point, line and Area data. of all (Self Study: Representation of Point, line and Area data) **UNIT – V MAP MAKERS & RECENT TRENDS K3 l2 hours** Map makers in India and their functions SOI, NATMO, NRSC, GSI, IIRS. Recent trends and developments in computer assisted cartography.

International cooperation in Cartography.

#### **TEXT BOOKS** :

- 1. Robinson A. H., (2006) .Elements of Cartography, John willey, London.
- 2. Mishra R. P. and Ramesh A., (2002).Fundamentals of Cartography, Concept Publishing, Delhi.

#### **REFERENCE BOOKS:**

- 1. Dent B. D., (1999) .Cartography: Thematic Map Design, (Vol. 1), McGraw Hill.
- 2. Gopal Singh, (2006). Map work and Practical Geography, Vikas Publishing House.
- 3. Gupta K. K and Tyagi V. C.(1992) Working with Maps, Survey of India, DST, New Delhi.
- 4. lawrence G.R.P (1979).Cartographic methods, Methuen, London.
- 5. Monkhouse. F. J. 2010: Maps and diagrams, Methuen, London
- 6. Raize, 1982: Principles of Cartography, Mc Graw Hill & Company, New York.
- 7. Singh R. l. and Singh R. P. B., (2015): Elements of Practical Geography, Kalyani Publishers.

 Steers J. A., (1965). An Introduction to the Study of Map Projections, University of London

#### **BLENDED LEARNING**

S.No.	Topics	Links
1	<u>Unit 2</u> Thematic Maps	https://www.cdc.gov/dhdsp/maps/gisx/resources/thematic- maps.html
2	Thematic Maps	https://www.sciencedirect.com/topics/agricultural-and- biological-sciences/thematic-maps
3	<u>Unit 4</u> Digital Cartography	https://www.geospatialworld.net/videos/what-is-digital- cartography/

#### Mapping of COs with POs and PSOs

	PO	PSO	PSO	PSO											
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
CO1	3	3	3	3	3	3	1	1	1	3	1	1	3	1	3
CO2	3	3	3	3	2	2	3	1	1	3	1	1	3	1	3
CO3	3	2	2	1	2	1	2	3	2	3	1	2	3	2	1
CO4	3	1	1	1	2	1	2	3		3	1	2	3	2	1
CO5	3	1	1	1	2	1	3	3	1	3	1	1	3	1	1

**Correlation:** 3 – High; 2 – Medium; 1 - Low **ASSESSMENT TOOLS** 

S.No.	Assessment Method	Frequency of Assessment
1	End Semester Examinations	Once in a semester
2	CIA 1	Once in a semester
3	CIA 2	Once in a semester
4	Model	Once in a semester
5	Assignment (Unit I & II)	Twice in a Semester
6	Seminar (Unit III & IV)	Twice in a Semester
7	Class Participation (Or) Group Discussion(Unit V)	Once in a Semester

Course designed by: Dr. Sreelakshmy M	Verified by HOD: Dr. Jyothirmayi P
Checked by CDC: Dr.K.Jayanthi	Approved by : Principal

#### SEMESTER: III & IV COURSE CODE: 23UGE4API

# TITLE OF THE COURSE: ALLIED PRACTICAL - CARTOGRAPHIC ANALYSIS (Skill Development)

# (Based on Allied courses Fundamentals of Cartography and Cartographic Methods & Map making)

#### **COURSE OBJECTIVES :**

- To make the student perceive the intended knowledge in techniques of map design.
- To develop a skill among the students to prepare maps, keeping in view the principle of cartography and also user requirements.
- To understand different methods of map reproduction techniques.

#### **COURSE OUTCOMES:**

After the completion of the course the student will be able to:

CO1	Explain the Diagrammatic Representation of Geographical Data	K2
CO2	Understand the Different types of Distribution maps and their characteristics	K2
CO3	Understand the concept of Map Projection and its significance	K2
CO4	Explain the Diagrammatic Representation of Geographical Data using MS	K2
	Excel	
CO5	Transfer the diagrammatic representation and results of practical works	K3
	through a record presentation.	

Credits: 4

#### SYLLABUS

#### **Instructional hours: 60**

#### UNIT I

#### 6 hours

**Diagrammatic representation of geographical data**: types and their uses;

One-dimensional: line diagram, bar diagrams- simple bar, compound bar, multiple bar, percentage bar diagram; pyramid diagram- age-sex pyramid.

Two-dimensional: Ring, Proportional circle, Square and Rectangular diagrams, Piediagram.

Three dimensional: Cube, and Sphere diagrams.

(two exercises each)

**K2** 

#### UNIT II

**K2** 

**Distribution maps**: Dot; Mono and multiple dot, Isopleth(Isotherm, isohyet and isobar), Choropleth, Chorochromatic and Choro-schematic methods and their characteristics.

(Two exercise each)

#### UNIT III

#### Map Projections K2

Map Projection: General principles and classification of Projections: Construction, Properties, limitations and uses of projections.

Zenithal projections: Gnomonic, Stereographic and Orthographic (Polar cases), Zenithal equal area and equidistant projections- construction, properties, uses and limitations.

Conical projections: One standard parallel, two standard parallels, Bonne's and Polyconic projection- construction, properties, uses and limitations.

Cylindrical projections: Simple cylindrical, Equal area cylindrical, Mercator's projection- construction, properties, uses and limitations.

(Two exercises each)

K3	6 hours
	K3

Preparation of Simple line, Multiple line, Simple bar, Multiple bar, compound bar, percentage bar and pie diagram in MS Excel.

(Two exercises each)

#### UNIT V

Record

#### **TEXT BOOKS:**

- 1. Monk house, F.J. and Wilkinson, H.R., (1989), Maps and Diagrams, B.I.Publications, New Delhi.
- 2. Singh, R. L., (2005), Elements of Practical Geography, Kalyani Publishers, New Delhi.
- 3. Gopal singh, (1996), Map work and practical geography, Vikas Publishing House, Mumbai

#### **REFERENCE BOOKS:**

- 1 Singh L. R. (2016) Fundamentals of Practical Geography, Sharda Pustak Bhawan, Allahabad.
- 2 Sarkar, A. (2015) Practical geography: A systematic approach. Orient Black Swan Private ltd., New Delhi.
- 3 Singh Gopal (2012). Map Work and Practical Geography. Vikas Publishing, New Delhi.
- 4 Singh, R.L. (1991) Elements of Practical Geography. Kalyani, New Delhi.
- 5 Robinson A.H. et. al., (1995) : Elements of Cartography. 6th ed. John Wiley, New York.
- 6 Misra, R.P. & A. Ramesh. (1989) Fundamentals of Cartography. Concept, New Delhi.

#### 6 hours

#### 6 hours

#### 6 hours

	PO	PSO	PSO	PSO											
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
CO1	3	3	2	2	3	3	1	1	3	3	3	2	3	1	3
CO2	3	3	2	1	2	3	3	2	2	2	2	2	3	2	3
CO3	3	3	2	1	2	1	2	2	2	2	2	2	3	1	3
CO4	3	3	2	3	3	3	2	2	3	2	3	1	3	2	3
CO5	2	2	2	1	1	1	3	1	1	1	2	2	1	1	2

# Mapping of COs with POs and PSOs

**Correlation:** 3 – High; 2 – Medium; 1 - Low

#### ASSESSMENT TOOLS

S.No.	Assessment Method	Frequency of Assessment
1	End Semester Examinations	Once in a Year
2	CIA 1	Once in a Year
3	CIA 2	Once in a Year
4	Model Exam	Once in a Year
5	Regularity	Once in a Year
6	Record	Once in a Year
7	Attendance	Once in a Year

Course Designed by: Dr. Franchina Mary A	Verified by HOD: Dr. Jyothirmayi P
Checked by CDC: Dr.K.Jayanthi	Approved by :
	Principal

#### **SEMESTER: IV**

#### COURSE CODE: 23UGE4SB2

# TITLE OF THE COURSE : SKILL BASED- GEOGRAPHY THROUGH MAPS

#### (Skill Development)

#### **COURSE OBJECTIVES :**

- To stimulate the interest of the student and improve their understanding of the 'what & where' of geographic features on the earth
- To highlight the vital role of maps in geography
- To develop the skills of map reference and map drawing

#### **COURSE OUTCOMES:**

After the completion of the course the student will be able to:

C01	Understand the divisions of the land into continents, countries, archipelagos	K2
	and peninsulas and capes.	
CO2	Differentiate between the different divisions of water, their location and	K2
	unique features.	
CO3	Distinguish between the major relief first order relief features and their	K2
	locations.	
CO4	Analyze in detail the major geopolitical regions of the world	K4
CO5	Examine a few of the outstanding natural and cultural geographic features	K4

#### **SYLLABUS**

#### Credits:2

#### Instructional hours: 45

#### UNIT I LAND FEATURES K2

#### 9 hours

Divisions of the land:

Continents- number of countries in each - largest and smallest countries in each continent with their capitals

Island Archipelagos – largest –The Polynesia, The Melanesia, The Micronesia & The Antilles.

Peninsula, cape, Isthmus. (examples from each continent)

(All features and places to be located on the map and described)

#### UNIT II WATER BODIES K2

#### 9 hours

Divisions of the water:

Oceans of the world - Coastal seas- location and prominent rivers flowing into them

	Inland seas- location in each continent and prominent rivers flowing into them
	Inland lakes in each continent (largest, highest, saltiest)
	Gulfs, Bays and straits (examples from each continent)
	(All features and places to be located on the map and described)
	(Self Study: Inland lakes in each continent)
UNIT	THIRELIEF FEATURES K29 hours
	Relief Features:
	Mountains – prominent mountain chain in each continent. Highest mountain / peak in
	each continent - Plateaus – prominent plateaus in each continent
	Plains - prominent plains in each continent - Deserts – prominent deserts in each
	continent
	(All features and places to be located on the map and described)
	(Self Study: Deserts)
UNIT	TV GEOPOLITICAL REGIONS K4 9 hours
	Geopolitical regions: Meaning and Significance.
	Scandinavia, Nordic, The Balkans, The Baltic states, Caucasus,
	Sahel, Maghreb, The Middle East, Near East
	(All features and places to be located on the map and described)
UNIT	V NATURAL FEATURES K4 9 hours
	locate and describe the following:
	Important Natural features: Grand Canyon, Great Barrier Reef, Niagara Falls, Victoria
	Falls, Angel Falls, Sundarbans, Paricutin Volcano, Ayers Rock, River Amazon & Nile,
	Dead sea.
	Important Man-made Features: Great wall of China, Machu Pichu, Suez Canal,
	Panama Canal, Trans-Siberian Railway.
	(All features and places to be located on the map and described)

#### **TEXT BOOKS:**

- 1. Sharma P. (2005) World Geography Mapping. Unique publishers, New Delhi.
- 2. K.Siddharth & S. Mukerjee (2017) edition. Geography through Maps. Kitab Mahal, Allahabad.

#### **REFERENCE BOOKS:**

- 1. Oxford School Atlas( 2012)Oxford University Press, New Delhi
- 2. TTK Atlas of the world
- 3. The Times Atlas of the World (1987) Times Books, London

#### **BLENDED LEARNING**

S.No.	Topics	Links
1	Unit 2	https://www.noaa.gov/ocean-coasts
	Ocean	
2	Gulf	https://www.nationalgeographic.org/encyclopedia/gulf/
3	Bays	https://www.nationalgeographic.org/encyclopedia/bay/
4	<u>Unit 3</u>	https://www.nationalgeographic.com/science/earth/surface-of-the-
	Mountains	earth/mountains/
5	Plains	https://www.nationalgeographic.org/encyclopedia/plain/
6	Deserts	https://www.nationalgeographic.com/environment/habitats/deserts/

#### Mapping of COs with POs and PSOs

	PO	PSO	PSO	PSO											
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
CO1	3	1	1	3	1	2	2	1	1	3	1	2	3	1	1
CO2	3	3	1	1	3	2	2	2	1	3	2	2	3	2	1
CO3	3	3	2	2	2	2	2	2	2	3	1	1	3	1	2
CO4		1	2	1	2	2	2	2	2	3	1	2	3	2	1
CO5	3	3	2	2	2	3	2	2	3	3	2	1	3	2	2

**Correlation:** 3 – High; 2 – Medium; 1 - Low

S.No.	Assessment Method	Frequency of Assessment
1	End Semester Examinations	Once in a semester
2	CIA 1	Once in a semester
3	CIA 2	Once in a semester
4	Model Exam	Once in a semester
5	Assignment (Unit I & II)	Twice in a semester
6	Seminar (Unit III & IV)	Twice in a semester
7	Quiz or Field Studies(Unit V)	Once in a semester

Course Designed by: Dr.Sreelakshmy M	Verified by HOD: Dr. Jyothirmayi P
Checked by CDC: Dr.K.Jayanthi	Approved by :
	Principal

**SEMESTER: V** 

#### COURSE CODE: 23UGE5C06

#### TITLE OF THE COURSE: CORE : WORLD REGIONAL GEOGRAPHY

#### **COURSE OBJECTIVES :**

- To demarcate the regions based on their physical and cultural characteristics.
- To introduce the students about the broad regional divisions of the world located in distant realms.
- To appraise the students about resources: their potentials; utilization and sustainability aspects.

#### **COURSE OUTCOMES:**

After the completion of the course the student will be able to:

CO1	Explain the concept and types of regions.	K2
CO2	Understand the location, surface features, climatic conditions and economy	K2
	of equatorial and tropical regions.	
CO3	Express the location, surface features, climatic conditions and economy of	K2
	warm temperate regions	
<b>CO4</b>	Explain the location, surface features, climatic conditions and economy of	K2
	cool temperate regions.	
CO5	Summarize the location, surface features, climatic conditions and economy	K2
	of Polar regions.	

#### **SYLLABUS**

#### Credits:5

# **Instructional hours:60**

# UNIT – I REGIONS K2 l2hours

Approaches in Geography- systematic and regional.

Region; Concept & Types.

Methods of regionalization - Identification of formal regions& functional regions landforms – Types - Climate – Types. Effect of landform and climate on Natural Regions.

(Self Study: Landforms – Types - Climate – Types)

UNIT – II EQUATORIAL & TROPICAL REGION K2 l2hours Location, surface features, climatic conditions and economy and life style of -Equatorial region- Tropical region : Monsoon, grassland, deserts.

(Beyond the Curriculum: Amazon Basin: Current Scenario)

#### UNIT – III WARM TEMPERATE REGION K2 l2hours

Location, surface features, climatic conditions and economy and life style of -Warm temperate regions: Mediterranean, Temperate grasslands, China type.

# UNIT IVCOOL TEMPERATE REGIONK2l2hoursLocation, surface features, climatic conditions and economy and life style of -Cooltemperate regions – West coast marine type, Siberian type, Laurentian type of Region.UNIT – VPOLAR REGIONK2l2hoursLocation, surface features, climatic conditions and economy and life style of – Taiga

& Tundra type.

(Self Study: Polar region)

#### **TEXT BOOKS:**

- 1. Heintzelman, O. H., & Highsmith, R. M.(1967), World Regional Geography. Englewood Cliffs, NJ: Prentice-Hall.
- Goh Cheng Leong.(2016), Certificate Physical & Human Geography, Oxford University Press, New Delhi
- 3. Ahmad, K. S. (1950), Major natural regions: (a treatment of the world on the basis of natural regions). New Delhi: S. Chand & Co.

#### **REFERENCE BOOKS:**

- 1. De, B. H., & Muller, P. O. (2003), Geography: realms, regions and concepts. Hoboken, NJ: Wiley.
- 2. English, P. W., Miller, J. A., & Cotter, J. V. (1989), World regional geography: A question of place. New York: Wiley.
- Minshull, R. M. (1967), Regional geography: Theory and practice. Chicago: Aldine Pub. Co.

#### **BLENDED LEARNING**

S.No.	Topics	Links
1	Unit l Region	https://www.nationalgeographic.org/encyclopedia/region/
2	Climate	https://www.nationalgeographic.org/topics/resource-library-
		<u>climate//q=&amp;page=1&amp;per_page=25</u>
3	<u>Unit 2</u>	https://www.nationalgeographic.org/encyclopedia/desert/
	Desert	

#### Mapping of COs with POs and PSOs

	PO l	<b>PO</b> 2	PO 3	<b>PO</b> 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO l2	PSO 1	PSO 2	PSO 3
CO1	1	2	2	1	3	3	3	1	1	2	1	1	3	1	1
CO2	1	2	1	1	3	3	3	1	1	2	1	1	3	1	1
CO3	1	2	2	1	3	3	3	1	1	2	1	1	3	1	1
CO4	1	2	2	1	3	3	3	1	1	2	1	1	3	1	1
CO5	1	2	1	1	3	3	3	1	1	2	1	1	3	1	1

Correlation: 3 – High; 2 – Medium; 1 - Low

#### ASSESSMENT TOOLS

S.No.	Assessment Method	Frequency of Assessment
1	End Semester Examinations	Once in a semester
2	CIA 1	Once in a semester
3	CIA 2	Once in a semester
4	Model	Once in a semester
5	Assignment (Unit I & II)	Twice in a semester
6	Seminar (Unit III & IV)	Twice in a semester
7	Group Discussion or Case Studies(Unit V)	Once in a semester

Course designed by: Dr. Meenakshi P	Verified by HOD: Dr. Jyothirmayi P
Checked by CDC: Dr.K.Jayanthi	Approved by :
	Principal

#### **SEMESTER: V**

#### COURSE CODE: 23UGE5C07

# TITLE OF THE COURSE: CORE : FUNDAMENTALS OF REMOTE SENSING (Employability Skill)

#### **COURSE OBJECTIVES :**

- To introduce to the students the basic principles of Remote Sensing
- To impart knowledge on Ariel photography, and photogrammetry.
- To introduce different types of satellites and their sensor characteristics.
- To outline the latest advances in remote sensing.

#### **COURSE OUTCOMES:**

After the completion of the course the student will be able to:

Explain the basic concepts and components of Remote sensing.	K2
Summarize the concepts of photo interpretation.	K2
Understand the key concept of earth observation satellites and its	K2
techniques	
Identify and recognize the various Earth Observation satellites and the	K2
Indian Remote sensing satellites and their sensor parameters.	
Analyse the applications of remote sensing in various fields	K3
	Explainthe basic concepts and components of Remote sensing.Summarize the concepts of photo interpretation.Understand the key concept of earth observation satellites and its techniquesIdentify and recognize the various Earth Observation satellites and the Indian Remote sensing satellites and their sensor parameters.Analyse the applications of remote sensing in various fields

#### SYLLABUS

# Credits: 5Instructional hours : 60UNIT-I REMOTE SENSINGK212 hours

Introduction to Remote Sensing: History of Remote Sensing, Energy sources and radiation Principles, EMR and Spectrum- Interaction of EM Radiation with atmosphere and earth surface; Reflection, Absorption and Transmission- Atmospheric windows, Types of Remote Sensing; Resolution.

(Self Study: Atmospheric windows)

#### UNIT- IIAERIEL REMOTE SENSINGK212 hours

Aerial Photography and Photogrammetry: Photographic Interpretation and Application of Aerial Photos. Difference between map and aerial photograph, Types of Aerial photographs- Scale and Ground coverage of aerial photographs. Elements of aerial photo interpretation.

#### UNIT – III SATELLITE REMOTE SENSING K2 l2 hours

Satellite Remote Sensing Principles: Data Acquisition Procedure, Platforms and sensors, types of satellites and orbits, land observation Satellites characteristics and application.

Active & Passive Remote Sensing systems-

Principles of Thermal Remote Sensing & its applications

Principles of Microwave Remote Sensing & its applications

#### RADAR, LiDAR, Ground Penetrating RADAR (INDUSTRY 4.0).

(Beyond the Curriculum : Multi Spectral & Hyper Spectral Remote Sensing)

UNIT – IV SATELLITES K2

Major Earth Observation Satellites:

LANDSAT, Sentinal, ALOS, EROS

Indian Remote Sensing Satellite Series.

(Self Study: LANDSAT, ALOS, EROS)

#### UNIT-V APPLICATIONS

#### 12 hours

12 hours

Application of Remote Sensing: agriculture, natural resource management, coastal and oceanographic studies, urban and rural planning and disaster management.

#### **TEXT BOOK:**

 Lillesand Thomas M. & Kiefer Ralph(2015) Remote Sensing and Image Interpretation Third Edition John Wiley, 7<sup>th</sup> ed.

#### **REFERENCES BOOKS:**

1. Campbell John B.(2011)Introduction to Remote Sensing, Taylor & Francis.

**K3** 

- George Joseph(2018) Fundamentals of Remote Sensing; Universities Press India Pvt ltd, Hyderabad, India, 3<sup>rd</sup> ed.
- 3. Floyd F. Sabins (2007) Remote Sensing and Principles and Image Interpretation,

Waveland Pr Inc; 3rd edition

- 4. Paul Wolf, (2000) Elements of Photogrammetry, McGraw Hill.
- 5. Toni Schenk(1999) Digital Photogrammetry, Volume I., TerraScience.

6. Robinson, A.; Morrison, J.; Muehrcke, P.; Kimmerling, A.; & Guptill, S.(2009) Elements of Cartography New York: Wiley. 6<sup>th</sup> ed.

#### **BLENDED LEARNING**

S.No.	Topics	Links
1	Unit l	https://earthdata.nasa.gov/learn/remotesensing#:~:text=Remote%2
	Remote Sensing	Osensing%20is%20the%20acquiring,record%20reflected%20or%2
		0emitted%20energy.
2	Remote Sensing	https://www.usgs.gov/faqs/what-remote-sensing-and-what-it-
		used?qt-news_science_products=0#qt-news_science_products
3	Remote Sensing	https://earthdata.nasa.gov/learn/backgrounders/remote-sensing
4	Unit 3	https://earthdata.nasa.gov/learn/remote-sensors
	Sensors	

# Mapping of COs with POs and PSOs

	PO	РО	PO	PO	PO	PSO	PSO	PSO							
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
CO1	3	3	3	3	3	3	3	3	3	3	1	1	3	3	3
CO2	2	3	3	3	3	3	3	3	2	3	1	2	3	3	3
CO3	2	2	2	2	2	1	3	3	1	3	1	2	3	3	3
CO4	3	1	3	3	2	1	2	3	2	3	1	2	3	3	3
CO5	3	1	3	3	2	1		3	2	3	1	1	3	3	3

Correlation: 3 – High; 2 – Medium; 1 - Low

S.No.	Assessment Method	Frequency of Assessment
1	End Semester Examinations	Once in a semester
2	CIA 1	Once in a semester
3	CIA 2	Once in a semester
4	Model Exam	Once in a semester
5	Assignment (Unit I & II)	Twice in a semester
6	Seminar (Unit III & IV)	Twice in a semester
7	Quiz or Field Studies (Unit V)	Once in a semester

Course designed by: Dr. Sreelakshmy M	Verified by HOD: Dr. Jyothirmayi P				
Checked by CDC: Dr.K.Jayanthi	Approved by :				
	Principal				

# SEMESTER: V COURSE CODE: 23UGE5C08 TITLE OF THE COURSE: CORE- BASICS OF GIS AND GNSS (Employability Skill)

#### **COURSE OBJECTIVES :**

- To explain the fundamentals of the Geographical Information System
- To help students of geography to shift focus from manual cartography to automated cartography to prepare maps of the 21<sup>st</sup> century.
- To provide a new outlook of integrating data with information to create meaningful maps and to understand them.
- To explain the underlying concept behind the Global Positioning System.

#### **COURSE OUTCOMES:**

After the completion of the course the student will be able to:

CO1	Understand the basic concepts and components of Geographical Information System.	K2
CO2	Distinguish spatial and non spatial data and their sources.	K2
CO3	Summarize the various methods of representation and editing of data.	K2
CO4	Explain the applications of the software in geography and the basic tools.	K2
CO5	Describe the basic principles and advantages of Global Navigational Satellite System	K2

#### SYLLABUS

#### Credits: 5

#### Instructional hours:60

UNIT I: GIS **K2** 12 hours Introduction to GIS: meaning, origin and development Components of GIS- functions of GIS (Self Study: origin and development of GIS) **UNIT II: DATA IN GIS K**2 12 hours Data in GIS- Spatial and Attribute; Characteristics of spatial data- co-ordinates, projection, datum; Spatial data sources-field survey, air photos, satellite imageries, GPS; Attribute data sources- census, surveys; Data format- Raster and Vector- their structure, advantages and disadvantages **UNIT III: DATA MANAGEMENT K2** l2 hours Management of Spatial data and attribute data

Data Input in GIS – key board entry, scanning, digitization (manual and automatic), raster to vector conversion, electronic data transfer; Data errors in spatial and attribute data entry; Error rectification methods for spatial and attribute data in raster and vector format; Measurement of length, perimeter and area for both raster and vector. **UNIT IV: GIS SOFTWARES K2** 12 hours GIS Software-Advantages and use of GIS in Geography- Open-source GIS soft wares GIS Data Analysis: Input; Geo-Referencing; Editing and Output; Overlays. Applications of GIS: land Use Mapping; Urban Sprawl Analysis; Forests Monitoring (Beyond the Curriculum: Geocomputing & Mobile GIS) **K2** UNIT V: **GNSS** 12 hours GNSS (INDUSTRY 4.0)- Concept of Satellite based Navigation-History of Satellite Navigation - Basic Principles of GNSS-Segments- Advantages and limitations of **GNSS** Global systems- NAVSTAR -GPS, GLONASS, Galileo, Beidou. Regional Systems- IRNSS (NAVIC), QZSS. (Self Study: GLONASS)

#### **TEXT BOOKS**

- Ian Heywood et.al.:(2012): An introduction to Geographical Information systems(4<sup>th</sup> edition): Pearson, UK
- Michael F. Goodchild et.al(2016):Geographic Information systems and science :4<sup>th</sup> edition: Wiley& sons,New York.

#### **REFERENCE BOOKS** :

- Burrough and McDonnell, (2004). Principles of Geographical Information systems –, Oxford University Press
- 2. Burrough P.A. (1986). Principles of Geographic Information system for land Resources assessment, Oxford University press, New York.
- Chang, & K.-T. (2008). Introduction to geographic information systems. Boston: McGraw-Hill.
- Chang Kang Tsung,(2003). Introduction to Geographic Information Systems; Tata McGraw Hill, New Delhi.
- 5. Davis, B. E. (2001). GIS: A visual approach. Albany, NY: Delmar Thomson learning.
- 6. Korte George.B. (2001). The GIS Book 5th edition. Singapore.: Thomson Asia Private ltd,.

- Mark Monmonier. (1982). Computer-assisted cartography. New Jersey: . Prentice-Hall, Englewood Cliff,.
- 8. Muralikrishna, I. V., & International Space Year Conference on Remote Sensing and Geographic Information Systems. (1992). Remote sensing applications and geographic information systems: Recent trends : ICORG-92. New Delhi: Tata McGraw-Hill.
  - 9. Star J and EstesJ. (1994). Geographic information system: An introduction. New Jersey: .Prentice Hall Englewood Cliff, New Jersey.

#### **BLENDED LEARNING**

S.No.	Topics	Links
1	<u>Unit l</u>	https://www.esri.com/en-us/what-is-gis/overview
	GIS	
2	GIS	https://www.gislounge.com/what-is-gis/
3	<u>Unit 5</u>	https://www.gsa.europa.eu/european-gnss/what-gnss
	GNSS	
4	GPS	https://www.gps.gov/systems/gnss/

#### Mapping of COs with POs and PSOs

	PO	PSO	PSO	PSO											
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
CO1	3	3	2	2	2	3	2	2	3	3	2	2	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	1	2	3	3	3
CO3	3	3	3	3	3	2	1	3	3	3	2	2	3	3	3
CO4	3	3	3	3	3	2	2	3	3	3	2	2	3	3	3
CO5	3	3	3	3	2	3	2	3	3	3	3	3	3	3	3

Correlation: 3 – High; 2 – Medium; 1 - Low

S.No.	Assessment Method	Frequency of Assessment
1	End Semester Examinations	Once in a semester
2	CIA 1	Once in a semester
3	CIA 2	Once in a semester
4	Model	Once in a semester
5	Assignment (Unit I & II)	Twice in a Semester
6	Seminar (Unit III & IV)	Twice in a Semester
7	Quiz Or Group Discussion(Unit V)	Once in a Semester

Course designed by: Sr. Helan Jenifer	Verified by HOD: Dr. Jyothirmayi P				
Checked by CDC: Dr.K.Jayanthi	Approved by : Principal				
	Principal				

#### **SEMESTER: V**

#### COURSE CODE: 23UGE5E01

#### TITLE OF THE COURSE: ELECTIVE: REGIONAL GEOGRAPHY OF ASIA

#### **COURSE OBJECTIVES :**

- To understand the grouping of countries in Asia based on geographical, historical, political compulsions and cultural similarities.
- To evaluate the physical characteristics of land in Asian countries
- To understand the human life, cultural and economic aspects of each region

#### **COURSE OUTCOMES:**

After the completion of the course the student will be able to:

CO1	Understand the location and extent, political divisions, relief, drainage,	K2
	climate, soil, natural vegetation, agriculture, Asia.	
CO2	Explain the utilization of Natural Resources in the Asian Mainland	K2
CO3	Understand the demographic structure of Asia.	K2
CO4	Identify the major regional divisions within Asia.	K2
CO5	Discuss the various Socio-Cultural-Political and Economic Organizations	K2
	of Asia.	

#### SYLLABUS

#### Credits:4

# Instructional hours:60

#### UNIT-I ASIA

#### К2

12 hours

Introduction

Asia in the context of the World- Physiographic Divisions of Asia-climate- Drainage systems of Asia- Soil types, Flora and fauna.

# UNIT-II ECONOMY & RESOURCES K2 l2 hours

Agriculture - Origin.

Geographical distribution and production of Crops - Rice, Sugarcane, Tea, Cotton, Rubber

Mineral resources – Iron ore & Manganese- Power Resources – Coal & Petroleum Industries - Factors of location, distribution and production of - Iron and Steel, cotton textile

#### (Self Study: Rice cultivation in Asia)

#### UNIT-III POPULATION K2

12 hours

Demography

Population; Distribution and density, growth rate, Population Problems

Asia as the motherland of all major religions.

#### (Self Study: Population problems of Asia)

UNIT-IV REGIONS OF ASIA K2 l2 hours

Major Regions of Asia: Countries And Their Major Features.

Northern Asia- Central Asia- Eastern Asia- Southern Asia, South Eastern Asia and West Asia.

#### UNIT V MAJOR ORGANISATIONS K2 l2 hours

The state of economic development of Asian Countries- Trade- Major Economies within Asia.

Major organisations; ASEAN, SAARC, SAFTA, OPEC, CIS.

#### **TEXT BOOKS:**

l. Dudley Stamp (2018) Asia- A regional and Economic Geography, AITBS Publishers, India

2. Ranjit Tirtha(2001) Geography of Asia- Rawat Publications.

#### **REFERENCE BOOKS:**

1. Y.P. Sharma (2015) Geography of Asia- Academic Publication.

2. Charles Daniel Tenney (2015) Geography of Asia Creative Media Partners.

3. Rawson R.R (2007) Monsoon lands of Asia, Routledge publications.

4. Geo Cheng Leong (1971) Certificate Regional Geography: Monsoon Asia, Oxford University Press.

5. Geo Cheng Leong (1971) Certificate Regional Geography: South East Asia, Oxford University Press.

#### **BLENDED LEARNING**

S.No.	Topics	Links
1	Unit 2	https://www.britannica.com/place/Asia/Agriculture
	Agriculture in Asia	
2	South Asia	https://www.britannica.com/place/Asia/South-Asia
3	Unit 5	https://www.opec.org/opec_web/en/
	OPEC	
4	SAARC	https://www.saarc-sec.org/index.php/about-saarc/about-
		saarc

	PO	PSO	PSO	PSO											
	l	2	3	4	5	6	7	8	9	10	II	12	I	2	3
CO1	3	1	1	3	1	2	2	1	1	3	1	2	3	1	1
CO2	3	3	1	1	3	2	2	2	1	3	2	2	3	2	1
CO3	3	3	2	2	1	2	2	2	2	3	1	1	3	1	2
CO4		1	2	1	1	2	2	2	2	3	1	2	3	2	1
CO5	3	3	2	2	1	3	2	2	2	3	2	1	3	2	2

# Mapping of COs with POs and PSOs

**Correlation:** 3 – High; 2 – Medium; 1 - Low

S.No.	Assessment Method	Frequency of Assessment
1	End Semester Examinations	Once in a semester
2	CIA l	Once in a semester
3	CIA 2	Once in a semester
4	Model	Once in a semester
5	Assignment (Unit I & II)	Twice in a Semester
6	Seminar (Unit III & IV)	Twice in a Semester
7	Quiz (Or) Group Discussion(Unit V)	Once in a Semester

Course designed by: Dr. Sreelakshmy M	Verified by HOD: Dr. Jyothirmayi P
Checked by CDC: Dr.K.Jayanthi	Approved by :
	Principal

# SEMESTER: V COURSE CODE: 23UGE5E02 TITLE OF THE COURSE: ELECTIVE: REGIONAL PLANNING AND DEVELOPMENT (Employability Skill)

#### **COURSE OBJECTIVES :**

- To understand the meaning & concept of regional planning.
- To evaluate the role of different sectors in the development of economy.
- To analyze the difference between area development & regional planning.

#### **COURSE OUTCOMES:**

After the completion of the course the student will be able to:

CO1	Understand the meaning & concept of regional planning	K2
CO2	Explain the concept of regional development.	K2
CO3	Understand the role of different sectors in the development of economy.	K2
CO4	Identify the difference between area development & regional planning.	K2
CO5	Discuss the role of special area development plans.	K2

#### Credits:4

#### **Instructional hours:60**

UNIT	I REGIONAL PLANNING	K2		12 hours									
	Concept of a region: types of region	ons & methods of regiona	alization.										
	Meaning, concepts and scope of re-	egional planning; Approa	ches to regio	nal planning;									
	Planning Region: concept, Charac	teristics and Delineation;	; Planning reg	gions of India.									
UNIT	II REGIONAL DEVELOPME	NT K2		12 hours									
	Growth centers and growth poles; Regional imbalances; regional development												
	strategies;												
	Regional development: concept and principles; Theories of regional development												
	(Myrdal and Perroux); Regional p	atterns of development a	nd imbalance	s in India;									
	Planning for regional developmen	t-Planning for sustainable	e developmer	nt.									
	(Self Study: Growth pole)												
UNIT	III REGIONAL DEVELOPME	NT & ECONOMY	K2	12 hours									

Role of agriculture, industry and infrastructure in regional development; regional development and economy.

Environmental issues in regional planning.

#### UNIT IV LEVELS OF PLANNING

#### 12 hours

K2

Area development and regional planning: National Capital Region; Micro-level planning and panchayati raj and their implications.

A brief history about the five year planning system in India.

#### UNIT V SPECIAL AREA DEVELOPMENT K2 l2 hours

Backward Regions and Regional Planning- Special Area Development Plans in India; Hill area development program (HADP), Border Area development (Program BADP) Damodar Valley Corporation (DVC), -The Success Story and the failures; NITI Aayog and its implications.

(Self Study : Damodar Valley Corporation)

#### **TEXT BOOKS:**

- Gupta, H. S. (2017)Regional Development and Planning. Kalyanai Publication, New Delhi.
- 2. Chandana, R. C. (2016) Regional Planning and Development, Kalyani Publication.
- Mishra R. P. (2002) Regional Planning: Concepts, Techniques, Policies and Case Studies. Concept Publishing co.

#### **REFERENCE BOOKS:**

- 1. Sundram K. V. (2012) Geography of Planning. Concept Publishing Co. New Delhi.
- Chand, M. and Puri, V.K.(2016) Regional planning in India; Allied Publishers, New Delhi.

S.No.	Topics	Links
1	Unit 2	https://unacademy.com/lesson/growth-poles-and-growth-
	Growth Centre Concept	centre-concept-perroux-and-boudville/6801MUW4
2	Regional Planning	https://unacademy.com/lesson/regional-planning-growth-
		centres-and-growth-poles-perroux-and-boudeville/EEKIE
3	Unit 5	https://niti.gov.in/planningcommission.gov.in/docs/reports/s
	Planning Commission	ereport/ser/bihinter/st_bihch3.pdf

#### **BLENDED LEARNING**

	PO	PSO	PSO	PSO											
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
CO1	3	1	1	3	1	2	2	1	1	3	1	2	3	1	1
CO2	3	3	2	1	3	2	2	2	1	3	2	2	3	2	1
CO3	3	3	2	2	2	2	2	2	2	3	1	1	3	1	2
CO4	2	1	2	1	1	2	2	2	2	3	1	2	3	2	1
CO5	3	3	2	2	2	3	2	2	2	3	2	2	3	2	2

# Mapping of COs with POs and PSOs

**Correlation:** 3 – High; 2 – Medium; 1 - Low

S.No.	Assessment Method	Frequency of Assessment
1	End Semester Examinations	Once in a semester
2	CIA l	Once in a semester
3	CIA 2	Once in a semester
4	Model	Once in a semester
5	Assignment (Unit I & II)	Twice in a Semester
6	Seminar (Unit III & IV)	Twice in a Semester
7	Quiz Or Class Participation(Unit V)	Once in a Semester

Course designed by: Dr. Sreelakshmy M	Verified by HOD: Dr. Jyothirmayi P
Checked by CDC: Dr.K.Jayanthi	Approved by :
	Principal

#### **SEMESTER: V**

#### COURSE CODE: 23NGE5E02

# TITLE OF THE COURSE: ELECTIVE - INTRODUCTION TO DISASTER MANAGEMENT

#### (Elective course offered to other department students)

#### **COURSE OBJECTIVES :**

- To understand the meaning, and types of hazards and disasters.
- To evaluate the different types of man-made and natural hazards environments

#### **COURSE OUTCOMES:**

After the completion of the course the student will be able to:

CO1	Understand the meaning, and types of hazards and disasters.	K2
CO2	Understand the different types of natural hazards, which occur around us.	K2
CO3	Explain the major man induced hazards.	K3
CO4	Identify the causes and impacts of Global warming and climate change	K2
CO5	Understand the process of disaster management	K2

#### **SYLLABUS**

Credits:4		<b>Instructional hours: 60hrs</b>					
UNIT I HAZARDS & DI	SASTERS	K2		l2 hours			
Natural Hazards & I	Disasters -; Risk	& Vulnerability	٧.				
Types of Hazards ar	nd disasters.						
UNIT II NATURAL HAZ	ZARDS K2			l2 hours			
Natural hazards- cau	uses & impacts o	of Flood, Landsl	ide, Drought, E	arthquake,			
Volcano, Tsunami;							
(Self Study: Drough	ht)						
UNIT III MAN-INDUC	ED HAZARDS	5-1 K.	3	l2 hours			
Man-induced hazard	ls – causes & im	pacts of Desert	fication, Forest	Fire, Pollution.			
UNIT IV MAN-INDUC	ED HAZARDS	-2 K	2	l2 hours			
Man-induced hazard	ls – causes & im	pacts of Global	Warming, Ozor	ne Depletion and			
climate change.							
(Self Study: Ozone	Depletion)						
UNIT V DISASTER MA	NAGEMENT	K2		l2 hours			
Disaster Manageme	nt: Disaster Cyc	le, Phases of Di	saster, Early wa	rning Systems			

#### **TEXT BOOKS:**

 Singh Jagbir (2007) "Disaster Management Future Challenges and Opportunities", 2007.
 Publisher- I.K. International Pvt. ltd. S-25, Green Park Extension, Uphaar Cinema Market, New Delhi, India

2. Singh, R.B. (2005) Risk Assessment and Vulnerability Analysis, IGNOU, New Delhi.

#### **REFERENCE BOOKS**

1. Kapur, A. (2010) Vulnerable India: A Geographical Study of Disasters, Sage Publication, New Delhi.

2. Modh, S. (2010) Managing Natural Disaster: Hydrological, Marine and Geological Disasters, Macmillan, Delhi.

3. Singh, R. B. (ed.), (2006) Natural Hazards and Disaster Management: Vulnerability and Mitigation, Rawat Publications, New Delhi.

4. Sinha, A. (2001). Disaster Management: lessons Drawn and Strategies for Future, New United Press, New Delhi.

5. Government of India. (1997) Vulnerability Atlas of India. New Delhi, Building Materials & Technology Promotion Council, Ministry of Urban Development, Government of India.

6. Singh Jagbir (2007) "Disaster Management Future Challenges and Opportunities", 2007.

Publisher- I.K. International Pvt. ltd. S-25, Green Park Extension, Uphaar Cinema Market, New Delhi, India

7. Singh, S. Environmental Geography. Prawalika Publication, Allahabad, 2016. Barucha, Arach. Textbook of Environmental Studies, University Press India, Hyderabad. 2016.

8. Thakur, D. K. A Text Book of Environment Disaster Management. Manisha Prakashan. Jaipur. 2014.

9. Sinha, A., Disaster Management- lessons Drawn and Strategies for Future, New United Press, New

10. Abbott, P. l., (1999). Natural disasters. McGraw-Hill, Boston

ll. Mrinalini Pandey, (2014). Disaster Management. Wiley India Pvt. ltd. New Delhi

#### **BLENDED LEARNING**

S.No.	Topics	Links
1	<u>Unit 2</u>	https://www.nationalgeographic.com/environment/article/tsunamis
	Tsunami	
2	Volcanoes	https://www.nationalgeographic.com/environment/article/volcanoes
3	Floods	https://www.nationalgeographic.com/environment/article/floods

4	Unit 5	https://ndma.gov.in/
	NDMA	

# Mapping of COs with POs and PSOs

	PO	PSO	PSO	PSO											
	1	2	3	4	5	6	7	8	9	10		12	I	2	3
CO1	3	1	1	3	1	2	2	1	1	3	1	2	3	1	1
CO2	3	3	1	1	3	2	2	2	1	3	2	2	3	2	1
CO3	3	3	2	2	1	2	2	2	2	3	1	1	3	1	2
<b>CO4</b>		1	2	1	1	2	2	2	2	3	1	2	3	2	1
CO5	3	3	2	2	1	3	2	2	2	3	2	1	3	2	2

**Correlation:** 3 – High; 2 – Medium; 1 - Low

S.No.	Assessment Method	Frequency of Assessment		
1	End Semester Examinations	Once in a semester		
2	CIA 1	Once in a semester		
3	CIA 2	Once in a semester		
4	Model	Once in a semester		
5	Assignment (Unit I & II)	Twice in a Semester		
6	Seminar (Unit III & IV)	Twice in a Semester		
7	Quiz Or Class Participation(Unit V)	Once in a Semester		

Course designed by: Dr. Sreelakshmy M	Verified by HOD: Dr. Jyothirmayi P
Checked by CDC: Dr.K.Jayanthi	Approved by :
	Principal

#### SEMESTER: V

#### COURSE CODE: 23UGE5SB3

#### TITLE OF THE COURSE: SKILL BASED: GEOGRAPHY OF TOURISM

#### (Entrepreneurial Skill)

#### **COURSE OBJECTIVES :**

- To understand the meaning of Tourism in depth.
- To evaluate the benefits and types of tourism.
- To analyze the causes and effects of tourism activity on economy.
- To undergo an educational tour and field trip and to prepare its report.

#### **COURSE OUTCOMES:**

After the completion of the course the student will be able to:

CO1	Understand the meaning of tourism and its significance.	K2
CO2	Differentiate between various types and forms of tourism.	K3
CO3	Discuss the social and economic significance of tourism.	K2
<b>CO4</b>	Explain the importance, objectives and frame work of organizing a tour.	K2
CO5	Execute and implement an educational tour and field visit to place of	K3
	geographical interest and to prepare its report.	

#### **SYLLABUS**

#### Credits: 2

# (K2) Instructional hours: 45

UNIT I TOURISM (K2)

Tourism; Meaning and Definition, Nature Scope & Importance of tourism- Tourism as an interdisciplinary Subject- Growth and development of modern tourism- History of Great Travellers- Recent Trends in Tourism Geography.Inter-Relationship of Tourism, Recreation and leisure.

Factors affecting tourism development: physical and cultural factors.

(Self Study: Recent Trends in Tourism Geography)

# UNIT II TYPES OF TOURISM(K3)9 hours

Geographical Parameters of Tourism.

Types of Tourism: Inter–regional and intra–regional tourism, inbound and outbound tourism, domestic, international tourism.

Forms of Tourism: religious, historical, social, health, business, conferences, conventions, sports and adventure, senior tourism, special interest tourism like culture or nature oriented, monsoon and agricultural. **UNIT III TOURISM & ECONOMY** (K2) 9 hours Impact of Tourism on; Economy, Employment, Trade, Foreign Exchange and infrastructure. (Self Study: Cultural Tourism in India) **UNIT IV TOURISM IN INDIA** (K2) 9 hours Development of Tourism in India- Geographical & Historical Tourism in India-Religious and Cultural Tourism in India. Recent Trends in Tourism: International and Regional; Domestic (India). Development of Tourism in Tamil Nadu- Major tourist location and its significance.. UNIT V FRAMEWORK FOR TOUR ARRANGEMENT (K3) 9 hours Importance of tour- Objectives of tour - Economic Planning - Frame work of tour. Role of travel / tour agency. Eco- Tourism, Sustainable Tourism, Meetings, Incentives, Conventions and Exhibitions. Preparation of educational tour report with geotagged photos and route map. (Study tour is compulsory for all students.).

#### **TEXT BOOK:**

l. Dixit, M. (2010) Tourism Geography and Trends, Royal Publication.

#### **REFERENCE BOOKS:**

1. Velvet Nelson(2017) An Introduction to the Geography of Tourism, lanham : Rowman & Littlefield

2. Stephen Williams, Alan A. lew (2014) Tourism Geography: Critical Understandings of Place, Space and experience.

- 3. Dixit, M and Sheela, C. (2001) Tourism Products-New Royal Book.
- 4. Mill and Morrison, (1992), The Tourism System: An Introductory Text, Prentice Hall.
- 5. Cooper, Fletcher et al, (1993), Tourism Principles and Practices, Pitman.
- 6. Burkart and Medlik, (1981), Tourism: Past, Present and Future , Heinemann, ElBS.
- 7. Gupta, SP, Lal, K, Bhattacharya, (2002) M. Cultural Tourism in India, DK Print 2002.
- 8. Hall, CM and Page, SJ. (1999) The Geography of Tourism and Recreation, Routledge.

# 9. Sinha, P.C. (1998) Tourism Geography, Anmol Publication

#### **BLENDED LEARNING**

S.No.	Topics	Links
1	Unit l	https://www.britannica.com/topic/tourism
	Tourism	
2	Unit 3	https://www.internetgeography.net/topics/what-is-the-impact-of-tourism/
	Impacts of	
	tourism	

# Mapping of COs with POs and PSOs

	PO	PSO	PSO	PSO											
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
CO1	3	1	1	3	1	2	2	1	1	3	1	2	3	1	1
CO2	3	3	1	1	3	2	2	2	1	3	2	2	3	2	1
CO3	2	2	1	2	1	2	2	2	2	3	1	1	3	1	2
CO4	2	1	2	1	1	2	2	2	2	2	1	2	3	2	1
CO5	3	3	2	2	1	3	2	2	2	3	2	1	3	2	2

**Correlation:** 3 – High; 2 – Medium; 1 - Low

S.No.	Assessment Method	Frequency of Assessment		
1	End Semester Examinations	Once in a semester		
2	CIA l	Once in a semester		
3	CIA 2	Once in a semester		
4	Model	Once in a semester		
5	Assignment (Unit I & II)	Twice in a Semester		
6	Seminar (Unit III & IV)	Twice in a Semester		
7	Tour report writing(Unit V)	Once in a Semester		

Course designed by: Dr. Sreelakshmy M	Verified by HOD: Dr. Jyothirmayi P
Checked by CDC: Dr.K.Jayanthi	Approved by :
	Principal

#### SEMESTERS: V & VI

#### **COURSE CODE: 23IDSBGE1**

# TITLE OF THE COURSE: SKILL BASED -FUNDAMENTALS OF GEOGRAPHY

(Skill-based course offered to the other department students in V & VI semesters)

#### **COURSE OBJECTIVES :**

- To introduce the students with the basic concepts of geography
- To enable them to understand the general geographical phenomena and its causes worldwide.
- To familiarize the students with the tools used in geography

#### **COURSE OUTCOMES:**

After the completion of the course the student will be able to:

CO1	Understand the evolution of geography through ages and know about the	K2
	universe	
CO2	Define various climatic zones and time zones.	Kl
CO3	Describe the resultant processes causing changes on the earth surface	Kl
CO4	Explain the tools used to study geography	K2
CO5	Understand about the various geographical features around the world.	K2

#### **SYLLABUS**

# Credits: 2Instructional hours: 45UNIT – IWHAT IS GEOGRAPHY?K29 hours

Introduction to Geography- meaning, scope and branches.

Our address in the world – Continents & Oceans.

Five themes in Geography

#### UNIT- II EARTH KI 9 hours

Shape & size of the earth

Rotation and Revolution of the Earth- Impact.

Latitudes – Major climatic regions- longitudes - Basis of time calculation.

Kl

Altitude – Major Relief features (Mountains, Plateaus and Plains)

#### (Self Study: International Dateline)

#### UNIT- III DYNAMIC EARTH

9 hours

Dynamic Earth

Forces acting on the Earth's surface.

Continental Drift - Plate Tectonics

#### UNIT- IV MAPS

K2

9 hours

Maps – Types and uses-Role of maps in daily life- Map reading.

On line and interactive maps.

Advances in mapping - Remote Sensing, GIS & GNSS: meaning and components.

(Self Study: Types of Maps)

UNIT- V GEOGRAPHICAL FEATURES K2 9 hours

- Basic information about the following
- Amazon and Nile
- Sahara and Antarctica

Andes and Himalayas

Aurora Borealis & Aurora Australis.

Grand Canyon & Great Barrier reef

Dead sea and Black sea

#### **TEXT BOOK:**

1. Leong, G.C. (1994). Certificate Physical and Human Geography. India : Oxford Publication

#### **REFERENCE BOOKS:**

- 1. Arthur N Strahler ,(1969), Physical Geography , New Jersey : Prentice Hall
- 2. Singh, S. (1998), Geomorphology, Allahabad : Prayag Pustak Bhavan
- 3. Singh, R.L. (1979), Elements of Practical Geography, New Delhi : Kalyani Publishers.

#### **BLENDED LEARNING**

S.No.	Topics	Links													
1	Unit 2	https://www.nationalgeographic.org/encyclopedia/earth/													
	Earth														
2	Rotation	https://www.nationalgeographic.org/encyclopedia/rotation/													
3	Unit 4	https://www.nationalgeographic.org/encyclopedia/map/													
	Мар														
4	GNSS	https://www.gsa.europa.eu/european-gnss/what-gnss													
	PO	PSO	PSO	PSO											
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	l	2	3	4	5	6	7	8	9	10	11	12	l	2	3
CO1	3	2	1	3	1	2	2	1	1	3	1	2	3	1	1
CO2	3	3	1	1	3	2	2	1	1	3	2	2	2	2	1
CO3	3	3	2	2	1	2	2	2	2	3	1	1	3	1	2
<b>CO4</b>	2	2	2	1	1	2	2	1	1	3	1	2	2	2	1
CO5	3	3	2	2	1	3	2	2	2	3	2	1	3	1	2

# Mapping of COs with POs and PSOs

**Correlation:** 3 – High; 2 – Medium; 1 - Low **ASSESSMENT TOOLS** 

S.No.	Assessment Method	Frequency of Assessment
1	End Semester Examinations	Once in a semester
2	CIA l	Once in a semester
3	CIA 2	Once in a semester
4	Model	Once in a semester
5	Assignment (Unit I & II)	Twice in a semester
6	Seminar (Unit III & IV)	Twice in a semester
7	Group Discussion or Case Studies(Unit V)	Once in a semester

Course designed by: Dr. Jyothirmayi P	Verified by HOD: Dr. Jyothirmayi P
Checked by CDC: Dr.K.Jayanthi	Approved by :
	Principal

#### **SEMESTER: VI**

#### COURSE CODE: 23UGE6C09

#### TITLE OF THE COURSE: CORE: HUMAN GEOGRAPHY

#### **COURSE OBJECTIVES :**

- To apprise the students with the nature of human environmental relationship
- To understand the distribution of races, languages and religions.
- To integrate the various factors of economic development and to acquaint the students about this dynamic aspect of economic geography.

#### **COURSE OUTCOMES:**

After the completion of the course the student will be able to:

CO1	Summarize the nature and significance of Human Geography	K2
CO2	Identify different types of human races, religions and languages.	K2
CO3	Understand and recall the various theories of population growth and to	K2
	understand the pattern of migration.	
CO4	Distinguish various types of human settlements.	K4
CO5	Apply the principles of the urban morphology with various models	K4

#### **SYLLABUS**

#### Credits: 5

#### **Instructional hours: 75 hours**

#### UNIT I HUMAN GEOGRAPHY (K2) 15 Hours

Human geography- Meaning, scope and content, branches.

Dynamics of man environment relationships: Determinism, Possibilism, Probabilism, Neo determinism.

#### (Beyond the Curriculum: Approaches and Four Traditions in Geography)

UNIT I	II RACE, RELIGION & LANGUAGE (K2)	15 Hours
	Human races - types and distribution, Major tribes of the World.	
	Religion- Major religions of the world- characteristics and distribution.	
	language- Major language groups of the world.	
	(Self Study: Factors affecting the distribution of world population)	

## Distribution of world population. Population theories: Demographic transition theory, Malthusian theory, Optimum population theory. Migration-Types, Causes & consequences. (Self Study: Causes of migration) UNIT IV SETTLEMENTS (K4) 15 Hours Human Settlements- Origin & Types- Site and Situation. Rural settlements- Patterns. Urban Settlements- Evolution of cities- Lewis Mumford & Griffith Taylor's classification. Classification of towns based on function. Concept of Primate city and Rank size rule.

Classes of towns in India.

UNIT V URBAN GEOGRAPHY (K4)

Urban Land Use Models.

Theories - Concentric Circle theory, Sector Model, Multiple Nuclei Theory. Christaller's Central place theory- The concept of Umland, Rural Urban Fring. Forms of Urbanization- Urban sprawl, Metropolis, Megalopolis, Conurbation. Problems of Urbanization and need for Urban Planning.

#### **TEXT BOOKS:**

- 1. Husain, Majid (1994). Human Geography. Rawat Publications, Jaipur.
- 2. Ghosh, S. (2008), Introduction to Settlement Geography, Orient Blackswan Pvt.ltd, Hyderabad.

#### **REFERENCE BOOKS:**

- 1. Harichandran A. & Chaudhary M.A, (2012), Human Geography, Global Academy Publishers & Distributors, New Delhi.
- 2. Rubenstein, J.M. (1992). An Introduction to Human Geography. McMillan, London.
- 3. Rubenstein M.J. (2012), Contemporary Human Geography, PHI learninh Pvt.ltd (2012), New Delhi.
- 4. Knowles R. & Wareing J. (1990), Economic and Social Geography, Rupa Publication India Pvt.ltd. New Delhi.

#### UNIT III DEMOGRAPHIC THEORIES & MIGRATION (K2) **15 Hours**

World Population- Growth & factors affecting the distribution of world population-

15 Hours

- 5. Roy D. (2015), Population Geography, (Books & Allied (P) ltd. Kolkata.
- 6. Chandana R.C. (1980), Introduction to Population Geography, Kalyani Publishers, New Delhi.
- 7. Hussain M.(2010), Evolution of Geographical Thought, Rawat Publications, Jaipur.
- 8. Goh Cheng leong & Morgan C. (1972). Human & Economic Geography. Oxford.
- 9. Mandal R.B. (2000). Urban Geography, Concept Publishing Company. New Delhi.
- Carter H. (1967). The study of Urban Geography ; Introductory Analysis. Pergamam Press, London.

#### **BLENDED LEARNING**

S.No.	Topics	Links
1	Unit 2	https://www.britannica.com/topic/race-human
	Human Race	
2	Population	https://population.un.org/wpp/
3	Population Problems	https://www.un.org/en/global-issues/population
4	Unit 3	https://www.economicsdiscussion.net/theory-of-
	Population Theories	population/top-3-theories-of-population-with-diagram/18461
5	Population	https://ncert.nic.in/ncerts/l/legy204.pdf
6	Urban Planning	https://www.nationalgeographic.org/article/urban-planning/

#### Mapping of COs with POs and PSOs

	PO	PSO	PSO	PSO											
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
CO1	3	1	1	3	1	2	1	1	1	3	1	2	3	1	1
CO2	3	3	1	1	3	2	2	2	2	3	2	2	3	2	1
CO3	3	3	2	2	2	2	2	2	2	3	1	1	1	1	2
<b>CO4</b>	2	1	2	1	1	2	2	1	2	1	1	2	3	2	1
CO5	3	3	2	2	2	1	2	2	2	1	2	1	3	2	2

**Correlation:** 3 – High; 2 – Medium; 1 - Low

#### **ASSESSMENT TOOLS**

S.No.	Assessment Method	Frequency of Assessment
1	End Semester Examinations	Once in a semester
2	CIA 1	Once in a semester
3	CIA 2	Once in a semester
4	Model Exam	Once in a semester
5	Assignment (Unit I & II)	Twice in a semester
6	Seminar (Unit III & IV)	Twice in a semester
7	Quiz or Field Studies(Unit V)	Once in a semester

Course designed by: Dr. Sreelakshmy M	Verified by HOD: Dr. Jyothirmayi P
Checked by CDC: Dr.K.Jayanthi	Approved by: Principal

#### **SEMESTER: VI**

#### COURSE CODE: 23UGE6C10

## TITLE OF THE COURSE: CORE: ECONOMIC GEOGRAPHY OF THE WORLD COURSE OBJECTIVES :

- To apprise the students with the types of economic activities and how they are distributed geographically.
- To understand the geography and transformation of economic activities from primary to secondary and tertiary stage.
- To integrate the various factors of economic development and to acquaint the students about this dynamic aspect of economic geography.

#### **COURSE OUTCOMES:**

After the completion of the course the student will be able to:

CO1	Summarize the nature and significance of economic geography in the context	K2
	of various economic activities.	
CO2	Identify different types of primary activities.	K2
CO3	Understand and recall the geography of the various mineral and power	K2
	resources.	
<b>CO4</b>	Distinguish various types of secondary activities	K2
CO5	Describe the significance of transport and trade in economic activities.	K2

#### **SYLLABUS**

#### Credits:5

#### **Instructional hours: 75**

# UNIT IECONOMIC GEOGRAPHYK2I5 hoursEconomic geography: Definition, Scope and Significance;<br/>Sectors of economic activity: Primary, Secondary, Tertiary, Quaternary and Quinary.<br/>Agriculture: Origin & factors influencing agriculture.<br/>Food Crops-Wheat, Rice and Maize.K2I5 hoursUNIT IIPRIMARY ACTIVITIESK2I5 hoursAgriculture: Commercial crops –Cotton, Sugarcane, Tea, Coffee, Rubber;<br/>Agriculture regions of the world.<br/>livestock- World distribution of dairy farming.Iso

Fisheries – factors and important fishing grounds of the world;

lumbering- Factors and distribution.

Mining- Factors and types.

(Self Study : important fishing grounds of the world)

#### UNIT III RESOURCES

15 hours

Mineral resources: Iron ore, Bauxite, Manganese and Copper; Power resources: Coal, petroleum and hydroelectric power; Non-conventional sources of energy- types and potentials; Atomic energy.

(Self Study : Atomic energy)

#### UNIT IV SECONDARY ACTIVITIES K2

15 hours

Manufacturing industries: locational factors, distribution and production - Iron and steel industry, cement industry; Textile (cotton and woolen); Petro-chemical.

**K2** 

UNIT V TERTIARY ACTIVITIES K2 15 hours

World Transportation: Relative significance of different means of transport- land, Air and Water, Factors affecting land, water and air transport; World oceanic routes; important inland waterways and important canals;

Trade factors and types.

International trade, Impact of globalization on economic development.

(Beyond the Curriculum: Inland waterways in India)

#### **TEXT BOOK:**

1. Goh Cheng Leong & Gillian C. Morgan (1982) Human & Economic Geography, Oxford University Press.

#### **REFERENCES BOOKS:**

 Roy, P. K. (2014) Economic geography: A Study of Resources, New Central Book Agency ltd. Kolkata,.

- 2. Saxena, H. M. (2013) Economic geography. Rawat Publication. New Delhi.
- 3. Sharm, T.C. (2013) Economic geography of India, Rawat Publication. New Delhi..

4. Knowles R. & Wareing J., (2004)Economic and Social Geography, Rupa Publication, New Delhi.

5. Brynt, R. H., (1990) Economic and Social Geography, Made Simple Book, Rupa Publication, New Dehi,

6. Alexander J. W., (1963) Economic Geography, Prentice-Hall Inc., Englewood Cliffs, New Jersey.

7. Hodder B. W. and lee Roger, (1974) Economic Geography, Taylor and Francis

BLENDED LEARNING	
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S.No.	Topics	Links
1	<u>Unit 2</u>	https://www.nationalgeographic.org/activity/fisheries-and-seafood-
	Fisheries	consumption/
2	Timber resources	https://www.nationalgeographic.org/article/timber-resources/
3	Mining	https://www.nationalgeographic.org/encyclopedia/mining/#:~:text= Mining%20is%20the%20process%20of,the%20metal%20iron%20i s%20produced.&text=A%20mineral%20is%20typically%20an,che miaal%20apmagitian%20apd%20armatal%20atmature
4	Mineral Deposits	https://www.nationalgeographic.org/encyclopedia/mineral-deposits/
5	Unit 3	https://www.sciencedirect.com/topics/computer-science/industrial-
	Industrial location	location

#### Mapping of COs with POs and PSOs

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO ll	PO l2	PSO l	PSO 2	PSO 3
CO1	3	1	1	3	1	2	2	1	1	3	1	2	3	1	1
CO2	1	1	1	1	1	2	2	2	1	3	2	2	3	2	1
CO3	3	3	2	2	1	2	3	2	2	3	1	1	3	1	2
CO4	1	1	2	1	1	2	2	2	2	3	1	2	3	2	1
CO5	3	3	2	2	1	3	2	2	2	3	2	1	3	2	2

**Correlation:** 3 – High; 2 – Medium; 1 - Low

#### ASSESSMENT TOOLS

S.No.	Assessment Method	Frequency of Assessment
1	End Semester Examinations	Once in a semester
2	CIA 1	Once in a semester
3	CIA 2	Once in a semester
4	Model	Once in a semester
5	Assignment (Unit I & II)	Twice in a Semester
6	Seminar (Unit III & IV)	Twice in a Semester
7	Content Writing Or Class Participation(Unit V)	Once in a Semester

Course designed by: Sr. Helan Jenifer	Verified by HOD: Dr. Jyothirmayi P
Checked by CDC: Dr.K.Jayanthi	Approved by : Principal
	<b>F</b>

#### SEMESTER: VI

#### COURSE CODE: 23UGE6C11

#### TITLE OF THE COURSE: CORE-POLITICAL GEOGRAPHY

#### **COURSE OBJECTIVES :**

- To familiarize the students with the geographical factors which have an influence on the political and administrative organization of space.
- To enhance awareness of multi-dimensional nature of geo-political space.
- To understand the complex relationship between geographical factors and the relations between nations.

#### **COURSE OUTCOMES:**

After the completion of the course the student will be able to :

CO1	Explain the concept of Political geography, State, Nation & Nationalism.	K2
CO2	Understand the structure and attributes of state.	K2
CO3	Understand the different dimensions of electoral geography.	K2
CO4	Examine the problems associated with sharing of oil & water and other resources conflicts	K2
CO5	Have sound knowledge of politics of displacement, focusing on dams and SEZ	K2

#### SYLLABUS

#### Credits:5

#### **Instructional hours:75**

15 hours

#### UNIT – I POLITICAL GEOGRAPHY K2 l5 hours

Political geography- Introduction: Concepts, Nature and Scope. Territoriality- The State, Nation – Concept of Nation and State- Spatial factors of the

state.

#### UNIT – II CORE, FRONTIER & BOUNDARIES K2

Frontiers and Boundaries- concepts and classifications- continental and maritime

boundaries,

Elements of spatial structure of the state- Core areas, Capital regions.

Geopolitics- principal components; Theories (Heartland and Rimland).

#### (Beyond the Curriculum: Para Diplomacy)

# UNIT - IIIELECTORAL GEOGRAPHYK215 hoursElectoral Geography – Geography of Voting, Geographic Influences on voting<br/>pattern, Geography of Representation, Gerrymandering.

Geographical determinants of Foreign policy.

(Self Study: Gerrymandering.)

#### UNIT - IVRESOURCE CONFLICTK215 hours

Political Geography of Resource Conflicts-Geographical distribution of world resources. Boundary sharing disputes- Water Sharing Disputes, Disputes and Conflicts Related to Forest Rights and Minerals (examples to be given within and outside country).

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(Self Study: International Organizations – UNO & SAARC.)
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#### UNIT – V WORLD ORGANISATIONS K2 15 hours

Role of World Organizations at International & Regional level- UNO & SAARC Politics of Displacement: Issues of relief, compensation and rehabilitation: with reference to Dams, Highways and Special Economic Zones

#### **TEXT BOOKS:**

- 1. Adhikari, S. (2014). Fundamentals of Political Geography. New Delhi: Rawat Publications.
- Dikshit, R. D. (1982). Political geography: A contemporary perspective. New Delhi: Tata McGraw-Hill.

#### **REFERENCE BOOKS:**

- 1. De, B. H. (1973). Systematic political geography. 2nd ed. New York, London: Wiley.
- Jena, &Barral. (1989). Election politics & voting behaviour in India. New Delhi: Discovery Publication House.
- 3. Moodie, A. E. (1963). Geography Beyond Politics. London: Hutchinson.
- 4. Pounds, N. J. (1972). Political geography. New York: McGraw-Hill.
- 5. Prescott, J. R. (1972). Political geography. London: Methuen.
- 6. Roy, M. (2000). Electoral politics in India: Election process and outcomes, voting behaviour and current trends. New Delhi: Deep & Deep Publications

#### **BLENDED LEARNING**

S.No.	Topics	Links
1	<u>Unit 3</u>	https://www.sciencedirect.com/topics/earth-and-planetary-
	Electoral Geography	sciences/electoral-geography
2	Frontiers	http://opac.lib.idu.ac.id/unhan-
		ebook/assets/uploads/files/23047-171.the-geography-of-
		frontiers-and-boundaries-routledge-library-editions-political-
		geography.pdf

3	Geopolitics	https://www.britannica.com/topic/geopolitics
4	Unit 4	https://www.e-ir.info/2019/05/24/geography-resources-and-
	Geopolitics of the Middle	the-geopolitics-of-middle-east-conflicts/
	East	

# Mapping of COs with POs and PSOs

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO	PSO 2	PSO 3
CO1	1	3	3	2	3	3	3	1	1	3	3	3	3	2	3
CO2	1	3	3	2	3	3	3	1	1	3	3	3	3	2	3
CO3	1	3	3	2	3	3	3	1	1	3	3	3	3	2	3
CO4	1	3	3	2	3	3	3	1	1	3	3	3	3	2	3
CO5	1	3	3	2	3	3	3	1	1	3	3	3	3	2	3

**Correlation:** 3 – High; 2 – Medium; 1 - Low

#### ASSESSMENT TOOLS

S.No.	Assessment Method	Frequency of Assessment
1	End Semester Examinations	Once in a semester
2	CIA 1	Once in a semester
3	CIA 2	Once in a semester
4	Model	Once in a semester
5	Assignment (Unit I & II)	Twice in a semester
6	Seminar (Unit III & IV)	Twice in a semester
7	Quiz Or Case Studies(Unit V)	Once in a semester

Course designed by: Dr. Meenakshi P	Verified by HOD: Dr. Jyothirmayi P
Checked by CDC: Dr.K.Jayanthi	Approved by:
	Principal

#### **SEMESTER: VI**

#### COURSE CODE: 23UGE6CP3

#### TITLE OF THE COURSE: CORE PRACTICAL III - SURVEYING AND

#### INTERPRETATION OF REMOTELY SENSED DATA PRODUCTS

(Based on Core course Fundamentals of Remote Sensing, Basics of GIS & GNSS, Allied

courses Fundamentals of Cartography and Cartographic Methods & Map making)

(Skill Development & Employability skill)

#### **Instructional hours: 60**

# **COURSE OBJECTIVES :**

Credits: 4

- To introduce the fundamentals of Surveying.
- To make students understand the concept of height measurement.
- To familiarize students with the interpretation of aerial photographs and satellite imageries.

#### **COURSE OUTCOMES:**

After the completion of the course the student will be able to:

CO1	Prepare plan and base map for the given area	K4
CO2	Prepare map based on GPS way points	K4
CO3	Interpret the physical and cultural aspects present in aerial photographs.	K3
CO4	Interpret the topography and cultural landscape present in satellite imageries.	K3
CO5	Prepare a project report based on the GPS survey.	K4

#### UNIT – I SURVEY K4 l2 hours

Surveying: Principles of surveying – equipment for land survey – their advantages and disadvantages.

Surveying by means of Chain, Plane Table, and Prismatic Compass.

Chain survey – preparation of plans and calculation of area – open and closed traverse. Radiation and Intersection methods.

Plane Table -open and closed traverse- Radiation and Intersection methods.

Prismatic compass -open and closed traverse-Radiation and Intersection methods.

Indian clinometers.

Abney level, Dumpy level.

(2 exercises each)

#### UNIT – II SURVEY K6

**l2 hours** 

Surveying by means of Modern and recent technology instruments:

GPS Survey: tracking routes and plotting on Google earth.

Total station

(2 exercises each)

#### UNIT – III AERIAL PHOTO INTERPRETATION K3 l2 hours

Interpretation of Remotely Sensed Data –Visual Interpretation of air photos. (3 exercises each)

# UNIT – IV SATELLITE IMAGE INTERPRETATION K3 l2 hours Interpretation of Remotely Sensed Data –Visual Interpretation of satellite imagery (3 exercises each) UNIT V DEPODET & DECORD V4 V2 hours

UNIT – V REPORT & RECORD K4 l2 hours

GPS Survey Report and Record

Preparation of a Field Trip report with geotagged photos and route map.

(Field trip is compulsory for all students)

#### **TEXT BOOKS:**

- 1. Monkhouse, F.J. and Wilkinson, H.R., (1989), Maps and Diagrams, B.I.Publications, New Delhi.
- 2. Singh, R. L., (2005), Elements of Practical Geography, Kalyani Publishers, New Delhi.
- 3. Gopal singh, (1996), Map work and practical geography, Vikas Publishing House, Mumbai

#### **REFERENCE BOOKS**:

- 1. Arnold (2003): Interpretation of Air Photos and Imageries , Prentice-Hall.
- 2. Avery and Berlin,(1998): Fundamentals of Remote Sensing and Air Photo Interpretation.
- 3. Gopal Singh: Map work and Practical Geography, Vikas Publishing House Pvt. limited
- 4. Kantkar T.P and Kulkarni S.V (1972) Surveying and levelling ,PuneVidhyarthi and GrihaPrakashan, Pune.
- 5. R. L. Singh: Elements of Practical Geography, Kalyani Publishers
- 6. R. Subramanian(2013): Surveying and levelling, OUP India.
- 7. R.L. Singh (1979) Elements of Practical Geography, Students Friends, Allahabad
- 8. S.S.Bhavikatti (2009): Surveying and levelling, Vol.I, IK International Publishing House Pvt ltd., New Delhi.
- 9. Singh and Kanauja (1988), Mapwork and Practical Geography.

#### Mapping of COs with POs and PSOs

	PO l	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO ll	PO l2	PSO l	PSO 2	PSO 3
CO1	2	1	1	3	3	3	1	2	3	3	3	1	1	3	3
CO2	1	3	3	3	3	2	1	2	3	3	3	2	1	2	3
CO3	1	3	2	3	3	2	1	2	3	3	3	2	1	2	3
CO4	1	3	3	3	2	3	1	2	3	3	3	2	2	2	3
CO5	2	3	3	2	2	3	3	3	3	3	3	3	3	2	3

Correlation: 3 – High; 2 – Medium; 1 - Low

#### ASSESSMENT TOOLS

S.No.	Assessment Method	Frequency of Assessment
1	End Semester Examinations	Once in a year
2	CIA 1	Once in a year
3	CIA 2	Once in a year
4	Model Exam	Once in a year
5	Regularity	Once in a year
6	Attendance	Once in a year
7	Record	Once in a year

Course designed by: Dr. Jyothirmayi P	Verified by HOD: Dr. Jyothirmayi P
Checked by CDC: Dr.K.Jayanthi	Approved by :
	Principal

#### **SEMESTER: VI**

#### COURSE CODE: 23UGE6E01

#### TITLE OF THE COURSE : ELECTIVE - BIOGEOGRAPHY AND SOIL GEOGRAPHY

#### **COURSE OBJECTIVES :**

- To understand the relationship between the earth and the living world.
- To understand the distribution of plants and animals in different regions.
- To analyze the process of soil formation and the need to conserve it.
- To evaluate the interrelationships among the living organisms within different environments

#### **COURSE OUTCOMES:**

After the completion of the course the student will be able to:

CO1	Understand the meaning, scope, development and branches of Biogeography.	K2
CO2	Identify the different kinds of plants and animals and their spatial distribution.	K2
CO3	Describe and classify the different types of soil along with their properties.	K2
CO4	Interpret the spatial characteristics of different kinds of biomes and associated	K3
	life forms.	
CO5	Analyze the Problems of extinction of plant and animal life by visiting and	K4
	area of ecological significance.	

#### SYLLABUS

#### Credits:4 Instructional hours: 60 UNIT I: BIOGEOGRAPHY K2 l2 hours

Introduction- Definition, scope and significance of Biogeography - Development and branches of Biogeography

#### UNIT – II CLASSIFICATION K2 l2 hours

Zoo-Geography - Animal kingdom: evolution of animals, dispersal of animals, distribution of animals on land and water- Zoogeographical regions of the world Phyto-Geography- Plant kingdom: evolution of plants, Plant Groupings – Raunkiaer's Classification of Plants- Succession and development of plant community and dispersal of plants

#### (Self Study- evolution of animals, evolution of plants)

**K3** 

#### UNIT III BIOMES

Biomes: meaning, concepts and types - Major Terrestrial biomes: Characteristics and distribution of Forests, Grasslands, Deserts and Polar Regions

#### 12 hours

#### UNIT IV BIODIVERSITY CONSERVATION K4 l2 hours

Problems of extinction of plant and animal life - Habitat degradation- and their conservation - Biodiversity and conservation & management-Ecological regions of India : their interrelations, problems, conservation and management: (a) Mangrove (b) Tropical rainforest (c) Desert (d) Mountain (e) Fresh water and marine (Special Reference to India.)

#### UNITV SOIL K2 l2 hours

Pedology: Soil formation and characteristics- Soil Properties (Physical and Chemical)-Nature and functions of soil - Soil Profile – Soil types: USDA & FAO soil taxonomy and its spatial distribution.- Soil Erosion – Soil Management. (Self Study-Nature and functions of soil - Soil Profile)

**Field Study**: Visiting an area of Ecological significance and preparation of a detailed report with geotagged photos, route map and the presentation of the same.

#### **TEXT BOOK:**

1. Robinson H. (1982) Bio Geography, ElBS. McDonald and Evans, London.

#### **REFERENCE BOOKS:**

- 1. Savindra Singh (2017) Biogeography, Pravalika Publications
- 2. Huggett.R.J (2009)Fundamentals of Biogeography, Rout ledge USA.
- Joy, T.(1993). Biogeography: A Study of Plants in the Ecosphere, Longman Sci &Tech.,U.K.
- 4. Martin C. (1975) Plant Geography, Methuen & Co., London.
- 5. Mathur. H.S(1998) Essentials of Bio Geography, Anuj Printers Jaipur.
- 6. New Begin I: Plant & Animal Geography, Methuen & Co., London

#### **BLENDED LEARNING**

S.No.	Topics	Links
1	Unit 2	https://www.britannica.com/science/faunal-region
	Faunal Region	
2	Zoo-Geographical	https://www.geographynotes.com/essay/zoo-geographical-
	Regions	regions/essay-on-the-zoo-geographical-regions-of-the-world-
		geography/4004
3	Unit 3	https://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/edu/?cid
	Soil	<u>=nrcsl42p2_053588</u>
4	Soil Groups	https://www.britannica.com/science/soil/FAO-soil-groups

	PO	PSO	PSO	PSO											
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
CO1	2	1	1	3	1	2	2	1	2	3	1	2	3	3	1
CO2	2	3	1	1	3	2	2	2	1	2	2	2	2	2	1
CO3	3	3	2	2	1	2	2	2	2	3	1	1	3	3	2
CO4	2	2	2	1	1	1	1	1	1	3	1	2	2	2	1
CO5	3	3	2	2	1	3	2	2	2	3	2	1	3	2	2

### Mapping of COs with POs and PSOs

**Correlation:** 3 – High; 2 – Medium; 1 - Low

#### ASSESSMENT TOOLS

S.No.	Assessment Method	Frequency of Assessment
1	End Semester Examinations	Once in a semester
2	CIA l	Once in a semester
3	CIA 2	Once in a semester
4	Model	Once in a semester
5	Assignment (Unit I & II)	Twice in a semester
6	Seminar (Unit III & IV)	Twice in a semester
7	Field Work (Or) Quiz(Unit V)	Once in a semester

Course designed by: Dr. Meenakshi P	Verified by HOD: Dr. Jyothirmayi P
Checked by CDC: Dr.K.Jayanthi	Approved by :
	Principal

# SEMESTER: VI COURSE CODE: 23UGE6E02 TITLE OF THE COURSE: ELECTIVE - ENVIRONMENTAL GEOGRAPHY

#### **COURSE OBJECTIVES:**

- To make the students understand the interrelationship between man and the environment in which he lives and his linkages with other organisms which form ecosystem.
- To create an awareness about environmental degradation concerns and its impact on mankind.
- To emphasize the importance of considering possible impacts of development through Environmental Impact Analysis.

#### **COURSE OUTCOMES:**

After the completion of the course the student will be able to:

CO1	Know how geography and environment are interrelated	Kl
CO2	Explain the ecosystem and its functions	K2
CO3	Describe the factors responsible for environmental degradation	Kl
CO4	Understand how man's activity is causing the deterioration of environment	K2
CO5	Analyze the degradation level of a particular environment and suggest the	K4
	conservation strategies.	

#### **SYLLABUS**

Credits: 4	ructional hou	rs: 60				
UNIT –I ENVIRONMENTAL GEOGR	RAPHY	Kl l2 hours				
Environment: Geography and En	vironment-Man and	Environmen	t Relationship-			
Components of Environment - Ecos	ystem- Function- Ty	pes - Biodiver	sity.			
(Self Study: Biodiversity)						
UNIT –II ENERGY FLOW K2			12 hours			
Flows in Ecosystems. – Energy flow	v- hydrological cycle	. Biogeochemi	ical cycle			
(Carbon and Nitrogen cycle).						
UNIT- III ENVIRONMENTAL DEGRA	DATION KI		l2 hours			
Environmental Degradation -defore	station- desertification	on – soil erosio	on – landslides-			
soil Salinization- Degradation due to	o plastic use					
(Self Study: Deforestation)						
UNIT- IV MAN MADE HAZARD	K2	12 hour	rs			

Man induced hazards- pollution; air pollution with reference to New Delhi – water pollution with reference to River Noyyal – land pollution-Noise pollution- Global warming; causes and consequences.

Environment and health

UNIT- V EIA & EARTH SUMMITSK4l2 hoursEnvironmental Impact Assessment; Case study of Narmada dam, Tehri dam and<br/>OrathupalayamOrathupalayamEnvironmental management – need for conservation –Environmental movements:<br/>Chipko Movement – Silent Valley movement- Narmada Bachao Andolan<br/>Environmental programs -Environmental summits -recent policies and developments.

**Field Study**: Visiting an area of Ecological significance and preparation of a detailed report with geotagged photos, route map and the presentation of the same.

#### **TEXT BOOK:**

1. Singh.S (1991).Environmental Geography. Allahabad: Prayag Pustak Publication.

#### **REFERENCE BOOKS:**

- 1. Chandna, R.C (1998). Environmental Awareness. New Delhi : Kalyani Publishers.
- 2. Hagett, Peter. (1975). Geography A Modern Synthesis. New York: Harper Row.
- 3. Marsh, William M.&Grossa, John M.(2002.Envirnmental Geography- Science, land use and Earth System.New Jersey :John Wiley &Sons,.
- 4. Odum E.P (1971), Fundamental Of Ecology.Philadelphia: W.B.Saunders Co,.
- 5. Smith.R.l(1992).Man and his Environment: A ecosystem Approach. New York: Harper & Row.

#### **BLENDED LEARNING**

S.No.	Topics	Links
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1	Unit l	https://www.unibayreuth.de/de/studium/masterstudium/00_master_flyer/enviro
	Environmenta	nmental_geography_eng.pdf
	l Geography	
2	Biodiversity	https://www.nationalgeographic.org/encyclopedia/biodiversity/
4	<u>Unit 3</u>	https://www.conserve-energy-future.com/causes-and-effects-of-environmental-
	Environmenta	degradation.php
	1 Degradation	
5	Environmenta	https://timesofindia.indiatimes.com/readersblog/pracin-jain-
	1 Degradation	academy/environmental-degradation-what-why-28138/

# Mapping of COs with POs and PSOs

	PO	PSO	PSO	PSO											
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
CO1	3	3	2	2	2	2	2	3	1	3	2	2	3	3	3
CO2	3	3	3	2	2	2	2	3	1	3	2	2	3	3	3
CO3	3	3	3	2	2	2	3	3	1	3	2	2	3	2	3
<b>CO4</b>	3	3	3	2	2	3	3	3	1	3	2	2	3	2	3
CO5	3	3	3	2	2	3	3	2	1	3	2	2	3	2	3

**Correlation:** 3 – High; 2 – Medium; 1 - Low ASSESSMENT TOOLS

S.No.	Assessment Method	Frequency of Assessment
1	End Semester Examinations	Once in a semester
2	CIA 1	Once in a semester
3	CIA 2	Once in a semester
4	Model	Once in a semester
5	Assignment (Unit I & II)	Twice in a Semester
6	Seminar (Unit III & IV)	Twice in a Semester
7	Content Writing Or Field Studies(Unit V)	Once in a Semester

Course designed by: Dr. Franchina Mary	Verified by HOD: Dr. Jyothirmayi P

Checked by CDC: Dr.K.Jayanthi	Approved by :
	Principal

# SEMESTER: VI COURSE CODE: 23UGE6SB4

#### TITLE OF THE COURSE : SKILLBASED -DISASTER STUDIES

#### (Employability Skill)

#### **COURSE OBJECTIVES :**

- To understand the meaning, and types of hazards and disasters.
- To evaluate the different types of man-made and natural hazards environments
- To create awareness about the process of disaster management
- To analyse the role of various disaster management agencies.

#### **COURSE OUTCOMES:**

After the completion of the course the student will be able to:

CO1	Understand the meaning, and types of hazards and disasters.	K2
CO2	Analyse the different types of man-made and natural hazards, which occur	K4
	around us.	
CO3	Analyse the major groups of disasters that affect India.	K4
CO4	Recognize the role of disaster management agencies and their role in disaster	K2
	risk reduction.	
CO5	Apply the basic knowledge about the disasters and its safety measures to save	K3
	life and property.	

#### **SYLLABUS**

# Credits:2 Instructional hours: 45hrs

#### UNIT IHAZARDS & DISASTERSK29 hours

Natural Hazards& Disasters - Definition and Concepts; Risk & Vulnerability. Types of Hazards and disasters.

#### UNIT II TYPES OF HAZARDS K4

Natural hazards- causes & impacts of Flood, landslide, Drought, Earthquake,

Volcano, Tsunami and Cyclone;

Man-induced hazards - causes & impacts of Desertification, Forest Fire, Soil

Degradation, Technological disasters, Armed conflicts and Civil Unrest.

Causes & impacts of Biological hazard with latest examples.

(Self Study: Desertification, Forest Fire)

#### UNIT III DISASTERS IN INDIA K4 9 hours

#### 9 hours

Disasters in India: Causes, Impact, Distribution and Mapping: Flood and Drought, Earthquake, landslides and Cyclone.

# UNIT IV DISASTER MITIGATION & MANAGEMENT K2 9 hours Disaster Management: Its need and stages-Mitigation and Preparedness; Disaster Risk Reduction Strategies, Disaster Cycle, Role of Remote Sensing in tracking the disasters. .

#### UNIT V NDMA K3 9 hours

National Disaster Management Authority (NDMA) and National Institute of Disaster Management (NIDM) and NDRF: Functions and strategies; Components of Disaster Relief: Water, food, sanitation, shelter, Health and Waste Management; Do's and Don'ts During Disasters.

(Self Study: NDMA, NDRF)

#### **TEXT BOOKS:**

 Singh Jagbir (2007) "Disaster Management Future Challenges and Oppurtunities", 2007.
 Publisher- I.K. International Pvt. ltd. S-25, Green Park Extension, Uphaar Cinema Market, New Delhi, India

2. Singh, R.B. (2005) Risk Assessment and Vulnerability Analysis, IGNOU, New Delhi. **REFERENCE BOOKS** 

# l. Kapur, A. (2010) Vulnerable India: A Geographical Study of Disasters, Sage Publication,

New Delhi.

2. Modh, S. (2010) Managing Natural Disaster: Hydrological, Marine and Geological Disasters, Macmillan, Delhi.

3. Singh, R. B. (ed.), (2006) Natural Hazards and Disaster Management: Vulnerability and Mitigation, Rawat Publications, New Delhi.

4. Sinha, A. (2001). Disaster Management: lessons Drawn and Strategies for Future, New United Press, New Delhi.

5. Government of India. (1997) Vulnerability Atlas of India. New Delhi, Building Materials &Technology Promotion Council, Ministry of Urban Development, Government of India.

6. Singh Jagbir (2007) "Disaster Management Future Challenges and Oppurtunities", 2007.

Publisher- I.K. International Pvt. ltd. S-25, Green Park Extension, Uphaar Cinema Market, New Delhi, India

7. Singh, S. Environmental Geography. Prawalika Publication, Allahabad, 2016. Barucha, Arach. Textbook of Environmental Studies, University Press India, Hyderabad. 2016.

8. Thakur, D. K. A Text Book of Environment Disaster Management. Manisha Prakashan. Jaipur. 2014.

9. Sinha, A., Disaster Management- lessons Drawn and Strategies for Future, New United Press, New

10. Abbott, P. l., (1999). Natural disasters. McGraw-Hill, Boston

ll. Mrinalini Pandey, (2014). Disaster Management. Wiley India Pvt. ltd. New Delhi

#### **BLENDED LEARNING**

S.No.	Topics	Links
1	<u>Unit 2</u>	https://www.nationalgeographic.com/environment/article/tsunamis
	Tsunami	
2	Volcanoes	https://www.nationalgeographic.com/environment/article/volcanoes
3	Floods	https://www.nationalgeographic.com/environment/article/floods
4	<u>Unit 5</u>	https://ndma.gov.in/
	NDMA	

#### Mapping of COs with POs and PSOs

	PO	PSO	PSO	PSO											
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
CO1	1	1	1	1	2	2	2	1	1	3	1	2	3	1	2
CO2	1	1	1	1	2	2	2	1	1	3	1	2	3	1	2
CO3	1	1	1	1	2	2	2	1	1	3	1	2	3	1	2
CO4	1	1	1	1	2	2	2	1	1	3	1	2	3	1	2
CO5	1	1	1	1	2	2	2	1	1	3	1	2	3	1	2

**Correlation:** 3 – High; 2 – Medium; 1 - Low

#### ASSESSMENT TOOLS

S.No.	Assessment Method	Frequency of Assessment
1	End Semester Examinations	Once in a semester
2	CIA l	Once in a semester
3	CIA 2	Once in a semester
4	Model	Once in a semester
5	Assignment (Unit I & II)	Twice in a Semester
6	Seminar (Unit III & IV)	Twice In a Semester
7	Content Writing Or Class Participation(Unit V)	Once in a Semester

Course designed by: Dr.Sreelakshmy M	Verified by HOD: Dr. Jyothirmayi P

Checked by CDC: Dr.K.Jayanthi	Approved by:
	Principal

#### **CERTIFICATE COURSE IN GIS**

#### (Code: 22CGIS001)

#### (Offered to the Final year students of B.Sc. Geography from 2019 batch onwards)

#### **COURSE OBJECTIVES:**

- To lay the foundation for understanding the basics of GIS.
- To make the students understand the data input, analysis and output process.
- To enable students to prepare a map using the basic GIS techniques.

#### **COURSE OUTCOMES:**

After the completion of the course the student will be able to:

CO1	Understand the meaning of GIS.	K2
CO2	Prepare the digitized and geo-referenced maps.	K3
CO3	Execute the basic analysis in GIS.	K3
CO4	Prepare map layout in GIS	K3

#### Syllabus

#### Total Instructional Hours:30 (10 hours of theory and 20 hours of practical)

UNIT	1	K2	6 Hours
	Introduction to	GIS- Data in GIS.	
UNIT	II	K3	6 Hours
	Data Input- Ge	o Referencing- Digitisation: Point, line, area	features.
UNIT	III	K3	6 Hours
	Basic Analysis	in GIS: overlaying- Buffering.	
UNIT	IV	K3	6 Hours
	Map output- M	ap Layout	
UNIT	V		6 Hours
	Record		
REFE	RENCE BOOH	KS:	

- Ian Heywood et.al.:(2012): An introduction to Geographical Information systems(4<sup>th</sup> edition): Pearson, UK
- Michael F. Goodchild et.al(2016):Geographic Information systems and science :4<sup>th</sup> edition: Wiley & sons, New York.
- Burrough and McDonnell, (2004). Principles of Geographical Information systems –, Oxford University Press
- Chang, & K.-T. (2008). Introduction to geographic information systems. Boston: McGraw-Hill.

#### **ASSESSMENT TOOLS**

S.No.	Assessment Method	Frequency of Assessment
1	End Semester Examinations (practical)	Once in a year
2	CIA l- Theory	Once in a year
3	CIA 2- Practical	Once in a year
4	Record	Once in a year

#### **EVALUATION PATTERN**

**Internal Component- 50 marks** 

**External Component – 50 marks** 

#### **Internal Exam Pattern**

Section A: 10 \* 2 marks = 20 (All questions are compulsory)

Section B: 2 \* 5 marks = 10 (All questions are compulsory)

Section C: 2 \* 10 marks = 20 (All questions are compulsory)

#### **CERTIFICATE COURSE IN CLIMATE CHANGE & GLOBAL IMPACTS**

#### (Offered to all the UG & PG students of other departments from 2022 batch onwards)

#### (The certificate course is offered in collaboration with Agri Engineering Department of Sri Sakthi Institute of Technology, Coimbatore)

#### **COURSE OBJECTIVES:**

- To make aware of the climate change phenomena around us.
- To make understand the impacts of climate change on different features.
- To create awareness regarding the various mitigation and adaptive methods

#### **COURSE OUTCOMES:**

After the completion of the course the student will be able to:

CO1	Understand the elements of weather and climate.	K2		
CO2	Find out the impacts of climate change on different sectors.	K2		
CO3	Identity the mitigation and adaptation measures.	K1		
CO4	Outline the nature of vulnerability assessment	K1		
	Syllobug Instructional Hourse 20			

#### Syllabus

#### **Instructional Hours: 30**

#### UNIT I INTRODUCTION TO ATMOSPHERE & CLIMATE K2 6 Hours

Weather & Climate- Atmospheric Structure & Composition- Solar Radiation & Global Energy Budget

Climate Change & Climate Variability- Greenhouse gases- Global warming Potential - Drivers of Climate Change - Radiative Forcing- Climate Feedbacks- Human footprint on global warming- Climate Change Indicators.

UNIT	II IMPACTS OF CLIMATE CHANGE K2			6 Hours
	Impact on Primary Sector- Agriculture- Livestock- Fisheries- Forestry-			
	Impact on Natural Ecosystem- Impact on Natural Resources Impact on Human Society, Livelihood & Urban Areas			
UNIT	<b>III INTRODUCTION TO MITIGATION &amp; ADAPT</b>	ATION	K1	6 Hours
	Concept of Mitigation & Adaptation- Climate Resilient p	pathways- (	Global	Institutional
	Mechanisms- Adaptive Strategies & Capacities- Economic Policy Instruments for			
	Reducing GHG emissions			

#### UNIT IV CLIMATE CHANGE & SOCIETY K1 6 Hours

Global Change Vulnerability Assessment- Climate Change and Indigenous

Communities- Climate Refugees- Climate Change and Human Health

#### UNIT V

**6 Hours** 

Case Study & Project Submission

#### **REFERENCE BOOKS:**

- 1. An Introduction to Climate –Glenn. T. Trewartha Mc Graw Hill.
- 2. Atmosphere, Weather and Climate Barry and Chorley, Routledge, London, 2003.
- 3. Singh, S. (2005), Climatology, Allahabad: Prayag Pustak Bhawan.
- 4. Lal D.S. (2015), Oceanography, Allahabad: Sharada Pustak Mahal
- Arthur, R. (2009). Coral bleaching and mortality in three Indian reef regions during an El Nino southern Oscillation event. Curr. Sci, 79, 1723 – 1729.
- 6. Worldfish. (2006). The threat to fisheries and aquaculture from climate change policy brief. The world fish center, Penang, Malaysia (available at: <a href="http://www.worldfishcenter.org">www.worldfishcenter.org</a>)
- Carney D. Ed. (1998) Sustainable Rural Livelihoods: What Contribution Can We Make? UK Department for International Development (DFID).
- 8. Government of India (2004) India's Initial National Communication to the UN Framework Convention, New Delhi:
- 9. GoI. Gosain A K and Rao S. (2003) Impacts of climate change on water sector. In Climate change and India: vulnerability assessment and adaptation, edited by P R Shukla, K S Sharma, N H Ravindranath, S Bhattacharya Hyderabad: Universities Press
- Baird, R. (2008). The impact of climate change and minority and indigenous peoples. Minority Rights Group International, pp.1-11.
- Burger, J. (1997). The Gaia Atlas of First Peoples: A Future for the Indigenous World, Penguin Books, Ringwood, p. 188.