School of Humanities & Social SciencesDepartment of Geography

NEP based Programme and Course Structure

B.A. (H) Geography

Program Code:SHS0115

Batch: 2021-25

NEP based OBE Document for B.A. Programme

Year-wise Structure of UG/ Programs

		Subject I	Subject II	Subject III	Subject IV	Vocational	Co-Curricular	Industrial Training/ Survey/ Project	Credits		(Min.-Max. Total Credits) After completion {Minimum Credits } [Max Duration in years]
		Major	Major	Major	Minor/ Elective	Minor	Minor	Major			
		6 Credits	6 Credits	6 Credits	4 Credits	3 Credits	2Credits	3/6/8 Credits			
Year	sem	Own Faculty	Own Faculty	Any Faculty	Other Department/ Faculty	Vocational Faculty ** (1-0-4)	Co-Curricular Course	Inter/Intra Faculty related to main Subject	Total	Min.-Max. of the semester / year	
1	I	Physical Geography-(4-0-0) **(UPHED A110101T)**	Resource Appraisal & Management (4-0-0)	Physical Geography of India (5-1-0)		Fundamentals of Remote Sensing** (0-1-4)	Food, Nutrition and Hygiene		23		Certificate in Geography (52)
		Cartographic Techniques I (Practical) -4 (0-0-8) **(UPHED A110102P)**									
	II	Human Geography(4-0-0) **(UPHED A110201T)**	Geomorphology(4-0-0)	India: Contemporary Issues (5-1-0)	Disaster* Management(4-0-0)	Fundamentals of GIS & GPS ** (0-1-4)	First aid and Health	Minor Project 1	29 (52)		
		Cartographic Techniques II (Practical) -4(0-0-8) **(UPHED A110302P)**									

2	III	Environmental Geography (4-0-0) **(UPHED A110301T)**	Climatology(4-0-0)	Social and Economic Geography of India (5-1-0)		Advances in Remote Sensing and GIS: Digital Image Processing**(0-1-4)	Human Values and Environment studies		23		Diploma in Geography(104)
		Statistical Methods in Geography- 4-(0-0-8) **(UPHED A110302P)**									
	IV	Economic Geography(4-0-0) **(UPHED A110401T)**	Hydrology and Oceanography (4-0-0)	Regional Geography of India (5-1-0) **(UPHED A110601T**	Geography of Tourism-* (4-0-0)	Remote Sensing and GIS Applications** (0-1-4)	Physical Education and Yoga	Minor Project- 2	29 (52)		
		Cartographic Techniques III (Practical) – 4(0-0-8) (**UPHED A110402P)**									
3	V	Regional Planning and Development (4-0-0) **(UPHED A110501T**)	Basics of Remote Sensing, GIS and GPS(4-0-0) **(UPHED 110502T)**	RTDC Research Methodology- 6			Analytic Ability and Digital Awareness	Project I- Field Work based 6-Credits **(UPHED A110504R**)	26		Bachelor in Geography(154)
		Remote Sensing (Practical) – 4 (1-0-6)									
	VI	Evolution of Geographical Thought(4-0-0) **(UPHED-A110602T)**	Soil and Biogeography(4-0-0)		Climate Change: Vulnerability and Adaptation* (4-0-0)		Communication Skills and Personality Development	Project II- Field Work based 6-Credits	24 (50)		

								(UPHED A110604R)				
		Geographical Information System (Practical)- 4 (1-0-6) **(UPHED A110603P)**										
4	VII	Political Geography(4-0-0)	Urban Geography(4-0-0)					Project I- Spatial Information Technology based 8-Credits	20			Bachelor (Research) in Geography (194)
		Political Geography Practical- -2 ((0-0-4)	Urban Geography Practical -2(0-0-4)									
	VIII	Agricultural Geography (4-0-0)	Population Geography (4-0-0)					Project II- Spatial Information Technology Based, 8-Credits	**20** (40)			
		Agricultural Geography Practical 2(0-0-4)	Population Geography Practical -2(0-0-4)									

Note- *- This Minor/ Elective course is open to all the students of university.

** This Vocation course is open to all the students of university.

Vision of the University

To serve the society by being a global University of higher learning in pursuit of academic excellence, innovation and nurturing entrepreneurship.

Mission of the University

1. **Transformative educational experience**
2. **Enrichment by educational initiatives that encourage global outlook**
3. **Develop research, support disruptive innovations andaccelerate entrepreneurship**
4. **Seeking beyond boundaries**

Core Values

- **Integrity**
- **Leadership**
- **Diversity**
- **Community**

Vision of the School

To become one of the leading schools of humanities and social sciences by setting global standards of excellence in ingenious curriculum, teaching-learning methods, professional development, and cross-cultural understanding

Mission of the School

M1. To promote learning and employability skills among students.
M2. To develop interdisciplinary approach in Social Sciences, in line with the market requirements.
M3. To guide and facilitate students to succeed in their academic profession.
M4. To encourage research and promote knowledge creation.

Core Values

- **Integrity**
- **Leadership**
- **Diversity**
- **Community**

Program Educational Objectives (PEO)

PEO1: To understand concepts and principles of different disciplines of Geography.

PEO2: To demonstrate a detailed understanding of the selected core discipline of study.

PEO3: To apply an independent approach to address various issues related to the core area of specialization by using appropriate theories and methodologies.

PEO4: To work as an independent critically discerning and creative participant in the workplace, community and personal life.

Program Outcomes of the BA (Hons.) Geography:

PO1: Content Knowledge: Understand the key concepts, constructs and statistical techniques of core geographical concepts.

PO2: Understanding of Theory: Identify theories and concepts from classical and contemporary geography theories.

PO3: Communication Skills: Demonstrate the ability to enhance geographical knowledge to others.

PO4: Research Skills: Develop an ability to use social scientific research methods to address geographical questions.

PO5: Analytical Skills: Possess analytical skills in areas such as policy analysis, administration/ management, communication, quantitative analysis and problem-solving.

PO6: Values in Geography: Apply a geographical perspective to analyze how social structure manifests itself in their own lives in order to actively participate in civic life.

PO7: Assessment: Acquisition of in-depth understanding of the applied aspects of Geography as well as interdisciplinary subjects in everyday life.

PO8: Entrepreneur Skills: The application of knowledge gained in the field of Geography in the classroom to the practical solving of societal problems.

Program Specific Outcomes of the BA (Hons.) Geography:

PSO1: Acquiring Knowledge of Physical Geography.

PSO2: Acquiring Knowledge of Human Geography.

PSO3: Analyse the problems of physical as well as cultural environments

BA (H) Geography	Credits	Type
SEM -I		
1. Physical Geography	4	Major
2. Resource Appraisal & Management	4	Major
3. Physical Geography of India	6	Major
4. Cartographic Techniques I	4	Practical
5. Fundamentals of Remote Sensing (Vocational)	3	Vocational
6 Food, Nutrition and Hygiene	2	Co-curricular
Total Credits	**23**	
SEM-II		
1. Human Geography	4	Major
2. Geomorphology	4	Major
3. India- Contemporary Issues	6	Major
4. Cartographic Techniques II (Practical)	4	Practical
5. Disaster management	4	Minor/ Elective
6. Fundamentals of Geographic Information System and GPS (Vocational)	3	Vocational
7. First aid and Health	2	Co-curricular
8. Minor Project	2	Minor Project
Total Credits	**29**	
SEM-III		
1. Environmental Geography	4	Major
2. Climatology	4	Major
3. Social and Economic Geography of India	6	Major
4. Statistical Methods in Geography	4	Practical
5. Advances in Remote Sensing and GIS: Digital Image Processing	3	Vocational
6- Human Values and Environment studies	2	Co-curricular
Total Credits	**23**	
SEM-IV		
1. Economic Geography	4	Major
2. Hydrology and Oceanography	4	Major
3. Cartographic Techniques III (Practical)	6	Major
4. Regional Geography of India	4	Practical
5. Geography of Tourism	4	Minor Elective
6. Remote Sensing and GIS: Applications	3	Vocational
7. Physical Education and Yoga	2	Co- Curricular
9. Minor Project	2	Minor Project
Total Credits	**29**	

SEM-V

1. Regional Planning and Development	4	Major
2. Basics of Remote Sensing, GIS and GPS	4	Major
3. Research Methodology (RTDC)	6	Major
4. Remote Sensing (Practical)	4	Practical
5. Analytic Ability and Digital Awareness (Co-Curricular)	2	Co- Curricular
6. Project I -Field Work based	6	Industrial Training/ Survey/ Project
Total Credits	**26**	
SEM-VI		
1. Evolution of Geographical Thought	4	Major
2. Soil and Biogeography	4	Major
3. Geographical Information System (Practical)	4	Practical
4. Climate Change: Vulnerability and Adaptation (Minor Elective)	4	Minor/ Elective
5. Communication Skills and Personality Development (Co- Curricular)	2	Co- Curricular
6. Project II Field Work based	6	Inter/Intra Faculty related to main Subject
Total Credit	**24**	
SEM-VII		
1- Political Geography	4	Major
2- Urban Geography	4	Major
3- Political Geography- Practical	2	Practical
4- Urban Geography- Practical	2	Practical
5- Project I- Spatial Information Technology based	8	Project
Total Credit	20	
Sem VIII		
1- Agricultural Geography	4	Major
2- Population Geography	4	Major
3- Agricultural Geography-Practical	2	Practical
4- Population Geography-Practical	2	Practical
5- Project- II Spatial Information Technology based	8	Project
Total Credit	20	

Program Structure
School of Humanities and Social Sciences
B.A. (H) Geography
Batch: 2021-25
SEMESTER: I

S. No.	SubjectCode bySharda	Subject Code by UPHED	Subjects	Teaching Load			Credits	Type of Course
				L	T	P		
THEORY SUBJECTS								
1.	BGO 151	A110101T	Physical Geography	4	0	0	4	Major
2.	BGO 152		Resource Appraisal & Management	4	0	0	4	Major
3.	BGO 153		Physical Geography of India	5	1	0	6	Major
4.	BGO 154		Fundamentals of Remote Sensing	0	1	4	3	Vocational
5.	COC 101	Z010101T	Food, Nutrition and Hygiene	2	0	0	2	Co-curricular
Practical/Viva-Voce/Jury								
6	BGP 155	A110102P	Cartographic Techniques I	0	0	8	4	Practical
TOTAL CREDITS							**23**	

Program Structure
School of Humanities and Social Sciences
B.A. (H) Geography
Batch: 2021-25
SEMESTER: II

S. No.	Subject Code by Sharda	Subject Code by UPHED	Subjects	Teaching Load			Credits	Type of Course
				L	T	P		
THEORY SUBJECTS								
1.	BGO 156	A110201T	Human Geography	4	0	0	4	Major
2.	BGO 157		Geomorphology	4	0	0	4	Major
3.	BGO158		India: Contemporary Issues	5	1	0	6	Major
4	BGO159		Disaster Management	4	0	0	4	Minor/ Elective
5	BGO160		Fundamentals of Geographic InformationSystem and GPS (Vocational)	0	1	4	3	Vocational
6	COC201	Z020201	First aid and Health	2	0	0	2	Co-curricular
7.	BGP 161		Minor Project				2	
Practical/Viva-Voce/Jury								
8	BGP162	A110202P	Cartographic Techniques II	0	0	8	4	Practical
TOTAL CREDITS							**29**	

Program Structure
School of Humanities and Social Sciences
B.A. (H) Geography
Batch: 2021-25
SEMESTER: III

S. No.	Subject Code by Sharda	Subject Code by UPHED	Subjects	Teaching Load			Credits	Type of Course
				L	T	P		
THEORY SUBJECTS								
1.	BGO 251	A110301T	Environmental Geography	4	0	0	4	Major
2.	BGO 252		Climatology	4	0	0	4	Major
3.	BGO 253		Social and Economic Geography of India	5	1	0	6	Major
4.	BGO254		Advances in Remote Sensing and GIS: Digital Image Processing	0	1	4	3	Vocational
5.	COC301	Z030301	Human Values and Environment studies	2	0	0	2	Co-curricular
Practical/Viva-Voce/Jury								
6.	BGP255	A110302P	Statistical Methods in Geography	0	0	8	4	Practical
TOTAL CREDITS							**23**	

Program Structure
School of Humanities and Social Sciences
B.A. (H) Geography
Batch: 2021-25
SEMESTER: IV

S. No.	Subject Code by Sharda	Subject Code by UPHED	Subjects	Teaching Load			Credits	Type of Course
				L	T	P		
THEORY SUBJECTS								
1.	BGO257	A110401T	Economic Geography	4	0	0	4	Major
2.	BGO258		Hydrology and Oceanography	4	0	0	4	Major
3.	BGO259	A110601T	Regional Geography of India	5	1	0	6	Major
4.	BGO260		Geography of Tourism	4	0	0	4	Minor/ elective
5.	BGO261		Remote Sensing and GIS Applications	0	1	4	3	Vocational
6.	COC401	Z040401	Physical Education and Yoga	2	0	0	2	Co-curricular
Practical/Viva-Voce/Jury								
7	BGP262	A110402P	Cartographic Techniques III (Practical)	0	0	8	4	Practical
8.	BGP263		Minor Project				2	
TOTAL CREDITS							**29**	

Program Structure
School of Humanities and Social Sciences
B.A. (H) Geography
Batch: 2021-25
SEMESTER: V

S. No.	Subject Code by Sharda	Subject Code by UPHED	Subjects	Teaching Load			Credits	Type of Course
				L	T	P		
THEORY SUBJECTS								
1.	BGO351	A110501T	Regional Planning and Development	4	0	0	4	Major
2.	BGO352	A110502T	Basics Remote Sensing, GIS and GPS	4	0	0	4	Major
3.			RTDC Research Methodology	5	1	0	6	Major
4.	COC501	Z050501	Analytic Ability and Digital Awareness	2	0	0	2	Co-curricular
Practical/Viva-Voce/Jury								
5.	BGP353	A110504R	Project I- Field Work based				6	Industrial Training/ Survey/ Project
6.	BGP354		Remote Sensing (Practical)	1	0	6	4	Practical
TOTAL CREDITS							**26**	

Program Structure
School of Humanities and Social Sciences
B.A. (H) Geography
Batch: 2021-25
SEMESTER:VI

S.No.	Subject Code by Sharda	Subject Code by UPHED	Subjects	Teaching Load			Credits	Type of Course
				L	T	P		
THEORY SUBJECTS								
1.	BGO356	A110602T	Evolution of Geographical Thought	4	0	0	4	Major
2.	BGO357		Soil and Biogeography	4	0	0	4	Major
3.	BGO358		Climate Change: Vulnerability and Adaptation	4	0	0	4	Minor/ Elective
4.	COC601	Z060601	Communication Skills and Personality Development	2	0	0	2	Co-curricular
Practical/Viva-Voce/Jury								
5.	BGP360	A110603P	Geographical Information System (Practical)	1	0	6	4	Practical
6.	BGP359	A110604R	Project II- Field Work based				6	Industrial Training/ Survey/ Project
TOTAL CREDITS							**24**	

Program Structure
School of Humanities and Social Sciences
B.A. (H) Geography
Batch: 2021-25
SEMESTER: VII

S. No.	Subject Code by Sharda	Subjects	Teaching Load			Credits	Type of Course
			L	T	P		
THEORY SUBJECTS							
1.	BGO451	Political Geography	4	0	0	4	Major
2.	BGO452	Urban Geography	4	0	0	4	Major
Practical/Viva-Voce/Jury							
3.	BGP454	Political Geography- Practical	0	0	4	2	Practical
4.	BGP455	Urban Geography- Practical	0	0	4	2	Practical
5.	BGP453	Project I- Spatial Information Technology based				8	Industrial Training/Survey/ Project
TOTAL CREDITS						**20**	

Program Structure
School of Humanities and Social Sciences
B.A. (H) Geography
Batch: 2021-25
SEMESTER: VIII

S. No.	Subject Code by Sharda	Subjects	Teaching Load			Credits	Type of Course
			L	T	P		
THEORY SUBJECTS							
1.	BGO456	Agricultural Geography	3	1	0	4	Major
2.	BGO457	Population Geography	3	1	0	4	Major
Practical/Viva-Voce/Jury							
3.	BGP459	Agricultural Geography- Practical	0	0	4	2	Practical
4.	BGP460	Population Geography- Practical	0	0	4	2	Practical
5.	BGP458	Project I Spatial Information Technology Based				8	Industrial Training/Survey/ Project
TOTAL CREDITS						**20**	

Course Modules

Bachelor of Arts GEOGRAPHY (Hons.)

Semester I

School: SHSS		**Batch:2021-25**
Program: BA (H) Geography		**Current Academic Year:2021-22**
Branch		**Semester: I**
1	Course Code	
2	Course Title	**Physical Geography**
3	Credits	4
4	Contact Hours (L-T-P)	4-0-0
5	Course Type	Major
6	Course Objective	The objective of this course is to develop the understanding about physical features and basic concept of Physical Geography
7	Course Outcomes	CO1: Student will understand basic concepts of Physical Geography CO2: Students will be familiarized with theories related to origin of continents. CO3: The student will be able to understand the mountain building CO4: Student will be able to explain the forces and processes affecting the land surface of the earth. CO5: Student will understand basic concepts of Atmosphere . CO6: Student will understand basic concepts of Hydrosphere.
8	Course Description	The course will introduce students to basic concepts of Physical Geography. Students will be able to examine the various theories related to origin of continents, mountain building and process

Syllabus Outline	
Unit 1	**Concepts and Bases**
1A	Meaning and Scope of Physical Geography
1B	Theories of Origin of the Earth- Gaseous Hypothesisof Kant, Nebular Hypothesis of Laplace, Hoyle's Supernova Hypothesis of Hoyle, Interstellar Hypothesis of Schmidt, Big Bang Theory
1C	Earth: Interior structure, Rocks: Types &characteristics
Unit 2	**Origin of Continents and Oceans**
2A	Continental Drift Theory- Wegner
2B	Concept of Plate Tectonics and Origin of Continents
2C	Theories of Mountain Building- Kobar, Holmes, PlateTectonics
Unit 3	**Earth Movements**
3A	Forces Affecting the Landforms of the Earth-Endogenetic and Exogenetic
3B	Folding and Faulting

3C	Earthquakes and Volcanoes		
Unit 4	**Atmosphere**		
4A	Composition and Structure of Atmosphere		
4B	Insolation, Vertical and Horizontal Distribution ofTemperature		
4C	Pressure and Winds		
Unit 5	**Hydrosphere**		
5A	Hydrological Cycle		
5B	Surface Configuration of Ocean Basin		
5C	Circulation of Ocean Water-Waves. Currents andTides		
Mode of examination	Theory		
Weightage Distribution	CA	MTE	ETE
	30%	20%	50%
Reading List	1. Gautam, A (2009): Physical Geography, Rastogi Publications, Meerut 2. Khullar, D.R. (2012). Physical Geography. New Delhi. India: Kalyani Publishers 3. Singh, D. S. Lal: Physical Geography, Sharda Pustak Bhawan, Allahabad. 4. Singh, S (2017): Physical Geography, Pravalika Publications, Allahabad 5. Strahler, A.H. and Strahler, A.N. (2016): Modern Physical Geography, John Wiley, New York 6. Thornbury, W.D. (1918): Principles of Geomorphology, New Age International (p) Ltd., New Delhi. 7. Tikkaa, R N (1989): Physical Geography, Kedarnath Ram Nath, Meerut 8. Trewartha G.T. (2015): Elements of Physical Geography, Andesite Press. 9. Wooldridge, S.W. and Morgan, R.S. (1959): The Physical Basis of Geography- An Outline of Geomorphology. Longmans Green, London 10. Suggested equivalent online courses: https://onlinecourses.swayam2.ac.in/cec21_hs03/preview https://onlinecourses.swayam2.ac.in/nos20_sc25/preview		

B.A. (HONS.) Geography (SEMESTER- I)

School: SHSS		**Batch:2021-25**
Program: BA (H) Geography		**Current Academic Year:2021-22**
Branch		**Semester: I**
1	Course Code	
2	Course Title	**Resource Appraisal & Management**
3	Credits	4
4	Contact Hours	(L-T-P) 4-0-0
5	Course Type	Major
6	Course Objectiv e	The objective of this paper is to provide an overview and basic concept of Resources and their management,
7	Course Outcome s	CO1: Student will be able to understand the nature and concept of resources. CO2: Student will be able to understand the distribution and problems related to their utilization. CO3: Students will also be familiarized with basic concept of conservation and management. CO4: Students will also be familiarized with the concept of population resource relation and resource regions of the world. CO5: He will also be able understand different policies for the efficient management of resources. CO6: Students will be familiar with the concept of sustainable development.
8	Course Descriptio n	The basic economy of the world is undergoing rapid transformation in recent times. In the process of development many resources are exploited without proper planning resulting various problems. In view of this, this paper tries to integrate various resources their appraisal and management.
Economic Geography		
Syllabus Outline		
Unit 1		**Basic Concept**
1A		Concept of Resources
1B		Classification of Resources
1C		Concept and Approaches to Resource Management
Unit 2		**Natural Resources: Distribution, Utilization andProblems**
2A		Soil, Forest and Water
2B		Mineral Resources- Iron Ore, Copper and Bauxite
2C		Power Resources: Coal and Petroleum
Unit 3		**Problems of Resource Utilization**
3A		Population Explosion and Pressure on Resources,Concept of Optimum, Over and Under Population
3B		Resource Regions of The World
3C		Development and Environmental Crises
Unit 4		**Conservation and Management**

4A	Meaning, Principles and Approaches to Conservation
4B	Resource Appraisal and Management Methods
4C	Emerging Issues: Contemporary Energy Crisis andFuture Scenario, Pandemic Linkage to Over- Exploitation of Resources
Unit 5	**Polices and Planning**
5A	Land, Water and Forest Policies in India
5B	Sustainable Resource Development –Concept, Methodsand Dimensions
5C	Integrated Resource Development –Ecological,Economic and Social Aspects
Readings books	1. Behra, Deepak Kumar (2000): Resource Management Through IndigenousKnowledge, New Delhi. 2. Berry, B. J.L. (1976): Geography of Economic Systems, Prentice Hall,Englewood Cliff 3. Boyce, R. D. (1974): Bases of Economic Geography, Holt, Rinehart andWinston, NewYork 4. Hartshorne, T. A. and Alexander, J. W. (2010): Economic Geography, PHI,New Delhi 5. Holechek, J.L. et.al. (2000): Natural Resources: Ecology, Economics and Policy,Prentice Hall, New Jersey. 6. Kellog, C.F. (1986): Food, Soil and People, The Manhattan Publishing Co. NewYork. 7. Rao, B.P. (2006): Resources and Environment, Vasundhara, Prakashan,Gorakhpur. 8. Siddhartha, K. (2000): Economic Geography: Theories, Process and Patterns, 9. Simmans, I.G. (1981): The Ecology of Natural Resources, Edward Arnold,London. 10. Singh, Jagdish (1998): Sansadhan Bhoogol, Gyanodaya Prakashan, Gorakhpur. 11. Smith, D. M. (1971): Industrial Location: An Economic Geographical Analysis,John Wiley and Sons, New York. 12. Singh, K.N and Siddiqui, A (2012): Economic Geography, Prayag PustakBhawan, Allahabad 13. Smith, G.H. (ed.) (2000): Conservation of Natural Resources, John Wiley, NewYork. 14. Smith, J.R. (1987): Industrial and Commercial Geography, London. 15. United Nations (2007): Human Development Report, Oxford, UNDP. Zimmermann, E.W. (1966): Introduction to World Resources, Harper & Row,New York.

School: SHSS		**Batch:2021-25**
Program: BA Hons. Geography		**Current Academic Year: 2021-22**
Branch:		**Semester: I**
1	Course Code	
2	Course Title	**Physical Geography of India**
3	Credits	6
4	Contact Hours	(L-T-P)5-1-0
	Course Type	Major
5	Course Objective	1. This paper seeks to equip students with the basics of Indian physicalGeography. 2. The purpose of the course is to provide a thorough background ofIndian climate and mechanism of monsoon of India. 3. The objective of the course is to make the students aware ofdrainage, soil, vegetation, and agro-climatic characteristics
6	Course Outcomes	CO1: The student will be able to understand the physical characteristics of Indian geography. CO2: The student will have thorough understanding of geology and physical geography of India. CO3: The students will have a comprehensive understanding of both climatic characteristics and mechanism of monsoon in India. CO4: the student will be able to understand the drainage, soil and vegetation Characteristics, their problems and conservation. CO5: They will also be able to identify agro-climatic regional variations, characteristic and related issues. CO6: It will help in developing analytical and critical thinking based on the themes and issues of Indian geography.
8	**Outline syllabus**	
	Unit 1	**Location, Geology & Relief**
	1A	Space Relationship of India with Neighbouring Countries;Geological Evolution
	1B	Delimitation & Characteristics of Physiographic Regions
	1C	Origin of Himalayas
	Unit 2	**Drainage**
	2A	Origin of River Systems of India
	2B	Drainage of Indo Gangetic Plain
	2C	Drainage of Peninsular Region
	Unit 3	**Climatic Characteristics**
	3A	Mechanism of the Indian Monsoon
	3B	Climatic Characteristics
	3C	Climatic Regions
	Unit 4	**Soil and Vegetation**

	4A	Soil Types and their Distributions., Soil Erosion andConservation		
	4B	Natural Vegetation		
	4C	Deforestation, Loss of Biodiversity and Conservation ofBiotic Resources		
	Unit 5	**Agro-Climatic Regions**		
	5A	Bases of Delimitation		
	5B	Agro-Climatic Regions of India		
	5C	Agro-Climatic Issues in India		
	Mode of examination	Theory		
	Weightage Distribution	CA	MTE	ETE
		30%	20%	50%
	Reading List	1. Bansal, S.C. (1999): Advanced Geography of India, MeenakshiPublication, Meerut. 2. Deshpande C.D (1992): India: A Regional Interpretation, Northern BookCentre, New Delhi. 3. Gautam, Alka (2001): Geography of India, Sharda Pustak Bhawan, Allahabad. 4. Hussain, Majid (2008): Advance Geography of India, Tata Mc Graw Hill,New Delhi. 5. Khullar, D.R. (2006): India: A Comprehensive Geography, Kalyani Pub.,New Delhi. 6. Krishnan, M. S. (1968): Geology of India and Burma, 4th edition. Higgin Bothams Private. Ltd., Madras. 7. Nag, P. and Gupta S. S. (1992): Geography of India, Concept Publishing.Company, New Delhi. 8. Sdyasuk Galina and P Sengupta: Economic Regionalization of India,Census of India Vol. 1.. No. 8. *Census of India*. 1961. 9. Sharma, T.C. (2013) Economic Geography of India. Rawat Publication,Jaipur 10. Singh, R. L. (ed.) (1971): India. A Regional Geography, NationalGeographical Society of India, Varanasi. 11. Spate O. H. K. and Learmonth A. T. A., India and Pakistan: A General andRegional Geography, Methuen, London, 1967 12. Tirtha, Ranjit 2002: Geography of India, Rawat Pubs., Jaipur & NewDelhi. 13. Tiwari, R. C. (2007): Geography of India, Prayag Pustak Bhawan,Allahabad 14. Wadia, D. N. (1959): Geology of India. MacMillan and Company, Londonand Madras.		

B.A. (HONS.) Geography (SEMESTER- I)

School: SHSS		**Batch:2021-25**
Program: BA (H) Geography		**Current Academic Year:2021-22**
Branch		**Semester: I**
1	Course Code	
2	Course Title	**Cartographic Techniques I**
3	Credits	4
4	Contact Hours	(L-T-P) 0-0-8
5	Course Type	Practical
6	Course Objective	The objective of this course is to develop theunderstanding of the uses of scale & measurement in Geography.
7	Course Outcomes	CO1: Students will be able to understand the concept of CartographyCO2: Students will be able to learn the classification system and construction of cylindrical map projections. CO 3: Students will be able to learn the construction and characteristicsof conical map projections. CO4: Students will be able to learn the construction and characteristics ofperspective polar zenithal map projections. CO5: They will be acquainted with interpretation and study of toposheetsand their importance in geography. CO6: They will be able to identify the relationship between physical andcultural features.
8	Course Description	Geography is an amalgam of physical as well as social sciences and as such, it is necessary for the students to go through laboratory exercises,particularly construction of scale and map projections. To achieve this objective, the concept of scale is to be understood at the initial stage.

Syllabus Outline

Unit 1	**Basic Concept**
1A	Nature, Scope and History of Cartography
1B	Graphical Construction of Plain and Comparative Scale
1C	Graphical Construction of Diagonal and Vernier Scale
Unit 2	**Map Projections: Cylindrical**
2A	Meaning, Classification and Choice of Projections
2B	Construction and Characteristics of Cylindrical Equal AreaProjection
2C	Construction and Characteristics of Mercator's Projection,Universal Transverse Mercator (UTM) Projection
Unit 3	**Map Projections: Conical**
3A	Conical with Two Standard Parallel
3B	Bonne's Projection

3C	Polyconic		
Unit 4	**Map Projections: Polar**		
4A	Polar Zenithal Gnomonic Projection		
4B	Polar Zenithal Stereographic Projection		
4C	Polar Zenithal Orthomorphic Projection		
Unit 5	**Topographical Maps**		
5A	Representation of Different Landforms by Contours		
5B	Study of Survey of India Topographical Maps, Classification &Scale		
5C	Interpretation of Topographical Sheets of a Hilly and a Plain Area		
Mode of examination	Practical.		
Weightage Distribution	CA	MTE	ETE
	30%	20%	50%
Practical	For practical, the course should be taught with the help of topographical sheets of Survey of India. It is necessary to have a well-equipped cartographic laboratory and motivate the students to use the instruments. Adequate number of maps of different areas of India beprocured from Survey of India.		
Readings books	1. Anson R. and Ormelling F. J., 1994: International Cartographic Association: BasicCartographic Vol. Pregmen Press 4. Hinks, A. R. (1921): Map Projection, Cambridge University Press, London. 2. L. R. Singh: Elements of Practical Geography, Sharda Publications, Allahabad. 5. Misra, R.P. and Ramesh, A. Fundamentals of Cartography, McMillan Co.,New Delhi, 1986. 3. Monkhouse & Willikinson: Maps and Diagrams, Methuen, London. 6. Raisz, E. (1962): Principles of Cartography, McGraw Hill, New York. 7. Robinson, A.H. et al.: Elements of Cartography, John Wiley & Sons, U.S.A.,1995. 8. Sarkar A.: K Practical Geography: A Systematic Approach, Oriental Longman,Calcutta, 1997. 9. Singh, R.L. and Dutt, P.K.: Elements of Practical Geography, Kalyani Publishers,New Delhi, 1979. 10. Steers, J. A. (1965): An Introduction to the Study of Map Projection. University ofLondon Press, London.		

Bachelor of Arts: GEOGRAPHY (Hons.)
Semester II

School: SHSS		**Batch:2021-25**
Program: BA (H) Geography		**Current Academic Year:2021-22**
Branch		**Semester: II**
1	Course Code	
2	Course Title	**Human Geography**
3	Credits	4
4	Contact Hours	(L-T-P)4-0-0
5	Course Type	Major
6	Course Objective	The objective of this course is to develop the understanding about basic concept of Human Geography
7	Course Outcomes	CO1: Student will be able to understand the nature of man-environment relationship. CO2: Students will be acquainted with the dispersal of man and cultural regions of the world. CO3: Student will be able to understand the human races and adaptation with reference to world and India. CO4: Student will be able to understand the human races and adaptation with reference to India CO5: The students will be able to critically recognize the characteristics of population distribution, problems, demographic transition theory and concept of Human Resource Development. CO6: Students will be made familiar with the human settlements, types and patterns.
8	Course Description	This course has been designed to acquaint the students with the nature of man-environment relationship and how man has adapted and modified the environment. He will also has an idea about distribution of human races, spatial pattern of population and contemporary issues at global level.

Syllabus Outline	
Unit 1	**Basic Concept**
1A	Nature and Scope of Human Geography
1B	Principles and Approaches of Human Geography
1C	Man, and Environment Relationships- Determinism,Possibilism, Neo-determinism
Unit 2	**Human Races and Early Economic Activities**
2A	Origin and Dispersal of Man
2B	Races: Origin & Classification
2C	Cultural Realms & Hearth
Unit 3	**Habitat and Human Adaptation to Environment**
3A	Cold Region- Eskimos, Hot region- Pygmies
3B	Kirghiz, Masai
3C	Indian Tribes- Gond, Gaddi, Tharu and Santhal

Unit 4	**Population**		
4A	Population Growth and Distribution, Population Agglomerations		
4B	Population Problems, Demographic Transition Theory		
4C	Concept of Human Resource Development		
Unit 5	**Settlements**		
5A	Rural Settlements- Types and Patterns with Special Reference to India		
5B	Urban Settlements- Trend & Pattern of Urbanization in The World		
5C	Classification of Cities, Population-Resource Relationship		
Mode of examination	Theory		
Weightage Distribution	CA	MTE	ETE
	30%	20%	50%
Reading List	1. Huntington E - Principles of Human Geography, The Classics.us. 2. Husain Majid (2019) Human Geography, 5th Edition, New Academic Publishing co. 3. Johnston R; Gregory D, Pratt G. et al. (2008) The Dictionary of Human Geography, Blackwell Publication. 4. Jordan-Bychkov et al. (2006) The Human Mosaic: A Thematic Introduction to Cultural Geography. W. H. Freeman and Company, New York. 5. Leong Goh Cheng & Martin Elizabeth (1982) Human & Economic Geography (Oxford in Asia College Texts) Paperback – 26 6. Rubenstein A.M (2011) Contemporary Human Geography, Pearson, Paperback 7. Suggested equivalent online courses: Courses on Swayam / MOOCs https://onlinecourses.swayam2.ac.in/nou20_hs18/preview		

B.A. (HONS.) Geography (SEMESTER- II)

School: SHSS		**Batch:2021-25**
Program: BA (H) Geography		**Current Academic Year: 2021-22**
Branch		**Semester: II**
1	Course Code	
2	Course Title	**Geomorphology**
3	Credits	4
4	Contact Hours	(L-T-P)4-0-0
5	Course Type	Major
6	Course Objective	1. Objective of this course is to introduce the latest concepts of geomorphology and 2. To familiarize the students with numerous processes and resultant landforms. 3. To understand the application of geomorphology.
7	Course Outcomes	CO1: Students will be able to understand the basic concept of geomorphology. CO2: students will be acquainted with various processes and development of landforms. CO3: Students will be able to understand the landform development theories. CO4: They will be acquainted with the landforms development processes by different agents of erosion. CO5: They will also be able to understand regional geomorphology of selected regions. CO6: Students will be able to understand the application of geomorphology and relevance of geomorphic knowledge in different fields.
8	Course Description	Geomorphology is literally "the study of earth forms". Geomorphologists are primarily concerned with the study of earth's surficial features, including their origin and evolution and impact on human activity. Geomorphology is the scientific study of landforms and the processes that shape them.

	Syllabus Outline	
	Unit 1	**Concepts and Bases**
	1A	Geomorphology: Nature and Scope
	1B	Fundamental Concept of Geomorphology
	1C	Geological Time Scale
	Unit 2	**Geomorphic Process**
	2A	Sub-aerial Denudation
	2B	Weathering and Erosion
	2C	Cycle of Erosion (Davis and Penck)
	Unit 3	**Evolution of Landforms**
	3A	Fluvial Landforms

	3B	Aeolian and Karst Landforms
	3C	Glacial and Coastal Landforms
	Unit 4	**Regional Geomorphology**
	4A	Indo-Gangetic Plain
	4B	Kashmir Himalaya
	4C	Chotanagpur Region
	Unit 5	**Applications of Geomorphology**
	5A	Mining
	5B	Transport and Dams
	5C	Environmental Hazards
Readings books		1. Bloom, A. L. (1992): Geomorphology–A Systematic Analysis, Prentice-Hall India,New Delhi. 2. Chorley, R. J., Schumm, S. A. and Sugden D.E. (1984): Geomorphology,Methuen, London. 3. Holmes, A. (1987): Principles of Physical Geology. Nelson, New York, 3rdedition. 4. Sparks, B.W. (1969) : Geomorphology. Longman, London. 5. Stoddard, D. R. (ed.) (1996): Process and Form in Geomorphology. Routledge,London, 6. Kale, V. and Gupta, A. (2001): Elements of Geomorphology, Oxford UniversityPress, Delhi. 7. Thornbury, W. D. (1990): Principles of Geomorphology. Wiley Eastern Edition,New York, 8.Singh, S. (2004): Geomorphology, Prayag Pustak Bhawan, Allahabad 10. Skinner, B. J. and Porter, S.C. (1996): The Dynamic Earth, John Wiley and Sons,New York. 11. Wooldridge, S.W. and Morgan, R.S. (1959): The Physical Basis of Geography:An Outline of Geomorphology. Longman, London, several reprints.

School: SHSS		**Batch:2021-25**
Program: BA (H) Geography		**Current Academic Year:2021-22**
Branch		**Semester: II**
1	Course Code	
2	Course Title	**India: Contemporary Issues**
3	Credits	6
4	Contact Hours	(L-T-P)5-1-0
5	Course Type	Core
6	Course Objective	The course is designed to develop the knowledge about contemporary issues of environment and geography in India.
7	Course Outcomes	CO1: Student will be able to demonstrate geographical knowledge about various regions of India and will also understand the pattern and disparity issues at various level. CO2: Students will be able to demonstrate understanding of Climatic and biotic hazards CO3:. Student will be able to demonstrate understanding of Terrestrial hazards CO4: Student will be able to understand the concept of human resource development, its measurement and regional pattern and variation along with poverty related issues. CO5: Students will be familiarized with human, environmental and Geographical issues related to India. CO6: It will help in developing analytical and critical thinking based on the themes and issues of Indian geography.
8	Course Description	The course introduces students to contemporary issues in geography of India. Students will be able to examine the various issues, problems and challenges associated with various physical regions of India.
Syllabus Outline		
Unit 1		**Disparity Issues**
1A		Problem of Population Explosion
1B		Disparity in Regional Development
1C		Gender Discrimination and Empowerment of Women
Unit 2		**Climatic and Biotic Hazards**
2A		Concept of Hazards and Disaster: Natural, Quasi-Naturaland Anthropogenic Hazards
2B		Hydro-climatic Hazards: Floods, and Droughts, Cloud Burst, Cyclones - Mechanism, Environmental Impact andRisk Reduction
2C		Biotic Hazards: Loss of Biodiversity its Causes, Impact andConservation
Unit 3		**Terrestrial Hazards**

3A	Edaphic Hazards: Salinization and Desertification-Mechanism, Impact and Management		
3B	Geomorphic hazards: Landslide, River bank erosionand Coastal Erosion--Mechanism, Impact and Management		
3C	Water Related Hazards: Contamination of Groundwater andFall of Piezometric Level		
Unit 4	**Human Development**		
4A	Concept and Indicators of Human Development,Human Development Index and its Components		
4B	Reginal Variation in Human Development		
4C	Poverty: Poverty line, Unemployment, Work Participationand Poverty Alleviation Programmes		
Unit 5	**Human, Environmental and geographical Issues**		
5A	Demographic Constraint: Malnutrition, Food Security andHunger		
5B	Inter-state Water Dispute		
5C	Urban Environmental Problems		
Mode of examination	Theory		
Weightage Distribution	CA	MTE	ETE
	30%	20%	50%
Readings Text book/s	1. Citizens' Report: Centre of Science and Environment, New Delhi. World Development Report: World Bank, Oxford University Press. 3.Human Development Report: Published Annually by Oxford University Press. 4.Natural Human Development Report: 2001- Govt. of India, Planning Commission, Oxford University Press. 5.Disaster Report,Centre for Development Studies: Trivandrum. 6.India Development Report: Parikh, Oxford University Press. 7Survey on Environment: Hindu, Chennai, Published Annually. 8.Weather Weapons: Nature Book Trust. 9.Settlement Geography of Through Desert: R. L. Singh. 10.Environment and Development: R. Bhattacharyya, (Edited). 11.Alexander, D. (1993): Natural Disasters, Research Press, New Delhi, 619 P. 12.Blaikie, P. Cannon, Davis and Wisenes (1994): At Risk, Natural Hazards, People's Vulnerability and Disasters, Pouthledge, London, 320 P. 13.Bryant, E. A. (1991): Natural Hazards: Cambridge University Press, Cambridge, pp. 294. 14.Burotn, I. Kates, R. W. and White, G. F. (1974): The Environment as a Hazard, Oxford University Press. 15.Coch, N. C. (1994): Geo-Hazards, Prentice Hall, N. Y., Pg.305. 18. Gilbert, F. White, ed. (1974): Natural hazards – Local, Natural and Global, Oxford University Press, N. Y. 16. Smith, K. (1996): Environmental Hazards: Assessing Risk and Reducing Disaster, Routledge.		

School: SHSS		**Batch:2021-25**
Program: BA (H) Geography		**Current Academic Year:2021-22**
Branch		**Semester: II**
1	Course Code	
2	Course Title	**Cartographic Techniques II**
3	Credits	4
4	Contact Hours	(L-T-P)0-0-6
5	Course Type	Core (Practical)
6	Course Objective	The objective of this course is to develop the understanding of concept and principles maps in Geography.
7	Course Outcomes	CO 1: Students will be able to understand the principles of map design and will be able to prepare and interpret thematic maps. CO 2: Students will be able to learn the construction of diagrams on the basis of Statistical data. CO 3: Students will be able to learn the construction of maps on the basis of Statistical data. CO4: They will acquire knowledge about weather instruments, symbols and their presentation on weather maps. CO 5: They will be able to interpret Indian daily weather maps of July. CO6: They will be able to interpret Indian daily weather maps of January.
8	Course Description	Geography is an amalgam of physical as well as social sciences and as such, it is necessary for the students to go through laboratory exercises, particularly construction of diagrams and maps on the basis of data. To achieve this objective, the concept of maps is to be understood at the initial stage.

Syllabus Outline

Unit 1	**Maps**
1A	Classification of Maps
1B	Principles of Map Design
1C	Thematic Map: Preparation and Interpretation
Unit 2	**Cartographic Representation of Statistical Data**
2A	Graphs: Line graph, Band Graph, Circular graph
2B	Climatic Diagrams: Wind Roses, Climograph and Hythergraphand their Interpretation
2C	Diagrams: Circle, Wheel, Pyramid, Rectangular
Unit 3	**Cartographic Representation of Areal Data**
3A	Choropleth Maps
3B	Dot Maps
3C	Proportional Circles Maps
Unit 4	**Weather Maps**
4A	Weather Instruments

4B	Weather Symbols		
4C	Representation of Atmospheric Features on Weather Maps ofIndia		
Unit 5	**Interpretation of Weather Maps**		
5A	Methods of Interpretation		
5B	Interpretation of Indian Daily Weather Map: July		
5C	Interpretation of Indian Daily Weather Map: January		
Mode of examination	Practical		
Weightage Distribution	CA	MTE	ETE
	30%	20%	50%
Practical	For practical, the course should be taught with the help of block diagrams, weather maps and topographical sheets of Survey of India. It is necessary to have a well-equipped cartographic laboratory and motivate the students to use the instruments. Adequate number of maps of different areas of India be procured from Survey of India and Meteorology Department.		
Readings books	1. Anson R. and Ormelling F. J., 1994: International Cartographic Association: Basic Cartographic Vol. Pregmen Press 2. Hinks, A. R. (1921): Map Projection, Cambridge University Press, London. 3. L. R. Singh: Elements of Practical Geography, Sharda Publications, Allahabad. 4. Misra, R.P. and Ramesh, A. Fundamentals of Cartography, McMillan Co., New Delhi, 1986. 5. Monkhouse & Willikinson : Maps and Diagrams, Methuen, London. 6. Raisz, E. (1962): Principles of Cartography, McGraw Hill, New York. 7. Robinson, A.H. et al.: Elements of Cartography, John Wiley & Sons, U.S.A., 1995. 8. Sarkar A.: K Practical Geography: A Systematic Approach, Oriental Longman, Calcutta, 1997. 9. Singh, R.L. and Dutt, P.K.: Elements of Practical Geography, Kalyani Publishers, New Delhi, 1979. 10. Steers, J. A. (1965): An Introduction to the Study of Map Projection. University of London Press, London.		

Bachelor of Arts:
GEOGRAPHY(Hon.)
Semester III

School: SHSS		**Batch:2021-25**
Program: BA (H)Geography		**Current Academic Year:2021-22**
Branch		**Semester: III**
1	Course Code	
2	Course Title	**Environmental Geography**
3	Credits	4
4	Contact Hour	(L-T-P) 4-0-0
5	Course Type	Major
6	Course Objective	1. This course aims to introduce concept and scope of environmental geography. 2. This course aims to imbibe the skills required to engage in debates surrounding human-environment relationships. 3. This course aims to develop the capacity to think critically the environmental programmes and policies at global, national and local levels
7	Course Outcomes	CO1: The student will be able to define the concept, scope and dimensions of environmental geography. CO2: The student will be able to understand the atmospheric changes and the climatic hazards. CO3: The student will be able to understand the ecosystem approach in environmental studies and energy and biomass pyramid. CO4: The course will help the students to reflectively analyse the human response to environmental degradation and hazards. CO5: The student will be able to understand the efforts to improve the environmental problems faced by mankind. CO6: The student will be able to criticize and evaluate the environmental policy and management in India
8	Course Description	This is an introductory paper trying to appraise the students with the interrelationship between human and, the environment within which they live and their linkages with other organisms. Such linkages form ecosystem, which varies in different biomes. The importance of conserving biodiversity to maintain ecological balance has also been emphasized in the course. Examples of some human induced ecological changes have been highlighted and restoration measures suggested.
	Syllabus Outline	
	Unit 1	**Concept and Dimensions**
	1A	Concept of Environment and Main Elements, Scope ofEnvironmental Studies
	1B	Approaches to Study the Environment
	1C	Recent Dimensions of Environmental Studies inGeography
	Unit 2	**Structure and Functions of Ecosystem**
	2A	Ecosystem: Concepts and Components

	2B	Ecosystems Forms and Functions: Trophic Level,Ecological Pyramids, Energy Flows
	2C	Bio-Geo-Chemical Cycles: Carbon, Nitrogen, Oxygen
	Unit 3	**Human-Environment Relationship**
	3A	Historical Progression, Adaptation in Different Biomes
	3B	Effects of Environment on Man: Bio-Physical,Perceptional, Behavioural
	3C	Environmental Problems in Tropical, Temperate and PolarEcosystems
	Unit 4	**Water, Air and Noise Pollution and Hazards**
	4A	Water, Air and Noise pollution, Water and LandDegradation
	4B	Problems of Solid Waste and Nuclear Fallout
	4C	Human Response to Floods and Cyclones
	Unit 5	**Environmental Policy and Management in India**
	5A	The Stockholm Conference, The Earth Summit, and Recent Development
	5B	Environmental Policies and Legislations in India (The Wildlife Act, Water Act and Environmental ProtectionAct)
	5C	Environmental Management, Environmental Movements in India*: Bisnoi*, *Chipko*, New Environmental Policy ofIndia; Government Initiatives
	Mode of examination	Theory
	Weightage Distribution	CA: 30% / MTE: 20% / ETE: 50%
	Reading List	1. Casper J.K. (2010). Changing Ecosystems: Effects of Global Warming. NewYork, USA: Infobase Pub. 2. Chandna R. C., 2002: Environmental Geography, Kalyani, Ludhiana. 3. Cunninghum W. P. and Cunninghum M. A., 2004: Principals of Environmental Science: Inquiry and Applications, Tata Mac-graw Hill, NewDelhi. 4. Goudie A., 2001: The Nature of the Environment, Blackwell, Oxford. 5. Government of India. (2011). Disaster Management in India. Delhi, India:Ministry of Home Affairs. 6. Kapur, A. (2010). Vulnerable India: A Geographical Study of Disasters. Delhi,India: Sage Publication. 7. Mal, Suraj., and Singh, R.B. (Eds.) (2009) Biogeography and Biodiversity.Rawat Publication, Jaipur 8. Miller G. T., 2004: Environmental Science: Working with the Earth, ThomsonBrooks Cole, Singapore. 9. MoEF, 2006: National Environmental Policy-2006, Ministry of Environmentand Forests, Government of India. 10. Odum, E. P. et al, 2005: Fundamentals of Ecology,Ceneage Learning India. 8. Singh S., 1997: Environmental Geography, Prayag Pustak Bhawan. Allahabad. 9. Suggested equivalent online courses: https://onlinecourses.swayam2.ac.in/aic19_ge05/preview 10. https://onlinecourses.swayam2.ac.in/nou21_bt03/preview

B.A. (HONS.) Geography (SEMESTER- III)

School: SHSS		**Batch:2021-25**
Program: BA (H) Geography		**Current Academic Year:2022-23**
Branch		**Semester: III**
1	Course Code	
2	Course Title	**Climatology**
3	Credits	4
4	Contact Hours	(L-T-P)4-0-0
5	Course Type	Core
6	Course Objective	The objective of this course is to develop the understanding of atmospheric processes and global warming.
7	Course Outcomes	CO 1: Students will be able to understand the concept of climatology and its significance in Geography CO2: Student will be made aware of the concept and distribution of insolation and temperature. CO3: Student will be able to learn the characteristics and pattern of atmospheric pressure and winds CO4: Student will be able to learn the Mechanism of Monsoon CO5: Students will be able to identify the mechanism of atmosphere and climatic differentiation on the earth. CO6: To understand the Atmospheric Disturbances and consequences of human activities on the atmospheric processes.
8	Course Description	This paper on Climatology is structured into components of aspects of atmosphere to emphasize the constituents of the atmosphere, the dynamic nature of the processes associated with it and their contribution in making the Earth habitable. The course content also leads to the identification of climatic differentiation on the earth, and the consequences of human activities on the atmospheric processes.

Syllabus Outline

Unit 1	**Basic Concepts**
1A	Meaning and Scope of Climatology
1B	Elements of Weather and Climate
1C	Atmospheric Composition and Structure
Unit 2	**Insolation and Temperature**
2A	Insolation and Factors Affecting Insolation, Heat Budget
2B	Temperature- Vertical and Horizontal Distribution
2C	Temperature Inversion
Unit 3	**Atmospheric Pressure and Winds**
3A	Vertical and Horizontal Distribution of Air Pressure
3B	Factors Affecting Winds: Planetary Winds, Periodic and LocalWinds
3C	Mechanism of Monsoon

Unit 4	**Atmospheric Characteristics**
4A	Evaporation, Humidity, Condensation, Fog, Clouds, andPrecipitation
4B	Atmospheric Stability and Instability
4C	Air Masses and Fronts: Concept, Classification and Properties,Climatic Classification: Koppen
Unit 5	**Atmospheric Disturbances**
5A	Origin & Characteristics of Temperate Cyclones
5B	Origin & Characteristics of Tropical Cyclones; Anti-Cyclones
5C	Climate Change and Global Warming: Causes,Consequences and Measures

Mode of examination	Theory		
Weightage Distribution	CA	MTE	ETE
	30%	20%	50%

Reading List

1. Barry R. G. and Carleton A. M., 2001: Synoptic and DynamicClimatology, Routledge, UK.
7. Barry R. G. and Corley R. J., 1998: Atmosphere, Weather andClimate, Routledge, New York.
8. Critchfield H. J., 1987: General Climatology, Prentice-Hall of India,New Delhi
2. Hobbs, J.E. (1983): Applied Climatology, Butterworths, London.
3. Lal, D.S. (2001): Climatology, Chaitanya Pub. House, Allahabad
9. Lutgens F. K., Tarbuck E. J. and Tasa D., 2009: The Atmosphere: AnIntroduction to Meteorology,
4. Oliver J. E. and Hidore J. J., 2002: Climatology: An AtmosphericScience, Pearson Education, New
10. Oliver J. E. and Hidore J. J., 2002: Climatology: An AtmosphericScience, Pearson Education, New Delhi.
5. Sidhartha, K. (2002): Atmosphere, Weather and Climate, Kislay Pub.Pvt. Ltd., New Delhi.
6. Singh, S (2009): Climatology, Prayag Pustak Bhawan, Allahabad.
7. Trewartha G. T. and Horne L. H., 1980: An Introduction to Climate,McGraw-Hill.
8. Trewartha G. T. and Horne L. H., 1980: An Introduction to Climate,McGraw-Hill. Prentice-Hall, Englewood Cliffs, New Jersey.

B.A. (HONS.) Geography (SEMESTER- III)

School: SHSS		**Batch:2021-25**
Program: BA Hons. **Geography**		**Current Academic Year: 2022-23**
Branch:		**Semester: III**
1	Course Code	
2	Course Title	**Social and Economic Geography of India**
3	Credits	6
4	Contact Hours	(L-T-P)5-1-0
	Course Type	Major
5	Course Objective	1. This paper seeks to equip students with the basics of Indian Geography. 2. The purpose of the course is to provide a thorough background of Indian economy and regional variations in India. 3. A key objective of the course is to make students aware Indian contemporary issues.
6	Course Outcomes	CO1: The student will be able to understand the population characteristics of India. CO2: The student will have thorough understanding of pattern of agriculture produce in India. CO3 The student will be able to explain the impact of green revolution on Indian agriculture. CO4: The students will have a comprehensive understanding of mineral resources of India. CO5: The students will be able to know the spatial pattern of power resources in India. CO6: The student will be able to evaluate the spatial pattern of Industries and industrial regionalization.
7	Course Description	The course is aimed at presenting a comprehensive, integrated and empirically based profile of India. Besides, the objective is to highlight the linkages of systematic geography of India with the regional personality of the country. The course is designed so as to present the role of the geographical positioning of India in moulding its geopolitical personality
8	**Outline syllabus**	
	Unit 1	**Population Characteristics**
	1A	Population: Growth, Distribution Density
	1B	Social: Distribution of Population by Race, Caste,Religion, Language
	1C	Population Resource Regions
	Unit 2	**Agricultural Production and Distribution**
	2A	Rice, Wheat, Cotton, Tea and Coffee

	2B	Green Revolution and its Impact		
	2C	Recent Trends of Indian Agriculture, Agricultural Regions		
	Unit 3	**Mineral Resources: Distribution and Production**		
	3A	Iron Ore and Manganese		
	3B	Mica and Bauxite		
	3C	Mineral Resource Regions		
	Unit-4	**Power resources**		
	4A	Coal, Petroleum, Gas		
	4B	Hydro-electricity, Nuclear		
	4C	Non-conventional Power Resources: Solar, Wind, Tidal		
	Unit 5	**Industries and Industrialization**		
	5A	Development of Cotton, Iron-ore, Paper and SugarIndustries		
	5B	Industrial Policies & Trend of Industrialization		
	5C	Industrial Complexes and Industrial Regions		
	Mode of examination	Theory		
	Weightage Distribution	CA	MTE	ETE
		30%	20%	50%

	Reading List	1. Bansal, S.C. (1999): Advanced Geography of India, Meenakshi Publication, Meerut. 2. Deshpande C.D (1992): India: A Regional Interpretation, Northerrn Book Centre, New Delhi. 3. Gautam, Alka (2001): Geography of India, Sharda Pustak Bhawan, Allahabad. 4. Hussain, Majid (2008): Advance Geography of India, Tata Mc Graw Hill, New Delhi. 5. Johnson, B.L.C. (1983): Development in South Asia, Penguin Books, Harmondsworth. 6. Khullar, D.R. (2006): India: A Comprehensive Geography, Kalyani Pub., New Delhi. 7. Krishnan, M. S. (1968): Geology of India and Burma, 4th edition. Higgin Bothams Private. Ltd., Madras. 8. Nag, P. and Gupta S. S. (1992): Geography of India, Concept Publishing. Company, New Delhi. 9. Pathak, C. R. 2003: Spatial Structure and Processes of Development in India. Regional Science Assoc., Kolkata. 10. Sdyasuk Galina and P Sengupta: Economic Regionalisation of India, Census of India Vol. 1. No. 8. *Census of India*. 1961. 11. Sharma, T.C. (2013) Economic Geography of India. Rawat Publication, Jaipur

		12. Singh, R. L. (ed.) (1971): India. A Regional Geography, National Geographical Society of India, Varanasi. 13. Spate O. H. K. and Learmonth A. T. A., India and Pakistan: A General and Regional Geography, Methuen, London, 1967 14. Tirtha, Ranjit 2002: Geography of India, Rawat Publs., Jaipur & New Delhi. 15. Tiwari, R. C. (2007): Geography of India, Prayag Pustak Bhawan, Allahabad 16. Wadia, D. N. (1959): Geology of India. MacMillan and Company, London and Madras.

B.A. (HONS.) Geography (SEMESTER- III)

School: SHSS		**Batch:2021-25**
Program: BA (H) Hons. Geography		**Current Academic Year:2022-23**
Branch		**Semester: III**
1	Course Code	
2	Course Title	**Statistical Methods in Geography**
3	Credits	3
4	Contact Hours	(L-T-P)0-0-6
5	Course Type	Practical
6	Course Objective	The objective of this course is to develop the understanding of the Statistical technicalities required for the analysis of different kinds data.
7	Course Outcomes	CO1: Student will able to understand the basic concept of statistics. CO2: Students will be able to understand the concept of Central tendency in statistics. CO3: Students will be able to learn the techniques to measures of dispersion and Correlation. CO4: They will learn different sampling methods with their merits and demerits CO5: Students will be able to learn the techniques to measures Correlation. CO6: Students will be able to learn the concept of regression and will be able to analyse Relationship & Association.
8	Course Description	The objectives of this course are to train the students in the art of representing demographic and Socio-economic databases of any area through simple statistical techniques and cartograms. The techniques of surveying and map projections necessary for accurate geographical positioning and preparing physical plans of an area also form parts of the practical exercises. This course thus trains the students in preparing different type of maps.

Syllabus Outline

	Unit 1	**Basic Concepts**
	1A	Significance of Statistical Methods in Geography, Sources ofData
	1B	Scales of Measurement (Nominal, Ordinal, Interval, Ratio)
	1C	Tabulation and Frequencies
	Unit 2	**Measures of Central Tendency**
	2A	Mean & Median
	2B	Mode and Quartile
	2C	Graphical Representation and Interpretation of FrequencyPolygon, Histogram, Ogive
	Unit 3	**Measures of Dispersion**
	3A	Mean Deviation

	3B	Standard Deviation		
	3C	Scatter Diagram		
	Unit 4	**Concept and Methods of Sampling**		
	4A	Concept and Types of Sampling		
	4B	Sampling Methods: Probability Sampling		
	4C	Non-Probability Sampling		
	Unit 5	**Correlation**		
	5A	Pearson's Product Moment(r)		
	5B	Spearman's Rank Correlation (rho)		
	5C	Regression: Interpretation and Analysis of Relationship &Association		
	Mode of examination	Practical		
	Weightage Distribution	CA	MTE	ETE
		30%	20%	50%
Readings Text book/s		1. Berry B. J. L. and Marble D. F. (eds.): Spatial Analysis – A Reader in Geography. 2. Duncan, O.D. et.al. (1961): Statistical Geography, Free Press of Glen Co., New York. 3. Ebdon D., 1977: Statistics in Geography: A Practical Approach. 4. Gregory S.: Statistical Methods and the Geographer. Longman S. London, 1963 geography. 5. Khan, Z.A.: Text Book of Practical Geography Concept, New Delhi 1998. 6. Lawarence, G.R.P.: Cartographic methods, Methuen, London, 1968. 7. Monkhouse, F.J. & Wilkinson, H.R.: Maps and Diagrams, Methuen, London, 1994. 8. Mahmood Aslam: Statistical Methods in Geographical Studies, Rajesh Publications, New Delhi, 2002. 9. Pal, S.K.: Statistics for geoscientists - Techniques and Applications, Concept Publications, New Delhi, 1998. 10. Sarkar, A.K.: Practical Geography- A Systematic Approach Orient Longman, Calcutta, 1997. 11. Sarkar A (2013) Quantitative Geography Techniques and Presentations, Orient Blackswan, Calcutta 12. Singh, R.L.: Elements of Practical Geography, Kalyani Pub., New Delhi. 13. Steers, J.A.: Map Projections., University of London Press, London 14. Taylor, P.J. (1977): Quantitative Methods in Geography, Hughton Miffin Co., Boston.		

Bachelor of Arts GEOGRAPHY(Hon.)
Semester IV

B.A. (HONS.) Geography (SEMESTER- IV)

School: SHSS		**Batch:2021-25**
Program: BA (H) Geography		**Current Academic Year:2022-23**
Branch		**Semester: IV**
1	Course Code	
2	Course Title	**Economic Geography**
3	Credits	4
4	Contact Hours	(L-T-P) 4-0-0
5	Course Type	Major
6	Course Objective	The objective of this paper is to provide an overview and basic concept of Economic Geography
7	Course Outcomes	CO1: Student will be able to understand the nature and concept ofEconomic Geography CO2: Student will be able to understand the natural resources andprimitive to modern human activities and adaptation CO3: Students will also be familiarized with application of theoriesand models. CO4: The students will be able to grasp the knowledge of spatialdistribution of industries and industrial regions and their characteristics at world level. CO5: The student will be able to evaluate industrial regions andtheir characteristics at world level. CO6: He will also be able understand transport network of the worldand pattern of modern international trade.
8	Course Description	The basic economy of the world is undergoing rapid transformation in recent times. The process of such transformation of economic activities from primary to secondary and tertiary stage is dynamic innature. In view of this, this paper tries to integrate the various dynamic aspects of economic development.

Economic Geography

Syllabus Outline	
Unit 1	**Fundamentals**
1A	Meaning & Scope of Economic Geography
1B	Methods & Approaches of Study
1C	Main Concepts of Economic Geography
Unit 2	**Primary Economic Activities**
2A	Economic Organization of Space: Forestry, Fishing and Mining Activities, Subsistence and Commercial Agriculture
2B	Principal Crops: Wheat, Rice and Cotton
2C	Agricultural Regions of the World (Derwent Whittlesey)
Unit 3	**Location Theory**
3A	Theory of Agricultural Location (Von Thunen)
3B	Theory of Industrial Location (Weber)
3C	Market Competition Theory
Unit 4	**Industries and Industrial Regions**
4A	Iron and Steel

4B	Cotton Textiles
4C	Industrial Regions of the World: USA, Europe and Japan
Unit 5	Transport and Trade routes
5A	Major Trans-Continental Railways and Sea Routes
5B	WTO and International trade and World Trade Pattern
5C	Globalization, Liberalization and Privatization
Readings books	1. Alexander, J. W. (1988): Economic Geography. Prentice-Hall, New Delhi. 2. Bryson, J., Henry, N., Keeble, D. and Martin, R. (eds.) (1999): The Economic Geography Reader: Producing and Consuming Global Capitalism. John Wiley and Sons, Inc, New York. 3. Berry, B. J. (1976): Geography of Economic Systems, Prentice Hall, Englewood Cliff 4. Boyce, R. D. (1974): Bases of Economic Geography, Holt, Rinehart and Winston, New York 5. Clark, G. L., Gertler, M. S. and Feldman, M. P. (eds.) (2000): The Oxford Handbook of Economic Geography. Oxford University Press, USA. 6. Coe, N. (2007): Economic Geography: A Contemporary Introduction. Blackwell Publishers, Inc., Massachusetts. 7. Guha, J. S. and Chattoraj, P.R. (2002): A New Approach to Economic Geography: A Study of Resources. The World Press Private Limited, Kolkata. 8. Hanink, D. M. (1997): Principles and Applications of Economic Geography: Economy, Policy, Environment. John Wiley and Sons, Inc, New York. 9. Hartshorne, T. A. and Alexander, J. W. (1988): Economic Geography (3rd revised edition) Englewood Cliff, New Jersey, Prentice Hall 10. Hudson, R. (2005): Economic Geographies: Circuits, Flows and Spaces. Sage Publications, London. 11. Knowles, R, Wareing, J. (2000): Economic and Social Geography Made Simple, Rupa and Company, New Delhi. 12. Knox, P., Agnew, J. and McCarthy, L. (2008): The Geography of the World Economy, Hodder Arnold, London 13. Saxena H.M. (2018) Economic Geography, Rawat Publications 14. Sokal, Martin 2011. Economic Geographics of Globalization: A short Introduction. Cheltenham, UK: Edward Elgar. 15. Smith, D. M. (1971): Industrial Location: An Economic Geographical Analysis, John Wiley and Sons, New York 16. Suggested equivalent online courses: Courses on Swayam / MOOCs https://onlinecourses.nptel.ac.in/noc21_hs50/preview

B.A. (HONS.) Geography (SEMESTER- IV)

School: SHSS		**Batch:2021-25**
Program: BA Hons. Geography		**Current Academic Year: 2022-23**
Branch:		**Semester: IV**
1	Course Code	
2	Course Title	**Hydrology and Oceanography**
3	Credits	4
4	Contact Hours	(L-T-P)4-0-0
	Course Type	Major
5	Course Objective	1. This course aims to introduce hydrology and its importance to the students. 2. Student will be introduced to many facets of Oceans. 3. This course aims to help them understand the impact of activates man on the marine environment.
6	Course Outcomes	CO1: The student will be able to understand the water cycle and CO2: The student will be able to define the impact of man on hydrological cycle. CO3: The student will be able to understand the nature, scope and history of oceanography and will also be able to interpret and explain the physiography of the ocean floor. CO4: The student will be able to understand the physical and chemical properties of ocean water. CO5: The course will help the students to analyse marine environments CO6: The student will be able to criticize and evaluate the impact of human activities on the marine environment.
7	Course Description	This is an introductory paper trying to introduce students to the many facets of hydrology and oceans, such as- surface configuration of oceans, physical and chemical properties of sea water, atmospheric and oceanographic circulation, the fascinating world of marine life and the characteristic of marine environment and the impact of man on the marine environment.
8	Outline syllabus	
	Unit 1	**Hydrology: Introduction**
	1A	Hydrological Cycle, Water Balance
	1B	Precipitation, Infiltration, Interception and Evapotranspiration, Groundwater, Streamflow and Runoff
	1C	Human Impact on Hydrological Cycle
	Unit 2	**Basic of Oceanography**
	2A	Nature and scope of Oceanography, History of Oceanography
	2B	Ocean Floor Topography: Major Relief Features of OceanBasins

	2C	Relief Features of Indian Ocean		
	Unit 3	**Properties of Ocean Water**		
	3A	Temperature		
	3B	Salinity		
	3C	Density		
	Unit 4	**Ocean Resources**		
	4A	Marine Deposits		
	4B	Biotic Resources, Mineral and Energy Resources		
	4C	Coral Reefs and Atolls: Theories of their Formation		
	Unit 5	**Circulation of Oceanic Water**		
	5A	Circulation Patterns in Oceans: Surface Waves andCurrents		
	5B	Oceanic Tides		
	5C	Impact of Humans on the Marine Environment		
	Mode of examination	Theory		
	Weightage Distribution	CA	MTE	ETE
		30%	20%	50%
	Text book/s*	1. Garrison, T. (1993): Oceanography – An Invitation to Marine Science,Wadsworth 2. Gerald, S. (1985): General Oceanography: An Introduction, New York. 3. Gross, G. M. (1990): Oceanography, Macmillan Publication, New York 4. Joseph, W. S. and Parish, H. I. (1974): Introductory Oceanography, McGrawHill, Tokyo 5. King, C.A. (1986); Oceanography, C.E. Arnold, London. 6. Lal, D.S. (2003): Oceanography, Sharda Pustak Bhawan, Allahabad. 7. Sharma, R.C. & Vatal, Mira (1995): Oceanography for Geographers,Chaitanya Pub. House, Allahabad. 8. Singh, Savindra (2007): Oceanography, Prayag Pustak Bhawan, Allahabad. 9. Thurman, H. V. and Trujillo, A. P. (1997): Introductory Oceanography,Prentice Hall, New Delhi 10.Thurman, H.B. (1983): Introductory Oceanography, Longman, London. 11.Andrew. D. Ward and Stanley, Trimble (2004): Environmental Hydrology, 2nd edition, Lewis Publishers, CRC Press. 12. Singh, Vijay P. (1995): Environmental Hydrology. Kluwar AcademicPublications, The Netherlands. 13. Kershaw S., 2000: Oceanography: An Earth Science Perspective, StanleyThornes, UK.		

B.A. (HONS.) Geography (SEMESTER- IV)

School: SHSS		**Batch:2021-25**
Program: BA (H) Geography		**Current Academic Year: 2022-23**
Branch		**Semester: III**
1	Course Code	
2	Course Title	**Cartographic Techniques III**
3	Credits	4
4	Contact Hours	(L-T-P)0-0-6
5	Course Type	Core (Practical)
6	Course Objective	The objective of this course is to develop the understanding of the technicalities required for the construction of different kinds of maps.
7	Course Outcomes	CO1. Students will be able to identify, draw and analyse the relief features. CO2. Students will be able to learn some basic morphometric techniques and techniques of measuring slope gradient. CO3. They will learn the basics of geological maps. CO4: They will be able to draw cross-sections of different types of strata. CO5: They will be able to learn some basic techniques of surveying and will be able to perform Plane Table Survey. CO6: They will be able to learn some basic techniques of surveying related to Prismatic Compass, Indian Clinometer and Abney Level.
8	Course Description	The objectives of this course are to train the students in the art of representing topographical features through quantitative techniques and diagrams. The techniques of surveying necessary for preparing physical plans of an area also form parts of the practical exercises.

Syllabus Outline		
	Unit 1	**Analysis of Relief**
	1A	Construction of Longitudinal and Transverse Profiles
	1B	Construction of Superimposed, Projected and Composite Profiles
	1C	Block Diagrams
	Unit 2	**Morphometric Techniques**
	2A	Slope Analysis: Wentworth Method
	2B	Drainage Ordering and Frequency Analysis
	2C	Drainage Density Analysis
	Unit 3	**Geological Maps**
	3A	Beds, Bedding Plane, Strike Lines, and Outcrop

	3B	Drawing of Cross-Section and Interpretation of Horizontal and Inclined Beds		
	3C	Drawing of Cross-Section and Interpretation Folded Beds, Completion of Bedding Plane		
	Unit 4	**Surveying I**		
	4A	Surveying: Meaning, Classification and Significance		
	4B	Basic Principles of Surveying		
	4C	Plane Table Surveying		
	Unit 5	**Surveying II**		
	5A	Prismatic Compass Surveying		
	5B	Indian Clinometer Surveying		
	5C	Abney Level Surveying		
Mode of examination		Theory		
Weightage Distribution		CA	MTE	ETE
		30%	20%	50%
Practical		The models showing the shape and size of the earth be made available to the students. Survey instruments like prismatic compass, plane table, dumpy level and clinometers and their accessories be made available in sufficient numbers so that students may handle these instruments individually or in groups.		
Readings Text book/s		**1-** Gregory S.: Statistical Methods and the Geographer. Longman S. London, 1963 geography. **2-** Khan, Z.A.: Text Book of Practical Geography Concept, New Delhi 1998. **3-** Lawrence, G.R.P.: Cartographic methods, Methuen, London, 1968. **4-** Monkhouse, F.J. & Wilkinson, H.R.: Maps and Diagrams, Methuen, London, 1994. **5-** Pal, S.K. Statistics for geoscientists - Techniques and Applications, Concept, New Delhi, 1998. **6-** Sarkar, A.K.: Practical Geography- A Systematic Approach Orient Longman, Calcutta, 1997. **7-** Singh, R.L. and Singh, Rana P.B. (1993): Elements of Practical Geography, Kalyani Publishers, Ludhiana and New Delhi		

B.A. (HONS.) Geography (SEMESTER- IV)

School: SHSS		**Batch:2021-25**
Program: BA Hons. Geography		**Current Academic Year: 2022-23**
Branch:		**Semester: IV**
1	Course Code	
2	Course Title	**Regional Geography of India**
3	Credits	6
4	Contact hours	(L-T-P)5-1-0
	Course Type	Major
5	Course Objective	1. This paper seeks to equip students with Regional Geography of India. 2. Students will be able to understand the attempt of regionalization in India 3. The purpose of the course is to provide a thorough background of regional variations in India.
6	Course Outcomes	CO1: Student will understand basic concepts of regions, their types andmethods of regionalization CO2: Students will be familiarized with various attempts of regionalization in India. CO3: Student will be able to demonstrate geographical knowledge about Problematic Regions of India. CO4: Student will be able to demonstrate geographical knowledge about selected regions of India CO5: Student will be able to explain various regional development programmes of India. CO6: The student will be able to define the problems and prospects of regions of India.:
7	Course Descriptio n	The course is aimed at presenting a comprehensive, integrated and empirically based regional profile of India. Besides, the objective is to highlight the linkages of systematic geography of India with the regional personality of the country.
8	**Outline syllabus**	
	Unit 1	**Basic Concepts**
	1A	Concept of Region and Regional Geography
	1B	Types of Regions
	1C	Methods of Regionalization
	Unit 2	**Regionalization**
	2A	Bases of Delimitation of Macro, Meso and Micro regions
	2B	Attempts of Regionalization with reference to L.D. Stampand O.H.K. Spate
	2C	Attempts of Regionalization with reference to C.D. Deshpande and R.L. Singh
	Unit 3	**Regional Analysis of Problematic Regions**
	3A	North Eastern Region
	3B	Tribal Regions

	3C	Middle Ganga Plain		
	Unit 4	**Problems and Prospects of Development- Case Studies**		
	4A	Chhotanagpur Plateau		
	4B	Malabar Coast		
	4C	Punjab Plain		
	Unit 5	**Problematic Regions Development Programmes ofSpecific Areas**		
	5A	Drought Prone Areas		
	5B	Flood Prone Areas		
	5C	Hill Areas		
	Mode of examination	Theory		
	Weightage Distribution	CA	MTE	ETE
		30%	20%	50%
	Reading List	1. Bansal, S.C. (1999): Advanced Geography of India, Meenakshi Publication, Meerut. 2. Deshpande C.D (1992): India: A Regional Interpretation, Northern Book Centre, New Delhi. 3. Gautam, Alka (2001): Geography of India, Sharda Pustak Bhawan, Allahabad. 4. Hussain, Majid (2008): Advance Geography of India, Tata Mc Graw Hill, New Delhi. 5. Johnson, B.L.C. (1983): Development in South Asia, Penguin Books, Harmondsworth. 6. Khullar, D.R. (2006): India: A Comprehensive Geography, Kalyani Pub., New Delhi. 7. Krishnan, M. S. (1968): Geology of India and Burma, 4th edition. Higgin Bothams Private. Ltd., Madras. 8. Nag, P. and Gupta S. S. (1992): Geography of India, Concept Publishing. Company, New Delhi. 9. Pathak, C. R. 2003: Spatial Structure and Processes of Development in India. Regional Science Assoc., Kolkata. 10. Sdyasuk Galina and P Sengupta: Economic Regionalisation of India, Census of India Vol. 1. No. 8. *Census of India*. 1961. 11. Sharma, T.C. (2013) Economic Geography of India. Rawat Publication, Jaipur 12. Singh, R. L. (ed.) (1971): India. A Regional Geography, National Geographical Society of India, Varanasi. 13. Spate O. H. K. and Learmonth A. T. A.: India and Pakistan: A General and Regional Geography, Methuen, London, 1967 14. Tirtha, Ranjit 2002: Geography of India, Rawat Publications., Jaipur & New Delhi. 15. Tiwari, R. C. (2007): Geography of India, Prayag Pustak Bhawan, Allahabad 16. Wadia, D. N. (1959): Geology of India. MacMillan and Company, London and Madras. 17. Suggested equivalent online courses: Courses on Swayam / MOOCs https://onlinecourses.swayam2.ac.in/nou20_ag10/preview		

Bachelor of Arts GEOGRAPHY(Hon.)
Semester V

B.A. (HONS.) Geography (SEMESTER- V)

School: SHSS		**Batch:2021-25**
Program: BA Hons. Geography		**Current Academic Year: 2023-24**
Branch:		**Semester: V**
1	Course Code	
2	Course Title	**Regional Planning and Development**
3	Credits	4
4	Contact Hours	(L-T-P)4-0-0
	Course Type	Major
5	Course Objective	1. To understand and evaluate the concept of region in geography and its role and relevance in regional planning. 2. To identify the issues relating to the development of the region through the process of spatial organization of various attributes and their inter relationship. 3. To identify the causes of regional disparities in development. perspectives and policy imperatives.
6	Course Outcomes	CO1: The student will be able to concept of regional planning. CO2: The student will be able to understand various theories and models for regional planning. CO3: The course will help the students to reflectively analyse the changing concept of development. CO4: The student will be able to criticize and evaluate the presentindicators of economic, social and environmental development. CO5: To develop understanding about concept of sectors of development, their level measurement, and concept of sustainable Development. CO6: The student will be able to understand regional development pattern multi-level planning in India.
7	Course Description	This is an introductory paper trying to expose students to some basic ideas and debates in regional planning and developments.
8	**Outline syllabus**	
	Unit 1	**Basic Concepts**
	1A	Concept and Scope of Regional Planning
	1B	Approaches to study Regional Planning
	1C	Methodology and Techniques of Regional Planning, Planning practices in Ancient India.
	Unit 2	**Theories & Models of Regional Development**
	2A	Central Place Theory
	2B	Growth Pole Model of Perroux; Growth Centre strategy forRegional Planning
	2C	Development Models of Myrdal and Rostow
	Unit 3	**Infrastructure and their Role in Regional Development**
	3A	Meaning and Types of Infrastructure

	3B	Role of Infrastructure in Regional Development – Irrigation,Power, Transport, Marketing		
	3C	Role of Infrastructure in Regional Development – InstitutionalFactors- Financial, Research Institutions		
	Unit 4	**Measuring Development**		
	4A	Sectors of Development- Indicators of Different Sectors andMethodology used in Measuring level of Economic Development		
	4B	Human Development Index		
	4C	Sustainable Development		
	Unit 5	**Reginal Development Pattern in India**		
	5A	Formulation and Purpose of Five-Year Plans in India		
	5B	Regional Development in India: Patterns and Imbalances(Agriculture, Education, Health, and Employment)		
	5C	Planning Regions of India: Attempts of their Delimitation		
	Mode of examination	Theory		
	Weightage Distribution	CA	MTE	ETE
		30%	20%	50%
	Text book/s*	1. Abler, R., et. al.: Spatial Organisation: The Geographer's View of the World, Prentice Hall, Englewood Cliffs, N.J., 1971. 2. Bhat, L.S.: Regional Planning in India, Statistical Publishing Society, Calcutta, 1973. 3. Bhat, L.S. et al.: Micro-Level Planning: A Case Study of Karnal Area, Haryana, K.B. Publications, New Delhi, 1976. 4. Chorley, R.J. and Hagget, P.: Models in Geography, Methuen, London, 1967. 5. Christaller, W.: Central Places in Southern Germany, Translated by C.W. Baskin, Prentice Hall, Englewood Cliffs, New Jersey, 1966. 6. Friedmann, J. and Alonso, W.: Regional Development Policy- A Case Study of Venezuela, M.I.T. Press Cambridhge, Mass, 1966. 7. Friedmann, J. and Alonso, W.: Regional Development and Planning - A Reader, M.I.T. Press, Cambridge, Mass, 1967. 8. Glikson, Arthur: Regional Planning and Development, Netherlands Universities foundation for International Co- operation, London, 1955. 9. Gosal, G.S. and Krishan, G.: Regional Disparities in Levels of Socio-Economic Development in Punjab, Vishal Publications, Kurukshetra, 1984. 10. Government of India, Planning Commission: Third Five Year Plan, Chapter on Regional Imbalances in Development, New Delhi, 1961. 11. Indian Council of Social Science Research: Survey of Research in Geography, Popular Prakashan, Bombay, 1972. 12. Johnson, E.A.J.: The Organisation of Space in Developing Countries, Harvard University Press, Cambridge, 1970. 13. Kuklinski, A.R.(ed.): Growth Poles and Growth Centres in Regional Planning, Mouton, The Hague,1972. 14. Kundu, A. and Raza, Moonis: Indian Economy- The Regional Dimension, Spectrum Publishers, New Delhi, 1982. 15. Losch, A.: The Economics of Location, University Press, Yale, New Haven,		

		1954. 16. Mishra, H. N. (2005): Regional Planning, Rawat Publication, Jaipur 17. Mishra, R. P. (2002): Regional Planning in India- Concept Publication, New Delh 18. Mishra, R.P. (1992): Regional Planning: Concepts, Techniques, Policies and Case Studies, Concept Pub., New Delhi. 19. Mishra, R.P. et. Al. (1987): Regional Development Planning in India : A New Strategy Vikas Pub., New Delhi. 20. Mishra, R.P. et.al. (1980): Multi Level Planning, Heritage Publishers 21. Ojha, R.N. (1987): Pradeshik Niyojan, Kitabghar Acharya Nagar, Kanpur. 22. Suggested equivalent online courses: https://onlinecourses.swayam2.ac.in/aic19_ge05/preview

B.A. (HONS.) Geography (SEMESTER- V)

School: SHSS		**Batch: Batch:2021-25**
Program: BA (H) Geography		**Current Academic Year: 2023-24**
Branch		**Semester: V**
1	Course Code	
2	Course Title	**Basics of Remote Sensing, GIS and GPS**
3	Credits	4
4	Contact Hours	(L-T-P)4-0-0
5	Course Type	Major
6	Course Objective	The objective of this course is to develop the understanding of concept and principles of Spatial technology (Remote Sensing and Geographical Information System), which is the new tool available to geographers for assessment, monitoring and analysis of Geographical data.
7	Course Outcomes	CO1: Students will be able to understand the basic concept of Remote Sensing CO2: Students will be able to learn the historical background of Remote Sensing CO3: Students will be acquainted with geometry of aerial photographs. CO4: Students will be able to understand the interpretation of aerial photographs and satellite imageries. CO5: Students will be able to understand the basics of Geographical Information System and GPS. CO6: Students will be able to understand data model-based analysis and applications of geospatial technology.
8	Course Description	Spatial Information Technology includes remote sensing (Aerial and satellite remote sensing), Geographical Information System, Global positioning System (GPS). These technologies have made possible integration of different data for geographical studies. To achieve this objective the course students will be made aware of these tools at the initial stage.

Outline syllabus

	Unit 1	**Remote Sensing**
	1A	Introduction to Remote Sensing
	1B	Characteristics of Electro-Magnetic Radiation: SpectralRegions and Bands
	1C	Stages of Remote Sensing: Interaction with Earth SurfaceFeatures and Atmosphere: Reflection, Absorption, Transmission, Scattering and Refraction, Atmospheric Windows, Spectral Signature
	Unit 2	**History and Types**
	2A	History of Remote Sensing with special reference to India
	2B	Types of Remote Sensing
	2C	Remote Sensing Satellites: Platforms and Sensors
	Unit 3	**Aerial Photography & Remote Sensing Data Interpretation**

	3A	Introduction to Elements of Photographic System: CameraSystem and Film, Aerial Photos: Types and Characteristics		
	3B	Basic Geometry & Characteristics of Aerial Photograph, Scale,Resolution, Concept of Relief Displacement		
	3C	Fundamentals of Visual Image Interpretation, Methods andTechniques of Image Interpretation		
	Unit 4	**Geographical Information System**		
	4A	Definitions, Objectives and Development, Component of GIS,Functional Elements of GIS		
	4B	GIS Hardware & Software		
	4C	Data Structure-Raster & Vector		
	Unit 5	**Spatial Analysis and Applications**		
	5A	Spatial Data Analysis – Raster – Vector based		
	5B	Applications of Geospatial Technology		
	5C	GPS and its Applications		
	Mode of examination	Theory		
	Weightage	CA	MTE	ETE
	Distribution	30%	20%	50%

Reading List

1. Bhatta, B. (2010): Remote Sensing and GIS, Oxford University Press, NewDelhi.
2. Bruce E. Davis (1996) GIS : A Visual Approach, Onward Press.
3. Burrough, P.A. and McDonnell, R. (1998): Principles of GeographicInformation Systems. Oxford University Press, Oxford. London
4. Campbell, J. B. (2002): Introduction to Remote Sensing, Taylor and Francis,London
5. Chang, K.T. (2003): Introduction to Geographic Information Systems. TataMcGraw Hill Publications Company, New Delhi.
6. Fraser Taylor, D.R. (1991): Geographic Information Systems. Pergamon Press,Oxford.
7. George, J. (2003): Fundamentals of Remote Sensing. Universities Press PrivateLtd, Hyderabad.
8. Glen, E. M. and Harold, C. S. (1993): GIS Data Conversion Handbook. FortCollins, Colorado, GIS Word Inc.
9. Heywood, I. (2003): An Introduction to Geographical Information Systems. 2ndedition, Pearson Publishing Company, Singapore.
10. Lillesand, T. M., Kiefer, R. W. and Chipman, J. W. (2004): Remote Sensing andImage Interpretation, Wiley, New York
11. Lo, C.P. and Yeung, A. K. W. (2002): Concepts and Techniques of GeographicInformation Systems. Prentice Hall of India, New Delhi.
12. Longley, P., Goodchild, M.F., Maguire, D. and Rhind, D. (1999): Geographic Information Systems. Principles, Techniques, Management, Applications. JohnWiley and Sons, New York.
13. Nag Prithvish and Kudrat M. (1998): Digital Remote Sensing, ConceptPublishing Company, New Delhi
14. Sabins, F. F. (1996): Remote Sensing: Principles and Interpretation, W. H.Freeman and Company, San Francisco
15. Suggested equivalent online courses: Courses on Swayam / MOOCs https://onlinecourses.swayam2.ac.in/aic20_ge05/preview

B.A. (HONS.) Geography (SEMESTER- V)

School: SHSS		**Batch: Batch:2021-25**
Program: BA (H) Hons. Geography		**Current Academic Year:2023-24**
Branch		**Semester: V**
1	Course Code	
2	Course Title	**Remote Sensing (Practical)**
3	Credits	4
4	Contact Hours	(L-T-P)1-0-6
5	Course Type	Core (Practical)
6	Course Objective	The objective of this course is to develop the understanding of concept and principles of computers and remote sensing (aerial photo and satellite imageries).
7	Course Outcomes	CO1: Students will be acquainted with the fundamentals of computer. CO2: Develop the understanding about basic practical knowledge of aerial photo and satellite imaging CO3: Students will be acquainted with the fundamentals of remote sensing and digital image processing. CO4: They will understand the interpretation of remote sensing images. CO5: They will also be able to create land use/ land cover maps through visual interpretation. CO6: They will also be able to create land use/ land cover maps through unsupervised classification
8	Course Description	GIS is a modern tool provided to a Geographer. This course will provide them with the ideas of the functioning and capabilities of Geographic Information System, which will help them to enhance their skills that can be applied in any geographical studies.

Outline syllabus

	Unit 1	**Computer's fundamentals**
	1A	Introduction to Computers
	1B	Fundamental of Computer
	1C	Exercise on Microsoft Word, Excel & Power Point
	Unit 2	**Aerial Photograph**
	2A	Determination of Scale of Aerial Photographs
	2B	Concept of Height on Aerial Photographs
	2C	Principles of photogrammetry, Stereovision Test
	Unit 3	**Remote Sensing**
	3A	Introduction to Reference System of IRS Satellites,Data Products and Formats
	3B	Remote Sensing Softwares
	3C	Image Enhancement Techniques
	Unit 4	**Visual Interpretation**
	4A	Elements of Photo/Image Interpretation, Interpretation ofSingle Vertical Aerial Photographs

	4B	Interpretation of Stereo Pair of Aerial Photographs		
	4C	Interpretation of Satellite Images		
	Unit 5	**Land use/land cover maps**		
	5A	Land use classification system		
	5B	Preparation of Land Use Map through Single Aerial Photographs, Preparation of Land Use Map through Stereo-Pair of Aerial Photographs		
	5C	Preparation of Land Use Map- Unsupervised Classification		
	Mode of examination	Theory		
	Weightage Distribution	CA	MTE	ETE
		30%	20%	50%
	Reading List	1. Campbell, J. B. (2002): Introduction to Remote Sensing. 5th ed. Taylor & Francis, London. 2. Curran, P.J. (1985): Principles of Remote Sensing, Longman, London. 3. Jenson, John R. 2007. Remote Sensing of the Environment: An Earth Resource Perspective. Person Prentice Hall. 4. Lillesand, T.M. and Kiefer, R.W. (2000): Remote Sensing and Image Interpretation. 4th ed. John Wiley and Sons, New York. 5. Reeves, R.G. (ed.) (1983): Manual of Remote Sensing, Vols. 1 & 2, American Society of Photogrammetry & Remote Sensing, Falls Church, Virginia. 6. Sabins Jr., Floyd F, (1978). Remote Sensing: Principles and Interpretation. W. H, Freeman and Company, New York. 7. Siegel, B.S. and Gillespie, R. (1985): Remote Sensing in Geology, John Wiley and Sons, New York. 8. Swain, P.H. and Davis, S.M. (ed.), (1978): Remote Sensing: The Quantitative Approach. McGraw Hill, New York.		

Bachelor of Arts GEOGRAPHY(Hon.)
Semester VI

B.A. (HONS.) Geography (SEMESTER- VI)

School: SHSS		**Batch:2021-25**
Program: BA Hons. **Geography**.		**Current Academic Year: 2023-24**
Branch:		**Semester: VI**
1	Course Code	
2	Course Title	**Evolution of Geographical Thought**
3	Credits	4
4	Contact Hours	(L-T-P)4-0-0
	Course Type	Major
5	Course Objective	1. To introduce the students to the philosophical and methodological foundations of the subject and its place in the world of knowledge. 2. To familiarize them with the major landmarks in development of geographic thought at different periods of time.
6	Course Outcomes	CO1: The student will be able to understand evolution, nature and paradigms in geographic thought. CO2: The student will be able to understand, interpret and explain the classical and medieval philosophies in geographical thinking. CO3: The student will be able to explain modern geographical thinking. CO4: The course will help the students to reflectively analyse the major debates in geographical thought. CO5: The course will help the students to understand the contribution of different schools. CO6: The student will be able to evaluate the recent trends in geographical thought.
7	Course Description	The course provides an introduction to the major philosophical and methodological foundations in geographic thought at different periods of time.
8	Outline syllabus	
	Unit 1	**Geography as a Discipline**
	1A	Nature and Scope of Geography, Geography as Science
	1B	Approaches to Geographical studies, Relevance ofGeography,
	1C	Paradigms in Geography, Thomas Kuhn theory about thegrowth and development of science. Application of Kuhn Model in Geography.
	Unit 2	**Classical Contributions to Geographical Thought**
	2A	Greek and Roman Geographers
	2B	Contributions of Explorers
	2C	Contributions of Indians (Classical)
	Unit 3	**Geography in Middle Ages**
	3A	Contribution of Arab Geographers
	3B	Renaissance Period in Europe
	3C	Renowned Travellers and their Geographical Discoveries
	Unit 4	**Schools of Geography I**
	4A	German School: Foresters, Kant, Humboldt, Ritter

	4B	German School: Richthofen, Ratzel, and Hettner		
	4C	French School: Blache and Brunhes Soviet Geography: Lomonosov and Gerasimov		
	Unit 5	**Schools of Geography II**		
	5A	American School- Contributions of Davis, Semple,Huntington, and Carl Sauer		
	5B	British School- Contributions of Mackinder, Herbertsonand L.D. Stamp		
	5C	Recent Trends of Geography		
	Mode of examination	Theory		
	Weightage Distribution	CA	MTE	ETE
		30%	20%	50%
	Text book/s	1. Ali, S.M. (1960): Arab Geography, Institute of Islamic Studies, AligarhMuslim University, Aligarh, First Edition. 2. Arentsen M., Stam R. and Thuijis R., 2000: Post- modern Approaches toSpace, ebook. 3. Bhat, L.S. (2009) Geography in India (Selected Themes). Pearson 4. Bonnett A., 2008: What is Geography? Sage. 5. Dikshit R. D., 1997: Geographical Thought: A Contextual History ofIdeas, Prentice– Hall India. 6. Dickinson, R.E. (1969): The Makers of Modern Geography, Routledgeand Kegon Paul, London. 7. Hartshorne, R. (1959): Perspectives on the Nature of Geography, JohnMurray, London. 8. Harvey, D. (1969): Explanation in Geography, Edward Arnold, London. 9. Hartshone R., 1959: Perspectives of Nature of Geography, RandMacNally and Co. 10. Holt-Jensen A., 2011: Geography: History and Its Concepts: A StudentsGuide, SAGE. 11. Husain, Majid (2001): Evolution of Geographical Thought, RawatPublications, Jaipur 12. Johnston R. J., (Ed.): Dictionary of Human Geography, Routledge. 13. Taylor, G. (ed.) (1953): Geography in the Twentieth Century. Methuenand Company Ltd., London. 14. Johnston, R., Gregory, D., Pratt, G., Watts, M. and Whatmore, S. (2003): The Dictionary of Human Geography. Blackwell Publishers, Oxford. 5th edition. 15. Johnston, R. and Sidaway, J.D. (2004): Geography and Geographers: Anglo-American Human Geography Since 1945, Arnold Publishers, London. 16. Rawling, E. and Daugherty, R. (eds.) (2005): Geography into the Twenty-first Century. 2nd edition, John Wiley and Sons, Chichester. 17. Suggested equivalent online courses: Courses on Swayam / MOOCs https://onlinecourses.swayam2.ac.in/cec21_lg06/preview		

B.A. (HONS.) Geography (SEMESTER- VI)

School: SHSS		**Batch:2021-25**
Program: BA Hons. Geography		**Current Academic Year: 2023-24**
Branch		**Semester: VI**
1	Course Code	
2	Course Title	**Soil and Biogeography**
3	Credits	4
4	Contact Hours	(L-T-P)4-0-0
5	Course Type	**Major**
6	Course Objective	The objective of this course is to develop the understanding of concept and principles of soil and bio-geography.
7	Course Outcomes	CO1: Student will have the basic and in-depth knowledge of soil, properties, soil profile etc. CO2: They will be acquainted with degradation of soil, its consequences and measures to manage the problems. CO3: Students will develop the understanding of land capability. CO4: Students will develop the understanding of classification and distribution of soils. CO5: They will be acquainted with biosphere and its functionality. CO6: Students will be able to assess different aspects of floral and faunal provinces.

Outline syllabus

	Unit 1	**Soil Geography- Basic Concept**
	1A	Factors affecting Soil Formation
	1B	Definition and Significance of Soil Properties, Texture,Structure, and Moisture
	1C	Soil Profile, Origin and Profile Characteristics of Zonal andAzonal soils
	Unit 2	**Soil Properties and Degradation**
	2A	Soil Properties: pH, Organic Matter, and NPK
	2B	Soil Erosion and Degradation: Factors, Processes andManagement Measures
	2C	Humans as Active Agents of Soil Degradation
	Unit 3	**Soil Classification**
	3A	Principles of Soil Classification: Genetic and USDA
	3B	Distribution of Soils
	3C	Concept of Land Capability
	Unit 4	**Biogeography- Concepts**
	4A	Nature and Scope of Biogeography
	4B	Concepts of Biosphere, Ecosystem, Biome, Ecotone,Community and Ecology

	4C	Energy flow in ecosystems, Concepts of trophic structure, food chain and food web, Bio-geochemical Cycles: Carbon-dioxide and Nitrogen		
	Unit-5	**Geographical Distribution**		
	5A	Major Groups of Faunal Provinces		
	5B	Major Groups of Floral Provinces		
	5C	Biodiversity: Definition, Types, Threats and ConservationMeasures		
	Mode of examination	Theory		
	Weightage Distribution	CA	MTE	ETE
		30%	20%	50%
	Reading List	1. Chapman J.L., Reiz, M.J. 1993. Ecology: Principle and Applications,Cambridge University Press. 2. Chiras, D.D., Reganold, J.P. 2009. Natural Resource Conservation:Management for a Sustainable 3. Cox, B., Moore, P.D., Ladle, R. 2016. Biogeography: An Ecological andEvolutionary Approach, 9th ed, Wiley-Blackwell. 4. Daji, J.A., Kadam, J.R., Patil, N.D. 1996. A Textbook of Soil Science, MediaPromoters and Publishers. 5. Dash, M.C., 2001. Fundamental of Ecology, 2nd edition, Tata McGrawHill,New Delhi 6. Dey, N. K., Ghosh. P. 1993. India: A Study in Soil Geography, SribhumiPublishing Company. 7. Franzmeier, D.P., McFee, W.W., Graveel, J.G., Kohnke, H. 2016. Soil ScienceSimplified, 5th ed, Waveland Press. Future, 10th ed, Pearson. 8. Huggett, R.J. 1998. Fundamentals of Biogeography, Routeldge, U.S.A. 9. Lomolino, M.V., Riddle, B.R., Whittaker, R.J. 2016. Biogeography, 5th ed,Oxford University Press. 10. MacDonald, G.2001. Biogeography: Introduction to Space, Time, and Life,Wiley 11. Mathur, H.S. 1998. Essentials of Biogeography, Anuj Printers, Jaipur. 12. Morgan, R.P.C. 1995. Soil Erosion and Conservation, 2nd edition, Longman. 13. Santra. A. 2006. Handbook on Wild and Zoo Animals, International BookDistributing Co. 14. Sharma Sandeep, 2017 Soil and Bio-Geography, Random Publications. 15. Sharma, P.D. 2011. Ecology and Environment, Rastogi Publications. 16. Singer, M., Munns, D.N. 2005. Soils: An Introduction, 6th ed, Pearson. 17. Singh S. 2015 Biogeography, Pravalika Publication, Allahabad. 18. Weil, R.R. and Brady, N.C. 2016. The Nature and Properties of Soil, 15thedition, Pearson. 19. White, R. 2006. Principles and Practice of Soil Science: The Soil as a NaturalResource, Blackwell. 20. Whittaker, R.H. 1975. Communities and Ecosystems, MacMillan.		

B.A. (HONS.) Geography (SEMESTER- VI)

School: SHSS		**Batch:2021-25**
Program: BA Hons. Geography		**Current Academic Year: 2023-24**
Branch		**Semester: VI**
1	Course Code	
2	Course Title	**Geographic Information System (Practical)**
3	Credits	4
4	Contact Hours	(L-T-P)1-0-6
5	Course Type	Core (Practical)
6	Course Objective	The objective of this course is to develop the understanding of concept and principles of Geographic Information System.
7	Course Outcomes	CO1: Student will understand the basic concept of map and projection systems. CO2: They will be acquainted with the softwares of GIS CO3: Students will develop the understanding of different tools of GIS CO4: They will be acquainted with the methods to input data and assigning the coordinates. CO5: Students will be able to digitize, add attributes and topology creation and making the data error free with the help of GIS software CO6: They will be acquainted with the methods to visualize spatial data.
8	Course Description	GIS is a modern tool provide to a Geographer. This course will provide them the ideas of the functioning and capabilities of Geographic Information System, which will help them to enhance their skills that can be applied in any geographical studies.

Outline syllabus

	Unit 1	**Map elements**
	A	**Scale**
	B	**Projection**
	C	**Coordinate Systems**
	Unit 2	**GIS Tools**
	A	**Introduction to GIS software**
	B	**Identification of input/output tools**
	C	**Identification of analytical tools**
	Unit 3	**Data input**
	A	**Acquiring Data**
	B	**Scanning**
	C	**Georeferencing of maps**
	Unit 4	**Digitization and overlay operations**
	4A	**Digitization Methods**
	4B	**Entering Attributes,**
	4C	**Topology Creation, Error Detection and Correction**

	Unit 5	**Data visualization**		
	5A	**Adding the Symbology**		
	5B	**Designing the Map Layout, Output and Export**		
	5C	**Overlay operations**		
	Mode of examination	**Theory**		
	Weightage Distribution	CA	MTE	ETE
		30%	20%	50%
	Reading List	1. Burrough, P.A. and McDonnell, R. (1998): Principles of GeographicInformation Systems. Oxford University Press, Oxford. London 2. Chang, K.T. (2003): Introduction to Geographic Information Systems. TataMcGraw Hill Publications Company, New Delhi. 3. Glen, E. M. and Harold, C. S. (1993): GIS Data Conversion Handbook. FortCollins, Colorado, GIS Word Inc. 4. Environmental Systems Research Institute, Inc. (1998): Understanding GIS:The ARC/INFO Method, ESRI Press, Redlands 5. Quantum GIS User Guide, http://docs.qgis.org/1.8/pdf/QGIS-1.8-UserGuide-en.pdf 6. Hiede, R., Sutton, T., Duster, H. and Sutton, M. (2013): The Quantum GISTraining Manual, Locate Press LLC, US		

B.A. (HONS.) Geography (SEMESTER- VII)

School: SHSS		**Batch: 2021-25**
Program: BA Hons. Geography		**Current Academic Year: 2024-25**
Branch:		**Semester: VII**
1	Course Code	
2	Course Title	**Political Geography**
3	Credits	4
4	Contact Hours	(L-T-P) 4-0-0
	Course Type	Major
5	Course Objective	1. To familiarize the students with the geographical factors which have a bearing on the political/administrative organization of space. 2. To enhance awareness of multi-dimensional nature of geo-political space.
6	Course Outcomes	CO1: The student will be able to define the scope and nature of political geography. CO2: The student will be able to understand the approaches to political geography. CO3: The student will be able to understand the functions and classifications of frontiers and boundaries. CO4: The student will be able to apply the knowledge of different global strategic views to contemporary world situation. CO5: The course will help the students to explain the Geopolitical problems of India and also significance of India in global context. CO6: The student will be able to understand the importance of Regional Co-operations.
7	Course Description	This is an introductory paper trying to expose students to some basic ideas and concepts in Political geography. Efforts have been made to orient students to the political/administrative organization of space.
8	Outline syllabus	
	Unit 1	**Fundamentals**
	1A	Nature and Scope of Political Geography
	1B	Evolution & Development of Political Geography
	1C	Approaches to the study of Political Geographywith reference to Functional and Unified Field Theory
	Unit 2	**Nation and State**
	2A	Concept of Nation and State
	2B	Frontiers and Boundaries: Functions and Classification ofInternational Boundaries
	2C	Capital Cities, Core and Periphery Regions
	Unit 3	**Global Strategic Views**
	3A	Views of Mahan, Mackinder
	3B	Views of Spykman and De. Seversky
	3C	Relevance of Global Strategic Views to Contemporary

		World Situation		
	Unit 4	**Contemporary problems of India**		
	4A	Geopolitical Problem of India with Pakistan		
	4B	Geopolitical Problem of India with China		
	4C	Significance of Indian Ocean		
	Unit 5	**Spatial Organizations**		
	5A	Regional co-operations – SAARC, ASEAN, OPEC		
	5B	Regional co-operations- G-15, Quad, BIMSTEC		
	5C	Structure of the Electoral System and Gerrymandering		
	Mode of examination	Theory		
	Weightage Distribution	CA	MTE	ETE
		30%	20%	50%
	Text book/s*	1. Adhikari, S. (1997): Political Geography, Rawat Publications, Jaipur 2. Bhagwati, J.N. (ed.): New International Economic Order - The North South Debate, M.I.T. Press, London, 1976. 3. Cox, K. (2002): Political Geography: Territory, State and Society, Wiley-Blackwell. 4. John, R. S. (2002): An introduction to Political Geography, Taylor & Francis 5. Dikshit, R.D.: Political Geography: A Contemporary Perspective, Tata McGraw-Hill Publishing Co., New Delhi, 1994. 6. Glassner M.I.: Political Geography, John Wiley, New York, 1993. 7. Panikkar, K.M. Geographical factors in Indian History, Bharatiya Vidya Bhavan, Bombay 1956. 8. Pounds N.T.: Political Geography Mc Graw Hill, New York, 1972. 9. Siddiq, M. (1997): India in the Indian Ocean: A Geopolitical Study, Rawat Publications, Jaipur. 10. Sukhwal. B.L. (1987): Modern Political Geography of India. Sterling Publication, New Delhi. 11. Painter J. and Jeffrey A., 2009: Political Geography, Sage Publications. 12. Taylor P. and Flint C., 2000: Political Geography, Pearson Education. Jones M., 2004: An Introduction to Political Geography: Space, Place and Politics, Routledge.		

B.A. (HONS.) Geography (SEMESTER- VII)

School: SHSS		**Batch: 2021-25**
Program: BA (H) Hons. Geography		**Current Academic Year: 2024-25**
Branch		**Semester: VII**
1	Course Code	
2	Course Title	**Political Geography (Practical)**
3	Credits	4
4	Contact Hours	(L-T-P)1-0-6
5	Course Type	Core (Practical)
6	Course Objective	The objective of this course is to make students acquainted with techniques and methods used in political geography and electoral geography as well, through hands-on practical exercises.
7	Course Outcomes	CO1: Students will be acquainted with the India's Global and Strategic Position under different scheme. CO2: To enable students to analysis of size and shape of administrative units CO3: They will understand and interpret the boundary dispute with its neighbours, CO4: They will be acquainted with Cartographic & Statistical Technique in Electoral Geography of given area. CO5: The student will be able to apply the knowledge in optimization of boundaries at district and local level. CO6: The student will be able to apply the knowledge in planning through cartographic techniques.
8	Course Description	The objective of this course is to make students acquainted with techniques and methods of urban analysis through hands-on practical exercises.
Outline syllabus		
	Unit 1	**Cartographic Representation of India's Global andStrategic Position under different Schemes**
	1A	Land Power Setting
	1B	Sea Power Setting
	1C	Air Power Setting
	Unit 2	**Analysis of Administrative Efficiency and Planning**
	2A	State Level
	2B	Division Level
	2C	District Level
	Unit 3	**Indian Boundaries Dispute**
	3A	India-China Boundary-North West
	3B	India-China Boundary- North East
	3C	India-Pakistan Boundary
	Unit 4	**Cartographic & Statistical Techniques in Electoral**

		Geography of given area
	4A	Delimitation of Parliamentary and AssemblyConstituencies
	4B	Trend and Pattern of Voter Turnout
	4C	Pattern of Party Support & Performances, Analysis of Geographic Influences on Voting
	Unit 5	**Optimization of Boundaries at District and Local Level**
	5A	Administrative Efficiency
	5B	Developmental Planning
	5C	Electoral Point of View
	Mode of examination	Practical
	Note-	A laboratory notebook, comprising class assignments of the above, is to be preparedand submitted. Viva-voce based on laboratory notebook.
	Reading List	1. Adhikari, S. (2005) : Political Geography of India, Sharada Pustak Bhawan,Allahabad. 2. Busteed, M.A. (1980) : Developments in Political Geography, London. 3. Carlson, L. (1971) : Geography and World Politics, Prentice Hall, New Jersey, 1971. 4. Chauhan, P.R. (1996) : Rajnitik Bhoogol, Vasundhara Prakashan, Gorakhpur. 5. Dikshit, R.D. (1989) : Political Geography : A Contemporary Perspective, Tata McGraw Hill, New Delhi. 6. Dikshit, S.K. (2007) : Rajnitik Bhoogol Avam Bhurajniti, VishwavidyalayaPrakashan, Varanasi (in Hindi). 7. Dwivedi, R.L. (1980) : Political Geography, Chaitanya Publishing House, Allahabad. 8. Glassner, M.L. & Blij, H.J.de (1968) : Systematic Political Geography, John Wiley,New York. 9. Johnston, R.J. (1982) : Geography and the State, Mac Millan, London. 10. Kasperson, R.E. & Minghi, J.V. (1971) : Structure of Political Geography, London. 11. Pounds, N. J.G. (1977) : Political Geography, Mc Graw Hill, New York. 12. Sinha, Manorama (1995) : Political Geography, Horizon Publication, Allahabad. 13. Sukhwal, B.L. (1985) : Modern Political Geography of India, Sterling Publication,New Delhi. 14. Taylor, P. (1985) : Political Geography, Longman, London, 1985.

B.A. (HONS.) Geography (SEMESTER- VII)

School: SHSS		**Batch: 2021-25**
Program: BA Hons. Geography		**Current Academic Year: 2024-25**
Branch:		**Semester: VII**
1	Course Code	
2	Course Title	**Urban Geography**
3	Credits	4
4	Contact Hours	(L-T-P)4-0-0
	Course Type	Major
5	Course Objective	1. To familiarize students with the basic concepts of urban geography and growth of urban centres around the world. 2. the course aims to familiarize the students with various urban growth models. 3. its objective is also to discuss urban morphology and prevailing urban problems with special reference to India.
6	Course Outcomes	CO1: Student will be aware of the basic concepts' urban geography. CO2: They will understand the models of urban growth. CO3: They will be able to understand the pattern land use and morphology along with urban problems. CO4: They will be able to understand the urban scenario of India. CO5: Understand concept and role of town planning. CO6: They will be introduced to the concept of smart cities
7	Course Description	The study of urban geography can help us understand, analyze, and interpret the landscape and communities of cities and metropolitan areas, around the world. In fact, urban geography is arguably one of the most important subdisciplines within geography, and especially within human geography.
8	Outline syllabus	
	Unit 1	**Fundamentals**
	1A	Nature and Scope of Urban Geography
	1B	Urban Growth in Ancient, Medieval, and Modern Period
	1C	Patterns of Urbanization in Developed and DevelopingCountries
	Unit 2	**Urban Growth Models**
	2A	Concentric Zone Model
	2B	Sectoral Model, and Multi-nuclei Model
	2C	Concept of Rank Size Rule
	Unit 3	**Urban Morphology**
	3A	Definition, Factors affecting on Urban Morphology
	3B	Types of Urban Morphology and Land Use

	3C	Morphology of Indian Cities		
	Unit 4	**Urban Issues with reference to India**		
	4A	Problem of Housing		
	4B	Problem of Slums		
	4C	Problem of Civic Amenities		
	Unit 5	**Urban Policies & Planning**		
	5A	Concept of Town Planning: Aims and Principles of TownPlanning		
	5B	Urban Policies		
	5C	Concept of Smart Cities		
	Mode of examination	Theory		
	Weightage Distribution	CA	MTE	ETE
		30%	20%	50%
	Text books	1. Pacione, M. (2009): Urban Geography, Routledge, New York 2. Carter, H. (1979): The Study of Urban Geography, Arnold Heinemann,London 3. Bose, A. (1980): India's Urbanisation, Tata McGraw Hill, New Delhi 4. Siddharth, K. and Mukherjee, S. (2013): Cities, Urbanization and UrbanSystem, Kisalaya Publishing, New Delhi 5. Hall, T. (2006): Urban Geography, Routledge, London 6. Ramchandran, R. (1997): Urbanization and Urban Systems in India, OxfordUniversity Press, New Delhi. 7. Mandal, R.B. (2000) Urban Geography: A Textbook, Concept Publishing Company,New Delhi.		

B.A. (HONS.) Geography (SEMESTER- VII)

School: SHSS		**Batch: 2021-25**
Program: BA (H) Hons. Geography		**Current Academic Year:2024-25**
Branch		**Semester: VII**
1	Course Code	
2	Course Title	**Urban Geography (Practical)**
3	Credits	4
4	Contact Hours	(L-T-P)1-0-3
5	Course Type	Major (Practical)
6	Course Objective	The objective of this course is to make students acquainted with techniques and methods of urban analysis through hands-on practical exercises.
7	Course Outcomes	CO1: Student will be aware of the basic cartographic techniques in urban geography. CO2: They will understand various methods urban mapping. CO3: They will be able to understand the concept of urban influence area and methods to delineate that. CO4: They will be given the idea of metropolitan region planning CO5: They will be acquainted with the methods to classify urban area based on their functions. CO6: they will also be aware of morphology and master plan through samples with practical exercise on town planning.
8	Course Description	This course will provide students with the basic methods required any urban studies.

Outline syllabus

Unit 1	**Diagrams**
1A	Proportionate Wheel Diagram
1B	Traffic flow Diagram
1C	Temporal Analysis of Urban Growth using Census of IndiaData
Unit 2	**Distribution Maps**
2A	Visualization of Civic Facility through Point Symbol Map
2B	State-wise Variation and Trends of Urbanization
2C	Preparation of Urban Land Use/ Land Cover Map from Satellite Images
Unit 3	**Delimitation of urban Influence area**
3A	Delimitation of Umland
3B	Delimitation of Urban Fringe
3C	Metropolitan Region-NCR
Unit 4	**Functional Classification and Population Projection**

4A		Functional Classification of Towns
4B		Population Projection and Population Growth Forecasting-Arithmetic Method
4C		Population Projection and Population Growth Forecasting-Graphical Method
Unit 5		**Morphology & Town Planning**
5A		Study of Morphology: Case Study
5B		Study of Typical Master Plans- NCR
5C		Selection of Sites for Township and their Planning
	Mode of examination	Practical
	Note-	A laboratory notebook, comprising class assignments of the above, is to be preparedand submitted. Viva-voce based on laboratory notebook.
	Reading List	1. Pacione, M. (2009): Urban Geography, Routledge, New York 2. Carter, H. (1979): The Study of Urban Geography, Arnold Heinemann, London 3. Bose, A. (1980): India's Urbanisation, Tata McGraw Hill, New Delhi 4. Siddharth, K. and Mukherjee, S. (2013): Cities, Urbanization and Urban System, Kisalaya Publishing, New Delhi 5. Hall, T. (2006): Urban Geography, Routledge, London 6. Ramchandran, R. (1997): Urbanization and Urban Systems in India, Oxford University Press, New Delhi. 7. Mandal, R.B. (2000) Urban Geography: A Textbook, Concept Publishing Company, New Delhi. 8. Monkhouse F.J. and Wilkinson. H. R. 1971. Maps and Diagrams: Their Compilation and Construction, 3rd ed (2017 reprint), Alphaneumera-Kolkata.

Bachelor of Arts GEOGRAPHY(Hon.)
Semester VIII

B.A. (HONS.) Geography (SEMESTER- VIII)

School: SHSS		**Batch: 2021-25**
Program: BA Hons. Geography		**Current Academic Year:2024-25**
Branch:		**Semester: VIII**
1	Course Code	
2	Course Title	**Agriculture Geography**
3	Credits	4
4	Contact Hours	(L-T-P)4-0-0
	Course Type	Major
5	Course Objective	1. To familiarize students with the basic concept, origin and development of agriculture. 2. To examine the role of agricultural determinants towards changing cropping pattern, intensity, productivity, diversification and specialization. 3. The course aims to familiarize the students with the application of various theories, models and classification schemes of cropping pattern and productivity. 4. its objective is also to discuss environmental technological and social issues in agriculture.
6	Course Outcomes	CO1: Students will be aware of the basic concepts and issues in agriculture geography. CO2: They will be acquainted with the land use and land cover classification CO3: They will understand the theories and models of Agriculture Geography. CO4: They will understand the pattern of cropping pattern intensity productivity diversification and specialization CO5: Students will be acquainted with the regionalization of various aspects related to agriculture. CO6: Understand the Contemporary scenario and issues of agriculturewith reference to India.
7	Course Description	Agriculture has been the dominant economic activity in the past and it is still the mainstay of over two-third of the world population. The study of agricultural geography is thus of great social relevance among all the branches of human geography.
8	Outline syllabus	
	Unit 1	**Basic Concepts**
	1A	Nature and Scope of Agriculture Geography
	1B	Approaches to study Agricultural Geography
	1C	Factors affecting Agriculture: Physical, Technological andInstitutional
	Unit 2	**Land Use/ Land Cover Classification**
	2A	Definition and Classification System
	2B	Land Use Classification with special reference to India

	2C	Carrying Capacity of Land		
	Unit 3	**Regionalisation of Agricultural Pattern**		
	3A	Concepts and Methods of Agricultural Regionalisation;Agricultural Systems of the World (Whittlesey's Classification)		
	3B	Cropping Intensity and Diversification, Agricultural LandUse Model (Von Thuenen)		
	3C	Indicators and Measurement of Level of AgriculturalDevelopment		
	Unit 4	**Agricultural Regions of India**		
	4A	Agro-climatic Regions of India		
	4B	Agro-ecological Regions of India		
	4C	Crop Combination Regions of India		
	Unit 5	**Agricultural Revolutions in India**		
	5A	Green Revolutions, White Revolutions		
	5B	Blue, Pink Revolutions		
	5C	Recent Trends of Indian Agriculture		
	Mode of examination	Theory		
	Weightage Distribution	CA	MTE	ETE
		30%	20%	50%
	Text book/s*	1. Basu, D.N., and Guha, G.S., 1996: Agro-Climatic Regional Planning inIndia, Vol.I & II, Concept 2. Bryant, C.R., Johnston, T.R, 1992: Agriculture in the City Countryside,Belhaven Press, London. 3. Burger, A., 1994: Agriculture of the World, Aldershot, Avebury. 4. Grigg, D. (1995): An Introduction to Agricultural Geography, Routledge,London 5. Hussain, Majid (1998): Agricultural Geography, Rawat Publications, Jaipur. 6. Ilbery B. W., 1985: Agricultural Geography: A Social and EconomicAnalysis, Oxford UniversityPress. 7. Kumar, Pramila & Sharma, S.K. (1990): Agricultural Geography (Hindi), M.P. Hindi Granth Academy, Bhopal. 8. Misra, R.P. (1968): Diffusion of Agricultural Innovation, Concept Publication, New Delhi. 9. Mohammad Ali (1978) Studies in Agricultural Geography, Rajesh Publishers, New Delhi Mohammad, N., 1992: New Dimension in Agriculture Geography, Vol. I to VIII, Concept Pub., New Delhi. 10. Mohammad, Noor (1980): Perspectives in Agricultural Geography (Vol. I–IV), Concept Pub. Co., New Delhi. 11. Roling, N.G., and Wageruters, M.A.E., (ed.) 1998: Facilitating SustainableAgriculture, Cambridge University Press, Cambridge. 12. Shafi, M., 2006: Agricultural Geography, Doring Kindersley India Pvt. Ltd.,New Delhi 13. Singh, J., and Dhillon, S.S., 1984: Agricultural Geography, Tata McGrawHill, New Delhi. 14. Singh, S.N. (1994): Agricultural Development in India, Kaushal Publications, Shillong. 15. Symons, L. (1970): Agricultural Geography, G. Bell and Sons Ltd., London		

B.A. (HONS.) Geography (SEMESTER- VII)

School: SHSS		**Batch: 2021-25**
Program: BA (H) Hons. Geography		**Current Academic Year:2024-25**
Branch		**Semester: VIII**
1	Course Code	
2	Course Title	**Agriculture Geography (Practical)**
3	Credits	4
4	Contact Hours	(L-T-P)1-0-6
5	Course Type	Major-Practical
6	Course Objective	The objective of this course is to familiarize students with the basic cartographic techniques and statistical methods and other measurement techniques used in agriculture geography. through hands-on practical exercises.
7	Course Outcomes	CO1: Students will be acquainted with the fundamentals of agriculture data presentation and interpretation, CO2: To enable students to understand the techniques to measureland capability, carrying Capacity, and agricultural intensity. CO3: They will understand the concept of crop combination region. CO4: They will be able to determine and map the crop intensity and diversity. CO5: The student will be able to demonstrate the use of land use classification, land use survey and land use planning. CO6: They will be acquainted with methods of agricultural productivity and efficiency Measurement.
8	Course Description	In geographical studies knowledge of effective representation of agriculture related data is essential for every geography student. This course will provide students with the graphical representation, various mapping and measurement techniques which can be applied in any agricultural studies.

Outline syllabus

Unit 1	**Preparation and Interpretation Diagrams**
1A	Ergograph
1B	Proportionate Wheel diagram
1C	Rectangular Diagram
Unit 2	**Measurements**
2A	Land Capability Classification with Special Reference to India
2B	Carrying Capacity
2C	Measurement of Agricultural Intensity
Unit 3	**Crop-combination regions**
3A	Crop-combination Regions by Weaver
3B	Cropping Intensity: Determination and Mapping
3C	Crop Diversity: Determination and Mapping
Unit 4	**Land Use**
4A	Land Use Classification System
4B	Techniques of Land Use Survey.
4C	Land Use Planning of a given area

<table>
<tr><td>Unit 5</td><td colspan="3">Measurement of Agricultural Productivity and Efficiency</td></tr>
<tr><td>5A</td><td colspan="3">Methods of Agricultural Productivity Measurement</td></tr>
<tr><td>5B</td><td colspan="3">Kendall’s Ranking Coefficient Method,</td></tr>
<tr><td>5C</td><td colspan="3">Weighted Ranking Coefficient Method</td></tr>
<tr><td>Mode of examination</td><td colspan="3">Practical</td></tr>
<tr><td>Note-</td><td colspan="3">A laboratory notebook, comprising class assignments of the above, is to be prepared andsubmitted. Viva-voce based on laboratory notebook.</td></tr>
<tr><td rowspan="2">Weightage Distribution</td><td>CA</td><td>MTE</td><td>ETE</td></tr>
<tr><td>30%</td><td>20%</td><td>50%</td></tr>
<tr><td>Reading List</td><td colspan="3">1. Hussain, M. 1978 Agricultural Geography, Rawat Publication, Jaipur Knowles, R and Wareing, J.1990. Economic and Social Geography, Made Simple Books, Rupa
2. Monkhouse, F.J., Wilkinson, H.R. 1971. Maps and Diagrams: Their Compilation and Construction, 3rd ed (2017 reprint), Alphaneumera-Kolkata. Sarkar, A. 2015. Practical Geography: A Systematic Approach,3rd ed, Orient Blackswan Private Ltd.
3. Shafi, M. 2005. Agricultural Geography, Pearson
4. Singh, J., Dhillon, S.S. 1994. Agricultural Geography, Tata McGraw Hill,New Delhi</td></tr>
</table>

B.A. (HONS.) Geography (SEMESTER- VIII)

School: SHSS		**Batch: 2021-25**
Program: BA Hons. Geography		**Current Academic Year:2024-25**
Branch:		**Semester: VIII**
1	Course Code	
2	Course Title	**Population Geography**
3	Credits	4
4	Contact Hours	(L-T-P)4-0-0
	Course Type	Major
5	Course Objective	1. To evaluate the basic concept and development of Population Geography 2. To familiarize the students with different theories of Population Geography 3. the course aims to familiarize the students with the pattern of population distribution in the world and make them aware about different facet and problem related to population.
6	Course Outcomes	CO1: After taking this course the student will be able to appreciate basic concepts and issues in Population Geography CO2: Understand the basic population theories. CO3: Understand the pattern of population growth, distribution and migration patterns. CO4 should be conversant with different sources of demographic data. CO5: Understand the pattern of population growth, distribution andComposition pattern of India CO6: Understand the Contemporary Problems & Policies with reference to developed and developing countries.
7	Course Description	The study of Population is important as it allows us to study the nature in which our population changes over time, and this is important as it allows us to study how changes to the population, such as change in density, male-female population, and other changes in population composition we are witnessing, which can lead to an increase/decrease in population pressure of any region.
8	Outline syllabus	
	Unit 1	**Basic Concepts**
	1A	Meaning & Scope of Population Geography
	1B	Development of Population Geography
	1C	Sources and Types of Population Data
	Unit 2	**Population Theories**
	2A	Malthusian Theory
	2B	Neo Malthusianism, Demographic Transition Theory
	2C	Optimum Population Theory
	Unit 3	**Population distribution and dynamics**
	3A	World Patterns of Population, Population Agglomerations

	3B	Population Explosion		
	3C	Migration: Types and Determinants and Migration Laws		
	Unit 4	**Population distribution and Composition- India**		
	4A	Population Growth, Distribution and Density of Population		
	4B	Age and Sex Composition		
	4C	Social and Economic Composition, Literacy, Urbanization,Demographic Dividend		
	Unit 5	**Contemporary Problems & Policies**		
	5A	Population Problems: Developed Countries		
	5B	Population Problems: Developing Countries		
	5C	India's Population Policy		
	Mode of examination	Theory		
	Weightage Distribution	CA	MTE	ETE
		30%	20%	50%
	Text book/s*	1. Agarwal, S. M. (1974): India's Population Problems, McGraw HillPublishing Co. Ltd., New Delhi. 2. Chandna, R. C. (2006): Geography of Population. Kalyani Publishers, NewDelhi. 3. Clarke, J.I. (1972): Population Geography. Pergamon Press, Oxford. 4. Demko, G.J., Rose, H.M., and Schnell, G.A. (1970): Population Geography:A Reader. McGraw-Hill, New York. 5. Desoza, A. A. (1983): Indian Population Problem in Perspective and SocialAction, Concept Publications, New Delhi 6. Dube, K.K. and Singh, M.B. (1994): *Jansankhya Bhoogol*, Rawat Publications, Jaipur. 7. Garnier, B.J. (1993): Geography of Population. 3rd edition. Longman,London. 8. Hazel, B. R. (1994): Population Geography, Singapore Publishers Pvt. Ltd.,Singapore 9. Jones, H. R. (1981): A Population Geography. Harper and Row, New York. 10. Peters, G. L. and Larkin, R.P. (1983): Population Geography: Problems,Concepts and Prospects. Kendall/Hunt, Dubuque, IA. 11. Sundaram, K.V. (1985): Population Geography, Heritage Publishers, NewDelhi. 12. Trewartha, G.T. (1985): A Geography of Population: World Patterns. JohnWiley and Sons, New York. 13. Zelinsky, W. (1966): A Prologue to Population Geography. Prentice Hall,New Jersey.		

School: SHSS		**Batch: 2021-25**
Program: BA (H) Hons. Geography		**Current Academic Year:2024-25**
Branch		**Semester: VIII**
1	Course Code	
2	Course Title	**Population Geography (Practical)**
3	Credits	4
4	Contact Hours	(L-T-P)1-0-6
5	Course Type	Core (Practical)
6	Course Objective	The objective of this course is to make students various mapping techniques and statistical methods used in population studies through hands-on practical exercises.
7	Course Outcomes	CO1: Students will be acquainted with the fundamentals of population data presentation through pyramids. CO2: To familiarize the students with different mapping techniques used in Population Geography CO3: To familiarize the students with the basic mapping techniques. CO4: They will able to calculate different methods to measure fertility. CO5: They will also be acquainted with the methods for representing data related to population composition. CO6: The student will be able to demonstrate the use of different methods of population projection.
8	Course Description	In population studies knowledge of effective representation of population data is essential for every geography student. This course will provide students with the graphical representation and various mapping methods that can be applied in any spatial studies.

Outline syllabus

	Unit 1	**Diagrammatic Presentation of population Data**
	1A	Simple Pyramid
	1B	Compound Pyramid
	1C	Superimposed Pyramid
	Unit 2	**Mapping of population Data I**
	2A	Simple Dot
	2B	Multiple Dot
	2C	Sphere Method
	Unit 3	**Mapping of population Data II**
	3A	Analysis of Work Participation Rate
	3B	Density Maps by Choropleths
	3C	Density Maps by Isopleths
	Unit 4	**Analysis and Composition of Population**

	4A	Fertility Index.The		
	4B	Occupation Structure		
	4C	Age and Sex Composition		
	Unit 5	**Population Projection**		
	5A	Graphical Method		
	5B	Mathematical Methods		
	5C	Logarithm Method		
	Mode of examination	Practical		
	Note-	A laboratory notebook, comprising class assignments of the above, is to be prepared and submitted. Viva-voce based on laboratory notebook.		
	Weightage Distribution	CA	MTE	ETE
			20%	50%
	Reading List	1. Chandna, R. C. (2006): Geography of Population. Kalyani Publishers, New Delhi. 2. Clarke, J.I. (1972): Population Geography. Pergamon Press, Oxford. 3. Demko, G.J., Rose, H.M., and Schnell, G.A. (1970): Population Geography: A Reader. McGraw-Hill, New York. 4. Garnier, B.J. (1993): Geography of Population. 3rd edition. Longman, London. 5. Jones, H. R. (1981): A Population Geography. Harper and Row, New York. 6. Monkhouse, F.J., Wilkinson, H.R. 1971. Maps and Diagrams: Their Compilation and Construction, 3rd ed (2017 reprint), Alphaneumera-Kolkata. 7. Peters, G. L. and Larkin, R.P. (1983): Population Geography: Problems, Concepts and Prospects. Kendall/Hunt, Dubuque, IA. 8. Sarkar, A. 2015. Practical Geography: A Systematic Approach, 3rd ed, Orient Blackswan Private Ltd. 9. Shafi, M. 2005. Agricultural Geography, Pearson 10. Singh, J., Dhillon, S.S. 1994. Agricultural Geography, Tata McGraw Hill, New Delh 11. Trewartha, G.T. (1985): A Geography of Population: World Patterns. John Wiley and Sons, New York.		

Minor/ Elective Other Department/Faculty

B.A. (HONS.) Disaster Management (SEMESTER- II)

School: SHSS		**Batch: 2021-25**
Program: BA (H) Hons. Geography		**Current Academic Year:2021-22**
Branch		**Semester: II**
1	Course Code	
2	Course Title	**Disaster Management**
3	Credits	4
4	Contact Hours	(L-T-P)4-0-0
5	Course Type	**Minor/ Elective**
6	Course Objective	The objective of this course is to develop the understanding of concept and principles of Disaster Management.
7	Course Outcomes	CO1: Develop the understanding about basic concept of natural and man-made hazard and disaster. CO2: They will understand the concept of management cycle. CO3: Students will be acquainted with Hydrological Disasters: Causes, Impact and Risk Reduction Measures. CO4: Students will be acquainted with Geological Disasters, Causes, Impact and Risk Reduction Measures. CO5: students will be oriented about Man-made Disasters, Causes, Impact and Risk Reduction Measures CO6: Develop the understanding about Response and Mitigation to Disasters.
Outline syllabus		
	Unit 1	**Basic Concepts**
	1A	Definition and Concepts: Hazards, Disasters; Classificationof Disasters, Risk and Vulnerability
	1B	Concept of Disaster Management- Meaning, Nature, and Importance,
	1C	Disaster Management Cycle: Pre, During and Post DisasterManagement
	Unit 2	**Hydrological Disasters: Causes, Impact and RiskReduction Measures**
	2A	Floods
	2B	Droughts
	2C	Cloud burst
	Unit 3	**Geological Disasters: Causes, Impact, and Risk ReductionMeasures**
	3A	Earthquakes
	3B	Landslides, and Avalanches
	3C	Volcanic Eruptions and Mudflow
	Unit 4	**Man-made Disasters**
	4A	CBRN – Chemical, Biological Disaster, Radiological andNuclear Disasters
	4B	Forest Fire: Impact, and Risk Reduction Measures

	4C	Industrial hazard: Causes, Impact, and Risk ReductionMeasures		
	Unit 5	**Response and Mitigation to Disasters:**		
	5A	Factors Affecting Mitigation Measures, Prediction, Preparation, Communication, Area and Accessibility,Population, Physiology and Climate		
	5B	Indigenous Community-Based Disaster Preparedness		
	5C	Role of National and International Policies and Action Plans:World Conferences on Disaster Management, National Disaster Management Act-2005		
	Mode of examination	Theory		
	Weightage Distribution	CA 30%	MTE 20%	ETE 50%
	Reading List	1. Singh, Savindar (2009): Disaster Management 2. Mishra B.J: Natural hazards and disaster management 3. Sundar I & Sezuiyan T: Disaster management 4. Verma: Encyclopedia of Disaster management, Eye Publication: VulnerableIndia 5. Sinha P. C. 2006 Disaster Mitigation: Preparedness, Recovery and Response.SBS Publication & Distributions Pvt. Ltd. New Delhi 6. Government of India. (1997) Vulnerability Atlas of India. New Delhi, BuildingMaterials 7. & Technology Promotion Council, Ministry of Urban Development, Governmentof India. 8. Kapur, A. (2010) Vulnerable India: A Geographical Study of Disasters, SagePublication, New Delhi. 9. Singh, R.B. (2005) Risk Assessment and Vulnerability Analysis, IGNOU, NewDelhi. Chapter 1, 2 and 3 10. Sinha, A. (2001). Disaster Management: Lessons Drawn and Strategies forFuture, New United Press, New Delhi. 11. Stoltman, J.P. et al. (2004) International Perspectives on Natural Disasters,Kluwer 12. Academic Publications. Dordrecht.Singh Jagbir (2007) “Disaster ManagementFuture Challenges and Oppurtunities”, 2007. 13. Publisher- I.K. International Pvt. Ltd. S-25, Green Park Extension, Uphaar Cinema Market, New Delhi, India (www.ikbooks.com)		

B.A. (HONS.) Geography (SEMESTER- IV)

School: SHSS		**Batch: 2021-25**
Program: BA Hons. Geography		**Current Academic Year:2022-23**
Branch:		**Semester: IV**
1	Course Code	
2	Course Title	**Geography of Tourism**
3	Credits	4
4	Contact hours	(L-T-P)4-0-0
	Course Type	Minor Elective
5	Course Objective	1. To familiarize the students with aspects of tourism which have a bearing on subject matter of geography. 2. To orient the students to the logistics of tourism industry and the role of tourism in regional development. 3. To understand the impact of tourism on physical and human Environment.
6	Course Outcomes	CO1: The student will be able to understand concept, scope and nature of Tourism. CO2: The student will be able explain the relevance and concept of Tourism infrastructure. CO3: The student will be able to criticize the types and impact of tourism. CO4: The student will be able to understand policy, planning, management and prospects of Tourism. CO5: The course will help the students to reflectively analyse the economic and environmental impact of Tourism and also the International Organisations in the Tourism sector. CO6: The student will be able to criticize and evaluate the Tourism industry in India and its impact on Indian economy.
7	Course Description	This course aims to familiarize the students with the nature and scope of Tourism in India and it's the impact on physical and human environments.
8	Outline syllabus	
	Unit 1	**Conceptual Framework**
	1A	Concept, Nature, Scope & Approaches to the Study ofTourism
	1B	Elements of Tourism
	1C	History of Tourism
	Unit 2	**Infrastructure and Support System for Tourism**
	2A	Accommodation- History and Classification
	2B	Travel Agents & Tour Operators, Transport &Communication, and Markets
	2C	Information Technology
	Unit 3	**Types & Impact**
	3A	Typology of tourism: Domestic, International, Inter-Regional and Intra-Regional, Mass Tourism
	3B	Cultural, Environmental, Socio-Cultural & EconomicImpact of Tourism

	3C	Multiplier effect of tourism		
	Unit 4	**Tourist Circuits**		
	4A	Major Tourist Circuits of the World		
	4B	Major Tourist Circuits (India) & their Salient Features		
	4C	Evolution Growth & Trend of Tourism in India		
	Unit 5	**Organizations of Tourism**		
	5A	International Organizations in the Tourism Sector		
	5B	Domestic Tourist Organizations		
	5C	Tourism Paradigms: Eco-tourism, Green Tourism, Heritage Tourism, Medical Tourism, Rural Tourism, Soft and Hard Tourism and Adventure Tourism etc.		
	Mode of examination	Theory		
	Weightage Distribution	CA	MTE	ETE
		30%	20%	50%
	Text book/s*	1. Bhatia, A. K. (1991): International Tourism - Fundamentals and Practices,Sterling Publisher, New Delhi. 2. Bhatia, A. K. (1996): Tourism Development: Principles and Practices, SterlingPublisher Ltd., New Delhi. 3. C.Huster and H.Green: Tourism and the Environment: A SustainableRelationship, Routledge, London,1995. 4. C.M. Hall and S.J. Page: The Geography of Tourism and Recreation,Environment, Place and Space, Routledge, London, 1999. 5. D. Milton: Geography of World Tourism, Prentice Hall, New York,1993. 6. D.S. Bhardwaj and M. Chaudhary (1997): Contemporary Issues in Tourism,Himalaya Mumbai. 7. Das, M. (1999): India: A Tourist Paradise, Sterling Publishers, New Delhi. 8. E. Inskeep: Tourism Planning: An Integrated and Sustainable DevelopmentApproach, Van Nostrand and Rein hold, New York,1991. 9. J. Lee: Tourism and Development in the Third World, Routledge, London, 1988. 10. N.K.Garg (1996): Tourism and Economic Development, Avishkan, Jaipur. 11. Pearce, D. G. (1987): Tourism Today: A Geographical Analysis, Longman,Harlow. 12. R.K.Kaul: Dynamics of Tourism and Recreation, Inter India, New Delhi, 1985. 13. Robinson H.: A Geography of Tourism, Macdonald and Evans, London, 1976. 14. Ryan Cris (1991): Recreational Tourism: A Social Science Perspetive,Routledge, London. 15. Singh Jagbir (2014) "Eco-Tourism" Published by - I.K. International Pvt. Ltd. S-25, Green Park Extension, Uphaar Cinema Market, New Delhi, India, (www.ikbooks.com). 16. Smith, L. J. S. (2010): Tourism Analysis: A Handbook, Halstead Press, Sydney.		

B.A. (HONS.) Geography (SEMESTER- VI)

School: SHSS		**Batch: 2021-25**
Program: BA Hons. Geography		**Current Academic Year:2023-24**
Branch:		**Semester: VI**
1	Course Code	
2	Course Title	**Climate Change: Vulnerability and Adaptation**
3	Credits	4
4	Contact Hours	(L-T-P)4-0-0
	Course Type	Minor Elective
5	Course Objective	• Providing in depth knowledge of Climate Change. • Assessment of Climate Change impacts on fragile ecosystems. • Adaptation strategy and governance.
6	Course Outcomes	CO1: The course will provide understanding of various dimensions of ClimateChange. CO2: they will also be able to assess the climate change through history. CO3: Students will be acquainted with the association of climate Change withvulnerability. CO4: Students will understand the impact of climate change on ecosystem. CO5: They will understand the significance of adaptation strategies and evaluation of role of Local and global organizations as well. CO6: Student will be acquainted with the various action plans at local and nationallevel.
7	Course Description	This is an introductory paper trying to expose students to some basic ideas of climatic change and vulnerabilities associated with that. This will also give them the idea about the efforts are being made at national and internationallevel.
8	**Outline syllabus**	
	Unit 1	**Conceptual background**
	1A	Understanding Climate Change
	1B	Evidences and Factors of Climate Change, Greenhouse Gases andGlobal Warming
	1C	Climate Change with reference to the Geological Time Scale
	Unit 2	**Climate Change and Vulnerability**
	2A	Physical Vulnerability
	2B	Economic Vulnerability
	2C	Social Vulnerability
	Unit 3	**Impact of Climate Change**
	3A	Agriculture and Water
	3B	Flora and Fauna
	3C	Human Health and morbidity
	Unit 4	**Adaptation and Mitigation**
	4A	Global Climatic Assessment- IPCC
	4B	Global Initiatives to Climate Change Mitigation: Kyoto Protocol, Carbon Trading, Clean Development Mechanism, COP, Climate Fund

	4C	Climate Change Vulnerability Assessment and Adaptive Strategieswith particular reference to South Asia		
	Unit 5	**Action Plans**		
	5A	National Action Plan on Climate Change		
	5B	Local Institutions (Urban Local Bodies, Panchayats)		
	5C	Mitigation: Awareness and Action Plan		
	Mode of examination	Theory		
	Weightage Distribution	CA	MTE	ETE
		30%	20%	50%
	Text book/s*	1.IPCC. (2007) Climate Change 2007: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change. 2. IPCC (2014) Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part A: Global and Sectoral Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA. 3. IPCC (2014) Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part B: Regional Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA. 4. OECD. (2008) Climate Change Mitigation: What Do we Do? Organisation and Economic Cooperation and Development. 5. UNEP. (2007) Global Environment Outlook: GEO4: Environment for Development, United Nations Environment Programme. 6. Parry, M., Canziani, O., Palutikof, J., Linden, P., Hanson, C. (Eds) 2007. Climate Change 2007: Impacts, Adaptation and Vulnerability-Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, Cambridge University Press. 7. Field, C.B., Barros V.R., Dokken, D.J., Mach, K.J., Mastrandrea, M.D., Bilir, D.E., Chatterjee, M., Ebi, K.L., Estrada, Y.O., Genova, R.C., Girma, B., Kissel, E.S., Levy, 8. A.N., MacCracken, S., Mastrandrea, P.R., White, L.L. (Eds) 2014. Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part A: Global and Sectoral Aspects-Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change, Cambridge University Press. 9. Field, C.B., Barros V.R., Dokken, D.J., Mach, K.J., Mastrandrea, M.D., Bilir, D.E., Chatterjee, M., Ebi, K.L., Estrada, Y.O., Genova, R.C., Girma, B., Kissel, E.S., Levy, A.N., MacCracken, S., Mastrandrea, P.R., White, L.L. (Eds) 2014. Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part B: Regional Aspects-Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change, Cambridge University Press. 10. Organisation for Economic Co-operation and Development (OECD) 2008. Climate Change Mitigation: What Do we do? Organisation and Economic Co-operation and Development. 11. United Nations Environmental Programme (UNEP) 2007. Global Environment Outlook: GEO4: Environment for Development, United Nations 12. WEBSITES: Intergovernmental Panel on Climate Change: www.ipcc.ch Ministry of Environment, Forest and Climate Change: envfor.nic.in World Bank Climate Change Knowledge Portal: sdwebx.worldbank.org/climateportal/index.cfm		

Vocational

B.A. (HONS.) Geography (SEMESTER- I)

School: SHSS		**Batch: 2021-25**
Program: BA (H) Hons. Geography		**Current Academic Year:2021-22**
Branch		**Semester: I**
1	Course Code	
2	Course Title	**Remote Sensing (Practical)**
3	Credits	4
4	Contact Hours	(L-T-P)0-1-4
5	Course Type	Vocational
6	Course Objective	The objective of this course is to develop the understanding of concept and principles of computers and remote sensing (aerial photo and satellite imageries).
7	Course Outcomes	CO1: Students will be acquainted with the fundamentals of computer. CO2: Develop the understanding about basic practical knowledge of aerial photo and satellite imaging CO3: Students will be acquainted with the fundamentals of remote sensing and digital image processing. CO4: They will understand the interpretation of remote sensing images. CO5: They will also be able to create land use/ land cover maps through visual interpretation. CO6: They will also be able to create land use/ land cover maps through unsupervised classification
8	Course Description	GIS is a modern tool provided to a Geographer. This course will provide them with the ideas of the functioning and capabilities of Geographic Information System, which will help them to enhance their skills that can be applied in any geographical studies.

Outline syllabus

	Unit 1	**Computer's fundamentals**
	1A	Introduction to Computers
	1B	Fundamental of Computer
	1C	Exercise on Microsoft Word, Excel & Power Point
	Unit 2	**Aerial Photograph**
	2A	Determination of Scale of Aerial Photographs
	2B	Concept of Height on Aerial Photographs
	2C	Principles of photogrammetry, Stereovision Test
	Unit 3	**Remote Sensing**
	3A	Introduction to Reference System of IRS Satellites,Data Products and Formats
	3B	Remote Sensing Softwares
	3C	Image Enhancement Techniques
	Unit 4	**Visual Interpretation**
	4A	Elements of Photo/Image Interpretation, Interpretation of

		Single Vertical Aerial Photographs		
	4B	Interpretation of Stereo Pair of Aerial Photographs		
	4C	Interpretation of Satellite Images		
	Unit 5	**Land use/land cover maps**		
	5A	Land use classification system		
	5B	Preparation of Land Use Map through Single Aerial Photographs, Preparation of Land Use Map through Stereo-Pair of Aerial Photographs		
	5C	Preparation of Land Use Map- Unsupervised Classification		
	Mode of examination	Theory		
	Weightage Distribution	CA	MTE	ETE
		30%	20%	50%
	Reading List	9. Campbell, J. B. (2002): Introduction to Remote Sensing. 5th ed. Taylor & Francis, London. 10. Curran, P.J. (1985): Principles of Remote Sensing, Longman, London. 11. Jenson, John R. 2007. Remote Sensing of the Environment: An Earth Resource Perspective. Person Prentice Hall. 12. Lillesand, T.M. and Kiefer, R.W. (2000): Remote Sensing and Image Interpretation. 4th ed. John Wiley and Sons, New York. 13. Reeves, R.G. (ed.) (1983): Manual of Remote Sensing, Vols. 1 & 2, American Society of Photogrammetry & Remote Sensing, Falls Church, Virginia. 14. Sabins Jr., Floyd F, (1978). Remote Sensing: Principles and Interpretation. W. H, Freeman and Company, New York. 15. Siegel, B.S. and Gillespie, R. (1985): Remote Sensing in Geology, John Wiley and Sons, New York. 16. Swain, P.H. and Davis, S.M. (ed.), (1978): Remote Sensing: The Quantitative Approach. McGraw Hill, New York.		

School: SHSS		**Batch: 2021-25**
Program: BA Hons. Geography		**Current Academic Year:2021-22**
Branch		**Semester: II**
1	Course Code	
2	Course Title	**Fundamentals of Geographic Information System and GPS (Vocational)**
3	Credits	4
4	Contact Hours	(L-T-P)0-1-4
5	Course Type	Core (Practical)
6	Course Objective	The objective of this course is to develop the understanding of concept and principles of Geographic Information System.
7	Course Outcomes	CO1: Student will understand the basic concept of map and projection systems. CO2: They will be acquainted with the softwares of GIS CO3: Students will develop the understanding of different tools of GIS CO4: They will be acquainted with the methods to input data and assigning the coordinates. CO5: Students will be able to digitize, add attributes and topology creation and making the data error free with the help of GIS software CO6: They will be acquainted with the methods to visualize spatial data.
8	Course Description	GIS is a modern tool provide to a Geographer. This course will provide them the ideas of the functioning and capabilities of Geographic Information System, which will help them to enhance their skills that can be applied in any geographical studies.

Outline syllabus

	Unit 1	**Map elements**
	A	Scale
	B	Projection
	C	Coordinate Systems
	Unit 2	**GIS Tools**
	A	Introduction to GIS software
	B	Identification of input/output tools
	C	Identification of analytical tools
	Unit 3	**Data input**
	A	Acquiring Data
	B	Scanning
	C	Georeferencing of maps
	Unit 4	**Digitization and overlay operations**
	4A	Digitization Methods
	4B	Entering Attributes,

	4C	Topology Creation, Error Detection and Correction		
	Unit 5	**Data visualization**		
	5A	Adding the Symbology		
	5B	Designing the Map Layout, Output and Export		
	5C	Overlay operations		
	Mode of examination	Theory		
	Weightage Distribution	CA	MTE	ETE
		30%	20%	50%
	Reading List	7. Burrough, P.A. and McDonnell, R. (1998): Principles of Geographic Information Systems. Oxford University Press, Oxford. London 8. Chang, K.T. (2003): Introduction to Geographic Information Systems. Tata McGraw Hill Publications Company, New Delhi. 9. Glen, E. M. and Harold, C. S. (1993): GIS Data Conversion Handbook. Fort Collins, Colorado, GIS Word Inc. 10. Environmental Systems Research Institute, Inc. (1998): Understanding GIS: The ARC/INFO Method, ESRI Press, Redlands 11. Quantum GIS User Guide, http://docs.qgis.org/1.8/pdf/QGIS-1.8-UserGuide-en.pdf 12. Hiede, R., Sutton, T., Duster, H. and Sutton, M. (2013): The Quantum GIS Training Manual, Locate Press LLC, US		

B.A. (HONS.) Remote Sensing and GIS Advance I (Vocational)
(SEMESTER- III)

School: SHSS		**Batch: 2021-25**
Program: BA (H) Hons. Geography		**Current Academic Year:2022-23**
Branch		**Semester: III**
1	Course Code	
2	Course Title	**Advances in Remote Sensing and GIS: Digital Image Processing (Vocational)**
3	Credits	3
4	Contact Hours	(L-T-P)0-1-4
5	Course Type	Vocational
6	Course Objective	The objective of this course is to make students acquainted with standard digital image processing techniques through hands-on practical exercises.
7	Course Outcomes	CO1: Students will be acquainted with the fundamentals of Digital Image Processing. CO2: To enable students to understand image correction techniques for better interpretation. CO3: To enable students to understand image enhancement techniques for better interpretation. CO3: They will understand the interpretation of remote sensing images. CO4: They will also be able to create land use/ land cover maps through visual interpretation, unsupervised/supervised classification and change detection. CO6: They will be able understand the various methods to use of digital images
8	Course Description	This course will provide students with the ideas of the functioning and capabilities of digital image processing, which will help them to enhance their skills that can be applied in any spatial studies.

Outline syllabus

	Unit 1	**Basic Concepts**
	1A	Digital Image, Supply and Storage of Digital Data
	1B	Digital Data Format, LUT
	1C	Image Restoration
	Unit 2	**Image Correction**
	2A	Noise Reduction; Radiometric Correction of Data
	2B	Geometric Correction of Data; Linear and Non-linear Transformations for Geometric Corrections
	2C	Histogram Significance
	Unit 3	**Image Enhancements**
	3A	Radiometric Enhancement

	3B	Spatial Enhancements		
	3C	Contrast stretching—Linear and Non-linear Methods		
	Unit 4	**Multi-band Enhancement Techniques**		
	4A	Band Ratios, Vegetation Indices		
	4B	PCA, Spatial Filtering		
	4C	Image Fusion		
	Unit 5	**Thematic Information Extraction**		
	5A	Parametric and Non-parametric Classifiers; Supervisedand Unsupervised Classification Methods		
	5B	Multi-date Data Analysis and Change Detection Processes		
	5C	Accuracy Assessment		
	Mode of examination	Theory		
	Weightage	CA	MTE	ETE
	Distribution	30%	20%	50%
	Reading List	1. Campbell, J. B. (2002): Introduction to Remote Sensing. 5th ed. Taylor & Francis, London. 2. Curran, P.J. (1985): Principles of Remote Sensing, Longman, London. 3. Harry, C.A. (ed.) (1978): Digital Image Processing, IEEE Computer Society. 4. Hord, R.M. (1982): Digital Image Processing of Remotely Sensed Data, Academic Press, New York. 5. Lillesand, T.M. and Kiefer, R.W. (2000): Remote Sensing and Image Interpretation. 4th ed. John Wiley and Sons, New York. 6. Reeves, R.G. (ed.) (1983): Manual of Remote Sensing, Vols. 1 & 2, American Society of Photogrammetry & Remote Sensing, Falls Church, Virginia. 7. Sabins Jr., Floyd F, (1978). Remote Sensing: Principles and Interpretation. W. H, Freeman and Company, New York. 8. Siegel, B.S. and Gillespie, R. (1985): Remote Sensing in Geology, John Wiley and Sons, New York. 9. Swain, P.H. and Davis, S.M. (ed.), (1978): Remote Sensing: The Quantitative Approach. McGraw Hill, New York.		

B.A. (HONS.) Remote Sensing and GIS Applications (Vocational)
(SEMESTER- IV)

School: SHSS		**Batch: 2021-25**
Program: BA Hons. Geography		**Current Academic Year:2022-23**
Branch		**Semester: IV**
1	Course Code	
2	Course Title	**Remote Sensing and GIS Applications (Vocational)**
3	Credits	3
4	Contact Hours	(L-T-P)0-1-4
5	Course Type	Vocational
6	Course Objective	Remote Sensing images are decision modern tools for different applications. To enable students to extract land-use/land-cover and other valuable information from the digital remote sensing images f different geographical applications. After the completion they will able to apply geospatial tools in geographical applications
7	Course Outcomes	CO1: Student will understand the analytical tools of geospatial technology and their applications tools for different applications. CO2: Students will develop the understanding geospatial data management and analysis functions. CO3: They will learn to create spatial and 3D models. CO4: They will be able to collect data through GPS and transferer that data directly on GIS layers CO5: They will be acquainted to use remote sensing and GIS for thematic mapping, analytical modelling, disaster management and risk analysis. CO6: They will also be acquainted to use remote sensing and GIS in urban and rural studies
8	Course Description	GIS is a modern tool provide to a Geographer. This course will provide them the ideas of the functioning and capabilities of Geographic Information System, which will help them to enhance their skills that can be applied in any geographical studies.

Outline syllabus

	Unit 1	**GIS analysis functions**
	1A	Geo-processing
	1B	Spatial Analysis
	1C	Overlay analysis
	Unit 2	**Spatial Modeling and Analysis**
	3A	Query Building
	3B	Network Analysis
	3C	TIN/DEM Models and Derivatives
	Unit 3	**GPS and GNSS**

	2A	Principles of GPS and GNSS Positioning		
	2B	Waypoint Collection		
	2C	Transferring Waypoints to GIS, Area and length Calculationsfrom GPS/GNSS Data		
	Unit 4	**Environmental Applications**		
	4A	Solid Waste Management		
	4B	Disaster Management		
	4C	Risk Zonation		
	Unit 5	**Applications in Land Use**		
	5A	Rural and Urban Land Use		
	5B	Rural and Urban Change		
	5C	Rural and Urban Information System		
	Mode of examination	Theory		
	Weightage	CA	MTE	ETE
	Distribution	30%	20%	50%
	Reading List	1. Bonham, Carter G.F. (1995): Information Systems for Geoscientists – Modelling with GIS. Pergamon, Oxford. 2. Burrough, P.A. and McDonnell, R. (1998): Principles of Geographic Information Systems. Oxford University Press, Oxford. London. 3. Campbell, J. B. (2002): Introduction to Remote Sensing. 5th ed. Taylor & Francis, London. 4. Chang, K.T. (2003): Introduction to Geographic Information Systems. Tata McGraw Hill Publications Company, New Delhi. 5. Curran, P.J. (1985): Principles of Remote Sensing, Longman, London. 6. Environment. Geo Information International, Cambridge 7. Environmental Systems Research Institute, Inc. (1998): Understanding GIS: The ARC/INFO Method, ESRI Press, Redlands 8. Glen, E. M. and Harold, C. S. (1993): GIS Data Conversion Handbook. Fort Collins, Colorado, GIS Word Inc. 9. Goodchild, M.F.; Park, B. O. and Steyaert, L. T. (eds.) (1993): Environmental 10. Harry, C.A. (ed.) (1978): Digital Image Processing, IEEE Computer Society. 11. Hiede, R., Sutton, T., Duster, H. and Sutton, M. (2013): The Quantum GIS Training Manual, Locate Press LLC, US 12. Hord, R.M. (1982): Digital Image Processing of Remotely Sensed Data, Academic Press, New York. 13. Lillesand, T.M. and Kiefer, R.W. (2000): Remote Sensing and Image Interpretation. 4th ed. John Wiley and Sons, New York. 14. Lo, C.P. and Yeung, A. K. W. (2002): Concepts and Techniques of Geographic 15. Longley, P. and Batty, M. (eds.) (1996): Spatial Analysis: Modelling in a GIS Modelling with GIS. Oxford University Press, Oxford. 16. Quantum GIS User Guide, http://docs.qgis.org/1.8/pdf/QGIS-1.8-UserGuide-en.pdf 17. Reeves, R.G. (ed.) (1983): Manual of Remote Sensing, Vols. 1 & 2, American Society of Photogrammetry & Remote Sensing, Falls Church,		

		Virginia. 18. Sabins, Jr., Floyd, F., (1986): Remote Sensing : Principles and Interpretation, W.H. Freeman, New York. 19. Siegel, B.S. and Gillespie, R. (1985): Remote Sensing in Geology, John Wiley and Sons, New York. 20. Swain, P.H. and Davis, S.M. (ed.), (1978): Remote Sensing: The Quantitative Approach. McGraw Hill, New York.