Punyashlok Ahilyadevi Holkar Solapur University, Solapur

NAAC Re Accredited 2022 'B^{++}' Grade (CGPA 2.96)

Name of the Faculty: Science & Technology

(As per National Education Policy 2020)

Syllabus: Geography

Name of the Course: B. Sc. III (Semester V & VI)

(Syllabus to be implemented from June 2026)

B. Sc. III (Geography)
Semester V & VI
Syllabus Structure (June 2026)

Level	Semester	Paper	Title of the paper	Lecture per Week		Total Marks	Credit
				T	P		
5.5	V	DSC 1 - 7 (T)	Soil Geography	3	-	75	3
		DSC 1- 7 (P)	Techniques of Soil Analysis	-	4	50	2
		DSC 1 - 8 (T)	Environmental Geography	3	-	75	3
		DSC1 - 8 (P)	Methods of Relief Representation	-	4	50	2
		DSC 1 - 9 (T)	Human Geography	3	-	75	3
		DSC 1- 9 (P)	Introduction to Map	-	4	50	2
		DSE 1 – 1 (T)	Cybersecurity	2	-	50	2
		DSE 1 – 1 (P)	Cybersecurity	-	2	25	1
		or					
		DSE 1 – 2 (T)	Resource Geography	2	-	50	2
		DSE 1 – 2 (P)	Weather Instrument	-	2	25	1
		VSC – 3 (P)	Tourism Planning and Management	-	4	50	2
		IKS (T)	Ancient Indian Geographic Thought	2	-	50	2
	VI	DSC 1 - 10 (T)	Biogeography	3	-	75	3
		DSC 1 - 10 (P)	Surveying	-	4	50	2
		DSC 1 - 11 (T)	Agriculture Geography	3	-	75	3
		DSC 1- 11 (P)	Quantitative Techniques in Agriculture Geography	-	4	50	2
		DSC 1 - 12 (T)	Social Geography	3	-	75	3
		DSC1 - 12 (P)	Representation of Statistical Data	-	4	50	2
		DSE 1 – 3 (T)	Political Geography	2	-	50	2
		DSE 1 – 3 (P)	Analysis of Socio-Economic Data	-	2	25	1
		or					
		DSE 1 – 4 (T)	Population Geography	2	-	50	2
		DSE 1 – 4 (P)	Practical in Population Geography	-	2	25	1
		VSC – 4 (P)	Agro- Tourism	-	4	50	2
		OJT	On Job Training in Geography	-	4	50	2

T – Theory P – Practical 2 Credits of Theory = 2 Hours of teaching per week

1 Credits of Practical = 2 Hours per week DSC- Discipline Specific Course DSE- Discipline Specific Elective

VSC- Vocational Skill Cours IKS - Indian Knowledge System

Punyashlok Ahilyadevi Holkar Solapur University, Solapur

Structure of Syllabus (NEP - 2020)

B. Sc. Part- III Semester –V

Name of the Paper: Soil Geography

Paper Code: DSC 1 – 7 (T) **Total Lectures- 45**

Course Credit: 3 **Total Marks- 75**

Preamble:

Soil Geography is an important branch of Geography that studies the formation, characteristics, classification, and distribution of soils on the Earth's surface. The course helps students understand soil as a valuable natural resource essential for agriculture, ecosystems, and human life. It provides knowledge about soil properties, soil types, degradation processes, and conservation techniques. The syllabus also emphasizes the importance of soil management for sustainable development and environmental protection. This course develops an understanding of the relationship between soil, climate, vegetation, and human activities.

Course Objectives:

1) To understand the concept, characteristics, and importance of soil as a natural resource.

2) To study the classification and distribution of major soil types.

3) To develop knowledge about soil degradation, soil erosion, and methods of soil conservation and management.

Course Outcomes:

1) Students will explain the properties and significance of soil and soil moisture conditions.

2) Students will identify and classify major soil types and describe their characteristics.

3) Students will analyze the causes of soil degradation and apply suitable soil conservation and management techniques.

Contents of the course

Unit No.	Details	No. of Lectures	No. of Credits
1	**Introduction and Soil characters** 1.1 Definition of soil 1.2 Soil as a resource 1.3 Water holding capacity	15	1

	14 Field capacity and Wilting point		
2	**Classification of Soils** 2.1 Classification of Soil i) Podzol ii) Pedocal 2.2 Study of following Soils: i) Mountain Soil ii) Alluvial soil iii) Regur soil iv) Red soil v) Laterite soil	15	1
3	**Soil Degradation and Conservation** 3.1 Causes and consequences of Degradation 3.2 Estimation of soil erosion 3.3 Universal soil loss equation 3.4 Methods of Soil Conservation and Management	15	1

References:

1) Bunting B. T. (1965): The Geography of Soil, Hutchinson.
2) Eyre S. R. (1963): Vegetation and Soils: A world picture, Edward Arnold.
3) Foth H. D. ((1978): Fundamentals of Soil Science, John Wiley, New York.
4) Hans Jenny ():Factors of Soil Formation A System of Quantitative Pedology
5) Khan Y. S. (2007): Perspectives in Biogeography, Lotus Publication, Solapur.
6) Konohora M. M. (1961): Soil Organic Matter, New York.
7) Rusself E. J. (1961): Soil condition and plant growth, Longmans.
8) Sawadi A. B. & Kolekar P. S. (2009): Bhoogolachi Multatave, Nirali Prakashan, Pune.
9) Singh Savindra (2000) Environmental Geography, Prayag Pustak Bhawan, Allahabad.
10) Singh Surender (2007): Geography, Tata McGraw-Hill Publishing Company Limited, New Delhi.

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Structure of Syllabus (NEP - 2020)

B. Sc. Part- III Semester –V

Name of the Paper: Techniques of Soil Analysis

Paper Code: DSC 1 – 7 (P) **Total Lectures- 60**

Course Credit: 2 **Total Marks- 50**

Preamble:

Techniques of Soil Analysis is an important practical course that introduces students to the scientific methods used in the study and analysis of soil properties. The course provides knowledge about soil profile examination, soil texture analysis, and chemical characteristics of soil. It helps students develop practical skills in field observation, laboratory techniques, and interpretation of soil data. The syllabus emphasizes the importance of soil analysis in agriculture, environmental management, and land resource planning. This course enables students to understand the relationship between soil properties and land productivity.

Course Objectives:

1) To develop practical knowledge and skills in soil profile study and soil texture analysis.

2) To understand the chemical properties of soil and techniques used for soil analysis.

Course Outcomes:

1) Students will examine and interpret soil profiles and soil texture using different analytical methods.

2) Students will analyze chemical properties of soil such as pH, nutrients, salinity, and organic matter.

Contents of the course

Unit No.	Details	No. of Lectures	No. of Credits
1	**Soil Profile Study** A) Soil horizons- i) O horizons ii) A Horizon iii) B Horizon iv) C Horizon v) E Horizon B) Examination of Soil Profile C) Record of Field Data D) Representation of Profile Data. (Observation Sheet) E) Estimation of Soil texture - i) International Pipette method (Analysis of one sandy & one clayey sample plotting of data	30	1

	on probability graph paper & estimation of grain size parameter) ii) Decantation Breaker Method iii) Triangulation Diagram & Its Use		
2	**Chemical properties** 1) PH – Determination of pH with pH Meter 2) Organic Matter (Humus) 3) Soil Nutrients 4) Cation Exchange Capacity (CEC) 5) Salinity, Alkalinity and Sodicity	30	1

References –

1) Hand book of Methods in Environmental Studies.- Amity S.K.(2004) ,ABD Publisher, Jaipur.

2) Maps & diagrams: Monkhous F. J. & Wilkusion H.R (1976), Methuen & Co. Ltd. London.

3) Physical Properties of Soil - Narayanan

4) Soil science – Daji

5) Soil & Sediment Analysis – Trivedi

6) Techniques in Geomorphology: King C.A.M (1966) Edward Arnold, London.

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Structure of Syllabus (NEP - 2020)

B. Sc. Part- III Semester –V

Name of the Paper: Environmental Geography

Paper Code: DSC 1 – 8 (T) **Total Lectures- 45**

Course Credit: 3 **Total Marks- 75**

Preamble:

Environmental Geography is an important branch of Geography that studies the relationship between humans and the environment. The course helps students understand ecosystems, environmental processes, and the impact of human activities on nature. It provides knowledge about environmental problems such as pollution, climate change, global warming, acid rain, and desertification. The syllabus also introduces environmental programmes and policies at global, national, and local levels for environmental protection and sustainable development. This course develops awareness and responsibility towards environmental conservation and management.

Course Objectives:

1) To understand the concepts, nature, scope, and importance of Environmental Geography.

2) To study the structure, functions, and types of ecosystems and their role in maintaining ecological balance.

3) To develop awareness about environmental problems, environmental policies, and sustainable environmental management.

Course Outcomes:

1) Students will explain the basic concepts and significance of Environmental Geography and ecosystems.

2) Students will identify major environmental problems and analyze their causes and impacts.

3) Students will evaluate environmental programmes and policies for environmental conservation and sustainable development.

Contents of the course

Unit No.	Details	No. of Lectures/ Periods	No. of Credits
1	**Introduction of Environmental Geography** 1.1 Definition of Environmental Geography	15	1

	1.2 Nature of Environmental Geography 1.3 Scope of Environmental Geography 1.4 Importance of Environmental Geography		
2	**Ecosystem** 2.1 Concept of Ecosystem 2.2 Structure of Ecosystem 2.3 Functions of Ecosystem- food chain and web 2.4 Major Ecosystem (Forest, Grassland and Marine)	15	1
3	**Environmental Problems, Programmes and Policies** 3.1 Environmental Problems – Pollution, Climate Change, Global Worming, Acid rain, Desertification. 3.2 Environmental Programmes and Policies – Global, National and Local levels	15	1

References:

1. Chandna R. C., 2002: Environmental Geography, Kalyani, Ludhiana.

2. Cunninghum W. P. and Cunninghum M. A., 2004: Principals of EnvironmentalScience: Inquiry and Applications, Tata Macgraw Hill, New Delhi.

3. Goudie A., 2001: The Nature of the Environment, Blackwell, Oxford. 9

4. Singh, R.B. (Eds.) (2009) Biogeography and Biodiversity. Rawat Publication, Jaipur

5. Miller G. T., 2004: Environmental Science: Working with the Earth, Thomson BrooksCole, Singapore.

6. MoEF, 2006: National Environmental Policy-2006, Ministry of Environment and Forests, Government of India.

7. Odum, E. P. et al, 2005: Fundamentals of Ecology, Ceneage Learning India.

8. Singh S., 1997: Environmental Geography, Prayag Pustak Bhawan. Allahabad.

9. UNEP, 2007: Global Environment Outlook: GEO4: Environment For Development, United Nations Environment Programme.

10. Singh, Savindra 2001. Paryavaran Bhugol, Prayag Pustak Bhawan, Allahabad. (in Hindi)

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Structure of Syllabus (NEP - 2020)

B. Sc. Part- III Semester –V

Name of the Paper: Methods of Relief Representation

Paper Code: DSC 1 – 8 (P) **Total Lectures- 60**

Course Credit: 2 **Total Marks- 50**

Preamble:

Methods of Relief Representation is an important course in Cartography and Geography that deals with the techniques used to represent the Earth's surface features on maps. The course helps students understand the importance of relief representation in geographical analysis and map interpretation. It introduces both traditional and modern methods of relief mapping, including digital techniques, GIS, and remote sensing applications. Students will gain knowledge about the interpretation of relief features and their significance in physical and regional geography. The course also develops practical understanding of modern technologies used in relief representation and spatial analysis.

Course Objectives:

1) To introduce students to the concept, importance, and historical development of relief representation methods in geography.

2) To develop practical understanding of modern relief representation techniques using GIS, Remote Sensing, and digital mapping methods.

Course Outcomes:

1) Students will be able to explain various methods and techniques of relief representation and interpret relief maps effectively.

2) Students will be able to apply digital tools, GIS, and Remote Sensing techniques for relief mapping and geographical analysis.

Contents of the course

Unit No.	Details	No. of Lectures	No. of Credits
1	**Introduction to Relief Representation** 1.1 Meaning and Definition of Relief Representation 1.2 Importance of Relief Representation 1.3 History and Development of Relief Representation Methods	30	1

2	**Modern Techniques and Applications** 2.1 Digital Relief Representation 2.2 Use of GIS and Remote Sensing in Relief Mapping 2.3 Interpretation of Relief Maps 2.4 Applications of Relief Representation in Geography	30	1

References:

1. Bygoot, J: An Introduction to Mapwork and Practical Geography, University Tutorial, London 1964.

2. Khan MD. Zulfequar Ahmad: Text Book of Practical Geography, Concept Publishing Company, New Delhi, 1998

3. Mishra, R.P. and Ramesh A.: Fundamentals of Cartography, Concept Publishing Company, New Delhi, 2000

4. Monkhouse F.J. and Wilkison, H.R.: Maps and Diagrams, Mathuen. London, 1971.

5. Negi., Dr. Balbir Singh: Practical Geography, KedarNath Ram Nath, Meerut, Delhi.

6. Raisz, E.: Principals of Cartography, McGraw Hill Book Com., Inc, New York, 1962.

7. Robinson, A.H. and Sale, S.D.: Elements of Cartography, John Witey and Sons, Inc, New York, 1969.

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Structure of Syllabus (NEP - 2020)

B. Sc. Part- III Semester –V

Name of the Paper: Human Geography

Paper Code: DSC 1 – 9 (T) **Total Lectures- 45**

Course Credit: 3 **Total Marks- 75**

Preamble:

Human Geography is an important branch of geography that studies the relationship between human beings and their environment. The course introduces students to the nature, scope, and significance of human geography along with its major branches. It explains human races, tribes, religions, and their spatial distribution across the world. The paper also focuses on rural and urban settlements, patterns of urbanization, and problems related to urban growth. The course helps students to understand socio-cultural diversity and changing human settlement patterns in the modern world.

Course Objectives:

1) To introduce students to the meaning, nature, scope, and importance of Human Geography.

2) To develop understanding about human races, tribes, religious groups, and their geographical distribution.

3) To explain the types, patterns, functions, and problems of rural and urban settlements and the process of urbanization.

Course Outcomes:

1) Students will be able to explain the basic concepts, branches, and significance of Human Geography.

2) Students will be able to analyze racial classification, tribal groups, and cultural diversity in different regions of the world.

3) Students will be able to interpret rural and urban settlement patterns, urbanization trends, and issues related to urban growth.

Contents of the course

Unit No.	Details	No. of Lectures/ Periods	No. of Credits
1	**Introduction to Human Geography**	15	1

	1.1 Meaning and Definition 1.2 Nature and Scope 1.3 Branches of Human Geography 1.4 Importance of Human Geography		
2	**Human Race and Tribe** 2.1 Definition and concept 2.2 Basis of racial classification 2.3 Racial Classification of Griffith Taylor 2.4 Religious Groups in the World 2.5 Tribe in Plateau Region - Gond	15	1
3	**Human Settlements** 3.1 Rural Settlements: Types, Pattern and functions 3.2 Urban Settlements: Functional classification 3.3 Urbanization and World Trend of Urbanization 3.4 Problems of urban settlement	15	1

References:

1) B.S. Negi Human Geography, Kedar Nath Ram Nath, Meerat.
2) R. Knowled and J. Wareing: Economic and Social Geography, Rupa and Co. New Delhi. (1993)
3) R. B. Mandal: Introduction to Rural Settlements, Concept Publishing Co. New Delhi. (2001)
4) R. C. Chandana: Geography of Population, Kalyani Pub. Ludhiyana (1988)

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Structure of Syllabus (NEP - 2020)

B. Sc. Part- III Semester –V

Name of the Paper: Introduction to Map

Paper Code: DSC 1 – 9 (P) **Total Lectures- 60**

Course Credit: 2 **Total Marks- 50**

Preamble:

Maps are an essential tool in geography for representing the Earth's surface and spatial information in a simplified form. This course introduces students to the basic concepts, importance, and historical development of maps. It helps learners understand the various elements, types, and classifications of maps used in geographical studies. The paper also explains physical, cultural, political, thematic, topographical, and cadastral maps along with their applications. The course develops fundamental map-reading and interpretation skills required for geographical analysis and practical understanding.

Course Objectives:

1) To introduce students to the basic concepts, importance, elements, and development of maps.

2) To develop understanding about different types and classifications of maps used in geographical studies.

Course Outcomes:

1) Students will be able to explain the fundamentals, elements, and significance of maps in geography.

2) Students will be able to identify, classify, and interpret different types of maps such as physical, political, thematic, topographical, and cadastral maps.

Contents of the course

Unit No.	Details	No. of Lectures/ Periods	No. of Credits
1	**Basics of Maps** 1.1 Meaning and Definition of Map 1.2 Importance and Uses of Maps 1.3 History and Development of Maps 1.4 Elements of a Map	30	1

2	**Types and Classification of Maps** 2.1 Physical and Cultural Maps 2.2 Political and Thematic Maps 2.3 Large Scale and Small-Scale Maps 2.4 Topographical Maps and Cadastral Maps	30	1

References:

1. Bygoot, J: An Introduction to Mapwork and Practical Geography, University Tutorial, London 1964.

2. Khan MD. Zulfequar Ahmad: Text Book of Practical Geography, Concept Publishing Company, New Delhi, 1998

3. Mishra, R.P. and Ramesh A.: Fundamentals of Cartography, Concept Publishing Company, New Delhi, 2000

4. Monkhouse F.J. and Wilkison, H.R.: Maps and Diagrams, Mathuen. London, 1971.

5. Negi., Dr. Balbir Singh: Practical Geography, KedarNath Ram Nath, Meerut, Delhi.

6. Raisz, E.: Principals of Cartography, McGraw Hill Book Com., Inc, New York, 1962.

7. Robinson, A.H. and Sale, S.D.: Elements of Cartography, John Witey and Sons, Inc, New York, 1969.

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Structure of Syllabus (NEP - 2020)
B. Sc. Part- III Semester –V
Name of the Paper: Cybersecurity

Paper Code: DSE 1 – 1 (T & P) **Total Lectures- 30 + 30**
Course Credit: 2 + 1 **Total Marks- 50 + 25**

Solapur University with UDDYAM – PAHSUI Introduces University Grants Commission (UGC) Mandated 3 Credits SCIENCE DSE-1-1 2 CREDITS THEORY + 1 CREDIT PRACTICAL		
Title of the Paper		Syllabus for Cybersecurity foundations program (Undergraduate Level)
Mandatory Credits		2 + 1
From Academic Year		2025-26
Sr No	**Heading**	Particulars
1	**Course Title**	Cybersecurity
2.	**Course Code**	(To be assigned by Solapur University)
3.	**Description of The Program**	The Undergraduate Program in Cyber Security is designed to provide students with a strong foundational understanding of the rapidly evolving digital threat landscape. Through a blend of theoretical modules and practical applications, students explore core topics such as cyberspace architecture, cyber crimes and legal frameworks, digital payment security, social media privacy, and the protection of personal digital devices. Emphasis is placed on understanding modern threats, including phishing, malware, social engineering, and data breaches, as well as developing skills in reporting incidents and configuring security tools. With integrated hands-on labs and real-world case studies, the program equips learners with the knowledge and tools to responsibly navigate digital environments, making it ideal for those pursuing careers in IT, security operations, digital forensics, or cyber law.
4.	Vertical:	✓ Vocational Skill Enhancement / ✓ Value Education Course / ✓ Open Elective
5.	Type	Theory and Practical
6.	Credit	2 credits
7.	Hours allotted	30 hours
8.	Marks allotted	50 marks
9.	**Course Objectives of the Program** • Develop foundational knowledge of cyberspace, web architecture, and digital	

	communication systems while understanding the emerging challenges in cyber security. • Identify and analyze various forms of cyber crimes including social engineering, financial fraud, and cyber threats targeting individuals and organizations, along with relevant legal frameworks such as the IT Act 2000. • Understand and evaluate the role of cyber law, privacy regulations, and policy mechanisms in combating cybercrime and ensuring digital safety. • Examine the security implications of social media usage, including data privacy, inappropriate content, and legal consequences, while adopting best practices for secure digital communication. • Explore the concepts of e-commerce and digital payment systems, including different modes of transactions, threats, and RBI guidelines for secure financial operations. • Learn the principles of digital device security and gain hands-on skills in configuring antivirus, firewalls, password policies, and mobile device security. • Acquire the ability to use practical tools and techniques to report, prevent, and mitigate cyber incidents, and foster a responsible and ethical approach to personal and professional digital interactions.
10.	**Program Outcomes** After completing the Cyber Security Undergraduate Program, students will: • Develop a foundational understanding of cyberspace, digital infrastructure, and the critical role of cybersecurity in the modern digital world. • Recognize and categorize various types of cybercrimes, including online frauds, phishing, ransomware, and social engineering attacks. • Gain knowledge of national cyber laws and regulations, especially the IT Act 2000, and understand how to report and respond to cyber incidents. • Understand the security and privacy challenges associated with social media platforms and apply best practices for responsible digital behaviour. • Acquire familiarity with e-commerce systems and digital payment modes, along with the ability to recognize and prevent associated frauds. • Develop hands-on proficiency in securing digital devices through password policies, antivirus tools, firewalls, and mobile security settings. • Implement basic cybersecurity tools and technologies to detect threats and apply remedial measures to protect personal and institutional data. • Demonstrate the ability to configure, manage, and monitor endpoint device security, and apply guidelines to mitigate risks. • Strengthen their awareness of ethical issues in digital interactions and data usage, fostering responsible digital citizenship. • Gain experience in practical applications through case studies and lab exercises that simulate real-world cyber scenarios. • Prepare for entry-level roles in cybersecurity support, digital risk awareness, IT help desk functions, and cyber law consultancy. • Build a strong foundation to pursue higher education or certifications in cybersecurity, digital forensics, ethical hacking, or information security management.
11.	**Modules: 2 CREDITS THEORY** **Our course content is designed based on the UGC syllabus, ensuring academic relevance and quality.**
Module 1: Introduction to Cyber security	

	Module Content - Defining Cyberspace and Overview of Computer and Web-technology, Architecture of cyberspace, Communication and web, Internet, World wide web, Advent of internet, Internet infrastructure for data transfer and governance, Internet society, Regulation of cyberspace, Concept of cyber security, Issues and challenges of cyber security.
	Learning Outcomes - After completion of this module, students would be able to understand the concept of Cyber security and issues and challenges associated with it.
Module 2: Cybercrime and Cyber law	
	Module Content - Classification of cyber crimes, Common cyber crimes- cyber crime targeting computers and mobiles, cyber crime against women and children, financial frauds, social engineering attacks, malware and ransomware attacks, zero day and zero click attacks, Cybercriminals modus-operandi ,Reporting of cyber crimes, Remedial and mitigation measures, Legal perspective of cyber crime, IT Act 2000 and its amendments, Cyber crime and offences, Organisations dealing with Cyber crime and Cyber security in India, Case studies.
	Learning Outcomes - Students, at the end of this module, should be able to understand the cyber crimes, their nature, legal remedies and as to how report the crimes through available platforms and procedures.
	Practical – 1. Reporting phishing emails. 2. Demonstration of email phishing attack and preventive measures.
Module 3: Social Media Overview and Security	
	Module Content - Introduction to Social networks. Types of Social media, Social media platforms, Social media monitoring, Hashtag, Viral content, Social media marketing, Social media privacy, Challenges, opportunities and pitfalls in online social network, Security issues related to social media, Flagging and reporting of inappropriate content, Laws regarding posting of inappropriate content, Best practices for the use of Social media, Case studies.
	Learning Outcomes - On completion of this module, students should be able to appreciate various privacy and security concerns on online Social media and understand the reporting procedure of inappropriate content, underlying legal aspects and best practices for the use of Social media platforms.
	Practical – 1. Reporting and redressal mechanism for violations and misuse of Social media platforms.
Module 4: E - Commerce and Digital Payments	
	Module Content - Definition of E- Commerce, Main components of E-Commerce, Elements of E-Commerce security, E-Commerce threats, E-Commerce security best practices, Introduction to digital payments, Components of digital payment and stake holders, Modes of digital payments- Banking Cards, Unified Payment Interface (UPI), e-Wallets, Unstructured Supplementary Service Data (USSD), Aadhar enabled payments, Digital payments related common frauds and preventive measures. RBI guidelines on digital payments and customer protection in unauthorised banking

	transactions. Relevant provisions of Payment Settlement Act,2007
	Learning Outcomes - After the completion of this module, students would be able to understand the basic concepts related to E-Commerce and digital payments. They will become familiar with various digital payment modes and related cyber security aspects, RBI guidelines and preventive measures against digital payment frauds.
	Practical – 1. Configuring security settings in Mobile Wallets and UPIs.
Module 5: Digital Devices Security, Tools and Technologies for Cyber Security	
	Module Content - End Point device and Mobile phone security, Password policy, Security patch management, Data backup, Downloading and management of third party software, Device security policy, Cyber Security best practices, Significance of host firewall and Ant-virus, Management of host firewall and Anti-virus, Wi-Fi security, Configuration of basic security policy and permissions.
	Learning Outcomes - Students, after completion of this module will be able to understand the basic security aspects related to Computer and Mobiles. They will be able to use basic tools and technologies to protect their devices.
	Practical – 1. Setting, configuring and managing three password policy in the computer (BIOS, Administrator and Standard User). 2. Security patch management and updates in Computer and Mobiles. 3. Managing Application permissions in Mobile phone. 4. Installation and configuration of computer Anti-virus. 5. Installation and configuration of Computer Host Firewall.
12.	**Modules: 1 CREDIT PRACTICAL** **Our course content is designed based on the UGC syllabus, ensuring academic relevance and quality.**
	PRACTICAL / LAB SYLLABUS (30 HOURS) Lab 1: Phishing Awareness and Email Security Experiments • Identifying phishing emails • Reporting phishing attempts • Demonstration of phishing attack lifecycle • Email header analysis • Anti-phishing best practices Lab 2: Social Media Privacy and Reporting Experiments • Privacy configuration on social platforms • Reporting inappropriate content • Identifying fake profiles • Detecting misinformation • Digital footprint analysis Lab 3: Digital Payment Security Experiments • Secure configuration of UPI applications • Mobile wallet security settings

	• Identifying digital payment fraud patterns • Transaction verification mechanisms • RBI consumer complaint portals Lab 4: Operating System Security Basics Experiments • User account management • Password policy implementation • BIOS password configuration • Standard vs administrator privileges • File encryption basics Lab 5: System Security Tools Experiments • Installing and configuring antivirus software • Firewall configuration • Malware scanning and removal • System update and patch management • Disk backup and recovery tools Lab 6: Mobile Security and Permissions Experiments • Mobile application permission management • Detecting malicious apps • Secure device configuration • Mobile OS security settings
13.	**REFERENCES** 1. Cyber Crime Impact in the New Millennium, by R. C Mishra, Auther Press. Edition 2010. 2. Cyber Security Understanding Cyber Crimes, Computer Forensics and Legal Perspectives by Sumit Belapure and Nina Godbole, Wiley India Pvt. Ltd. (First Edition, 2011) 3. Security in the Digital Age: Social Media Security Threats and Vulnerabilities by Henry A. Oliver, Create Space Independent Publishing Platform. (Pearson , 13th November, 2001) 4. Electronic Commerce by Elias M. Awad, Prentice Hall of India Pvt Ltd. 5. Cyber Laws: Intellectual Property & E-Commerce Security by Kumar K, Dominant Publishers. 6. Network Security Bible, Eric Cole, Ronald Krutz, James W. Conley, 2nd Edition, Wiley India Pvt. Ltd. 7. Fundamentals of Network Security by E. Maiwald, McGraw Hill.
14.	**Semester-End Examination -** MCQ-based online exam conducted through the LMS. The question paper is for 100 marks. Minimum 40 marks required to pass.
15.	**Format of question paper: Multiple Choice Questions (MCQs)**
16.	**Live Sessions and Course material -** There is no live online sessions. The entire course is self-study-oriented in accordance with the syllabus prescribed by the UGC. It includes E- book, recorded videos, lab manual, and assignments. The course is made available completely online through the LMS, allowing students to explore the content in a self-paced manner.

Punyashlok Ahilyadevi Holkar Solapur University, Solapur

Structure of Syllabus (NEP - 2020)

B. Sc. Part- III Semester –V

Name of the Paper: Resource Geography

Paper Code: DSE 1 – 2 (T) **Total Lectures- 30**

Course Credit: 2 **Total Marks- 50**

Preamble:

Resource Geography is an important branch of geography that studies the distribution, utilization, and conservation of natural resources. This course introduces students to the concepts, nature, scope, and significance of resource geography. It focuses on various natural resources such as land, water, forests, coal, petroleum, natural gas, wind, and solar energy. The paper also highlights the problems associated with resource exploitation and the need for sustainable conservation practices. The course helps students understand the role of resources in economic development and environmental management.

Course Objectives:

1) To introduce students to the concepts, nature, scope, and importance of Resource Geography.

2) To develop understanding about the distribution, utilization, problems, and conservation of natural resources.

Course Outcomes:

1) Students will be able to explain the concept, classification, and significance of resources in geography.

2) Students will be able to analyze the distribution, utilization, and conservation of conventional and non-conventional resources.

Contents of the course

Unit No.	Details	No. of Lectures	No. of Credits
1	**Introduction to Resource Geography** 1.1 Definition of Resource Geography 1.2 Nature and Scope of Resource Geography 1.3 Concept and Classification of Resources 1.4 Importance of Resource Geography	15	1

2	**Natural Resource** (Distribution, Utilization, Problems and Conservation) 2.1 Land Resource, Water Resources and Forest Resource 2.2 Conventional Resource- Coal, Petroleum and natural gas 2.3 Non-Conventional Resource- Wind and Solar	15	1

References:

1. Cutter S. N., Renwich H. L. and Renwick W., 1991: Exploitation, Conservation, Preservation: A Geographical Perspective on Natural Resources Use, John Wiley and Sons, New York.

2. Gadgil M. and Guha R., 2005: The Use and Abuse of Nature: Incorporating This Fissured Land: An Ecological History of India and Ecology and Equity, Oxford University Press. USA.

3. Holechek J. L. C., Richard A., Fisher J. T. and Valdez R., 2003: Natural Resources: Ecology, Economics and Policy, Prentice Hall, New Jersey.

4. Jones G. and Hollier G., 1997: Resources, Society and Environmental Management,

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B. Sc. Part- III Semester –V

Name of the Paper: Weather Instrument

Paper Code: DSE 1 – 2 (P) **Total Lectures- 30**

Course Credit: 1 **Total Marks- 25**

Preamble:

The study of weather instruments is essential for understanding atmospheric conditions and weather phenomena. This course introduces students to the principles, mechanisms, and functions of important meteorological instruments. It provides practical knowledge about measuring temperature, pressure, rainfall, wind direction, and wind speed. The paper helps students develop observational and analytical skills required for weather study and climatological analysis.

Course Objectives:

1) To develop understanding about the principle, mechanism, and functions of major weather instruments used in meteorology.

Course Outcomes:

1) Students will be able to identify and explain the working and use of different weather instruments for observing and analyzing weather conditions.

Contents of the course

Unit No.	Details	No. of Lectures	No. of Credits
1	**Weather Instruments** Principle, Mechanism, and Function a) Thermograph b) Barograph c) Dry and Wet Bulb Thermometer d) Wind vane e) Cup Anemometer f) Rain Gauge	30	1

References:

1. Khan MD. Zulfequar Ahmad: Text Book of Practical Geography, Concept Publishing Company, New Delhi, 1998

2. Negi., Dr. Balbir Singh: Practical Geography, KedarNath Ram Nath, Meerut, Delhi.

8. Saha, Pijushkanti and BasuPartha: Advanced Practical Geography – A Laboratory

9. Sarkar, Ashis: Practical Geography: A systematic Approach, Orient Longman limited, Calcutta, 1997.

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B. Sc. Part- III Semester –V

Name of the Paper: Tourism Planning and Management

Paper Code: VSC -3 (P) **Total Lectures- 60**

Course Credit: 2 **Total Marks- 50**

Preamble:

Tourism Planning and Management is an important field that focuses on the systematic development and management of tourism activities. This course introduces students to the concepts, types, and problems of tourism planning at national, regional, and local levels. It provides knowledge about itinerary preparation, travel regulations, and tourism-related formalities such as passport, visa, customs, and immigration. The paper also highlights the role of major travel agencies and organizations in promoting tourism. The course helps students understand the practical aspects and challenges of tourism management in the modern world.

Course Objectives:

1) To introduce students to the concepts, types, and importance of tourism planning and management.

2) To develop understanding about travel formalities, itinerary preparation, and the role of tourism organizations and travel agencies.

Course Outcomes:

1) Students will be able to explain the principles, problems, and types of tourism planning and management.

2) Students will be able to prepare travel itineraries and understand tourism regulations, travel formalities, and the functions of major travel agencies.

Contents of the course

Unit No.	Details	No. of Lectures	No. of Credits
1	Tourism Planning 1.1 Concept of Tourism Planning 1.2 Types of Tourism Planning – National, Regional and Local 1.3 Problems in Tourism Planning 1.4 Preparation of itinerary planning	30	1

2	**Tourism Management** 2.1 Concept of Tourism management 2.2 Travel formalities and regulations – passport, visa, foreign exchange, customs and immigration etc. 2.3 Major travel agencies in world: PATA and TAAI 2.4 Limitations of tourism management	30	1

References:

1. World Travel and Tourism Council: Travel and Tourism Global economic impact and Trends, Gloria Guevara manzo, President and CEO (2019)

2. Md. Abu Barkat Ali: Travel and Tourism Management, Prentice Hall India Learning Private Limited, 2015.

3. M. R. Dileep: Tourism, Transport and Travel Management, Routledge publisher, 2019. 18

4. Ratandeep Singh: Tourism and Development Management: Practice and Procedures, Kanishka Publishing House 2008

5. Ratandeep singh: Handbook of tour and travel management, kanishka publishers' distributors, 2018.

6. Sinha P. C.: Tourism transport and travel management, Anmol Publisher, 2011.

7. Sushma Seth Bhat and Pran Nath Seth: Travel and Tourism, Penguin Books Ltd, 2003.

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B. Sc. Part- III Semester –V

Name of the Paper: Ancient Indian Geographic Thought

Paper Code: IKS (T) **Total Lectures- 30**

Course Credit: 2 **Total Marks- 50**

Course Preamble:

The course on Indian Knowledge System (IKS) and Ancient Geography of India highlights the rich geographical knowledge embedded in ancient Indian traditions. It explains how ancient scholars understood the Earth, rivers, mountains, oceans, and regions in relation to human life and culture. The course emphasizes the holistic relationship between nature, society, and sustainability. It explores traditional knowledge related to environmental ethics, hydrology, climatology, and settlement patterns. Learners gain an understanding of India's intellectual and cultural heritage through ancient texts and geographical concepts. The integration of IKS encourages multidisciplinary learning by connecting archaeology, ecology, and modern geographic science. The course also promotes critical thinking, innovation, and a sense of cultural rootedness among students. Ultimately, it aims to connect ancient geographical wisdom with modern sustainability and spatial development goals.

Course Objectives:

1. To introduce learners to the foundational concepts with special reference to ancient geographical thought.
2. To Study the ancient Indian Geographers.

Learning Outcomes:

1. Understand the basic ancient Indian concepts in Geography.
2. Understand the Contribution of ancient Indian Geographer.

Contents of the course

Unit No.	Details	No. of Lectures	No. of Credits
1	**Ancient Indian Geographical Concepts** 1.1 Ancient Indian Major Eras 1.2 Geography, origin of the universe, Earth, Size of Earth, Eclipses, Atmosphere, weather and Season, Latitudes and	15	1

	longitude, Earthquake, Continents (Islands), Bharatvarsh		
2	**Contribution of Ancient Indian Geographer** 1.Chanakya (Kautilya) 2. Aryabhat 3. Varahmihira 4. Yogeshwara 5. Susruta 6. Bhaskarcharya 7. Utpala 8. Vijaynandi 9. Brahmagupta 10. Kalidas	15	1

References:

1) History of Ancient Indian Geography – P. L. Bhargava, 1972, Upper India Publishing House, Lucknow.
2) Ancient Indian Geography – D. C. Sircar, 1990, Motilal Banarsidass Publishers, Delhi.
3) Aryabhatiya – Aryabhata, 499 CE, Motilal Banarsidass Publishers (modern edition).
4) Brihat Samhita – Varahamihira, 6th Century CE, Chaukhamba Sanskrit Series Office, Varanasi (modern edition).
5) Arthashastra – Chanakya, 4th Century BCE, Penguin Books India (modern edition).
6) A History of Indian Geography – R. L. Singh, 2008, Indian Geographical Society Publication.
7) Indian Geographical Thought – S. M. Ali, 1996, Rawat Publications, Jaipur.
8) Geography Through the Ages – J. N. Sarkar, 2001, Concept Publishing Company, New Delhi.

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B. Sc. Part- III Semester –VI

Name of the Paper: Biogeography

Paper Code: DSC 1 – 10 (T) **Total Lectures- 45**

Course Credit: 3 **Total Marks- 75**

Preamble:

Biogeography is an important branch of geography that studies the distribution of plants, animals, and ecosystems on the Earth's surface. This course introduces students to the meaning, nature, and scope of biogeography along with the concept of environment and ecosystem. It explains the physical and anthropogenic factors influencing the distribution of biodiversity. The paper also focuses on the importance of biodiversity, conservation practices, biodiversity hot-spots, and India as a mega diversity region. The course helps students understand the threats to biodiversity and the need for sustainable environmental conservation.

Course Objectives:

1) To introduce students to the concepts, nature, scope, and importance of Biogeography.

2) To develop understanding about biodiversity, ecosystem, factors influencing biogeography, and conservation practices.

Course Outcomes:

1) Students will be able to explain the relationship between environment, ecosystem, and biodiversity distribution.

2) Students will be able to analyze the factors affecting biogeography and evaluate the importance of biodiversity conservation and related environmental issues.

Contents of the course

Unit No.	Details	No. of Lectures	No. of Credits
1	**Introduction to Biogeography** 1.1 Definition and meaning 1.2 Nature and Scope of Biogeography 1.3 Environment and ecosystem	15	1
2	**Factors Influencing the Biogeography**	15	1

	2.1 Physical - Physiography, Soil, Climate, vegetation and Water 2.2 Anthropogenic		
3	**Biodiversity** 3.1 Concept of Biodiversity – Importance 3.2 Concept of Conservation 3.3 Hot-Spot of Biodiversity and India's as mega diversity region 3.4 Threats to biodiversity- Natural and Manmade	15	1

References:

1) Sharma P.D. (1994-95): Ecology and Environment –Published by Kumar Rastogi, Meerut, Rajesh Printers New Delhi.

2) Nigel Pears (1977): Basic Biogeography Longman Group Ltd. London.

3) Khan Y S (2008): Biogeography, Lotus Publication, Solapur

4) Meike Howard K: Patterns of Life:- Biogeography of the changingworld –Unwin Hyman Inc. Ltd. Londan (1989.

5) H. Robinson (1982): Biogeography English Language Book Society, Londan.

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B. Sc. Part- III Semester –VI

Name of the Paper: Surveying

Paper Code: DSC 1 – 10 (P) **Total Lectures-60**

Course Credit: 2 **Total Marks- 50**

Course Preamble:

The paper "Surveying" introduces students to the basic principles and practical methods of land surveying used in geography and related fields. The course explains the meaning, nature, importance, and types of surveying. It provides practical knowledge about the preparation of plans using plane table survey, chain and tape survey, prismatic compass survey, cross staff survey, and Abney level survey. The syllabus develops skills in measurement, field observation, and map preparation through different survey techniques. Overall, the paper enhances practical and technical understanding of surveying methods used in geographical studies.

Course Objectives:

1) To understand the meaning, nature, importance, principles, and types of surveying used in geographical studies.

2) To develop practical skills in the preparation of plans and field measurements using different survey methods and instruments.

Course Outcomes:

1) Students will be able to explain the concepts, principles, importance, and types of surveying.

2) Students will be able to conduct field surveys and prepare plans using plane table, chain and tape, prismatic compass, cross staff, and Abney level survey methods.

Contents of the course

Unit No.	Details	No. of Lectures	No. of Credits
I	**Introduction to Surveying** 1.1 Definition and Meaning of Survey 1.2 Nature of Surveying 1.3 Importance of Surveying 1.4 Types of survey 1.5 Principles of Surveying	30	01

II	**Preparation of Plans by Survey Methods** 2.1 Plane Table survey - Radial, Intersection, open and closed Traverse method 2.2 Chain and Tape Survey - Triangulation, open and closed Traverse method 2.3 Prismatic compass survey - Radial, Intersection, open and closed Traverse method 2.4 Correction of bearing 2.5 Cross staff surveying	30	01

References:

1) Surveying and Levelling – B. C. Punmia, 2016, Laxmi Publications, New Delhi.
2) Plane Surveying – S. K. Duggal, 2013, Tata McGraw-Hill Publishing Company, New Delhi.
3) Fundamentals of Surveying – S. V. Kulkarni, 2007, Pune Vidyarthi Griha Prakashan, Pune.
4) Practical Geography – Gopal Singh, 2010, Vikas Publishing House Pvt. Ltd., New Delhi.
5) Surveying Theory and Practice – James M. Anderson and Edward M. Mikhail, 1998, McGraw-Hill Publication.
6) Engineering Surveying – W. Schofield, 2001, Butterworth-Heinemann Publication.
7) Elements of Practical Geography – R. L. Singh, 2005, Kalyani Publishers, New Delhi.
8) A Textbook of Surveying – C. Venkatramaiah, 2012, Universities Press, Hyderabad.

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B. Sc. Part- III Semester –VI

Name of the Paper: Agriculture Geography

Paper Code: DSC 1 – 11 (T) **Total Lectures-45**

Course Credit: 3 **Total Marks- 75**

Preamble:

The paper Agriculture Geography introduces students to the study of agriculture from a geographical perspective, focusing on the relationship between human activities and the physical environment. It helps learners understand the nature, scope, and importance of agriculture in regional and global development. The course explains how physical, economic, and social factors influence agricultural practices and productivity. It also provides knowledge about various traditional and modern types of agriculture practiced across the world. Through this course, students will develop an understanding of agricultural patterns, land use, and rural economy. The paper aims to build analytical skills for studying agricultural systems and contemporary agricultural issues in geographical context.

Course Objectives:

1) To understand the meaning, nature, scope, and importance of Agricultural Geography.

2) To examine the physical, economic, and social determinants influencing agricultural activities and land use patterns.

3) To study the different types of subsistence and commercial agriculture practiced in various regions of the world.

Course Outcomes:

1) Students will be able to explain the concepts, scope, and significance of Agricultural Geography.

2) Students will be able to analyze the impact of physical, economic, and social factors on agricultural development.

3) Students will be able to differentiate between various types of subsistence and commercial agricultural systems.

Contents of the course

Unit No.	Details	No. of Lectures	No. of Credits

1	**Introduction to Agriculture Geography** 1.1 Definition of Agriculture Geography 1.2 Nature of Agriculture Geography 1.3 Scope of Agriculture Geography 1.4 Importance of Agriculture Geography	15	1
2	**Determinants of Agriculture** 2.1 Physical- Relief, Climate, Water Bodies and Soil 2.2 Economic - Capital, Transportation and Irrigation 2.3 Social – Land holding, Traditional methods and Govt. Polices	15	1
3	**Types of Agriculture** 3.1 Substance Agriculture - Primitive Subsistence Agriculture, Shifting Cultivation, Nomadic Herding, Intensive Agriculture 3.2 Commercial Agriculture - Commercial Grain Farming, Extensive Agriculture**,** Plantation Agriculture, Mixed Agriculture	15	1

References:

1) Agricultural Geography – Jasbir Singh and S. S. Dhillon, 2004, Tata McGraw-Hill Publishing Company, New Delhi.

2) Principles of Agricultural Geography – M. Shafi, 2006, Pearson Education, New Delhi.

3) Agricultural Geography of India – R. L. Singh, 1998, National Geographical Society of India, Varanasi.

4) Geography of Agriculture – Mohammad Shafi, 2000, Concept Publishing Company, New Delhi.

5) Agricultural Problems of India – R. C. Tiwari, 2011, Pointer Publishers, Jaipur.

6) Organic Farming and Sustainable Agriculture – S. P. Palaniappan and K. Annadurai, 2007, Scientific Publishers, Jodhpur.

7) Agricultural Biotechnology – S. S. Purohit, 2005, Agrobios Publication, Jodhpur.

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B. Sc. Part- III Semester –VI

Name of the Paper: Quantitative Techniques in Agriculture Geography

Paper Code: DSC 1 – 11 (P) **Total Lectures-60**

Course Credit: 2 **Total Marks- 50**

Preamble:

The paper "Quantitative Techniques in Agriculture Geography" introduces students to the application of statistical and quantitative methods in the study of agricultural patterns and processes. It provides knowledge about the collection, classification, tabulation, and presentation of agricultural data for geographical analysis. The course helps learners understand various quantitative techniques used for measuring agricultural productivity, crop combination, concentration, and diversification. It develops analytical and interpretative skills required for agricultural research and regional planning. The paper enables students to apply scientific and quantitative approaches in the study of Agricultural Geography.

Course Objectives:

1) To understand the importance and application of quantitative techniques in Agricultural Geography.

2) To develop skills in the collection, classification, tabulation, and analysis of agricultural data using quantitative methods.

Course Outcomes:

1) Students will be able to apply quantitative techniques for analyzing agricultural productivity, crop combination, and crop diversification.

2) Students will be able to interpret and present agricultural data scientifically through tables and statistical methods.

Contents of the course

Unit No.	Details	No. of Lectures	No. of Credits
1	**Introduction to Quantitative Techniques** 1.1 Nature and Importance of Quantitative Techniques in Agricultural Geography 1.2 Collection and Classification of Agricultural Data	30	1

	1.3 Tabulation of Agricultural Data 1.4 Preparation of Frequency Distribution Tables		
2	**Quantitative Techniques in Agriculture Geography** 2.1 Measurement of agricultural productivity- Kendall, Sapre and Deshpande 2.2 Crop Combination- Weaver and Doi. 2.3 Crop Concentration and Diversification-Bhatia	30	1

References:

1. Chandana and siddhu – Population Geography
2. Clarke. J. I. – Population Geography, Pergamoh Press, London.
3. Cole and king-Quantitative Geography.
4. Elhance D. N – Fundamentals of Statistics, KitabMahal, Allahbad.
5. Gregary, S. Statistical Methods and the Geographers. Longman Group Ltd.
6. Hammond. R and McCullogh,-Quantitative Techniques in Geography: an introduction, 14|Page Clarendon Press, Oxford.
7. MahmoodAslam Statistical Methods in Geography.
8. Saxena. H. M. Geography of Marketing; Concepts and methods, New Delhi
9. Singh Jasbir-An Agricultural Geography, Vishal Publication, Kurukshetra.
10. Woodcock R. G. & Bailey M. J. – Quantitative Geography, Mac Donald &Erans Ltd. London.

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B. Sc. Part- III Semester –VI

Name of the Paper: Social Geography

Paper Code: DSC 1 – 12 (T) **Total Lectures-45**

Course Credit: 3 **Total Marks- 75**

Preamble:

The paper "Social Geography" focuses on the study of human society and its spatial organization in different parts of the world. It helps students understand the relationship between social groups, culture, and geographical environment. The course introduces major social categories such as tribes, races, and religious groups along with their spatial distribution. It also highlights concepts of social welfare and wellbeing through components like healthcare, housing, and education. The paper examines important social problems such as slums, communal conflicts, and crime in the Indian context. Through this course, students will develop a geographical understanding of social diversity, inequality, and human wellbeing in society.

Course Objectives:

1) To understand the meaning, nature, scope, and importance of Social Geography.

2) To study the spatial distribution and characteristics of major social groups such as tribes, races, and religious communities.

3) To examine the concepts of social welfare, wellbeing, and major social problems in India from a geographical perspective.

Course Outcomes:

1) Students will be able to explain the basic concepts and branches of Social Geography.

2) Students will be able to analyze the spatial distribution and social characteristics of tribes, races, and religious groups.

3) Students will be able to evaluate issues related to social welfare, wellbeing, and social problems such as slums, communal conflicts, and crime.

Contents of the course

Unit No.	Details	No. of Lectures	No. of Credits
1	**Introduction of Social Geography**	15	1

	1.1 Definition of Social Geography 1.2 Nature and Scope of Social Geography 1.3 Branches of Social Geography 1.4 Importance of Social Geography		
2	**Social Categories and their spatial distribution of World** 3.1 Tribes - Definition and concept of tribe, Major tribes- Maasai and Naga 3.2 Race – Definition, bases of racial classification, Classification of Human Race 3.3 Religious Groups in the World	15	1
3	**Social Welfare, Wellbeing and Social Problems in India** 4.1 Concept of Social Welfare and Wellbeing 4.2 Components of Social Welfare and Wellbeing – Healthcare, Housing and Education 4.3 Social Problems- Slums, Communal Conflicts and Crime	15	1

References:

1. Ahmed A., 1999: Social Geography, Rawat Publications.
2. Casino V. J. D., Jr., 2009) Social Geography: A Critical Introduction, Wiley Blackwell.
3. Cater J. and Jones T., 2000: Social Geography: An Introduction to Contemporary Issues, Hodder Arnold.
4. Holt L., 2011: Geographies of Children, Youth and Families: An International Perspective, Taylor & Francis.
5. Panelli R., 2004: Social Geographies: From Difference to Action, Sage.
6. Rachel P., Burke M., Fuller D., Gough J., Macfarlane R. and Mowl G., 2001: Introducing Social Geographies, Oxford University Press.
7. Smith D. M., 1977: Human geography: A Welfare Approach, Edward Arnold, London.
8. Smith D. M., 1994: Geography and Social Justice, Blackwell, Oxford.
9. Smith S. J., Pain R., Marston S. A., Jones J. P., 2009: The SAGE Handbook of Social Geographies, Sage Publications.
10. Sopher, David (1980): An Exploration of India, Cornell University Press, Ithasa
11. Valentine G., 2001: Social Geographies: Space and Society, Prentice Hall.

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B. Sc. Part- III Semester –VI

Name of the Paper: Representation of Statistical Data

Paper Code: DSC 1 – 12 (P) **Total Lectures- 60**

Course Credit: 2 **Total Marks- 50**

Preamble:

The paper "Representation of Statistical Data" introduces students to various techniques used for the graphical and cartographic presentation of geographical data. It provides knowledge about diagrammatic methods such as proportional circles, proportional squares, star diagrams, climographs, and hythergraphs. The course also focuses on cartographic methods including choropleth maps, dot maps, and isopleth techniques for spatial representation. It helps learners develop practical skills in interpreting and presenting statistical information accurately and effectively. The paper enables students to apply statistical data representation techniques in geographical analysis, research, and regional planning.

Course Objectives:

1) To understand the various diagrammatic and cartographic techniques used for the representation of geographical statistical data.

2) To develop skills in the preparation, interpretation, and application of statistical diagrams and maps in geography.

Course Outcomes:

1) Students will be able to prepare and interpret different types of statistical diagrams such as proportional circles, squares, star diagrams, climographs, and hythergraphs.

2) Students will be able to apply cartographic methods like choropleth, dot, and isopleth maps for geographical data analysis and presentation.

Contents of the course

Unit No.	Details	No. of Lectures	No. of Credits
1	**Diagrammatic Representation of Data** 1.1 Proportional Circle 1.2 Proportional Square	30	1

	1.3 Star Diagram 1.4 Climograph and Hythergraph		
2	**Cartographic Representation of Data** 2.1 Choropleth Map 2.2 Dot Map 2.3 Isopleth Method 2.4 Applications of Statistical Data Representation in Geography	30	1

References:

1. Bygoot, J: An Introduction to Mapwork and Practical Geography, University Tutorial, London 1964.

2. Khan MD. Zulfequar Ahmad: Text Book of Practical Geography, Concept Publishing Company, New Delhi, 1998

3. Mishra, R.P. and Ramesh A.: Fundamentals of Cartography, Concept Publishing Company, New Delhi, 2000

4. Monkhouse F.J. and Wilkison, H.R.: Maps and Diagrams, Mathuen. London, 1971.

5. Negi., Dr. Balbir Singh: Practical Geography, KedarNath Ram Nath, Meerut, Delhi.

6. Raisz, E.: Principals of Cartography, McGraw Hill Book Com., Inc, New York, 1962.

7. Robinson, A.H. and Sale, S.D.: Elements of Cartography, John Witey and Sons, Inc, New York, 1969.

8. Saha, Pijushkanti and BasuPartha: Advanced Practical Geography – A Laboratory

9. Sarkar, Ashis: Practical Geography: A systematic Approach, Orient Longman limited, Calcutta, 1997.

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B. Sc. Part- III Semester –VI

Name of the Paper: Political Geography

Paper Code: DSE 1 – 3 (T) **Total Lectures-30**

Course Credit: 2 **Total Marks- 50**

Preamble:

The paper "Political Geography" examines the relationship between geography, political processes, and the organization of states and nations. It introduces students to the concepts of state, nation, frontiers, boundaries, and the geographical elements that influence political power and administration. The course explains how location, resources, population, and communication shape the political structure of a region. It also focuses on resource conflicts and issues related to displacement, rehabilitation, and regional development. Case studies such as the Krishna and Ganga water conflicts, along with the Sardar Sarovar and Ujani projects, help learners understand real-world political and environmental issues. The paper develops analytical understanding of political problems, resource management, and socio-spatial conflicts from a geographical perspective.

Course Objectives:

1) To understand the concepts, nature, and scope of Political Geography.

2) To examine the role of geographical factors and resource conflicts in shaping political issues, displacement, and rehabilitation.

Course Outcomes:

1) Students will be able to explain the concepts of state, nation, boundaries, frontiers, and elements influencing political organization.

2) Students will be able to analyze resource conflicts, displacement issues, and rehabilitation problems from a geographical and political perspective.

Contents of the course

Unit No.	Details	No. of Lectures	No. of Credits
1	**Introduction of Political Geography** 1.1 Definition of Political Geography 1.2 Nature and Scope of Political Geography	15	1

	1.3 Concept of State, Nation, State- Nation, Frontiers and Boundaries 1.4 Elements of State: Location, Shape, Size, Topography, Climate, Vegetation, Resources, Population and Communication		
2	**Resource Conflicts and Politics of Displacement** 4.1 Krishna Water Conflict (Inter State) 4.2 Ganga Water Conflict (International) 4.3 Issues of Relief, Compensation and Rehabilitation: Sardar Sarovar Projects 4.4 Issues of Relief, Compensation and Rehabilitation: Ujani Projects	15	1

References:

1. Kalpana Rajaram: Geography, Spectrum Books Pvt. Ltd, New Delhi, (2007).
2. Surender Singh: Geography, TATA Mcgraw Hill book Company, New Delhi (2007)
3. Adhikari Sudeepta: Political Geography, Rawat Publication, Jaipur (2017)

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B. Sc. Part- III Semester –VI

Name of the Paper: Analysis of Socio-Economic Data

Paper Code: DSE 1 – 3 (P) **Total Lectures-30**

Course Credit: 1 **Total Marks- 25**

Preamble:

The paper "Analysis of Socio-Economic Data" focuses on graphical techniques used for analyzing and interpreting socio-economic information. It develops students' skills in preparing and interpreting various diagrams and graphs to understand trends, relationships, and variations in data. The course enhances analytical abilities and the effective presentation of socio-economic data for geographical and social science research.

Course Objectives:

1) To develop understanding and practical skills in the graphical analysis and interpretation of socio-economic data using various statistical techniques.

Course Outcomes:

1) Students will be able to prepare and interpret different graphical methods such as pyramids, cumulative graphs, deviational graphs, and scatter diagrams for socio-economic analysis.

Contents of the course

Unit No.	Details	No. of Lectures	No. of Credits
1	Compound Pyramids, Superimposed Pyramids, Triangular graph-linear- relationship variables, Cumulative graph, Deviational graph, Scatter diagram	30	1

References:

1. Lawrence, G.R.P. (1973): Cartographic methods, Methuen & Co. London.
2. Mishra, R. P. (1982): Fundamental of cartography, Prasaranga, University Mysore.
3. Monkhouse, F.J.R & Wilkinson, H.R.: Maps & diagrams, Methuen & Co. London.
4. Raisz, Erwin: Principles of cartography, McGraw- Hill Book Co., New York.
5. Robinson A.H. & Sale R.D.: Element of Cartography, John House & Sons Ltd. London.
6. Singh R. L.: Elements of Practical Geography.

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B. Sc. Part- III Semester –VI

Name of the Paper: Population Geography

Paper Code: DSE 1 – 4 (T) **Total Lectures-30**

Course Credit: 2 **Total Marks- 50**

Preamble:

The paper "Population Geography" introduces students to the study of population distribution, composition, and growth from a geographical perspective. It explains the nature, scope, and significance of population geography along with important sources of population data such as Census, Statistical Abstract, and NSS. The course focuses on population composition including age-sex structure and rural-urban characteristics and their socio-economic impacts. It also highlights contemporary population issues such as HIV/AIDS and COVID-19 along with population policies of India and the USA. The paper develops analytical understanding of population patterns, problems, and policies in relation to regional development.

Course Objectives:

1) To understand the nature, scope, significance, and sources of data in Population Geography.

2) To examine population composition, contemporary population issues, and population policies from a geographical perspective.

Course Outcomes:

1) Students will be able to analyze population composition and distribution using demographic data and geographical methods.

2) Students will be able to evaluate contemporary population issues and compare population policies of different countries.

Contents of the course

Unit No.	Details	No. of Lectures	No. of Credits
1	**Introduction to Population Geography** 1.1 Definition of population geography 1.2 Nature and Scope of population Geography	15	1

	1.3 Significance of population Geography Sources of population data (Census, Statistical abstract, NSS)		
2	**Population Composition and Policies** 2.1 Age-Sex Composition: Causes, Effects, Measures and Characteristics 2.2 Rural and Urban Composition: Causes, Effects, Measures and Characteristics 2.3 Contemporary Issues: HIV/ AIDS, Covid 19 2.4 Population Policy - USA and India	15	1

References:

1. Barrett H. R., 1995: Population Geography, Oliver and Boyd.
2. Bhende A. and Kanitkar T., 2000: Principles of Population Studies, Himalaya Publishing House.
3. Chandna R. C. and Sidhu M. S., 1980: An Introduction to Population Geography, Kalyani Publishers.
4. Clarke J. I., 1965: Population Geography, Pergamon Press, Oxford.
5. Jones, H. R., 2000: Population Geography, 3rd ed. Paul Chapman, London.
6. Lutz W., Warren C. S. and Scherbov S., 2004: The End of the World Population Growth in the 21st Century, Earthscan
7. Newbold K. B., 2009: Population Geography: Tools and Issues, Rowman and Littlefield Publishers.
8. Pacione M., 1986: Population Geography: Progress and Prospect, Taylor and Francis.
9. Wilson M. G. A., 1968: Population Geography, Nelson.
10. Chandna, R C (2006), Jansankhya Bhugol, Kalyani Publishers, Delhi
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B. Sc. Part- III Semester –VI

Name of the Paper: Practical in Population Geography

Paper Code: DSE 1 – 4 (P) **Total Lectures-30**

Course Credit: 1 **Total Marks- 25**

Preamble:

The paper "Practical in Population Geography" provides practical training in the measurement and analysis of demographic data using various population indicators and techniques. It helps students develop skills in preparing and interpreting age-sex pyramids and calculating important demographic ratios and rates. The course focuses on population change, mortality analysis, and population projection methods for geographical study. It enhances students' analytical and quantitative abilities in population research and demographic analysis.

Course Objectives:

1) To develop practical skills in the calculation, representation, and interpretation of demographic indicators and population data in Population Geography.

Course Outcomes:

1) Students will be able to prepare age-sex pyramids and calculate demographic measures such as dependency ratio, infant mortality rate, population change, and population projection.

Contents of the course

Unit No.	Details	No. of Lectures	No. of Credits
1	Age-sex pyramid, Child-women ratio, Dependency ratio, Infant mortality rate, Age specific mortality, Rate of Population Change, Population Projection	30	1

References:

1. Liendsor, J. M. (1997): Techniques in Human Geography, Routledge, London

2. Lloyd P. and Dicken, B. (1972): Location in Space: A Theoretical Approach to Economic Geography, Harper and Row, New York

3. Wood, A. and Roberts, S. (2011): Economic Geography: Places, Network and Flows, Routledge, London

4. Chorley, R. J. and Hagget, P. (1972) Socio-economic Models in Geography, Mathuen and Co., London
5. Monkhouse, F. J. and Wilkinson, H. R. (1971): Maps and Diagrams, Methuen and Co., London

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B. Sc. Part- III Semester –VI

Name of the Paper: Agro- Tourism

Paper Code: VSC - 4 (P) **Total Lectures-60**

Course Credit: 2 **Total Marks- 50**

Preamble:

This syllabus has been designed to portray Agro- tourism as an applied branch of tourism with emphasis on the acquisition of knowledge and skills associated with the content. A general review of the undergraduate students of agro-tourism syllabus is presumed. Students will expected and able to give the answers of questions on all the topics set out in the column headed syllabus. The notes therein are intended to indicate the scope of the questions related to agro tourism will be set, but they are not be considered as an exhaustive list of limitations and illustration. Students have practical which should contain records based on individual observations carried out from the field visit. In order to enhance effective teaching as well as learning process and better performance of students, continues assessment of students is recommended for acquiring essential skills related to agro-tourism.

Course Objectives:

Course Outcomes:

Contents of the course

Unit No.	Details	No. of Lectures	No. of Credits
1	**Introduction to Agro-Tourism** 1.1 Definition of Agro-Tourism 1.2 Importance of Agro-Tourism 1.3 Agro- tourism Sustainability 1.4 Need & Role of Agro- Tourism in rural development	30	1
2	**Factors and Types of Agro-Tourism** 2.1 Factors affecting on Agro-Tourism 2.2 Types of Agro-Tourism 2.3 Problems and Remedies of Agro-Tourism 2.4 Agro-Tourism Centre’s in Solapur	30	1

References:

1.Talwar, Prakash. Travel and Tourism Management. Gyan Books Pvt. Ltd., Main Ansari Road, Darya Ganj, New Delhi-110 002.

2. Badri, S.C)2003(Trends in Tourism Promotion. International Books Distributors, Dehradun Uttarakhand (India).

3. Salve S.D. Chavan K. R., Mhatre K. G (2024), Agrotourism and Economics, Mahi Publication, Ahmedabad

4. Bhatia A. K. (1991) International Tourism: Fundamentals and Practices, Sterling Pvt LTD New Delhi, 5. 6. 7. 8. 9. 10.

5. Ramu M. S. and Vazhacharikal P. J. (2022) Agrotourism in India: Status and Prospects, independently published, Banglore

6. Sznajdar M, Prezebdrska L., Scrimgeour Frank (2009), Agritourism, CABI Publication, USA

7. Randall Jack (1993), Agricuture Tourism, Discovery Publishing House PVT LTD, India

8. Parkar P.R.(2021),Agritourism:Guide for Beginners,walnut publication, India

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B. Sc. Part- III Semester –VI

Name of the Paper: On Job Training in Geography

Paper Code: OJT **Total Lectures-60**

Course Credit: 2 **Total Marks- 50**

Course Preamble:

On Job Training in Geography provides practical exposure and field-based learning opportunities to students in various geographical applications and professional activities. The course helps students to connect theoretical knowledge of geography with real-life work experiences in planning, surveying, environmental studies, GIS, and related sectors. It develops technical, analytical, communication, and problem-solving skills required for professional growth. The training enables students to understand workplace ethics, responsibilities, and organizational functioning. Overall, the course enhances employability and prepares students for careers in geographical and allied fields.

Course Objectives:

1) To provide practical training and field-based experience in the application of geographical knowledge and techniques in professional sectors.

2) To develop technical, analytical, communication, and workplace skills required for employment and career opportunities in geography and allied fields.

Course Outcomes:

1) Students will be able to apply geographical knowledge and practical skills in professional and field-based work environments.

2) Students will be able to develop technical, analytical, communication, and workplace competencies required for careers in geography and related fields.

Contents of the course

Unit No.	Details
I	**Introduction to On Job Training in Geography** 1.1 Meaning and Importance of On Job Training 1.2 Objectives and Scope of Training in Geography 1.3 Professional Ethics and Work Culture 1.4 Career Opportunities in Geography and Allied Fields
II	**Field Work and Practical Training**

	2.1 Internship / Training in Government Offices, NGOs, Industries, Research Institutes etc. 2.2 Preparation of Daily Work Record 2.3 Interaction with Experts and Officials 2.4 Practical Application of Geographical Knowledge

Note:

1) Duration: 60 hours

2) Students should complete on-job training in any government department, private organization, NGO, research institute, industry or geographical agency related to the subject area.

3) Students must maintain a daily work diary and obtain certification from the training supervisor.

4) Submission of training report and viva-voce examination is compulsory for course completion.

5) Internal assessment shall be based on attendance, work performance, field participation, and supervisor's evaluation.

6) The course shall emphasize experiential learning, skill development, and employability as recommended in National Education Policy 2020.

Pattern of Examination

	Credit	Total Marks	University Assessment (UA)	College Assessment / Internal Marks (CA)
Theory Paper	3	75	45	30
Theory Paper	2	50	30	20
Practical Paper	2	50	30	20

Passing Criteria

For 3 credit (75 Marks)

UA = 18 out of 45

CA = 12 out of 30

For 2 credit (50 Marks)

UA = 12 out of 30

CA = 08 out of 20

College Assessment (CA) System

Choose any two of the following

Home Assignment / Class Test / Unit Test / Tutorial / Seminar / Presentation / Viva / Field visit / Educational visit / Project / Workshop Participation / Conference Participation