



**Tuljaram Chaturchand College, Baramati**

*Autonomous College*

*Three years degree programme in Geography*

(Faculty of Science and Technology)

*Revised Syllabus for*

**T.Y.B.A. Geography Sem V**

For Tuljaram Chaturchand College, Baramati

**Choice Based Credit System Syllabus**

**To be implemented from Academic Year 2021-2022**

**Choice Based Credit System Syllabus****To be implemented from Academic Year 2021-2022****T. Y. B. A. GEOGRAPHY**

Semester	Code No.	Paper Title
V	GEO 3501	Geography of Tourism-I
	GEO 3502	Physical Geography of India
	GEO 3503	Practical in Map Reading and Map Preparation
VI	GEO 3601	Geography of Tourism-II
	GEO 3602	Human Geography of India
	GEO 3603	Practical in Statistical Techniques

**Programme outcomes (Pos) (BA Geography):**

PO.1. Ability of Problem Analysis: Student will be able to analyse the problems of physical as well as cultural environments of both rural and urban areas. Moreover, they will try to find out the possible measures to solve those problems.

PO.2. Conduct Social Survey Project: They will be eligible for conducting social survey project, which is necessary for the assessment of development status of a particular group or section of the society.

PO.3. Individual and teamwork: Works effectively as an individual and as a member or leader in diverse teams and in multidisciplinary settings.

PO.4. Application of modern instruments: Students will be able to apply various modern instruments for data collection and field survey.

PO.5. Application of GIS and modern Geographical Map Making Techniques: Students will learn how to prepare map based on GIS by using the modern geographical map-making techniques.

PO.6. Critical Thinking: Students will be able to understand and solve the critical problems of physical and cultural environment.

PO.7. Development of Observation Power: As a student of Geography, they will be capable to develop their observation power through field experience and in future, they will be able to identify the socio-environmental problems of a locality.

PO.8. Development of Communication Skill and Interaction Power: After the completion of the course, they will be efficient in their communication skill as well as power of social interaction.

PO.9. Effective Citizenship: Demonstrate empathetic social concern and equity centred national development and the ability to act with an informed awareness of issues and participate in civic life through volunteering.

PO.10. Enhancement of the ability of Management: Demonstrate knowledge and understanding of the management principles and apply these to their own work, as a member and leader in a team, to manage projects. They will perform effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

PO.11. Ethics: Recognize different value systems including your own, understand the moral dimensions of your decisions and accept responsibility for them.

PO.12. Understand Environmental Ethics and Sustainability: Understand the impact of the acquired knowledge in societal and environmental contexts and demonstrate the knowledge of need for sustainable development.

PO.13. Self-directed and Life-long Course: Acquire the ability to engage in independent and life-long Course in the broadest context social, environmental and technological changes.

PO.14. Presentation Skill: Students are being able to understand and write effective reports and design credentials, make effective demonstrations, give and receive clear instruction.

**T.Y.B.A. Geography(G3), Syllabus for Semester V**

**Subject: Tourism Geography-I**

**Subject Code: GEO3501**

**No. of Credits: 03**

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**Course Objectives:**

1. To introduce the fundamentals of tourism.
2. To learn the basics of tourism services.
3. To learn the role of geographical factors in tourism.
4. To introduce various accommodation facilities at tourism places.
5. To understand the principles of tourism planning and development.
6. To develop a geographical perspective on tourism.
7. To learn the spatial dynamics of tourism.

**Course Outcomes:**

After the completion of the course, Students will be able to-

1. Students will understand basic concepts in tourism
2. Students will understand potentials of different tourist places.
3. Students will know relationship between tourism and geography.
4. Students will get acquainted with accommodation.
5. Student will analyze factors influencing tourist behaviour.
6. Student will analyze case studies related to tourism development and management.
7. Student will explore strategies for promoting sustainable tourism practices.

<b>Topics and Course points</b>
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<p><b>Unit – 1: Introduction to Tourism Geography</b></p> <p>1.1 Tourism: Meaning, nature and Characteristics</p> <p>1.2 Definition of Tourists and Tourism</p> <p>1.3 Approaches to the study of Tourism</p> <ol style="list-style-type: none"> <li>i. Uniqueness</li> <li>ii. Diversity</li> <li>iii. Recreational</li> <li>iv. Dynamic</li> <li>v. Interdisciplinary</li> <li>vi. Non-Productive</li> <li>vii. Seasonal</li> </ol> <p>1.4 Tourism as a Basic Need of Mankind</p> <p>1.5 Introduction to tourism as an industry</p> <p>1.6 Relation between Geography and Tourism</p> <p>1.7 Importance of Tourism</p>	<p><b>Lectures</b></p> <p><b>12</b></p>
<p><b>Unit – 2: Classification of Tourism and Tourist</b></p> <p>2.1 Classification of Tourism</p> <ol style="list-style-type: none"> <li>i. Geo-Tourism</li> <li>ii. Agro- Tourism</li> <li>iii. Heritage Tourism</li> <li>iv. Adventure Tourism</li> <li>v. Religious Tourism</li> <li>vi. Health Tourism</li> <li>vii. Sport Tourism</li> <li>viii. Disaster Tourism</li> </ol> <p>2.2 Classification of Tourist Based on</p> <ol style="list-style-type: none"> <li>i. Nationality</li> <li>ii. Travel Time</li> <li>iii. Travel Distance</li> </ol>	<p><b>12</b></p>

<ul style="list-style-type: none"> <li>iv. Number of Tourists</li> <li>v. Purpose</li> <li>vi. Approach</li> </ul>	
<p><b>Unit – 3: Transportation and Communication</b></p> <p>3.1 Role of Transport in Tourism</p> <ul style="list-style-type: none"> <li>i. Road</li> <li>ii. Rail</li> <li>iii. Water</li> <li>iv. Air</li> <li>v. Space</li> </ul> <p>3.2 Support System in tourism industry</p> <ul style="list-style-type: none"> <li>i. Guide</li> <li>ii. Telephone/ mobile/ TV</li> <li>iii. Internet</li> <li>iv. Electronic &amp; Printing Media</li> <li>v. Travel &amp; Tourist Agencies</li> </ul>	<b>12</b>
<p><b>Unit – 4: Accommodation</b></p> <p>4.1 Accommodation Types</p> <ul style="list-style-type: none"> <li>i. Private Hotels, motels, Inn, home stay</li> <li>ii. Govt. accommodation- Tourist home, Guest House, Rest house, Youth Hostel, Tents, Caravans and Bed &amp; Breakfast</li> <li>iii. Rail Yatribhavan</li> <li>iv. House boats</li> <li>v. Dharmashala</li> </ul> <p>4.2 Booking and Accommodation</p>	<b>12</b>

**Reference Books & Websites:**

1. Robinson H. (1996): A Geography of Tourism
2. Bhatia A. K., Sterling Publisher Ltd., New Delhi: Tourism Development, Principles and Practices
3. S. N. Singh (1985): Geography of Tourism and Recreation
4. Douglas Pearce (1987) Tourism Today: A Geographical Analysis:
5. Mathieson A. and Wall C, Logman, U.K: Tourism: Economic Physical and Social Impact:
6. Manoj Das India: A tourist Paradise
7. Maneet Kumar Tourism Today: An Indian Perspective
8. Hudman L.E. Geography of Travel and Tourism
9. Seth P. N (1985) Sterling Publisher Ltd., New Delhi Successful Tourism Management.
10. Smith S. L. J : Tourism Analysis.
11. Gupta V. K: Tourism of India
12. Kaul R. N, Sterline Publisher Ltd: Dynamics of Tourism
13. Shinde S. B, Phadke Prakashana Kolhapur 2: Geography of Tourism
14. Nagkonde P. M., Prof. D. Pardhi. Vidya Prakashan Nagpur: Geography Tourism
15. Vitthal Gharpure., Pimplapure Publication Nagpur: Geography of Tourism.
16. Bhagwat A. V., Medha Joshi.: Murlidhar Publication Pune: Geography of Tourism.
17. Dixit N. K, Vista International Publication Delhi: Tourism Geography.

## Choice Based Credit System Syllabus (2019 Pattern)

## Mapping of Program Outcomes with Course Outcomes

Class: T.Y.B.A.

Subject: Geography

Course: Geography of Tourism

Course Code: GEO3501

Weightage: 1= Weak or low relation , 2= Moderate or partial relation, 3= Strong or direct relation

Program Outcomes (POs)								
Course Outcomes	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8
CO 1				2				
CO 2			3					
CO 3				2				
CO 4				2				
CO 5					2			
CO 6								3
CO 7					2			

**PO3: Social competence and communication skill:**

CO2- Educators can incorporate practical exercises, case studies, role-plays, and real-world scenarios into their teaching methodologies to reinforce these skills. Encouraging students to engage in internships, volunteer opportunities, or part-time jobs within the tourism sector can provide hands-on experience and further enhance their social competence and communication abilities.

**PO4: Disciplinary Knowledge:**

CO1- To encourage disciplinary knowledge in these areas, educators can incorporate multidisciplinary approaches in their teaching, combining elements from geography, history, economics, environmental studies, cultural studies, and more. Field trips, case studies, research projects, and interactive discussions can further deepen students' understanding of the potentials of diverse tourist places across various disciplines.



CO3- Educators can integrate geographical concepts into tourism studies by employing maps, GIS software, case studies of specific destinations, discussions on environmental impact assessments, and fieldwork to explore geographical features and their influence on tourism. This multidisciplinary approach encourages students to appreciate the complex interplay between geography and tourism, enriching their disciplinary knowledge.

CO4- Educators can facilitate disciplinary knowledge by incorporating case studies, simulations, visits to different types of accommodations, guest lectures by industry experts, and opportunities for students to engage in internships or practical experiences within the hospitality sector. This approach allows students to grasp the multifaceted nature of accommodations and their significance within the broader context of tourism and hospitality disciplines.

**PO5: Personal and professional competence:**

CO5-Educators can promote personal and professional competence by engaging students in case studies, role-plays, and discussions centered around real-life scenarios. Additionally, encouraging internships, industry projects, and exposure to various tourist behaviors through fieldwork can provide practical experiences that deepen their understanding and competence in handling diverse situations in their future careers.

CO7- Educators can facilitate personal and professional competence by incorporating sustainability principles into coursework, engaging students in sustainability projects, inviting guest speakers from sustainable tourism organizations, and encouraging involvement in sustainability-focused extracurricular activities. Hands-on experiences, such as volunteering in conservation projects or internships with sustainable tourism entities, also provide invaluable Course opportunities that strengthen personal commitment and professional competence toward sustainable practices.

**PO8: Critical Thinking and Problem solving:**

**CO6-** To maximize the development of critical thinking and problem-solving skills, educators can structure assignments around case studies, encourage debates and discussions, facilitate group analysis, and challenge students with open-ended questions related to the cases. Incorporating real-life scenarios from the tourism industry, guest lectures, or industry-related projects further reinforces their ability to apply critical thinking skills in practical situations.

## T.Y.B.A. Geography(S3), Syllabus for Semester V

**Subject:** Physical Geography of India**Subject Code:** GEO:3502**No. of Credits:** 03**Course Objectives:**

1. To get an introduction to the main regions of the India in terms of both their uniqueness and similarities.
2. To understand climatic characteristics of India.
3. To know the various drainage system of India.
4. To enhance the knowledge about soil and natural vegetation in India.
5. To acquaint the knowledge of types and pattern of rural settlement.
6. To understand economic sector available in India.
7. To understand the physical features of India, including its topography, climate, rivers, mountains, and natural resources.

**Course Outcomes:**

After the completion of the course, Students will be able to-

1. Identify and explain the Indian Geographical Environment.
2. Evaluate the impacts on natural environments of India.
3. Understand difference between Himalayan and peninsular drainage system.
4. Know the impact of climate on types of soil.
5. Aware of drainage pattern in the view of sustainable development.
6. Well aware of adjoin countries of India and their relation.
7. Familiarize with the climatic characteristics and importance of country.

**Topics and Coursepoints**

<p><b>Unit – 1: Location and Physiography</b></p> <p>1.1 Location and extent of India</p> <ul style="list-style-type: none"> <li>i. Absolute and Relative</li> <li>ii. Latitudinal and Longitudinal extent</li> </ul> <p>1.2 India and neighboring countries</p> <p>1.3 Physiographic divisions of India and their characteristics and importance</p> <ul style="list-style-type: none"> <li>i. The Northern Mountain</li> <li>ii. The Northern Plains</li> <li>iii. The Peninsular Plateau</li> <li>iv. The Coastal Plains</li> <li>v. The Islands</li> </ul>	<p><b>Lectures</b></p> <p><b>12</b></p>
<p><b>Unit – 2: Climate</b></p> <p>2.1 Main seasons and associated weather conditions</p> <ul style="list-style-type: none"> <li>i. The winter</li> <li>ii. The summer</li> <li>iii. The rainy/ monsoon</li> <li>iv. The retreat of monsoon</li> </ul> <p>2.2 Monsoon: Origin and Mechanism</p> <p>2.3 El- Nino and La- Nina</p> <ul style="list-style-type: none"> <li>i. Concept and mechanism</li> <li>ii. Impact on Indian monsoon</li> </ul>	<p><b>12</b></p>
<p><b>Unit – 3: Drainage System</b></p> <p>3.1 Meaning, Definition and Concept of Drainage System</p> <p>3.2 The Himalayan River System</p> <ul style="list-style-type: none"> <li>i. East flowing rivers (Ganga, Brahmaputra)</li> <li>ii. West flowing rivers (Indus)</li> </ul> <p>3.3 The Peninsular River System</p> <ul style="list-style-type: none"> <li>i. East flowing rivers (Godavari, Krishna and Mahanadi)</li> </ul>	<p><b>12</b></p>

ii. West flowing rivers (Narmada and Tapi)	
<b>Unit – 4: Soil and Natural Vegetation</b>	<b>12</b>
4.1 Types of soil and Its distribution	
i. Alluvial Soil	
ii. Black Soil	
iii. Red Soil	
iv. Lateritic Soil	
v. Forest and Mountain Soil	
vi. Saline and Alkaline Soil	
vii. Peaty and Marshy Soil	
4.2 Soil Degradation and Conservation	
4.3 Types of Natural Vegetation and the distribution	
i. Moist Tropical Forest	
ii. Dry Tropical Forest	
iii. Mountain Sub- Tropical Forest	
iv. Alpine Forest	
4.4 Deforestation and Conservation	

**ReferenceBooks:**

1. Khullar R. D. (2007): India- A Compressive Geography, Kalayani Publisher.
2. Aher A.B, Chaodhari A. P &ChaodhariArchna. Regional Geography of India Prashant Publication Jalgaon 2015.
3. Khullar, D. R. (2006): India. A Comprehensive Geography. Kalyani Publishers., New Delhi.
4. Krishnan, M. S. (1968): Geology of India and Burma. 4th edition. HigginBothams Private. Ltd., Madras
5. Nag, P. and Gupta S. S. (1992): Geography of India. Concept Publishing. Company, New Delhi.
6. Singh, R. L. (ed.) (1971): India. A Regional Geography. National Geographical Society of India, Varanasi.

## Choice Based Credit System Syllabus (2019 Pattern)

## Mapping of Program Outcomes with Course Outcomes

Class: T.Y.B.A.

Subject: Geography

Course: Geography of India

Course Code: GEO3502

Weightage: 1= Weak or low relation , 2= Moderate or partial relation, 3= Strong or direct relation

Program Outcomes (POs)								
Course Outcomes	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8
CO 1		2	2					
CO 2				2				
CO 3							3	
CO 4				2				
CO 5				2				
CO 6				1				
CO 7				2				

**PO 2: Effective Citizenship and Ethics:**

CO1- Understanding India's location, extent, and relationships with neighbouring countries is essential for effective citizenship and ethical considerations in regional and international affairs. Effective citizens can play a significant role in promoting peace, cooperation, and ethical practices in India's interactions with its neighbours.

**PO 3: Social Competence:**

CO1- Having knowledge of India's geography and its relationships with neighbouring countries is a critical aspect of social competence. It helps individuals navigate cultural diversity, engage effectively in international relations, promote peaceful solutions to conflicts, and foster cross-cultural understanding, which are all essential components of social competence in an increasingly interconnected world.

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**PO 4: Disciplinary Knowledge:**

CO 2- Understanding the geological structure and physiographic divisions of India is a fundamental aspect of disciplinary knowledge in geography. This knowledge forms the foundation for comprehending India's landforms, natural resources, and environmental processes.

CO 4 - knowledge of India's drainage basin, major rivers, and their tributaries is a critical component of disciplinary knowledge in geography. It enables students to analyze hydrological, environmental, cultural, and developmental aspects related to the country's river systems.

CO 5 The mechanism of the monsoon, along with its active and break periods, is a vital component of disciplinary knowledge in geography. It provides a basis for understanding the climatic, environmental, and societal aspects of this significant meteorological phenomenon in the Indian subcontinent and other regions affected by monsoons.

CO 6 The distribution of soil and forest cover in India is a vital component of disciplinary knowledge in geography. It provides a foundational understanding of the country's environmental diversity, ecosystems, and natural resource utilization, which are integral to various geographical subfields and critical for informed decision-making in land use and conservation.

CO 7- Types of minerals and energy resources in India are essential for geographical knowledge, particularly in the fields of resource geography, economic geography, environmental geography, energy geography, and geopolitics. These resources are vital for India's economic development, energy security, and environmental sustainability.

**PO 7: Environment and Sustainability:**



CO 3- Knowledge of India's climate and its impact on agriculture, the environment, and sustainability is integral to geographical studies. It informs agricultural practices, environmental conservation efforts, and sustainable development strategies, recognizing the role of climate in shaping India's geography and influencing the well-being of its people.

### **T.Y.B.A. Geography (S4), Syllabus for Semester V**

**Subject:** Practical in Map Reading and Map Preparation

**Subject Code:** GEO: 3503

**No. of Credits:** 04

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**Workload:** Six periods per week per batch consisting of 12 students; however the last batch needs to have more than six students.

Examination for the course will be conducted at the end of the semester.

#### **Course Objectives:**

1. To Introduce SOI toposheets and Indian Daily Weather Report.
2. To develop the skills of toposheet and weather map reading/interpretation.
3. To introduce basic skills of map making using advance technology.
4. To introduce Google Earth and Google Maps
5. The goal to enhance the students Course experience with field visits and digital techniques.
6. The overall aim of the course is to provide an introduction to map reading.
7. To get knowledge of map scales and their types.

#### **Course Outcomes:**

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

1. Gain understanding of basic concepts of map making using ArcGIS techniques.
2. Become familiar with the reading of SOI toposheets and IMD weather maps.

3. Gain practical experience and awareness of some skills of map preparation and reading.
4. Identify different physical and manmade features on the toposheets.
5. Attain solid grounding to enable self-Course of additional techniques of map interpretation and making map beyond those taught in the course.
6. Use effectively Google Earth and Google Maps.
7. Aware about geographical phenomena after observing different data.

### Topics and Course points

<p><b>Unit – 1: Introduction to Toposheets</b></p> <p>1.1 Introduction to Survey of India (SOI) toposheets</p> <p>1.2 Marginal Information, Conventional signs and symbols</p> <p>1.3 Types of toposheet/Indexing of toposheets</p> <p style="padding-left: 20px;">i. 1: 1000000/Million sheet</p> <p style="padding-left: 20px;">ii. 1:250000/Degree sheet/Quarter inch sheet</p> <p style="padding-left: 20px;">iii. 1:100000/Half inch sheet</p> <p style="padding-left: 20px;">iv. 1:50000/One inch sheet</p>	<p><b>Lecture</b></p> <p><b>12</b></p>
<p><b>Unit – 2: Methods of Relief Representation &amp; Profiles</b></p> <p>2.1 Quantitative methods of relief representation</p> <p>i. Regional: Contours, Form lines,</p> <p style="padding-left: 40px;">ii. Locational: Bench Marks, Spot Height, Triangulation Mark, Relative Height (r)</p> <p>2.2 Representation of slopes by contours</p> <p>i. Concave and Convex Slope,</p>	<p><b>12</b></p>

<ul style="list-style-type: none"> <li>ii. Steep and Gentle Slope</li> <li>iii. Uniform and Non-uniform Slope</li> </ul> <p>2.3 Representation of landforms by contours</p> <ul style="list-style-type: none"> <li>i. Hill, Spur, Plateau, Ridge, Pass, Cliff &amp; Waterfall</li> </ul> <p>2.4. Profiles</p> <ul style="list-style-type: none"> <li>i. Cross profile of any region from toposheet</li> <li>ii. Longitudinal profile of a river or road from toposheet</li> </ul>	
<p><b>Unit – 3: SOI Toposheet Reading and Interpretation</b></p> <p>3.1 Reading of at least two toposheet one each for Plain or Plateau and Mountainous Region</p> <p>3.2 One day field Excursion for orientation of toposheet, observation and identification of geographical features and preparation of a brief report</p> <p><b>Unit – 4: Weather Map Reading and Interpretation</b></p> <p>1.1 Introduction to Indian Daily Weather Report of India Meteorological Department (IMD)</p> <p>1.2 Symbols in Indian Daily Weather Report</p> <p>1.3 Isobaric patterns: Cyclone and Anticyclone</p> <p>1.4 Reading of weather map of any two seasons.</p> <p>1.5 One day visit to nearby weather station of IMD</p>	<p><b>12</b></p> <p><b>12</b></p>
<p><b>Unit – 5: Preparation of Thematic Map using GIS Softwares</b></p> <p>1.1 Introduction to Geographical Information System (GIS)</p> <ul style="list-style-type: none"> <li>i. Definition of GIS</li> <li>ii. Components of GIS</li> <li>iii. Applications of GIS</li> </ul> <p>1.2 Preparation of Thematic map using Arc Map or QGIS Software</p>	<p><b>12</b></p>

i. Geo-referencing of Toposheet ii. Digitization of Point, Line & Polygon features iii. Attribute data attachment iv. Creation of Layout and thematic map 1.3 Introduction to Google Earth and Google Maps	
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#### Reference Books & Websites:

1. Singh Leharaj, (1973): Map Work and Practical Geography, Central Book Depot – Allahabad
2. D. Y. Ahirrao and E. K. Karanjkehele, (2002): Pratyakshik Bhugol, Sudarshan Publication, Nashik
3. Arjun Kumbhare (1994), Practical Geography, Sumeru Publication, Mumbai.
4. Pijushkanti Saha & Partha Basu (2007): Advanced Practical Geography, Books and Allied (P) Ltd., Kolkata.
5. Heywood, I., Cornelius, S. and Carver, S. (2011) An Introduction to Geographical Information Systems. Prentice Hall, Fourth Edition.
6. <https://surveyofindia.gov.in/>
7. <https://mausam.imd.gov.in/>
8. <https://www.imdpune.gov.in/>
9. <https://www.esri.com/en-us/home>
10. <https://youtube.com/c/GeoDeltaLabs>

11. <https://www.google.com/earth/>
12. <https://www.google.com/maps>
13. <http://studymaterial.unipune.ac.in:8080/jspui/handle/123456789/201>

## Choice Based Credit System Syllabus (2019 Pattern)

## Mapping of Program Outcomes with Course Outcomes

Class: T.Y.B.A.

Subject: Geography

Course: Practical in map reading and map preparation

Course

Code: GEO3503

Weightage: 1= Weak or low relation , 2= Moderate or partial relation, 3= Strong or direct relation

Program Outcomes (POs)								
Course Outcomes	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8
CO 1			2	2				
CO 2				3				
CO 3					2			
CO 4				2				
CO 5						2		
CO 6			2					
CO 7								3

**PO3: Social competence and communication skills:**

CO1- Educators can facilitate social competence and communication skills by organizing group projects where students collaboratively create maps using ArcGIS techniques. Additionally, peer review sessions, presentations, and discussions centered around map design choices, data interpretation, and spatial analysis can further encourage effective communication among students. As students engage in these activities, they not only enhance their technical skills but also develop the ability to communicate complex spatial information clearly and interact effectively within a team setting.

CO6- By leveraging the functionalities of Google Earth and Google Maps effectively, you can enhance teaching, research, planning, and presentation skills, providing engaging and informative experiences for various purposes.

**PO4: Disciplinary Knowledge:**

CO1-By familiarizing themselves with ArcGIS techniques, students gain a valuable skill set applicable across diverse disciplines. It allows them to visualize, analyze, and interpret spatial data, enabling deeper insights into various fields of study and facilitating informed decision-making processes.

CO2- Familiarity with reading SOI toposheets and IMD weather maps equips individuals with valuable skills in interpreting geographical and meteorological data. It enhances their understanding of spatial information, aids in decision-making processes, and supports research and planning activities across various fields.

CO4- By identifying and understanding different physical and man-made features on toposheets, individuals develop a comprehensive understanding of landscapes, geographical elements, and their implications across multiple disciplines. It enhances their ability to interpret spatial data, plan effectively, and make informed decisions in their respective fields of study or work.

**PO5: Personal and professional competence:**

CO3- By actively engaging in map preparation and honing map reading skills, individuals not only enhance their personal competence in navigation and understanding spatial information but also equip themselves with valuable transferable skills that can significantly benefit their professional competence across diverse industries and roles.

**PO6: Self directed and Life-long Course:**

CO5-By establishing a robust foundation in map interpretation and map-making techniques, individuals cultivate the skills and mindset necessary for self-directed and lifelong Course. This sets the stage for continuous growth, adaptability to change, and a proactive approach to acquiring new knowledge and skills throughout their personal and professional lives.

**PO8: Critical thinking and problem solving:**

CO7-By observing and analyzing geographical data, individuals hone critical thinking and problem-solving skills. This process encourages a systematic approach to problem identification, evidence-based decision-making, and innovative problem-solving strategies applicable across diverse disciplines and professional contexts.