



Anekant Education Society's

# 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 (Semester V)**

For Tuljaram Chaturchand College, Baramati

**Choice Based Credit System Syllabus (2022 Pattern)**

**To be implemented from Academic Year 2024-2025**

Anekant Education Society's

## Tuljaram Chaturchand College, Baramati

*Autonomous College*

### ***Board of Studies in Geography***

From 2022-23 To 2024-25

Sr. No.	Name	Designation
1.	<b>Dr. Arun S. Magar</b>	Chairman
2.	<b>Dr. Asaram S. Jadhav</b>	Member
3.	<b>Mr. Vinayak D. Chavan</b>	Member
4.	<b>Ms. Sayali B. Pawar</b>	Member
5.	<b>Ms. Aysha A. Mulani</b>	Member
6.	<b>Ms. Aisha S. Tamboli</b>	Member
7.	<b>Dr. Santosh Lagad</b>	Vice-Chancellor Nominee
8.	<b>Dr. Pravin Kokane</b>	Expert from other University
9.	<b>Dr. T. P. Shinde</b>	Expert from other University
10.	<b>Dr. Babaji Maskare</b>	Industry Expert
11.	<b>Mr. Ganesh Ghanawat</b>	Meritorious Alumni
12.	<b>Tilekar Rucha</b>	Student
13.	<b>Shaikh Muskan</b>	Student

## **Prologue/ Introduction of the programme:**

Students enrolled in the program complete a curriculum that exposes and trains students in a full range of essential skills and abilities. They will have the opportunity to master the following objectives. Geography mainly concerns changes in spatial attributes in a temporal perspective, this programme in geography is tailored to meet the students' specific educational and professional goals in mind. It focuses on spatial studies, qualitative as well as quantitative, and emphasizes on human-environment relationship. During the first year of the programme, the students are trained on advanced concepts of physical and human geography. From second year students are allowed to concentrate on specific areas of the subject, on which they complete their field and survey reports. After completing the course, the students will be amply prepared for professional careers in geography and allied disciplines like GIS and Remote Sensing.

The syllabus tries to give equal importance to the two main branches of Geography: Physical and Human. The principal goal of the syllabus is to enable the students to secure a job as well as acquire adequate geographical knowledge at the end of the undergraduate programme. Keeping this in mind and in tune with the changing nature of Geography, adequate emphasis is concentrated on applied aspects of the subject such as emerging techniques of mapping and field-based data generation. The syllabus emphasizes on development of basic skills of the subject.

### **Programme outcomes (Pos) (B.A. Geography)**

1. Student will learn a basic narrative of geographical features in a various region of the world.
2. Students are enhancing the ability to use Geographical instruments for the advanced study of geography.
3. Student will understand & evaluate different geographical theories, principles, various arguments and point of view.
4. Development of observation and survey skills through study tours, field visits and village survey among students.
5. Students enhance the basic skill about advanced Geo-spatial techniques regarding GIS, RS, GPS, DGPS, Total Station and Drone Survey.

6. Student will gain the knowledge of physical geography. Student will have a general understanding about the geomorphological processes and formation of landforms.
7. Student will be able to correlate the knowledge of physical geography with the human geography. They will be able to acquire the knowledge of Human Geography and will correlate it with their practical life.
8. Student will be able to analyze the problems of physical as well as cultural environments of both rural and urban areas. Along with they will try to find out the possible measures to solve those problems.
9. They will be able for conducting social survey project which is needed for measuring the status of development of a particular area or section of the society.
10. Students will be able to handling and application of various modern instruments so that they can be collect data.
11. They will learn preparation of map based on Geo-spatial technology by using the modern geographical map making techniques, such as Satellite images of different bands, Google Maps, Google Earth etc.
12. As a student of Geography, they will be able to develop their observation power through field experience and in future they will be able to identify the socioenvironmental and socioeconomic problems of society.
13. Some of the students are being able to understand and write effective reports and design credentials, make effective demonstrations.
14. Students are able to use their knowledge according to need for sustainable development.
15. After the completion of the project, they will be efficient in their communication skill as well as skill to interact with society.
16. This syllabus design according to competitive exam like MPSC and UPSC. Students can learn effectively concepts of Geography.

## Choice Based Credit System Syllabus

To be implemented from Academic Year 2022-2023

### GEOGRAPHY

Class	Semester	Paper Code	Subject
FYBA	I	UAGG111	Physical Geography
	II	UAGG121	Human Geography
SYBA	III	UAGG231	Geography of Disaster Management-I
		UAGG232	Physical Geography of Maharashtra
		UAGG233	Practical in Elements of Map and Surveying
		UAGGSEC-1	Fundamentals of Google Earth
	IV	UAGG241	Geography of Disaster Management-II
		UAGG242	Human Geography of Maharashtra
		UAGG243	Statistical Techniques in Geography
		UAGGSEC-2	Research Methodology in Geography
TYBA	V	UAGG351	Tourism Geography
		UAGG352	Physical Geography of India
		UAGG353	Practical in Remote Sensing and GIS
		UAGGSEC-3	Fundamentals of Google map
	VI	UAGG361	Human Geography of India
		UAGG362	Introduction to GIS
		UAGG363	Practical In GIS
		UAGGSEC-4	Application of Google Map

## B.A. PROGRAMME CREDIT DISTRIBUTION PATTERN (128 Credit)

Class	Semester	Core Course	Elective Course			Ability Enhancement Compulsory Courses (AECC)		Total Credit
			Discipline Specific Elective	Dissertation Project	Generic Elective Course	Ability Enhancement Compulsory Courses	Skill Enhancement Courses	
FYBA	I	4 papers 4 x 3 = 12 Credits	-	-		Comp.English 3 Credits Mar/Hin/Sanskrit = 3 Credits		18
	II	4 papers 4 x 3 = 12 Credits	-	-	Democracy 2 Credit  Phy.Edu. 2 Credit	Comp.English 3 Credits  Mar/Hin/Sanskrit = 3 Credits		22
SYBA	III	3 papers 3 x 3= 9 Credits	2 Special papers 2 x 3= 6 Credits	-	Env.Sci. 2 Credit	Comp.English 3 Credits	Special papers 1 x 2= 2 Credits	22
	IV	3 papers 3 x 3= 9 Credits	2 Special papers 2 x 3= 6 Credits	-		Certificate Course Not Related to subject 2 Credit	Special papers 1 x 2= 2 Credits	22
TYBA	V	3 papers 3 x 3= 9 Credits	2 Special papers 2 x 3= 6 Credits  Certificate Course Related to subject 2 Credit	-	-	Comp.English 3 Credits	Special papers 1 x 2= 2 Credits	22
	VI	3 papers 3 x 3= 9 Credits	2 Special papers 2 x 3= 6 Credits	1 Project related to subject 2 Credit	-	Comp.English 3 Credits	Special papers 1 x 2= 2 Credits	22
		<b>60</b>	<b>26</b>	<b>2</b>	<b>6</b>	<b>26</b>	<b>8</b>	<b>128</b>

**Mandatory 8 additional / add on credits for  
Undergraduate Programmes**

- Note:**
- 1. 6 credits from Group-1 are compulsory**
  - 2. Choose minimum 2 credits from Group-2 to Group-7**

Group-1	(a)	Physical Education (at F.Y.B.A. Sem. II)	02 credits
	(b)	Democracy Course (FYBA Sem. II)	02 credit
	(c)	Environmental Awareness (S.Y.B.A. Sem. III)	02 Credit
Group-2	(a)	Certificate Course Not Related to Subject (S.Y. B.A. Sem. IV)	02 Credit
Group-3	(a)	Representation in Sports at University Level	02 credits
	(b)	Representation in Sports at State Level / National level	02 credits
	(c)	Representation in Sports at International (overseas) Level	04 credits
Group-4	(a)	National Social Service Scheme (participation in college camp)	02 credits
	(b)	National Social Service Scheme (participation in university camp)	02 credits
	(c)	NCC (participation in annual camp)	02 credits
	(d)	NCC (with B certificate/ C certificate award)	02 credits
	(e)	NSS / NCC participation in Republic day parade	04 credits
	(f)	Selection in AVISHKAR at University Level	02 credits
Group-5	(a)	Research paper publication at National level	02 credits
	(b)	Research paper publication at International (overseas) level	02 credits
Group-6	(a)	Participation in Summer School/ Internship programme / Short term course (not less than 2 weeks duration)	02 credits
	(b)	Participation in cultural and co-curricular activities/ extracurricular activities/competitions at University level / State Level	02 credit
Group-7	(a)	Participation in cultural and co-curricular activities/ extracurricular activities/competitions at University level / State Level	02 credit
	(b)	Participation in cultural and cocurricular activities / extracurricular activities/ competitions at International (overseas) level	02 credits

- Note:
- 1) One Credit = 15/16 Lectures.
  - 2) The Project should be initiated at on the onset of V Semester and submitted during VI Semester.
  - 3) FY/SY/TY --> 4 Lectures per week.
  - 4) Theory paper be covered with 70% actual teaching (3 actual lectures per week) and 30% component (1 lecture per week) of self-study should be further evaluated through Group discussion / Seminar / Open Book Test / MCQ / Essay writing / Assignment etc.

**T.Y.B.A. Geography (G3), Syllabus for Semester V****Course Title: Tourism Geography****Course Code: UAGG 351****No. of Credits: 03**

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**Learning Objectives:**

1. Understanding the spatial distribution of tourist destinations: Students learn to analyze the geographical distribution of tourist attractions, destinations, and activities, considering factors such as physical landscapes, climate, culture, and infrastructure.
2. Exploring tourism flows and patterns: Students examine the movement of tourists across regions and countries, including the analysis of tourist flows, transportation networks, and tourism corridors.
3. Analyzing tourism impacts: Students explore the economic, social, cultural, and environmental impacts of tourism on destinations, including issues such as overtourism, environmental degradation, cultural commodification, and socio-cultural change.
4. Examining tourism planning and development: Students learn about the principles and practices of tourism planning and development, including destination management, sustainable tourism development, carrying capacity assessment, and tourism policy analysis.
5. Investigating tourism in different geographical contexts: Students examine the characteristics and dynamics of tourism in various geographical contexts, including urban tourism, rural tourism, coastal tourism, mountain tourism, and cultural tourism.
6. Applying spatial analysis techniques: Students develop skills in using geographic information systems (GIS), remote sensing, and other spatial analysis techniques to analyze tourism-related spatial data, such as tourist flows, land use patterns, and environmental impacts.
7. Critically evaluating tourism policies and practices: Students critically evaluate



tourism policies, practices, and strategies at various scales (local, regional, national, and international) and assess their implications for destination sustainability, community well-being, and cultural heritage preservation.

### **Learning Outcomes:**

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

- CO 1:** Demonstrate understanding of the spatial distribution of tourist destinations, attractions, and activities worldwide.
- CO 2:** Evaluate the economic, social, cultural, and environmental impacts of tourism on destinations and local communities.
- CO 3:** Investigate tourism in different geographical contexts, such as urban, rural, coastal, mountainous, and cultural settings.
- CO 4:** Discuss the role of tourism in globalization processes and its implications for economic development and cultural exchange.
- CO 5:** Assess sustainable tourism practices and their effectiveness in minimizing negative impacts and maximizing benefits for destinations and communities.
- CO 6:** Apply spatial analysis techniques, such as Geographic Information Systems (GIS), to analyze tourism-related spatial data and patterns.
- CO 7:** Critically evaluate tourism policies, practices, and strategies at various scales, considering their implications for destination sustainability, community well-being, and cultural heritage preservation.

## Topics and Learning points

### **Unit – 1: Introduction to Tourism Geography** **Teaching Hours**

- 1.1 Tourism: Meaning, nature and Characteristics **12**
- 1.2 Definition of Tourists and Tourism
- 1.3 Approaches to the study of Tourism
  - i. Uniqueness
  - ii. Diversity
  - iii. Recreational
  - iv. Dynamic
  - v. Interdisciplinary
  - vi. Non-Productive
  - vii. Seasonal
- 1.4 Tourism as a Basic Need of Mankind
- 1.5 Relation between Geography and Tourism
- 1.6 Importance of Tourism

### **Unit – 2: Classification of Tourism and Tourist** **12**

- 2.1 Classification of Tourism
  - i. Geo-Tourism
  - ii. Agro- Tourism
  - iii. Heritage Tourism
  - iv. Adventure Tourism
  - v. Religious Tourism
  - vi. Health Tourism
  - vii. Sport Tourism
  - viii. Disaster Tourism
- 2.2 Classification of Tourist Based on

- i. Nationality
- ii. Travel Time
- iii. Travel Distance
- iv. Number of Tourists
- v. Purpose
- vi. Approach

**Unit – 3: Transportation and Communication****12****3.1 Role of Transport in Tourism**

- i. Road
- ii. Rail
- iii. Water
- iv. Air
- v. Space

**3.2 Support System in tourism industry**

- i. Guide
- ii. Electronic & Printing Media
- iii. Travel & Tourist Agencies
- iv. Internet
- v. Telephone/ mobile/ TV

**Unit – 4: Accommodation****12****4.1 Accommodation Types**

- i. Private Hotels, motels, Inn, home stay
- ii. Govt. accommodation- Tourist home, Guest House, Rest house, Youth Hostel, Tents, Caravans and Bed & Breakfast
- iii. Rail Yatribhavan

- iv. House boats
- v. Dharmashala

#### 4.2 Booking and Accommodation

### 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. Nagktode 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 (2022 Pattern)

### Mapping of Program Outcomes with Course Outcomes

**Class:** TYBA

**Subject:** Geography

**Course:** Tourism Geography

**Course Code:** UAGG 351

**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					1	3		
CO 2			1			3		
CO 3				1		3		
CO 4						3		
CO 5		2				3	2	
CO 6	1					3		
CO 7						3		1

### Justification for the mapping

#### PO 1: Research Related Skills:

**CO 6:** Apply spatial analysis techniques, such as Geographic Information Systems (GIS), to analyze tourism-related spatial data and patterns. This involves utilizing research skills and scientific methods to analyze tourism-related data.

#### PO 2: Effective Citizenship and Ethics:

**CO 5:** Assess sustainable tourism practices and their effectiveness in minimizing negative impacts and maximizing benefits for destinations and communities. This involves understanding the ethical considerations and responsibilities of tourism stakeholders towards sustainable tourism practices.

**PO 3: Social Competence:**

**CO 2:** Evaluate the economic, social, cultural, and environmental impacts of tourism on destinations and local communities. This involves understanding the social implications of tourism and its effects on local communities.

**PO 4: Disciplinary Knowledge:**

**CO 3:** Investigate tourism in different geographical contexts, such as urban, rural, coastal, mountainous, and cultural settings. This involves understanding the disciplinary knowledge of tourism geography in various geographical contexts.

**PO 5: Personal and Professional Competence:**

**CO 1:** Demonstrate understanding of the spatial distribution of tourist destinations, attractions, and activities worldwide. This involves developing personal and professional competence in understanding global tourism patterns.

**PO 6: Self-directed and Life-long Learning:**

**COs 1-7:** All COs involves aspects of self-directed and life-long learning as students engage in ongoing learning and skill development within the field of tourism geography.

**PO 7: Environment and Sustainability:**

**CO 5:** Assess sustainable tourism practices and their effectiveness in minimizing negative impacts and maximizing benefits for destinations and communities. This involves understanding the environmental aspects of tourism and promoting sustainable practices.

**PO 8: Critical Thinking and Problem Solving:**

**CO 7:** Critically evaluate tourism policies, practices, and strategies at various scales, considering their implications for destination sustainability, community well-being, and cultural heritage preservation. This involves applying critical thinking skills to evaluate tourism-related issues and formulate solutions.

**Course Title: Physical Geography of India****Course Code: UAGG 352****No. of Credits: 03**

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**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 understand economic sector available in India.
6. To recognize factors affecting location of industries.
7. To study major types of industries in India.

**Course Outcomes:**

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

- CO1.** Identify and explain the Indian Geographical Environment.
- CO2.** Evaluate the impacts on natural environments of India.
- CO3.** Understand difference between Himalayan and peninsular drainage system.
- CO4.** Know the impact of climate on types of soil.
- CO5.** Aware of the drainage pattern in the view of sustainable development Well aware of the adjoin countries of India and their relation.

**CO6.** Understand difference between Himalayan and peninsular drainage system

**CO7.** Know salient features of the India.

### **Topics and Learning points**

<b>Unit – 1: Location and Physiography</b>	<b>Teaching Hours</b>
1.1 Location and extent of India	<b>12</b>
a. Absolute and Relative	
b. Latitudinal and Longitudinal extent	
1.2 India and neighboring countries	
1.3 Physiographic divisions of India and their characteristics and importance	
a. The Northern Mountain	
b. The Northern Plains	
c. The Peninsular Plateau	
d. The Coastal Plains	
The Islands	
<b>Unit – 2: Climate</b>	<b>12</b>
2.1 Main seasons and associated weather conditions	
The winter	
The summer	
The rainy/ monsoon	
The retreat of monsoon	
2.2 Monsoon: Origin and Mechanism	
2.3 El- Nino and La- Nina	
Concept and mechanism	
Impact on Indian monsoon	
<b>Unit – 3: Drainage System</b>	<b>12</b>
3.1 Meaning, Definition and Concept of Drainage System	



### 3.2 The Himalayan River System

East flowing rivers (Ganga, Brahmaputra)

West flowing rivers (Indus)

### 3.3 The Peninsular River System

East flowing rivers (Godavari, Krishna and Mahanadi)

West flowing rivers (Narmada and Tapi)

## **Unit – 4: Soil and Natural Vegetation**

**12**

### 4.1 Types of soil and its distribution

Alluvial Soil

Black Soil

Red Soil

Lateritic Soil

Forest and Mountain Soil

Saline and Alkaline Soil

Peaty and Marshy Soil

### 4.2 Soil Degradation and Conservation

### 4.3 Types of Natural Vegetation and the distribution

Moist Tropical Forest

Dry Tropical Forest

Mountain Sub- Tropical Forest

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 (2022 Pattern)

**Mapping of Program Outcomes with Course Outcomes****Class:** T.Y.B.A.**Subject:** Geography**Course:** Geography of India**Course Code:** GEO352**Weightage:** 1= Weak or low relation , 2= Moderate or partial relation, 3= Strong or direct relation

<b>Program Outcomes (POs)</b>								
<b>Course Outcomes</b>	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.

**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.

**Subject:** Practical in Remote Sensing and GIS**Subject Code:** UAGG 353**No. of Credits:** 03**Course Objectives:**

1. To introduce students to the concept and potential applications of Geographic Information Systems (GIS) and Remote Sensing.
2. To provide a historical overview of the development of GIS and Remote Sensing Technologies.
3. To outline the objectives and key elements of GIS and Remote Sensing systems.
4. To familiarize students with the principles, types, and advantages of Remote Sensing Techniques
5. To understand and utilize map elements and layouts for effective data visualization and analysis.
6. To develop students' skills in georeferencing spatial data and digitizing various Features for GIS applications.
7. To equip students with the knowledge of different data types, sources, formats, And georeferencing techniques in GIS.

**Course Outcomes:****By the end of the course, students will be able to:**

**CO 1.** Students will have a comprehensive understanding of the concepts, potentials, and Historical background of GIS and Remote Sensing.

**CO 2.** Students will be able to articulate the objectives and components of GIS and Remote Sensing systems.

**CO 3.** Students will demonstrate proficiency in identifying and describing different types of Remote Sensing systems techniques and their advantages.

**CO4.** Students will be able to create and interpret maps, including thematic maps, using of GIS software.

**CO5.** Students will develop practical skills in georeferencing spatial data and digitizing features for GIS applications.

**CO6.** Students will be able to recognize various data types and sources available for GIS analysis and utilize them effectively.

**CO7.** Students will acquire the ability to export maps in different formats and apply georeferencing techniques appropriately.

### Topics and Learning points

<b>Unit 1: Introduction to Remote Sensing</b>	<b>Teaching Hours</b>
1.1 Remote Sensing: definition, concept	12
1.2 Principles of Remote Sensing	
1.3 History of Remote Sensing	
1.4 Development of Remote Sensing in India	
<b>Unit 2: Map Elements and Layouts</b>	<b>12</b>
2.1 Georeferencing of Toposheet	
2.2 Digitization of Point, Line and Polygon Features	
2.3 Creation of Layout and Thematic Map	
2.4 Exporting of Maps in Different Formats	
<b>Unit 3: Data Types and Sources</b>	<b>12</b>
3.1 Spatial Data Types	

3.2 Sources of Spatial Data

3.3 Data Formats (Shape File, KML, Geodatabase)

3.4 Georeferencing

#### **Unit 4: Image Classification**

**12**

4.1 Definition and Objectives of Image Classification

4.2 Importance of Image Classification in Remote Sensing and GIS Applications

4.3 Supervised Classification

4.4 Unsupervised Classification

#### **Reference:**

1. Longley, P. A., Goodchild, M. F., Maguire, D. J., & Rhind, D. W. (2015). *Geographic Information Science & Systems*. John Wiley & Sons.
2. Craglia, M., & Haining, R. (2017). Spatial data infrastructures at twenty: end users, data providers, and users as producers. In *Spatial data infrastructures at twenty* (pp. 1-12). CRC Press.
3. Kuhn, W. (2017). Understanding the Use of Geographic Information Technologies in K-12 Education: An Analysis of the 2016 National Survey of Geographic Information Systems in Schools. *Journal of Geography*, 116(4), 151-163.
4. DeMers, M. N. (2017). *Fundamentals of Geographic Information Systems*. John Wiley & Sons.
5. Jensen, J. R. (2016). *Remote Sensing of the Environment: An Earth Resource Perspective*. Pearson.
6. Campbell, J. B. (2015). *Introduction to Remote Sensing*. Guilford Publications.
7. Cowen, D. J. (2017). GIS Versus CAD versus DBMS: What are the Differences?. In *Advances in Spatial Data Handling* (pp. 47-62). Springer.
8. Fitzgerald, M., & Lees, B. (2016). Georeferencing: the Geographic

Associations of Information. MIT Press.

9. Burrough, P. A., & McDonnell, R. A. (2015). Principles of Geographical Information Systems. Oxford University Press.
10. Oosterom, P. V., Zlatanova, S., & Penninga, F. (Eds.). (2017). Advances in 3D Geoinformation Systems. Springer.



## Choice Based Credit System Syllabus (2022 Pattern)

**Mapping of Program Outcomes with Course Outcomes****Class:** T.Y.B.A.**Subject:** Geography**Course:** Practical in Remote Sensing GIS**Course Code:** UAGG-353**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	2			2				
CO 3				2				
CO 4	2			2				
CO 5	2			2				
CO 6				2				
CO 7	2			2				

**PO1: Research-Related Skills:**

CO2, CO4, CO5, CO7 contribute to the Effective Citizenship and Ethics. For example,

CO2: Articulating the objectives and components of GIS and Remote Sensing systems:

Research in GIS and Remote Sensing often requires a deep understanding of the objectives and components of these systems. Researchers need to articulate the specific goals of their research projects and understand how GIS and Remote Sensing technologies can be utilized to achieve those goals effectively. This objective ensures that students develop the foundational knowledge necessary for conducting research in the field.

CO4: Creating and interpreting maps, including thematic maps, using GIS software Maps are essential tools in many research projects, particularly in spatial analysis and visualization. Researchers often need to create thematic maps to represent spatial patterns and relationships in their data. By developing skills in creating and interpreting maps using GIS software, students gain the ability to visualize and communicate their research findings effectively, which is crucial for conveying research outcomes to both academic and non-academic audiences.

CO5: Developing practical skills in georeferencing spatial data and digitizing features for GIS applications:

Georeferencing spatial data and digitizing features are foundational skills in GIS research. Researchers frequently work with various types of spatial data that need to be accurately georeferenced and digitized for analysis. This objective ensures that students possess the technical skills required to manipulate spatial data effectively, which is essential for conducting research involving GIS and Remote Sensing technologies.

CO7: Acquiring the ability to export maps in different formats and apply georeferencing techniques appropriately:

Researchers often need to export maps in different formats to share their findings with collaborators, stakeholders, or the broader community. Additionally, applying georeferencing techniques appropriately is crucial for ensuring the accuracy and reliability of spatial data used in research. This objective emphasizes the importance of effectively communicating research results through maps and ensuring the integrity of spatial data, which are essential aspects of conducting research in GIS and Remote Sensing.

**PO 4: Disciplinary Knowledge:**

CO1, CO2, CO3, CO4, CO5, CO6 and CO7, contribute to the Effective Citizenship and Ethics. For example, CO1 requires students to know the concept and ethical consideration  
CO1 requires students to know the concepts, potentials, and historical background of GIS and Remote Sensing, students gain foundational knowledge essential for further exploration and advancement in the field.

CO2- Articulating the objectives and components of GIS and Remote Sensing systems helps students grasp the fundamental building blocks of these technologies, enabling them to analyze and design systems effectively.

CO3- Proficiency in identifying and describing different types of Remote Sensing systems techniques and their advantages enhances students' knowledge of the diverse tools available for data acquisition and analysis, thereby broadening their understanding of the field.

CO4- The ability to create and interpret maps, including thematic maps, using GIS software equips students with practical skills necessary for spatial analysis and visualization, contributing to their proficiency in applying GIS techniques.

CO5- Developing skills in georeferencing spatial data and digitizing features for GIS applications enables students to accurately integrate spatial information into their analyses, facilitating informed decision-making and problem-solving in various domains.

CO6- Recognizing various data types and sources available for GIS analysis and utilizing them effectively enhances students' ability to access and leverage diverse datasets, fostering a deeper understanding of the complexities and nuances of spatial data analysis.

CO7- Acquiring the ability to export maps in different formats and apply georeferencing techniques appropriately ensures that students can effectively communicate their findings and integrate GIS outputs into different platforms and workflows, thus enhancing the practical applicability of their knowledge.

**Course Title:** Fundamentals of Google Map**Course Code:** UAGGSEC 3**No. of Credits:** 02**Course Objectives:**

1. To understand the concept of Google Maps and its utility
2. To identify nearby places, landmarks, and points of interest.
3. To share locations with others and explain the sharing process
4. To interpret real-time traffic updates and make informed navigation decisions.
5. To discover alternative routes and route options to reach destinations.
6. To explore streets virtually using Google Maps' Street View feature.
7. To measure distances and areas accurately using Google Maps tools

**Course Outcomes:****By the end of the course, students will be able to:**

- CO1.** Understand Google Maps and its significance in modern navigation.
- CO2.** Identify and explore nearby places, landmarks, and attractions.
- CO3.** Know how to share locations with others using Google Maps.
- CO4.** Make informed navigation decisions based on real-time traffic updates.
- CO5.** Analyse alternative routes and select the most suitable options.
- CO6.** Virtually explore streets and locations using Google Maps' Street View.
- CO7.** Accurately measure distances and areas, demonstrating a practical knowledge of Google Maps' measurement tools.

**Topics and Learning Points****UNIT 1: Introduction to Google Maps****Teaching Hours**

- 1.1 Understanding the concept of Google Maps
- 1.2 History and evolution of Google Maps

**06**

1.3 Exploring the Google Maps interface

1.4 Basic navigation and zooming

**UNIT 2: Searching and Finding Places**

**08**

2.1 Searching for specific locations

2.2 Finding nearby places and landmarks

2.3 Sharing locations

2.4 Saving and managing favorite locations

**UNIT 3: Directions and Navigations**

**08**

3.1 Getting driving, walking and public transit directions

3.2 Understanding real-time traffic updates

3.3 Alternative routes and route options

3.4 Offline navigation with Google maps

**UNIT 4: Exploring Additional Features**

**08**

4.1 Street view: exploring streets virtually

4.2 Indoor maps and floor maps

4.3 Using Google Earth in conjunction with Google maps

4.4 Measuring distances and areas

**References:**

1. Anji Reddy, M. (2004): Geoinformatics for environmental management. B. S. Publications
2. Li, J., & Chen, Y. (2018). "Google Maps: Power Tools for Maximizing the API." O'Reilly Media.
3. Kassner, M., & Winter, J. (2017). "The Google Maps API and PHP, MySQL, and

Apache." A press.

4. Martin, A. P. (2019). "Google Maps: A Nuts and Bolts Approach to User-Friendly Web Mapping." Chapman and Hall/CRC.
5. [Google Maps Platform Documentation](https://developers.google.com/maps/documentation) - Official documentation for developers using Google Maps API. <https://developers.google.com/maps/documentation>
6. [Google Maps JavaScript API Tutorial](https://developers.google.com/maps/get-started) - Official guide to getting started with the Google Maps JavaScript API. <https://developers.google.com/maps/get-started>
7. [OpenStreetMap](https://www.openstreetmap.org/#map=4/21.84/82.79) - A collaborative mapping project that provides open and free geographic data. <https://www.openstreetmap.org/#map=4/21.84/82.79>

## Choice Based Credit System Syllabus (2022 Pattern)

## Mapping of Program Outcomes with Course Outcomes

Class: T.Y.B.A.

Subject: Geography

Course: Fundamentals of Google Map

Course Code: UAGGSEC-3

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	1							
CO 2				1				
CO 3			1					
CO 4		1						
CO 5		2						
CO 6				2				
CO 7				1				

Justification:

PO 1:

CO1: Understand Google Maps and its significance in modern navigation.

PO 2:

CO4: Make informed navigation decisions based on real-time traffic updates.

CO5: Analyse alternative routes and select the most suitable options.

PO 3:

CO3: Know how to share locations with others using Google Maps.

PO 4:

CO2: Identify and explore nearby places, landmarks, and attractions.

CO6: Virtually explore streets and locations using Google Maps' Street View.

CO7: Accurately measure distances and areas, demonstrating a practical knowledge of Google Maps' measurement tools.