Anekant Education Society's
Tuljaram Chaturchand College, Baramati

(Autonomous)

Three years degree programme in Geography

(Faculty of Science and Technology)

Revised Syllabus for

S.Y.B.A. Geography (Semester IV)

For Tuljaram Chaturchand College, Baramati

Choice Based Credit System

Syllabus (2022 Pattern)

To be implemented from

Academic Year 2023-2024

<p style="text-align:center">**Title of the Course: B.A. (Geography)**</p>

<p style="text-align:center">**Preamble**</p>

Introduction:

Tuljaram Chaturchand College has decided to change the syllabus of various faculties from June, 2022. Taking into consideration the rapid changes in science and technology and new approaches in different areas of Geography and related subjects, Board of Studies in Geography of Tuljaram Chaturchand College, Baramati - Pune has prepared the syllabus of B. A. Geography Semester - III under the Choice Based Credit System (CBCS). The model curriculum as developed by U.G.C. is used as a guideline for the present syllabus.

A bachelor degree in geography will provide you the knowledge and skills you need to begin a variety of rewarding careers. Geographers work as urban planners, GIS technicians and analysts, disaster preparedness planners, teachers, environmental scientists, remote sensing analysts, transportation planners, demographers, hydrologists and in a variety of other areas. Students who complete bachelor degree in Geography, courses will examine the spatial organization of physical features and human activities at a variety of spatial scales from local to global. Students will be able to locate featureson the surface of the earth, explain why they are located where they are, and describe how places are similar and/or different. Students will also examine human interactions with the environment and describe how physical and cultural landscapes change through time. Students completing physical geography courses will be able to describe the processes that drive earth's climate, create landforms, and govern the distribution of plants and animals. Students completing human geography will analyze and describe cultural phenomenon such as population, development, agriculture, language, and religion.

❖ **Aims and Objectives of the new curriculum of the SYBA:**

1. To maintain updated curriculum.

2. To take care of fast development in the knowledge of Geography.

3. To enhance the quality and standards of Geography Education.

4. To provide a broad common frame work, for exchange, mobility and free dialogue across the Indian Geography and associated community.

5. To create and aptitude for Geography in those students who show a promise for higher studies and creative work in Geography.

6. To create confidence in others, for equipping themselves with that part of

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 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.

7. 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.

8. 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.

9. Students will be able to handling and application of various modern instruments so that they can be collect data.

10. 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.

11. 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.

12. After the completion of the project, they will be efficient in their communication skill as well as skill to interact with society.

13. This syllabus design according to competitive exam like MPSC and UPSC.

Anekant Education Society's

Tuljaram Chaturchand College, Baramati

(Autonomous)

Board of Studies in Geography

From 2022-23 To 2024-25

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

Choice Based Credit System Syllabus (2022 Pattern)

To be implemented from Academic Year 2022-2023

GEOGRAPHY

Course Structure

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	Application of Google Earth
TYBA	V	UAGG351	Physical Geography of India
		UAGG352	Introduction to Remote Sensing
		UAGG353	Practical in Remote Sensing
		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

Department of Geography
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
		60	**26**	**2**	**6**	**26**	**8**	**128**

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 studyshould be further evaluated through Group discussion / Seminar / Open Book Test / MCQ / Essay writing / Assignment etc.

S.Y.B.A. Geography, Syllabus for Semester IV

Paper: UAGG241: Geography of Disaster Management –II

No. of Credits: 03   No. of Periods: 48

Course Objectives:

1. To make students well aware of the basic concepts and nature of preparedness.
2. To understand disaster risk reduction strategies.
3. To understand procedure on government level.
4. To make students well aware of international organizations involved in disaster management.
5. To make students well aware of international disaster response and cooperation.
6. To understand various agencies, work in Disaster Management.
7. To understand recent disaster occurs in surrounding area.

Course Outcomes:

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

CO1. Understand the value of preparedness of disaster.

CO2. Understand disaster risk reduction strategies

CO3. Able to understand procedure on government level and how to work governmental agencies

CO4. Aware about international organizations involved in disaster management.

CO5. Aware about international disaster response and cooperation.

CO6. Participate in a rescue team.

CO7. increase social awareness.

Topics and Learning points

Unit	Lectures
Unit1: Disaster Preparedness and Mitigation 1.1 Concept and nature of Preparedness 1.2 Public Awareness and training 1.3 Emergency response planning, drills, and simulations 1.4 Disaster risk reduction strategies 1.5. Mitigation measures for specific disaster type	**Lectures** **12**
Unit 2: Standard operating procedure on government level 2.1 NIDM 2.2 NDMA 2.3 SDMA 2.4 DDMA 2.5 NDRF 2.6 SDRF	**12**
Unit 3: International Cooperation and Agreements 3.1 International organizations involved in disaster management 3.2. International agreements and conventions related to disaster management 3.3. Case studies on international disaster response and cooperation	**12**
Unit 4: A case study of disaster Management 4.1 Hail storm in Maharashtra 2014 4.2. Malian Landslide 2015 4.3 Kolhpaur Flood 2021 4.4 Irshalwadi Landslide 2023	**12**

Reference:

1. Geography and Disasters" by Susan L. Cutter, David A. Johnston, and Christopher T. Emrich.

2. "Disaster Management: Enabling Resilience" by Anne K. Zerger and Edward A. Thomas.

3. "Disaster Risk Reduction: Cases from Urban Africa" edited by Kennedy Mbekeani and Eunice M. M. Musvoto.

4. "Disaster Risk Management in Asia and the Pacific" edited by Rajib Shaw, Fuad Mallick, and Anshu Sharma.

5. "Geography, Environment and Disaster Risk Reduction" edited by Susan L. Cutter, Isabelle Ruin, and Jörn Birkmann.

6. Saptarshi P. G., More J. C., Ugale V. R. (2009), "Geography and Natural Hazard" Diamond, Pune.

7. Savindra Singh, (2000): Environmental Geography. Prayag Pustak Bhavan, Allahabad

8. Singh, S., 1998. Geomorphology, Prayag Pustak Bhavan, Allahabad.

9. A. H. Choudhar ,P. N. Salve, S. M. Kadam. R. H. Choudhar, V. C. Ithape (2010),

10. "Contemporary Issues and Geography",Atharva ,Pune.

Choice Based Credit System Syllabus (2022 Pattern)

Mapping of Program Outcomes with Course Outcomes

Class:SYBA (Sem. IV)   **Subject:** Geography

Course: Geography of Disaster Management   **Course Code:** UAGG241

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		.						3
CO 2		2	2					
CO 3				3				
CO 4			2					2
CO 5			3				2	
CO 6			3				2	
CO 7			3				2	

Justification for the Mapping

PO 2: Effective Citizenship and Ethics:

Student will be active advocates for policies that promote disaster resilience and social welfare. They can engage with policymakers, raise awareness about necessary regulations and standards, and hold authorities accountable. By participating in advocacy efforts, citizens contribute to the development of ethical and responsible policies that prioritize disaster risk reduction.

PO 3: Social Competence:

CO2: Students can effectively engage with their peers, teachers, and communities to raise awareness about disaster risks and preparedness measures. They can organize workshops, seminars, or awareness campaigns to educate others, promoting a culture of safety and preparedness in schools and beyond.

CO4: Understanding the role of international organizations in disaster management is important for students as it provides valuable insights into the global efforts aimed at disaster preparedness, response, and recovery.

CO5: Students will be aware of global issues, including natural disasters and humanitarian crises in different parts of the world. Being informed about international disasters helps students appreciate the interconnectedness of the world and understand the need for global cooperation in disaster response.

CO6: Students learn to work together effectively, understanding the importance of each team member's role. They develop the ability to communicate, coordinate, and support one another during high-pressure situations, fostering a sense of camaraderie and mutual respect.

CO7: by increasing social awareness, students develop a strong foundation for social competence. These skills empower them to navigate complex social situations, build meaningful relationships, and positively influence their communities and the broader world.

PO 4: Disciplinary Knowledge:

CO3: Disaster risk reduction (DRR) strategies for students are essential to prepare them for potential emergencies and empower them to contribute to a safer environment.

PO 7: Environment and Sustainability:

CO5: Students can study how disaster risk reduction strategies align with the United Nations Sustainable Development Goals (SDGs). Understanding the interconnection between disaster resilience and goals such as clean water and sanitation, zero hunger, and life on land can help students appreciate the importance of these initiatives for environmental sustainability.

CO6: Participating in a rescue team within the context of environment and sustainability equips students with valuable skills and knowledge to respond to disasters while considering the environmental impact and promoting sustainability.

CO7: Encourage students to organize awareness campaigns within their schools andcommunities. They can create posters, videos, or presentations to educate others about environmental issues, such as deforestation, pollution, and endangered species. These campaignsraise social awareness and promote eco-conscious behaviours.

PO 8: Critical Thinking and Problem solving:

CO1: Critical thinking enables students to engage in scenario planning. By considering different disaster scenarios, students can analyze the potential consequences and develop strategic plans. They learn to anticipate challenges, identify resources, and formulate proactive strategies, fostering strategic thinking skills essential for effective disaster preparedness.

CO4: by engaging students in critical analysis and problem-solving activities related to international organizations in disaster management, educators can enhance their ability to think critically, evaluate information, and propose innovative solutions. These skills are invaluable, preparing students to address complex challenges and contribute meaningfully to disaster management efforts in the future.

S.Y.B.A. Geography (S1), Syllabus for Semester IV

Subject: Human Geography of Maharashtra

Subject Code: UAGG:242 **No. of Credits**: 03

- -

Learning Objectives:

1. To make students aware about the agriculture problems and prospects of Maharashtra.
2. To understand the population distribution in Maharashtra.
3. To know the population characteristics of Maharashtra
4. To analyze trends and pattern of rural settlement in Maharashtra.
5. To understand the concept of rural development.
6. To find out tourism potential in Maharashtra.
7. To understand the prospectus in Tourism activity in Maharashtra and the role of MIDC in industrial development in rural area of Maharashtra

Learning Outcomes:

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

CO1. Awareness of human, Population and their characteristics

CO2. Aware about the importance, problems and prospects of agriculture in Maharashtra

CO3. Acquire knowledge about cropping pattern and major crops system of Maharashtra.

CO4. Understand the settlement types and pattern in Maharashtra.

CO5. Understand the rural development field in Maharashtra.

CO6. Understand the prospectus in Tourism activity in Maharashtra.

CO7. Improvement knowledge about tourism potential and tourist places in Maharashtra.

Topics and Learning points

Unit 1: Agriculture	Lectures
1.1 Importance of Agriculture in Economy of Maharashtra	12
1.2 Major Crops - Wheat, Rice, Jawar, Bajra.	
1.3 Cash Crops and Horticulture - Cotton, Sugarcane, Onion, Pomegranate, Grapes.	
1.4 Problems of agriculture in Maharashtra	
Unit 2: Population	**12**
2.1 Population distribution of Maharashtra	
2.2 Factors affecting distribution / density of population	
2.3 Population composition - Sex Ratio, Age structure, Literacy, Occupational structure.	
2.4 Migration- types and trends in Maharashtra	
2.5 District wise density of Maharashtra	
Unit 3: Settlement	**12**
3.1 Types and Patterns of rural settlement of Maharashtra	
3.2 Functional Classification of cities of Maharashtra	
3.3 Urbanization in Maharashtra	
3.4 Potential of Major Cities in Maharashtra – Mumbai, Pune, Nagpur	
Unit 4: Rural Development of Maharashtra	**12**
4.1 Concept of Rural Development	
4.2 Parameters of Rural Development	
4.3 Schemes for Rural Development	
4.4 Case Studies – Hivare Bazar and Ralegan Siddhi (Ahmednagar), Katewadi (Pune)	

Unit 5: Tourism	**12**
5.1 Growth and development of tourism in Maharashtra	
5.2 Tourism Potential of Maharashtra	
5.3 Agro-Tourism	
5.4 Case study of Agro- tourism – KVK, Malegaon and Palshiwadi (Baramati) Role of MTDC	

Reference Books:

1. Dikshit K.R.,1986, Maharashtra in Maps, Maharashtra State Board for Literature And Culture, Bombay.

2. Deshpande C. D., 1971, Geography of Maharashtra, National Book Trust, Bombay, India.

3. Sadhu Arun, Maharashtra, National Book Trust

4. Savadi A. B., Geography of Maharashtra: Nirali Prakashan, Pune.

5. Dastane S., Maharashtra, Ramchandra and company, Pune

6. Sawadi A. B., The Mega State Series: Nirali Publication, Pune.

7. Maharashtra state Agricultural Atlas. 8. Karve I., Maharashtra its Land and people.

8. More J. C., 2014, Geography & Agriculture for MPSC Examination, Atharv Publication, Pune (Marathi).

9. Khatib K. A.,2021, Geography of Maharashtra, K'sagar Publication, Pune.

10. Patil V. J., 2013, Geography of Maharashtra, Prashant Publication, Jalgaon.

11. Sathe S. V., Geography of Maharashtra, Chinmay Publication.

12. Patil Dilip and Baviskar Dipak, 2021, Dipastambha, Geography of Maharashtra, Dipastambha Publication.

13. Doifode K. H., 2021, Geography of Maharashtra, Study Circle Publication, Pune.

14. Karlekar Shrikant, and Sangale Sailaja, 2019, Geography of Maharashtra, Diamond Publication, Pune.

15. Phule Suresh, Geography of Maharashtra, Vidya Book Publication.

16. http://studymaterial.unipune.ac.in

17. Maharashtra Geography in Marathi, Study Material for MPSC Exams, Download Notes PDF : Maharashtra State Exams | Grade up, BYJU'S Exam Prep (byjusexamprep.com)

Choice Based Credit System Syllabus (2022 Pattern)

Mapping of Program Outcomes with Course Outcomes

Class: SYBA (Sem. IV)   **Subject:** Geography

Course: Human Geography of Maharashtra   **Course Code:** UAGG242

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

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

Justification for the Mapping

PO 1: Research Related Skill:

CO 5 and CO 6 foster the enhancement of research-related skills in the realm of rural development and the exploration of tourism potential. This empowers students to effectively employ their acquired knowledge in their immediate surroundings and discover their latent capabilities.

PO 2: Effective Citizenship and Ethics:

Partial alignment with effective citizenship and ethics is observed in CO 1, CO 4, and CO 6. These courses empower students to cultivate a sense of responsibility concerning population distribution, providing insights into the future's family size requirements. Additionally, they equip students to recognize various types and patterns of rural settlements and the underlying factors influencing their development, fostering an understanding of how to promote specific rural settlement patterns.

PO 3: Social Competence:

Course outcomes 4, 5, 6, and 7 with a focus on how they contribute to social competence:

4. Enhancing Social Competence through Rural Settlement Analysis: This course outcome fosters social competence by enabling students to analyse the various types and patterns of rural settlements. By understanding these settlement structures, students will be better equipped to engage in informed discussions about the social dynamics and challenges in rural areas, ultimately contributing to their social competence.

5. Encouragement Social Competence through Rural Development Insights: This outcome supports the development of social competence as students delve into the study of rural development. By exploring strategies and approaches to improve rural areas, students will gain a deeper appreciation of the social impact of development initiatives and how these can enhance the well-being of rural communities.

6. Cultivating Social Competence in Assessing Tourism Potential and Prospects: This course outcome contributes to social competence by equipping students with the knowledge and skills to evaluate tourism potential in rural regions. Understanding the prospects of rural tourism development helps students appreciate the social and cultural implications of such activities, thus enriching their ability to engage effectively in discussions related to rural tourism.

7. Fostering Social Competence through an Examination of MIDC's Role in Economic Development: This outcome nurtures social competence by examining the role of the Maharashtra Industrial Development Corporation (MIDC) in economic development. Students will gain insights into the social implications of industrial growth and how MIDC's activities impact local communities. This knowledge will empower them to participate in meaningful discussions on the interplay between economic development and social well-being.

PO 4: Disciplinary Knowledge:

Course outcomes 2, 3, 5, and 6 make straight with the acquisition of disciplinary knowledge. These outcomes facilitate students in gaining a comprehensive understanding of population distribution, population characteristics, rural development, and the potential tourism areas in Maharashtra.

PO 5: Personal and professional competence:

Course outcome 1 and 7 make a meaningful contribution to enhancing students' understanding of agricultural and industrial fields.

PO 6: Self-directed and Life-long learning:

All course outcomes develop regional human geographical knowledge of students providing them with valuable insights that can significantly enrich their lifelong social, personal, and economic foundations.

PO 7: Environment and Sustainability:

6 and 7 outcomes of this course contribute their caring role in the environment and suitability. Students will exhibit a strong commitment to environmental care and sustainability, utilizing their knowledge to foster positive impacts. They will apply their expertise to bolster the green vegetation in areas with significant tourism potential, including agro-tourism and forest-tourism. Students will leverage their acquired knowledge to drive rural development and boost the tourism sector. They will actively engage in initiatives that expand green spaces and promote sustainable tourism practices in diverse settings, like agro-tourism and forest-tourism, to unlock their full potential.

PO 8: Critical Thinking and Problem solving:

Course outcome 1 and 6 increasing critical thinking and problem-solving deeper understanding in the field of agriculture and tourism.

Subject: Statistical Techniques in Geography

Subject Code: UAGG:243   **No. of Credits**: 04

- -

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

Learning Objectives:

1. To understand Central Tendency and dispersion.
2. To develop the skills of data collection and interpretation.
3. To analyze and calculate inferential statistics.
4. To understand correlation of various geographic phenomena.
5. Students will also learn how to plan a small group field visit and work in small groups in the field
6. The goal to enhance the students learning experience with field visits and digital techniques.
7. The overall aim of the course is to provide an introduction to fundamental statistical methods used in Geography.

Learning Outcomes:

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

CO1. Gain understanding of basic statistical techniques used in Geography

CO2. Analyze and calculate central tendency techniques used in Geography.

CO3. Understand knowledge about analysis techniques used in research work.

CO4. Gain practical experience and awareness of some skills of field visits and data collection.

CO5. Develop skills by problem-solving, field and/or primary and secondary data collection, analysis and interpretation.

CO6. Develop communication and interactive skills through group work.

CO7. Enhance ability to work as part of a team.

Topics and Learning points

Unit	Lectures

Unit 1: Introduction to statistical techniques in geography
 	
1.1 Applications of statistical techniques in Geography
 	
1.2 Geographical data
   I.   Primary and secondary data
   II.   Spatial and temporal data
   III. Discrete and continuous data
   IV. Grouped and ungrouped data
 	
1.3 Types of statistics: descriptive and inferential statistics
	15

Unit 2: Descriptive Statistics 2.1 Introduction to descriptive statistics 2.2 Measures of central tendency: mean. mode and median 2.3 Measures of dispersion: variance and standard deviation (Calculations of above parameters for ungrouped and grouped data	**30**
Unit 3: Inferential statistics 3.1 Population and sample 3.2 Hypothesis testing: null and alternative hypothesis 3.3 The Chi-square test (One sample case) 3.4 Student's 't' test (Two sample case)	**30**
Unit4: Correlation and regression analysis 4.1 Introduction to bivariate correlation and regression 4.2 Pearson's product-moment correlation coefficient 4.3 Spearman's Rank order correlation coefficient 4.4 Linear regression equation.	**30**
Unit 5: Study tour or village/ city survey 5.1 A short tour of two days duration or a long tour of more than five days duration and preparation of study report OR A village/ city survey and preparation of report	**15**

Reference Books:

1. Singh Lehraj, (1973): Map Work and Practical Geography, Central Book Depot – Allahabad

2. Jadhav Asaram, (2022): Statistical Techniques for Geography, Pritam Publication, Jalgaon, Maharashtra.

3. D. Y. Ahirrao and E. K. Karanjkhele, (2002): Pratyakshik Bhugol, Sudarshan Publication, Nashik

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. Asis Sarkar (2015): Practical Geography, A Systematic Approach, Orient Black Swan

7. David, E. (1989): Statistics for Geographers.

8. Elhance, D.L., Elhance, V. and Aggarwal B.M. (2014): Fundamentals of Statistics, KitabMahal, Allahabad.

9. Hammond, R. and McCullagh, P. (1978): Quantitative Techniques in Geography, Clarendon Press. Oxford, London.

10. Karlekar, S. and Kale, M. (2006): Statistical Analysis of Geographical Data, Diamond Publication, Pune.

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

12. Norcliffe, G.B. (1977): Inferential Statistics for Geographers, Hutchinson, London.

13. Rogerson, P.A. (2015): Statistical Methods for Geography, SAGE Publication, London.

14. Wheller, D., Shaw, G. and Barr, S. (2010): Statistical Techniques in Geographical Analysis, David Fulton, Routledge, New York.

15. Yeats, M. H. (1974): An Introduction to Quantitative Analysis in Human Geography.

16. http://studymaterial.unipune.ac.in:8080/jspui/handle/123456789/201

Choice Based Credit System Syllabus (2022 Pattern)

Mapping of Program Outcomes with Course Outcomes

Class: SYBA (Sem. IV) **Subject:** Geography

Course: Statistical Techniques in Geography **Course Code:** UAGG243

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

Justification for the Mapping

PO 1: Research Related Skill:

All Cos directly correlate with research skill. All the statistical techniques are very useful in the field of any type of research.

PO 3: Social Competence:

Some time we collect data from society for specific cause. This information is useful for social wellbeing.

PO 7: Environment and Sustainability:

Data collection of trees, crops, share vegetation cover are useful for environment point of you.

Paper: UAGGSEC-2: Applications of Google Earth

No. of Credits:02   **No. of Periods:**32

Learning Objectives:

1. To learn how to utilize Google Earth Engine for monitoring and analyzing environmental data.

2. To explore methods for tracking deforestation, urban growth, and climate change

3. To Understand the pedagogical value of Google Earth in teaching Geography.

4. To Discover the potential of virtual field trips and excursions for educational purposes.

5. To explore the business applications of Google Earth Pro for location-based analysis.

6. To understand the role of location-based marketing and market analysis in business.

7. To learn how to use Google Earth for infrastructure planning and site selection

Course Outcomes:

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

CO1. Demonstrate an understanding of the key concepts and principles related to environmental monitoring.

CO2. Apply various techniques to track and assess deforestation, urban growth, and climate change.

CO3. Develop effective teaching methods using Google Earth to enhance geography education

CO4. Create and implement virtual field trips and excursions for educational purposes, enhancing learning experiences

CO5. Apply Google Earth Pro to solve business problems related to location-based analysis.

CO6. Develop strategies for location-based marketing and market analysis using Google Earth

CO7. Use Google Earth for making informed decisions in infrastructure planning and site selection.

Topics and Learning points

Unit 1: Environmental Monitoring and Analysis	Lectures

1.1 Monitoring environmental changes with Google Earth Engine
 	
    1.2 Analyzing satellite imagery and remote sensing data
 	
    1.3 Tracking deforestation, urban growth, and climate change
 	
    1.4 Case studies on environmental applications
	10

Unit 2: Research and Academic Use	**10**

2.1 Google Earth in research and academia
 	
    2.2 Using Google Earth for fieldwork and data collection
 	
    2.3 Use of Google Earth in teaching Geography
 	
    2.4 Field trips and virtual excursions	

Unit 3: Business and Industry Applications	**12**

3.1 Google Earth Pro for business applications
 	
    3.2 Location-based marketing and market analysis
 	
    3.3 Infrastructure planning and site selection
 	
    3.4 Use cases in various industries	

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3. Joly, D., and Gaffuri, J. (2016). Web Mapping Illustrated: Using Open Source GIS Toolkits. O'Reilly Media.

4. Kohler, A., and Gow, J. (2018). Using Google Earth in Geography Classrooms: A Collection of Lessons and Ideas.Springer.

5. Roth, R. E., and Krum, K. (2013). Google Maps API. Apress.

6. Google Earth Help Center: https://support.google.com/earth/?hl=en#topic=4386911

7. Google Earth User Guide: https://support.google.com/earth/answer/21955

8. Google Earth Outreach: https://www.google.com/earth/outreach/

9. Google Earth Blog: https://www.gearthblog.com/

10. Google Earth Community: https://support.google.com/earth/community?hl=en

11. Google Earth Education: https://www.google.com/earth/education/

12. GIS Geography: https://gisgeography.com/google-earth-pro-tutorial/

13. KML Tutorial: https://developers.google.com/kml/documentation/kml_tut

14. Earth Point: https://www.earthpoint.us/

15. Google Earth Studio: https://www.google.com/earth/studio/