



Anekant Education Society's

Tuljaram Chaturchand College, Baramati

(Autonomous)

Four Year B.A. Degree Program in Geography

(Faculty of Science & Technology)

CBCS Syllabus

FYBA (Geography) Semester -I

For Department of Geography

Tuljaram Chaturchand College, Baramati

Choice Based Credit System Syllabus (2023 Pattern)

(As Per NEP 2020)

To be implemented from Academic Year 2023-2024

Title of the Programme: FYBA (Geography)**Preamble**

AES's Tuljaram Chaturchand College has made the decision to change the syllabus of across various faculties from June, 2023 by incorporating the guidelines and provisions outlined in the National Education Policy (NEP), 2020. The NEP envisions making education more holistic and effective and to lay emphasis on the integration of general (academic) education, vocational education and experiential learning. The NEP introduces holistic and multidisciplinary education that would help to develop intellectual, scientific, social, physical, emotional, ethical and moral capacities of the students. The NEP 2020 envisages flexible curricular structures and learning based outcome approach for the development of the students. By establishing a nationally accepted and internationally comparable credit structure and courses framework, the NEP 2020 aims to promote educational excellence, facilitate seamless academic mobility, and enhance the global competitiveness of Indian students. It fosters a system where educational achievements can be recognized and valued not only within the country but also in the international arena, expanding opportunities and opening doors for students to pursue their aspirations on a global scale.

In response to the rapid advancements in science and technology and the evolving approaches in various domains of Geography and related subjects, the Board of Studies in Geography at Tuljaram Chaturchand College, Baramati - Pune, has developed the curriculum for the first semester of FYBA Geography, which goes beyond traditional academic boundaries. The syllabus is aligned with the NEP 2020 guidelines to ensure that students receive an education that prepares them for the challenges and opportunities of the 21st century. This syllabus has been designed under the framework of the Choice Based Credit System (CBCS), taking into consideration the guidelines set forth by the National Education Policy (NEP) 2020, LOCF (UGC), NCrF, NHEQF, Prof. R.D. Kulkarni's Report, Government of Maharashtra's General Resolution dated 20th April and 16th May 2023, and the Circular issued by SPPU, Pune on 31st May 2023.

A Geography degree equips students with the knowledge and skills necessary for a diverse range of fulfilling career paths. Graduates in Geography find opportunities in various fields, including urban planning, GIS analysis, disaster preparedness, teaching, environmental science, remote sensing analysis, transportation planning, demography, hydrology, and many other domains. Throughout their three-year degree program, students explore the spatial

organization of both natural and human phenomena across different scales, from local to global. They learn to identify and analyze features on the Earth's surface, understand their spatial patterns, and compare similarities and differences between different places. The curriculum also delves into the intricate relationship between humans and the environment, examining how physical and cultural landscapes evolve over time. Students specializing in physical geography gain an understanding of the processes that shape Earth's climate, create landforms, and influence the distribution of plant and animal life. By acquiring these comprehensive skills and knowledge, graduates are well-prepared to embark on rewarding careers that contribute to a better understanding of our world and address the challenges of our ever-changing planet.

Overall, revising the Geography syllabus in accordance with the NEP 2020 ensures that students receive an education that is relevant, comprehensive, and prepares them to navigate the dynamic and interconnected world of today. It equips them with the knowledge, skills, and competencies needed to contribute meaningfully to society and pursue their academic and professional goals in a rapidly changing global landscape.

Programme Specific Outcomes (PSOs)

- PSO1. Problem Analysis:** Demonstrate the ability to analyze physical and cultural problems in both rural and urban environments and propose effective solutions.
- PSO2. Socio-economic Survey Project:** Possess the skills necessary to conduct socio-economic survey projects, enabling them to assess the development status of specific social groups or sections of society.
- PSO3. Individual and Teamwork:** Effectively collaborate as individuals and as members or leaders in diverse teams and multidisciplinary settings.
- PSO4. Application of Modern Instruments:** Apply various modern instruments for data collection and field surveys.
- PSO5. GIS and Geographical Map Making:** Learn to utilize GIS and modern techniques for creating geographically-based maps.
- PSO6. Critical Thinking:** Demonstrate the ability to understand and address critical issues in physical and cultural environments.
- PSO7. Development of Observation Skills:** Through field experiences, students will develop strong observational skills and the ability to identify socio-environmental problems in localities.
- PSO8. Human perception and behaviour:** Learning human perception and behaviour to acquire the geographical knowledge over time, is essential to improve decision making process.
- PSO9. Effective Citizenship:** Exhibit empathetic social concern, an equity-centered approach to national development, and actively engage in civic life through volunteering.
- PSO10. Management Skills:** Understand and apply management principles to their work, functioning effectively as individuals and as members or leaders in diverse, multidisciplinary teams.
- PSO.11 Ethics:** Recognize different value systems, including their own, understand the moral dimensions of their decisions, and take responsibility for their actions.
- PSO12. Environmental Ethics and Sustainability:** Comprehend the societal and environmental impact of their knowledge and exhibit an understanding of the need for sustainable development.
- PSO13. Identification of critical problems and issues:** Detection and identification of the critical problems and spatial issues are essential for sustainable development.

Anekant Education Society's
Tuljaram Chaturchand College, Baramati
(Autonomous)

Board of Studies (BOS) 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.	Mr. Sachin C. Memane	Member
5.	Ms. Akshata S. Raje	Member
6.	Dr. Santosh Lagad	Vice-Chancellor Nominee
7.	Dr. Pravin Kokane	Expert from other University
8.	Dr. T. P. Shinde	Expert from other University
9.	Dr. Babaji Maskare	Industry Expert
10.	Mr. Ganesh Ghanawat	Meritorious Alumni
11.	Ms. Kadam Radhika	Student Representative
12.	Ms. Harshada Saste	Student Representative

Credit Distribution Structure for F.Y.B.A.-2023-2024 (Geography)

Level	Semester	Major		Minor	OE	VSC, SEC, (VSEC)	AEC, VEC, IKS	OJT, FP, CEP, CC, RP	Cum. Cr/Sem	Degree/Cum.Cr.
		Mandatory	Electives							
4.5	I	GEO-101-MJM: Physical Geography (4 credits)	--	--	GEO-116-OE: Principles of Remote Sensing-I (2 credits)	GEO-121-VSC: Land Surveying & Measurement (2 credits)	ENG-131-AEC Functional English-I (2 credit)	CC1 (2 credit)	22	UG Certificate 44 credits
		GEO-102-MJM: Practical in Physical Geography (2 credits)			GEO-117-OE: Principles of Geoinformatics -I (2 credits)	GEO-126-SEC: Fundamentals of Google Earth (2 credits)	GEO-135-VEC: Environmental Pollution and Value Education (2 credits)			
						GEO-137-IKS: Ancient Indian Geographical Thoughts (2 credits)				
	II	GEO-151-MJM: Human Geography (4 credits)	--	GEO-161-MN: Fundamentals of Geography (2 credits)	GEO-166-OE: Principles of Remote Sensing-II (2 credits)	GEO-171-VSC: Map Making in GIS (2 credits)	ENG-181-AEC Functional English-II (2 credit)	CC2 (2 credit)	22	
		GEO-152-MJM: Practical in Human Geography (2 credits)			GEO-167-OE: Principles of Geoinformatics -II (2 credits)	GEO-176-SEC Fundamentals of Google Map (2 credits)	GEO-185-VEC: Save The Earth (2 credits)			
	Cum Cr.		12	--	2	8	8	10	4	

Course Structure for F.Y.B.A. Geography (2023 Pattern)

Sem	Course Type	Course Code	Course Name	Theory / Practical	Credits
I	Major Mandatory	GEO-101-MJM	Physical Geography	Theory	04
	Major Mandatory	GEO-102-MJM	Practical in Physical Geography	Practical	02
	Open Elective (OE)	GEO-116-OE	Principles of Remote Sensing-I	Theory	02
	Open Elective (OE)	GEO-117-OE	Principles of Geoinformatics-I	Theory	02
	Vocational Skill Course (VSC)	GEO-121-VSC	Land Surveying and Measurement	Theory	02
	Skill Enhancement Course (SEC)	GEO-126-SEC	Fundamentals of Google Earth	Theory	02
	Ability Enhancement Course (AEC)	ENG-131-AEC	Functional English-I	Theory	02
	Value Education Course (VEC)	GEO-135-VEC	Environmental Pollution and Value Education	Theory	02
	Indian Knowledge System (IKS)	GEO-137-IKS	Ancient Indian Geographical Thoughts	Theory	02
	Co-curricular Course (CC)	--	To be selected from the Basket	Theory	02
Total Credits Semester-I					22
II	Major Mandatory	GEO-151-MJM	Human Geography	Theory	04
	Major Mandatory	GEO-152-MJM	Practical in Human Geography	Practical	02
	Minor	GEO-161-MN	Fundamentals of Geography	Theory	02
	Open Elective (OE)	GEO-166-OE	Principles of Remote Sensing-II	Theory	02
	Open Elective (OE)	GEO-167-OE	Principles of Geoinformatics-II	Theory	02
	Vocational Skill Course (VSC)	GEO-171-VSC	Map Making in GIS	Theory	02
	Skill Enhancement Course (SEC)	GEO-176-SEC	Fundamentals of Google Map	Theory	02
	Ability Enhancement Course (AEC)	ENG-181-AEC	Functional English-II	Theory	02
	Value Education Course (VEC)	GEO-185-VEC	Save The Earth	Theory	02
	Co-curricular Course (CC)	--	To be selected from the Basket	Theory	02
Total Credits Semester II					22
Cumulative Credits Semester I and II					44

**CBCS Syllabus as per NEP 2020 for F.Y.B.A Geography
(2023 Pattern)**

Name of the Programme	: B.A. Geography
Programme Code	: UAGEO
Class	: F.Y.B.A.
Semester	: I
Course Type	: Major Mandatory
Course Code	: GEO-101-MJM
Course Title	: Physical Geography
No. of Credits	: 04
No. of Teaching Hours	: 60

Course Objectives:

1. To describe the components of the Earth System.
2. To understand the Plate Tectonic Theory and associated features.
3. To study distribution of major landforms of the Earth.
4. To know the process of weathering and soil formation process.
5. To understand the role of hydrological cycle in the earth system.
6. To explain the factors influencing the formation of ocean currents.
7. To identify and study local landforms and weather features.

Course Outcomes:

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

- CO1.** Identify and describe the characteristics and functions of each component within the Earth System.
- CO2.** Explain the processes and features associated with plate tectonics, such as divergent boundaries, convergent boundaries, transform boundaries, and associated geological phenomena
- CO3.** Identify and classify major landforms on Earth, including mountains, plains, plateaus, valleys, and deserts.
- CO4.** Explain the stages and factors involved in soil formation, including parent material, climate, organisms, topography, and time.
- CO5.** Understand the role of the hydrological cycle in redistributing water on Earth and

maintaining global water balance.

CO6. Analyze the role of ocean currents in global climate patterns, marine ecosystems, and the transport of heat around the Earth.

CO7. Observe and analyze local weather features, including cloud formations, wind patterns, and precipitation, and understand their causes and implications.

Topics and Learning Points

UNIT 1: Introduction to Physical Geography	Teaching Hours
1.1 Definition, nature and scope	12
1.2 Components of Earth System	
1.3 Branches of Physical geography	
1.4 Importance of Physical Geography	
UNIT 2: Lithosphere	12
2.1 Internal structure of the Earth	
2.2 Plate Tectonic Theory	
2.3 Major landforms	
2.4 Weathering and soil formation	
UNIT 3: Atmosphere	12
3.1 Structure and composition of atmosphere	
3.2 Heat balance and global wind circulation pattern	
3.3 Tropical cyclones	
3.4 Monsoon	
UNIT 4: Hydrosphere	12
4.1 Hydrological cycle	
4.2 Ocean bottom relief features	
4.3 Tides and ocean currents	
4.4 Major oceans and seas	
UNIT 5: Applicability of Physical Geography	12
5.1 Urban planning and landuse	
5.2 Natural hazard assessment and mitigation	
5.3 Water resource management	
5.4 Tourism and recreation planning	

References:

1. Clyton K., (1986), Earth Crust, AdusBook , London.
2. Davis W. M., (1909), Geographical Essay, Ginnia Co.
3. Dayal P., (1996), Text Book of Geomorphology, Shukla Book Depot, Patna.
4. Kale V.S. and Gupta A., (2015), Introduction of Geomorphology, University Press, PVT Kolkata.
5. Lal, D. S.(1998): 'Climatology', Chaitanya Publishing House,Allahabad
6. Kale V.S. and Gupta A., (2001), Elements of Geomorphology, Oxford Univ. Press.
7. Monkhouse, (1951), Principle of Physical Geography, McGraw Hill Pub – New York.
8. Pitty A. F., (1974), Introduction to Geomorphology, Methuen London.
9. Singh Savindra, (2000), Physical Geography,PrayagPustakBhavan, 20-A, University Road, Allahabad – 211002.
10. Steers J. A., (1964), The Unstable Earth Some Recent Views in Geography, Kalyani Publishers, New Delhi.
11. Swaroop Shanti, (2006), Physical Geography, King Books, NaiSarak, Delhi –110006.
12. Wooldridge S. W. and Morgan R. S., (1959), The Physical Basis of Geography and Outline of Geomorphology, Longman Green and Co. London.
13. Chaudhari J. L (2013) Physical Geography

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(2023 Pattern)**

Name of the Programme	: B.A. Geography
Programme Code	: UAGEO
Class	: F.Y.B.A.
Semester	: I
Course Type	: Major Mandatory
Course Code	: GEO-102-MJM
Course Title	: Practical in Physical Geography
No. of Credits	: 02
No. of Teaching Hours	: 60

Course Objectives:

1. To describe the components of the Earth System.
2. To understand the Plate Tectonic Theory and associated features.
3. To study distribution of major landforms of the Earth.
4. To know the process of weathering and soil formation process.
5. To understand the role of hydrological cycle in the earth system.
6. To explain the factors influencing the formation of ocean currents.
7. To identify and study local landforms and weather features.

Course Outcomes:

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

- CO1.** Identify and describe the characteristics and functions of each component within the Earth System.
- CO2.** Explain the processes and features associated with plate tectonics, such as divergent boundaries, convergent boundaries, transform boundaries, and associated geological phenomena
- CO3.** Identify and classify major landforms on Earth, including mountains, plains, plateaus, valleys, and deserts.
- CO4.** Explain the stages and factors involved in soil formation, including parent material, climate, organisms, topography, and time.
- CO5.** Understand the role of the hydrological cycle in redistributing water on Earth and

maintaining global water balance.

CO6. Analyze the role of ocean currents in global climate patterns, marine ecosystems, and the transport of heat around the Earth.

CO7. Observe and analyze local weather features, including cloud formations, wind patterns, and precipitation, and understand their causes and implications.

Topics and Learning Points

UNIT 1: Map reading and Interpretation	Teaching Hours
1.1 Introduction to Topographical Maps	20
1.2 Identification and drawing of relief features from the toposheet	
1.3 Measurement of area, distance, direction and elevation	
1.4 Interpretation of topographical maps	
UNIT 2: Weather instruments and measurement	20
2.1 Handling and operation of weather instruments	
2.2 Measurement of temperature, atmospheric pressure, humidity, and wind speed	
2.3 Recording and interpretation of weather data	
UNIT 3: Field visit and study of landforms and geomorphic processes	20
4.1 Field visit to observe and study landforms	
4.2 Identification and description of geomorphic processes that have shaped the landscape	
4.3 Writing a field visit report	

References:

1. Clyton K., (1986), Earth Crust, AdusBook , London.
2. Davis W. M., (1909), Geographical Essay, Ginnia Co.
3. Dayal P., (1996), Text Book of Geomorphology, Shukla Book Depot, Patna.
4. Kale V.S. and Gupta A., (2015), Introduction of Geomorphology, University Press, PVT Kolkata.
5. Lal, D. S.(1998): 'Climatology', Chaitanya Publishing House, Allahabad
6. Kale V.S. and Gupta A., (2001), Elements of Geomorphology, Oxford Univ. Press.
7. Monkhouse, (1951), Principle of Physical Geography, McGraw Hill Pub – New York.

8. Pitty A. F., (1974), Introduction to Geomorphology, Methuen London.
9. Singh Savindra, (2000), Physical Geography, Prayag Pustak Bhavan, 20-A, University Road, Allahabad – 211002.
10. Steers J. A., (1964), The Unstable Earth Some Recent Views in Geography, Kalyani Publishers, New Delhi.
11. Swaroop Shanti, (2006), Physical Geography, King Books, Nai Sarak, Delhi –110006.
12. Wooldridge S. W. and Morgan R. S., (1959), The Physical Basis of Geography and Outline of Geomorphology, Longman Green and Co. London.
13. Chaudhari J. L (2013) Physical Geography

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(2023 Pattern)**

Name of the Programme	: FYBA Geography
Programme Code	: UAGEO
Class	: FYBA
Semester	: I
Course Type	: Open Elective (OE)
Course Code	: GEO-116-OE
Course Title	: Principles of Remote Sensing-I
No. of Credits	: 02
No. of Teaching Hours	: 30

Course Objectives:

1. To understand the field of remote sensing.
2. To provide understanding of fundamentals of remote sensing and their applications.
3. To provide detail understanding of sensors and platforms.
4. To provide understanding of platform and its types.
5. To understand the role of platform in data acquisition.
6. To prepare skilled manpower to fulfill the dream of Digital India.
7. To encourage the research and development in the field of remote sensing and GIS.

Course Outcomes:

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

- CO1.** Understand about basic concepts in remote sensing.
- CO2.** Identify the types of satellite.
- CO3.** Recognize importance of sensor in data collection.
- CO4.** Get knowledge of platform in acquiring data.
- CO5.** Familiar and interact with EMR in environment.
- CO6.** Can do the image processing.
- CO7.** Develop an idea about satellite image interpretation.

Topics and Learning Points

UNIT 1: Introduction to Remote Sensing	Teaching Hours
1. Remote Sensing: definition, concept	10
2. Principles of Remote sensing	
3. History of Remote Sensing	
4. Development of Remote Sensing in India	
UNIT 2: EMR and EMS	10
1. EM Radiation, EM Spectrum, Spectral Signature	
2. Interaction of EMR with atmosphere	
3. Interaction of EMR with Earth's surface	
4. Black body radiation, Laws of radiation	
UNIT 3: Platforms and Sensor	10
1. Platform: Types and characteristics	
2. Satellites: Geo-stationery and Sun synchronous	
3. Sensors: Concept and Basic Principles	
4. Types of Sensors: Across track (whiskbroom) and Along track (push broom) scanning	

References:

1. Anji Reddy, M. (2004): Geoinformatics for environmental management. B. S. Publications
2. Campbell, J.B. (2002): Introduction to remote sensing. Taylor Publications.
3. Chang. T.K. (2002): Geographic Information Systems. Tata Mc Graw Hill
4. Drury, S.A. (1987): Image Interpretation in Geology. Allen and Unwin.
5. Francis Tar Bernhard sen. Geographical Information Systems. John Wiley.
6. Gupta, R.P. (1990): Remote Sensing Geology. Springer Verlag.
7. Heywood. I, Cornelius S, Crver Steve. (2003): An Introduction to Geographical Information Systems. Pearson Education
8. Jensen, J.R. (2000): RS of the Environment: An Earth resource Perspective Prentice Hall.
9. Joseph George (2003): Fundamentals of remote sensing. Universities Press.

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Name of the Programme	: FYBA Geography
Programme Code	: UAGEO
Class	: FYBA
Semester	: I
Course Type	: Open Elective (OE)
Course Code	: GEO-117-OE
Course Title	: Principles of Geoinformatics-I
No. of Credits	: 02
No. of Teaching Hours	: 30

Course Objectives:

1. To introduce the fundamentals of Geographical information system.
2. To understand the historical development of GIS
3. To know the database and its types.
4. To prepare for the practical work with GIS System.
5. To understand the database model used in GIS
6. To introduce the principles of digitization and its merits and demerits.
7. To create a map layout by digitization process.

Course Outcomes:

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

- CO1.** Realize basic concepts in Geoinformatics.
- CO2.** Understand historical development of GIS
- CO3.** Analyses types of databases and their applications.
- CO4.** Carry out practical work in GIS Software's.
- CO5.** Familiar with basic principles in digitization process.
- CO6.** Handling database models used in GIS.
- CO7.** Create a thematic maps and location maps of study area

Topics and Learning Points

UNIT 1: Introduction to GIS	Teaching Hours
1.1 Definition, potential of GIS, concept of space & time	10
1.2 Spatial Information Theory	
1.3 History of GIS	
1.4 Objectives of GIS	
1.5 Elements of GIS, hardware & software requirements	
UNIT 2: Database and data model	10
2.1 Spatial: spatial relationship, functional relationship, logical relationship	
2.2 Non-spatial: nominal, ordinal, ratio and cyclic	
2.3 Spatial model: Geometric primitives, Raster, Vector	
2.4 Non-spatial model: DBMS, hierarchical, network and relational	
UNIT 3: Structuring of Spatial Data	10
3.1 Digitization: Meaning and concept	
3.2 Merits and demerits in digitization	
3.3 Types of Digitizers: manual, semi-automatic & automatic	
3.4 Editing error: detection & correction, topology building	

References:

1. Burroughs, P. A. and McDonnell, R. A. (2002): Principles of Geographical Information System, Oxford University Press.
2. George J. (2004): Fundamentals of Remote Sensing, Universities Press Pvt. Ltd., Hyderabad.
3. Jensen, J. R. (2003): Remote Sensing of Environment, An Earth Resource Perspective, Pearson Education Pvt. Ltd., New Delhi.
4. Kang- Tsung-Chang, Introduction to Geographical Information System, 2002, McGraw Hill.
5. Lillesand, T. M. and Kiefer R. W. (2002): Remote Sensing and Image Interpretation, John Wiley and Sons, New Delhi.
6. Lo C. P. and Yeung, A.K.W. (2002): Concepts and Techniques of Geographic Information System, Prentice Hall, India.

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Name of the Programme	: FYBA Geography
Programme Code	: UAGEO
Class	: FYBA
Semester	: I
Course Type	: Vocational Skill Course (VSC)
Course Code	: GEO-121-VSC
Course Title	: Land Surveying and Measurement
No. of Credits	: 02
No. of Teaching Hours	: 30

Course Objectives:

1. This course develops cartographic and surveying knowledge of students.
2. This course gives adequate knowledge of plane table survey to measure area.
3. To enable the students to use various techniques of calculating area.
4. To familiarize the students with GPS Survey and Plotting on a graph paper.
5. To acquaint the students with various skills of land surveying.
6. To explain the students for converting area in different units.
7. To inform the students with different shape of land measurement.

Course Outcomes:

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

- CO1.** Understand concept of cartography and its development.
- CO2.** Represent data by using cartographic techniques.
- CO3.** Aware about basics of surveying.
- CO4.** Conduct plane table survey and measures any type of land.
- CO5.** Take coordinate point using GPS and they can able to plot this point on paper to make map of surveying area.
- CO6.** Measure area of any shape of land.
- CO7.** Measure and convert an area in different measurement.

Topics and Learning Points

UNIT 1: Introduction to Surveying and Plane Table Survey	Teaching Hours
1.1 Definition of Surveying	10
1.2 Types of North Direction (True, Magnetic and Grid North)	
1.3 Types of Survey	
1.4 Plane Table Survey:	
a) Radiation Method	b) Intersection Method
UNIT 2: GPS Survey	10
2.1 Introduction and handling techniques of GPS	
2.2 Types of GPS	
2.3 Conducting GPS point with Latitude, Longitude and Altitude	
2.4 Plotting techniques GPS point on graph paper and measurement of area	
UNIT 3: Techniques of land measurement	10
3.1 Actual land measurement using above two instruments of surveying	
3.2 Measurement of area (Circle, Square, Rectangle, Triangle, Uneven shape)	
3.3 concepts of Guntha (R), Ekar, Hector and Square Kilo miter	
3.4 Conversion of area (R in to Ekar, hector into Ekar, Square km into square meter, Square meter to square feet)	

References:

1. Sharma J. P., 2010, Prayogic Bhugol, Rastogi Publishers, Meerut.
2. Singh R. L. and Singh R. P. B., 1999, Elements of Practical Geography, Kalyani Publishers.
3. Slocum T. A., McMaster R. B. and Kessler F. C., 2008, Thematic Cartography and Geovisualization (3rd Edition), Prentice Hall.
4. Tyner J. A., 2010, Principles of Map Design, The Guilford Press.
5. Sarkar A., 2015, Practical Geography: A Systematic Approach, Orient Black Swan Private Ltd., New Delhi
6. Singh R. L. and Dutta P. K., 2012, Prayogatama Bhugol, Central Book Depot, Allahabad

7. Ahirrao Y., Karanjkehele E. K., 2002, Practical Geography, Sudarshan Publication, Nashik
8. Saptarshi P. G., Jog S. R., Statistical Methods
9. Karlekar S. N., 2008, Statistical Methods, Diamond Publication, Pune
10. Kanetkar T. P., Kulkarni S. V., 1986, Surveying and Leveling, Pune Vidyarthi Griha Publication, Pune
11. Kumbhare A., Practical Geography, Sumeru publication, Dombivali.
12. Saha P., Basu P., 2007, Advanced Practical Geography, Books and Allied (P) Ltd, Kolkata
13. Saha P., Basu P., Advanced Practical Geography: 2007, Books and Allied (P) Ltd, Kolkata
14. V. J. Patil and A. P. Chaudhari, 2016 Pratyakshik Bhugol, Prashant Publication

**CBCS Syllabus as per NEP 2020 for F.Y.B.A Geography
(2023 Pattern)**

Name of the Programme	: FYBA Geography
Programme Code	: UAGEO
Class	: FYBA
Semester	: I
Course Type	: Skill Enhancement Course (SEC)
Course Code	: GEO-126-SEC
Course Title	: Fundamentals of Google Earth
No. of Credits	: 02
No. of Teaching Hours	: 30

Course Objectives:

1. To provide an introduction to the Google Earth Pro software.
2. To study capabilities for spatial data visualization, analysis, and communication.
3. To learn how to navigate and customize Google Earth Pro.
4. To study import and manage geographic data.
5. To learn to create and edit placemarks, polygons, paths, and images.
6. To measure distances and areas, perform spatial queries and analysis.
7. To share and export data.

Course Outcomes:

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

- CO1.** Navigate and customize the Google Earth Pro interface and preferences.
- CO2.** Import and manage geographic data in different formats.
- CO3.** Create and edit placemarks, polygons, paths, and images.
- CO4.** Add attributes and labels to geographic features.
- CO5.** Use measurement and annotation tools to perform spatial analysis and querying.
- CO6.** Share and export maps and data in different formats.
- CO7.** Apply this knowledge in any field and applications.

Topics and Learning Points

UNIT 1: Introduction to Google Earth	Teaching Hours
1. Overview of Google Earth Pro interface and tools	10
2. Customizing the Google Earth Pro preferences	
3. Navigation and view controls in Google Earth Pro	
UNIT 2: Data Import and Management	10
1. Importing and exporting data in different formats	
2. Creating and managing folders, layers, and projects	
3. Managing and editing data attributes and metadata	
UNIT 3: Creating and Editing Geographic Features	10
1. Creating and editing placemarks, polygons, paths, and images	
2. Adding and editing attributes and labels to geographic features	
3. Using measurement and annotation tools in Google Earth Pro	

References:

1. Battersby, S. E., and Finn, M. P. (2018). Mapping and Visualization with SuperCollider. Springer.
2. Brown, M. (2014). Google Maps: Power Tools for Maximizing the API. McGraw Hill Professional.
3. Joly, D., and Gaffuri, J. (2016). Web Mapping Illustrated: Using Open Source GIS Toolkits. O'Reilly Media.
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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/>

**CBCS Syllabus as per NEP 2020 for F.Y.B.A Geography
(2023 Pattern)**

Name of the Programme	: FYBA Geography
Programme Code	: UAGEO
Class	: FYBA
Semester	: I
Course Type	: Value Education Course (VEC)
Course Code	: GEO-135-VEC
Course Title	: Environmental Pollution and Value Education
No. of Credits	: 02
No. of Teaching Hours	: 30

Course Objectives:

1. To create the awareness about dynamic environment among the student.
2. To acquaint the students with fundamental concepts of environment for development in different areas.
3. The students should be able to integrate various factors of Environment and dynamic aspect of Environment.
4. To make aware the students about the problems of environment, their utilization and conservation in the view of sustainable development.
5. To make conscious about environment pollution.
6. To utilize different ideas to reduce environment pollution.
7. To accept value education about environment.

Course Outcomes:

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

- CO1.** Understand concept of environment and its development.
- CO2.** Identify biodiversity, ecosystem of environment.
- CO3.** Well recognize types and importance of environment.
- CO4.** Identify solution to control or reduce environmental pollution.
- CO5.** Understand of value of environment.
- CO6.** Awareness among society to improve knowledge about environment.
- CO7.** Analyse and prepare a plan to reduce environment pollution.

Topics and Learning Points

UNIT 1: Introduction to Environmental Geography	Teaching Hours
1.1 Definition, Nature and scope of Environmental Geography.	10
1.2 Types of Environments	
1.3 Importance of Environmental Geography	
1.4 Approaches to study of environmental Geography	
UNIT 2: Environmental Pollution	10
2.1 Concept of Pollution	
2.2 Air Pollution-Causes, effects and control measures	
2.3 Water Pollution-Causes, effects and control measures	
2.4 Soil Pollution-Causes, effects and control measures	
2.5 Noise Pollution-Causes, effects and control measures	
UNIT 3: Value Education	10
3.1 Meaning of value education	
3.2 Value education about air pollution	
3.3 Value education about water pollution	
3.4 Value education about land / soil pollution	
3.5 Value education about noise pollution	

References:

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**CBCS Syllabus as per NEP 2020 for F.Y.B.A Geography
(2023 Pattern)**

Name of the Programme	: FYBA Geography
Programme Code	: UAGEO
Class	: FYBA
Semester	: I
Course Type	: Indian Knowledge System
Course Code	: GEO-137-IKS
Course Title	: Ancient Indian Geographical Thoughts
No. of Credits	: 02
No. of Teaching Hours	: 30

Course Objectives:

1. To introduce the students with ancient Indian geographers and their contribution.
2. To understand the historical development of geography and various allied subjects.
3. To know the universe and its origin and different theories regarding it.
4. To understand astronomical concepts and their relevance to geography.
5. To understand the mathematical thermos.
6. To introduce the principles of mathematical and astronomical thermos.
7. To understand the impact of exploration and discoveries in subject matter.

Course Outcomes:

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

- CO1.** Understand ancient Indian geographers and their contribution.
- CO2.** Know historical development of geography and various allied subjects.
- CO3.** Familiar with the universe and its origin and different theories regarding it.
- CO4.** Understand astronomical concepts and their relevance to geography.
- CO5.** Analyse the mathematical thermos.
- CO6.** Understand principles of mathematical and astronomical thermos.
- CO7.** Uunderstand the impact of exploration and discoveries in subject matter

Topics and Learning Points

UNIT 1: Ancient Indian Geographers	Teaching Hours
1.1 Varahamihira	10
1.2 Brahmagupta	
1.3 Bhaskaracharya	
1.4 Aryabhatta	
UNIT 2: Discoveries in mathematics and Astronomy	10
2.1 Universe and its origin	
2.2 Eclipse	
2.3 Earth	
2.4 Latitude and Longitude	
2.5 Cardinal Point	
UNIT 3: The impact of exploration and discoveries	10
3.1 Discovery of continents	
3.2 Mountains and rivers	
3.3 The Ganga	
3.4 The Tsangpo	

References:

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5. Hershov, R. (1959): Perspectives of Nature of Geography, Rand Mac Nally and Co.
6. Hussain, M. (1995) : Evolution of Geographical Thought, Rawat Pub. Jaipur
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Examination Pattern / Evaluation Pattern

Teaching and Evaluation (for Major, Minor, AEC, VEC, IKS courses)

Course Credits	No. of Hours per Semester	No. of Hours per Week	Maximum Marks	CE	ESE
	Theory/Practical	Theory/Practical		40 %	60%
1	15 / 30	1 / 2	25	10	15
2	30 / 60	2 / 4	50	20	30
3	45 / 90	4 / 6	75	30	45
4	60 / 120	4 / 8	100	40	60

Teaching and Evaluation (for VSC, SEC & CC courses)

- Evaluation to be done by Internal & External Experts
- No descriptive end semester written examination
- Evaluation to be done at Department level preferably prior to commencement of Theory /Practical Examinations
- Evaluation to be done on the Skills gained by student