



Progressive Education Society's  
**Modern College of Arts, Science and Commerce (Autonomous)**  
Ganeshkhind, Pune 411016  
[www.moderncollegegk.org](http://www.moderncollegegk.org)

Academic Year 2022-23

## **SYBA SYLLABUS**

Faculty of Arts  
**Board of Studies (B.O.S.) Geography**  
(March 2023)

## **Department of Geography**

### **B A- Geography**

#### **PROGRAM OUTCOME:**

After completing B.A. Program in Geography, students will be able to

##### **1. Knowledge Outcomes:**

- Demonstrate knowledge of physical and cultural features of the earth and locate them on a map.
- Know about the basic discipline of Geography and its subbranches.
- Know the basic concepts and terminologies used in Geography like interior of the earth, plate tectonic, sea floor spreading, population growth, disasters, composition and structure of atmosphere, hydrosphere etc.
- Differentiate between minerals and rocks, weather and climate, interior of the earth, basic industries, farming etc.
- Get information about the causes and effects of local, national and international problems like global warming, acid rain, ozone depletion, soil degradation, deforestation etc.

##### **2. Skill Outcomes:**

- Carry out surveying and learn the art of map making and prepare maps for the areas with the help of surveying techniques.
- Gain knowledge of quantitative methods and their ability to use statistical and cartographical methods to solve geographical problems.
- Construct various types of projections and scales as per requirement of the study.
- Collect primary and secondary data in the field.
- Apply various statistical formulas to analyze data.
- Use cartographic techniques with the help of simple software techniques like MS Office.
- Handle topographical and weather maps and interpret them.
- Identify types of rocks.
- Know about Geographical Information System (GIS) and Remote Sensing (RS)

#### **PROGRAM SPECIFIC OUTCOMES:**

- Students learn about the formation of landforms and identify around them.
- Students learn about various economic activities of man and their spatial temporal distribution.
- Students acquire knowledge of basic surveying and map making.
- Students know about disasters, their causes and managing disasters.
- Students come to know about the geographical, socio-economic, and political background of India.
- Students apply geographical knowledge in their day-to-day life like being alert about disasters, weather, and climate phenomena etc.

**Department of Geography**  
**Syllabus (Autonomous)**

**List of Subjects for FYBA Geography**

**From 2022-23**

<b>Sr</b>	<b>Paper</b>	<b>Sem</b>	<b>Level</b>	<b>Subject Name</b>	<b>Subject Code</b>
1	CC 1A	1	General-1	Physical Geography	22-GG-A1131
2	CC 1B	2	General-1	Human Geography	22-GG-A1231

**List of Subjects for SYBA Geography**

**From 2023-24**

<b>Sr</b>	<b>Paper</b>	<b>Sem</b>	<b>Level</b>	<b>Subject Name</b>	<b>Subject Code</b>
1	DSE 1A	3	Special-1	Population Geography 1	23-GG-A2331
2	DSE 2A	3	Special-2	Practical Geography 1	23-GG-A2332
3	CC 1C	3	General-2	Economic Geography 1	23-GG-A2333
4	SEC 2A	3	Skill Development-1	Remote Sensing	23-GG-A2334
5	DSE 1B	4	Special-1	Population Geography -II	23-GG-A2431
6	DSE 2B	4	Special-2	Practical Geography -II	23-GG-A2432
7	CC 1D	4	General-2	Economic Geography -II	23-GG-A2433
8	SEC 2B	4	Skill Development-1	Geographical Information System	23-GG-A2434

**SYBA Geography**  
**Syllabus for Semester III**  
**Population Geography – I (DSE 1 A)**  
**Subject Code: 23-GG-A2331**

**Total Credits: 04**

**Total Periods: 48**

**Objectives:**

1. To understand the history of population.
2. To introduce the basic concepts used in Population Geography.
3. To understand the types of Population data.

<b>Sr. No.</b>	<b>Topic</b>	<b>Subtopics</b>	<b>Teaching Hours</b>	<b>Total Credits</b>
1	Introduction	1. Definition, Nature, and Scope 2. Significance of Population studies, 3. Relation of Population Geography with other Social Sciences.	12	<b>03</b>
2	Population Growth and Demographic Attributes	1. Distribution of Population 2. Factors affecting Growth of Population 3. Fertility, Mortality - (Concept, Measurement) 4. Migration - Concept, Causes, Types	12	
3	Composition of Population	1. Age-Sex pyramid, Age Structure 2. Occupational Structure, Dependency Ratio 3. Longevity, Life Expectancy. (With Reference to India)	12	
4.	Population Data & Presentation	1. Census of India 2. National Sample Survey, Sample Registration Survey, NFHS, DLHS, 3. Presentation of Population Data – Maps, Graphical Presentation using computer software.	12	

### **Learning Outcomes:**

- CO1: Students describe the need of Population Geography as an independent branch to study various aspects of population.
- CO2: Students list sources of population data and be able to compute them with graphical presentation.
- CO3: Students elaborate the causes behind uneven distribution of population in the world.
- CO4: Students understand the composition of the population.

### **Reference Books:**

1. Barrett H. R., 1995, Population Geography, Oliver and Boyd Publication,
2. Bhende A. and Kanitkar T., 2000, Principles of Population Studies, Himalaya Publishing House.
3. Chandna R. C. and Sidhu M. S., 1980, An Introduction to Population Geography, Kalyani Publishers.
4. Clarke J. I., 1965, Population Geography, Pergamon Press, Oxford.
5. Jones, H. R., 2000, Population Geography, 3rd ed., Paul Chapman, London.
6. Lutz W., Warren C. S. and Scherbov S., 2004, The End of the World Population Growth in the 21st Century, Earth scan
7. Newbold K. B., 2009, Population Geography Tools and Issues, Rowman and Littlefield Publishers.
8. Pacione M., 1986, Population Geography-Progress and Prospect, Taylor and Francis.
9. Wilson M. G. A., 1968, Population Geography, Nelson Publishers.
10. Panda B P , 1988, Population Geography, Granth Academy, Bhopal (Hindi)
11. Maurya S D, 2009, Population Geography, Sharda Putak Bhawan, Allahabad (Hindi)
12. Chandna, R C, 2006, Population Geography, Kalyani Publishers, Delhi. (Hindi)

**SYBA Geography**  
**Syllabus for Semester IV**  
**Population Geography – II (DSE 1 B)**  
**Subject Code: 23-GG-A2431**

**Total Credits: 04**

**Total Periods: 48**

**Objectives:**

1. To introduce students to the Population Policy of India and China.
2. To understand the health indicator in India.
3. To acquaint students with the concept of urbanization in population geography.
4. To understand population theories.

<b>Sr. No.</b>	<b>Topic</b>	<b>Sub Topics</b>	<b>Teaching Hours</b>	<b>Total Credits</b>
1	Population Theories	1. Population as a Resource 2. Population and space <ul style="list-style-type: none"> <li>• Over Population</li> <li>• Optimum Population</li> <li>• Under Population</li> </ul> 3. Theories of Population <ul style="list-style-type: none"> <li>• Malthusian Theory</li> <li>• Marxian Theory</li> </ul>	12	<b>03</b>
2	Contemporary Issues	1. Health Indicator in India 2. Education and Literacy 3. Economic Status 4. Concept of HDI	12	
3	Problems and Policies of Population	1. Population Problems in India. 2. Population Problems in developed countries- Germany & Japan. 3. Population Policies in India and China	12	
4	Urbanization	1. Concept of urbanization 2. Trends of World urbanization. 3. History of urbanization in India 4. Problems of Urbanization in India.	12	

**Learning Outcomes:**

- CO1: Students understand the concepts of population and space and know the terminologies like Optimum population, Over population and Under population.
- CO2: Students compare and read about the population policies of India and China.
- CO3: List out health indicators and Human Development Index.
- CO4: Explore and interpret the process and trend of urbanization.

**Reference Books:**

1. Barrett H. R., 1995, Population Geography, Oliver and Boyd Publication,
2. Bhende A. and Kanitkar T., 2000, Principles of Population Studies, Himalaya Publishing House.
3. Chandna R. C. and Sidhu M. S., 1980, An Introduction to Population Geography, Kalyani Publishers.
4. Clarke J. I., 1965, Population Geography, Pergamon Press, Oxford.
5. Jones, H. R., 2000, Population Geography, 3rd ed., Paul Chapman, London.
6. Lutz W., Warren C. S. and Scherbov S., 2004, The End of the World Population Growth in the 21st Century, Earth scan
7. Newbold K. B., 2009, Population Geography Tools and Issues, Rowman and Littlefield Publishers.
8. Pacione M., 1986, Population Geography-Progress and Prospect, Taylor and Francis.
9. Wilson M. G. A., 1968, Population Geography, Nelson Publishers.
10. Panda B P , 1988, Population Geography, Granth Academy, Bhopal (Hindi)
11. Maurya S D, 2009, Population Geography, Sharda Putak Bhawan, Allahabad (Hindi)
12. Chandna, R C, 2006, Population Geography, Kalyani Publishers, Delhi. (Hindi)
13. Sawant, Athavale, Musmade, Population Geography, Mehta Publication, Pune. (Marathi)
14. More J. C., 2014, Geography & Agriculture For MPSC Examination, Atharv Publication, Pune (Marathi)
15. Musmade A.H., Sonawane A.E., More J.C., 2015, Population & Settlement Geography, Diamond Publication Pune. (Marathi)

**SYBA Geography**  
**Syllabus for Semester III**  
**(DSE 2 A) Practical Geography – I**  
**(Map Scales and Projections)**  
**Subject Code: 23-GG-A2332**

**Total Credits: 04**

**Total Periods: 60**

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

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

**Objectives of Course:**

1. To introduce the basic concepts in Practical Geography
2. To enable students to use various Scales and Projection Techniques in Geography.
3. To acquaint students with the utility of various Projections in Geographical knowledge.
4. To explain the elementary and essential principles of practical work in Geography.

**Course Outcome:**

After the successful completion of the course, the students will be able to:

1. Develop practical skill and use of map scale and projection.
2. To make students aware of the new techniques, accuracy and skills of map making.

**Note:**

1. Use of Map stencils, Log tables, Calculator, computer, Statistical Tables is allowed at the time of Examination.
2. Students must check the practical's regularly, and Journal should be certified by practical in-charge and Head of the Department before the examination.
3. Students without a certified journal should not be allowed for the practical examination.
4. Each of the practical batches needs a separate question paper.



<b>Sr. No.</b>	<b>Topic</b>	<b>Sub Topic &amp; Learning Point</b>	<b>No of Practical</b>	<b>Credits</b>
<b>1.</b>	<b>Introduction of Maps</b>	1. Definition of Maps 2. History of Maps 3. Elements of Map 4. Classification of Maps: a. On the basis of scale: i) Small scale ii) Large Scale b. On the basis of function: i) Physical ii) Cultural 5. Use of maps	<b>03</b>	<b>04</b>
<b>2.</b>	<b>Map Scale</b>	1. Definition of Map Scale. 2. Types of Map Scale a. Verbal Scale b. Numerical Scale c. Graphical Scale 3. Conversion of Scale (British and Metric System) a. Verbal Scale to Representative Fraction b. Representative Fraction into Verbal scale 4. Construction of Simple Graphical scale (At least two examples from each)	<b>06</b>	
<b>3.</b>	<b>Basics of Map Projection</b>	1. Basic concepts of Projection: Latitude, Longitude, Parallel of latitude, Meridian of longitude, Prime meridian, Equator, Direction 2. Definition and types of map projection 3. Calculation of time based on meridian and GMT (Calculation of minimum four examples)	<b>04</b>	
<b>4.</b>	<b>Construction of Map Projection</b>	1. Zenithal Projection a. Zenithal Polar Gnomonic Projection 2. Conical Projection a. Conical projection with one standard parallel/ Simple conical projection 3. Cylindrical Projection a. Cylindrical equal area projection 4. Mercator projection (Properties and Uses of Map Projection) (At least two examples from each projection)	<b>07</b>	

**Learning Outcomes:**

- CO1: Students read the history of Cartography and understand the importance of Cartography as an independent branch of study.
- CO2: Classify the types of maps.
- CO3: Convert verbal scale to numeric and also British to metric system and vice versa.
- CO4: Draw the graphical scale and major types of projections.

**Reference Books:**

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,
12. Saha P., Basu P., 2007, Advanced Practical Geography, Books and Allied (P) Ltd, Kolkata

**SYBA Geography**  
**Syllabus for Semester IV**  
**(DSE 2 B) Practical Geography – II**  
**(Cartographic Techniques/ Surveying and Excursion/ Village/ Project Report)**  
**Subject Code: 23-GG-A2432**

**Total Credits: 04**

**Total Periods: 60**

**Objectives of Course:**

1. To introduce the students to the basic and contemporary concepts in Cartography.
2. To acquaint the students with the utility and applications of various Cartographic Techniques.
3. To introduce the latest concepts regarding the modern cartography in the field of Geography.
4. To explain the elementary and essential principles of practical work in Geography.

**Course Outcome:**

After the successful completion of the course, the students will be able to:

1. Develop practical knowledge and application of cartographical techniques.
2. To make students aware of the new techniques, accuracy and skills of Map Making.

**Note :**

1. Use of Map stencils, Log tables, Calculators, Statistical Tables is allowed at the time of Examination.
2. Journal completion by the students and the certified by practical in-charge and Head of the Department is compulsory.
3. Students without a certified journal should not be allowed for the practical examination.
4. Each of the practical batches needs a separate question paper.

<b>Sr. No.</b>	<b>Topic</b>	<b>Sub Topic &amp; Learning Point</b>	<b>No of Practical</b>	<b>Credits</b>
<b>1.</b>	<b>Introduction to Cartography</b>	1. Definition of Cartography 2. Development of cartography a. Traditional b. Modern 3. Use of Cartography	<b>02</b>	

2.	<b>Cartographic techniques</b>	1. Techniques of representation of data (Use and limitations) <ol style="list-style-type: none"> <li>a. Simple line graph</li> <li>b. Simple bar Graph</li> <li>c. Pie diagram</li> <li>d. Choropleth Map</li> <li>e. Isopleth Method (Iso-height or Isothermal)</li> <li>f. Flow diagram</li> </ol> (At least 01 example of each manually and using computer)	<b>06</b>	
3.	<b>Surveying</b>	1. Definition of Surveying. 2. Types of North Direction (True, Magnetic and Grid North) 3. Types of Survey (Any three) <ol style="list-style-type: none"> <li>a. Plane Table Survey: (Radiation Method and Intersection Method)</li> <li>b. Prismatic Compass Survey.</li> <li>c. GPS Survey and plotting</li> <li>d. Demonstration of Total Station</li> <li>e. Introduction of Drone Survey</li> </ol> 4. Measurement of land: <ol style="list-style-type: none"> <li>i) Measurement of survey field</li> <li>ii) Example on measurement of area (Circle, Square, Rectangle, Triangle, Uneven shape)</li> <li>iii) Conversion of area (hector into Acre, Square km into square meter, square meter to Square Feet)</li> </ol>	<b>08</b>	<b>04</b>
4.	<b>Excursion / village/city survey and report writing</b>	Study tour to places of geographical interest anywhere in the country Or Socio- economic survey of village /city	<b>04</b>	

**Learning Outcomes:**

CO1: Students will discover modern methods of Cartography.

CO2: Construct techniques of data representation manually and on computer.

CO3: Carry out surveying with the help of surveying instruments and prepare a map.

CO4: Participate in a study tour and prepare a study tour report.

CO5: Know how to measure the area in real life.

**Reference Books:**

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,
12. Saha P., Basu P., 2007, Advanced Practical Geography, Books and Allied (P) Ltd, Kolkata
13. Advanced Practical Geography: 2007, Saha P., Basu P., Books and Allied (P) Ltd, Kolkata.

**SYBA Geography**  
**Syllabus for Semester III**  
**Economic Geography – I (CC 1C)**  
**Subject Code: 23-GG-A2333**

**Total Credits: 04**

**Total Periods: 48**

**Objectives:**

1. To introduce the students to the basic principles and concepts of Economic Geography.
2. To acquaint students with the applications to Economic Geography.
3. To integrate various factors of economic development and dynamic aspects of Economic Geography.

<b>Sr. No.</b>	<b>Topic</b>	<b>Sub Topics</b>	<b>Teaching Hours</b>	<b>Total Credits</b>
1	Introduction	<ol style="list-style-type: none"> <li>1. Definition, nature and scope of Economic Geography</li> <li>2. Need and significance of Economic Geography</li> <li>3. Economic Geography and its relationwith Social Sciences</li> <li>4. Approaches of the study of Economic Geography</li> </ol>	12	<b>03</b>
2	Economic Activities	<ol style="list-style-type: none"> <li>1. Introduction and concept of economic activity with problems and prospect</li> <li>2. Primary Activities</li> <li>3. Secondary Activities</li> <li>4. Tertiary Activities</li> </ol>	12	
3	Natural Resources	<ol style="list-style-type: none"> <li>1. Concept of Natural resources</li> <li>2. Classification of Natural Resources</li> <li>3. Renewable and Non Renewable Resources <ul style="list-style-type: none"> <li>• <b>Mineral Resources-</b> Iron Ore and Manganese</li> <li>• <b>Energy Resources-</b> Coal, Mineral Oil, Natural Gas, Hydroelectricity, Solar Energy, Wind Energy, Geothermal Energy, Nuclear Energy.</li> </ul> </li> <li>4. Conservation of Resources</li> </ol>	12	
4	Agriculture	<ol style="list-style-type: none"> <li>1. Introduction to Agriculture</li> <li>2. Role of Agriculture in Indian economy</li> <li>3. Factors influencing agriculture in India. <ol style="list-style-type: none"> <li>a. Physical</li> <li>b. Socio-economic</li> <li>c. Political and Cultural</li> </ol> </li> <li>4. Agro-based industries in India <ol style="list-style-type: none"> <li>a. Cotton Industries</li> </ol> </li> </ol>	12	

		b. Sugar Industries c. Dairy Industries 5. Agro –Tourism	
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### Learning Outcomes:

CO1: Students can differentiate between activity and Economic activity.

CO2: Students can classify various economic activities like primary, secondary and tertiary.

CO3: Understand the importance of resources and make wise use of them.

CO4: Know significance of agriculture in the economy and classify agriculture on the basis of various parameters.

### Reference Books :

1. Gautam A., 2010, Advance Economic Geography, Sharda Pustak Bhavan, Allahabad
2. Chauhan R. N., 2007, Basic Principles of Economic Geography, ABD Publishers, Jaipur
3. Padey P. N., Economic Geography, Nirali Publication ,Pune
4. Sadhukhan S. K., 1994, Economic Geography An Appraisal of Resources, S Chand & Company Ltd ,New Delhi
5. Roy P., Mukherjee S., 1993, Economic Geography: Resource Appraisal of resources- New Central Book Agency, Calcutta
6. Mannur H. G., 2008, International Economics, Vikas Publishing House PvtLtd,Noida
7. Siddharth K., 2003, Economic Geography, Theories, Processes &Patterns, Kisalaya Publications Pvt, Ltd, Noida
8. Husain M., 2008, Geography of India, Tata McGraw Hill, New Delhi
9. Bhat L. S., 1973, Regional Planning in India, Statistical Publishing Society, Kolkata
10. Desai V,1991, Fundamentals of Rural Development, Rawat Publications, New Delhi
11. Paranjape, Gupte, Karmarkar, 1974, Economic & Commercial Geography, Nirali Publication, Pune.
12. More J. C., 2014, Geography & Agriculture For MPSC Examination, Atharv Publication, Pune
13. Pagar S.D., Thorat A. M., More J. C., 2015, Agriculture Geography, AtharvPublication, Pune.
14. Sanjay Patil, Pacharane, Suryavanshi, Chaudhari, 2013, Economic Geography, Atharv Publication, Pune.

**SYBA Geography**  
**Syllabus for Semester IV**  
**Economic Geography – II (CC 1D)**  
**Subject Code: 23-GG-A2433**

**Total Credits: 04**

**Total Periods: 48**

**Objectives:**

1. To integrate the various factors of economic development.
2. To acquaint students with the dynamic aspects of Economic Geography.

Sr.No.	Topic	Sub Topics	Teaching Hours	
1	Trade and Transport	1. Modes of Transportation and their characteristics a) Road b) Rail c) Air d) Water e) Pipeline. 2. Importance of transportation for Economic Development 3. Types of Trade a) Domestic b) International 4. India's International Trade	12	<b>03</b>
2	Industries	1. Factors influencing industries. 2. Weber's theory of industrial location 3. Major industrial regions in India a) Iron and steel Industry b) Automobile Industry c) IT Industry	12	
3	Regional Planning	1. Concept and Objectives of regional planning 2. Significance of regional planning 4. Regional and sectoral imbalance in India	12	
4	Rural Development in India	1. Concept and parameters of rural development 2. Government schemes for rural development a) IRD Programme b) DPAD Programme c) MNREGA 3. Socio-economic Transformation in Rural India	12	



### **Learning Outcomes:**

- CO1: Students know the significance of industries in economic development and classify.
- CO2: Differentiate between various modes of transport.
- CO3: Understand the need for trade and analyze the causes behind the domestic and international trade.
- CO4: Recognise the causes and effects of uneven rating of Economic Development in the world.

### **Reference Books:**

1. Gautam A., 2010, Advance Economic Geography, Sharda Pustak Bhavan, Allahabad
- Chauhan R. N., 2007, Basic Principles of Economic Geography, ABD Publishers, Jaipur
2. Padey P. N., Economic Geography, Nirali Publication, Pune
3. Sadhukhan S. K., 1994, Economic Geography An Appraisal of Resources, S Chand & Company Ltd, New Delhi
4. Roy P., Mukherjee S., 1993, Economic Geography: Resource appraisal of Resources-New Central Book Agency, Calcutta
5. Mannur H. G., 2008, International Economics, Vikas Publishing House Pvt Ltd, Noida
6. Siddharth K., 2003, Economic Geography, Theories, Processes & Patterns, Kisalaya Publications Pvt, Ltd, Noida
7. Husain M., 2008, Geography of India, Tata McGraw Hill, New Delhi
8. Bhat L. S., 1973, Regional Planning in India, Statistical Publishing Society, Kolkata
9. Desai V., 1991, Fundamentals of Rural Development, Rawat Publications, New Delhi
10. Paranjape, Gupte, Karmarkar, 1974, Economic & Commercial Geography, Nirali Publication, Pune.
11. More J. C., 2014, Geography & Agriculture for MPSC Examination, Atharv Publication, Pune
12. Pagar S.D., Thorat A. M., More J. C., 2015, Agriculture Geography, Atharv Publication, Pune.
13. Sanjay Patil, Pacharane, Suryavanshi, Chaudhari, 2013, Economic Geography, Atharv Publication, Pune.

**SYBA Geography**  
**Syllabus for Semester III**  
**(SEC 2A) Remote Sensing**  
**Subject Code: 23-GG-A2334**

**Total Credits: 02**

**Total Periods: 30**

**Objectives:**

1. To introduce the students about the basic concepts of Remote Sensing.
2. To acquaint the students with the utility of RS and its applications.
3. To inculcate the skill of satellite image interpretation among the students.

Sr. No.	Topic	Sub Topics	Teaching Hours	Total Credits
1	Introduction to Remote Sensing	1. Concept, Definition and Types of RS 2. Development of RS in India 3. Stages in RS 4. Electromagnetic Spectrum 5. Types of Remote Sensing Platform 6. Types of Satellites 7. Functions of Satellites 8. Applications of RS	10	2
2	Image Interpretation	1. Aerial Photographs 2. Satellite Images 3. Elements of Image Interpretation 4. Visual Image Interpretation of Satellite Images i.e. IRS or LANDSAT	10	
3	Software based Practical	1. Google Earth 2. Google Map 3. Image Downloading through Bhuvan/ USGS 4. Layer Stacking 5. Image Enhancement Image Classification – Supervised & Unsupervised	10	

**Course Outcomes:**

On successful completion of this course, the students will be able to -

- Obtain knowledge about the concepts of remote sensing.
- Acquire skills in visual interpretation of satellite images.

**Reference Books:**

- Anji Reddy, M. (2008): Textbook of Remote Sensing and Geographic Information System, B.S. Publication, Hyderabad.
- Bhatta B., (2011): Remote Sensing and GIS, Oxford University Press, India.
- Campbell, J. (2002): Introduction to Remote Sensing, Taylor & Francis, London.
- Cracknell, A.P. (1991): Introduction to Remote Sensing, Tylor & Francis, London.

- Gupta, R.P. (1990): Remote Sensing Geology. Springer Verlag.
- Heywood, I., Steve, C. and Cornelius, S. (2003): An Introduction to Geographical Information Systems, Pearson Education.
- Jensen, J. R. (2000): Remote Sensing of the Environment: An Earth resource Perspective, Prentice Hall.
- Jensen, J. R. (2005): Introductory Digital Image Processing, Prentice Hall, New Jersey.
- Joseph, G. (2004): Fundamentals of Remote Sensing, Universities Press, Hyderabad, India.
- Karlekar, S. (2006): Doorsamvedan - Remote Sensing (Marathi), Diamond Publications, Pune.
- Karlekar, S. (2017): Dursamvedan Aani Bhougolik Mahiti Pranali (Marathi), Diamond Publications, Pune.
- Lillesand, T. M., Kiefer, R. W. and Chipman, J. W. (2016): Remote Sensing and Image Interpretation, 6<sup>th</sup> Edition, Wiley India.
- Rao R. M. (2002): Geographical Information Systems, Rawat Publication.
- Sabins, F. F. (1996): Remote Sensing: Principles and Interpretation, W.H. Freeman and Company, San Francisco.

**SYBA Geography**  
**Syllabus for Semester IV**  
**(SEC 2B) Geographical Information System**  
**Subject Code: 23-GG-A2434**

**Total Credits: 02**

**Total Periods: 30**

**Objectives:**

1. To introduce the students about the basic concepts of GIS.
2. To acquaint the students with the utility and applications of GIS Technique.
3. To create the awareness about Geospatial technology among the students.
4. To inculcate skill of map making among the students by using GIS Technique.

Sr. No.	Topic	Sub Topics	Teaching Hours	Total Credits
1	Introduction to GIS	1. Definition of GIS 2. History of GIS Development 3. Objectives of GIS 4. Functions of GIS 5. Components of GIS 6. Applications of GIS	08	<b>2</b>
2	Data Types & Models	1. Spatial Data – Concept, Sources; Data Models – Raster & Vector 2. Non-spatial Data – Concept, Sources; Data Models – Relational, Network, Hierarchical & Object-orientated	08	
3	Software based Practical	1. Types of GIS and GIS Soft wares 2. Geo-referencing of Topo sheet/Map 3. Digitization of Point, Line & Polygon for map making 4. Data Attachment Creation of Layout and Map	14	

**Course Outcomes:**

On successfully completion of this course, the students will be able to -

- Comprehend knowledge about the concepts in GIS.
- Acquire skills of map making using GIS.

**Reference Books:**

- Burrough, P. A. and McDonnell, R. A. (2000): Principles of Geographical Information Systems, Oxford University Press, New York.
- Chang, K. T. (2008): Introduction to Geographic Information Systems, Avenue of the Americas, McGraw-Hill, New York.
- Debashis, C. and Sahoo, R. N. (2015): Fundamentals of Geographic Information System, Viva Books Private Limited.
- DeMers, M. N. (2008): Fundamentals of Geographic Information Systems, John Wiley and Sons, New Delhi.
- Heywood, I., Cornelius, S. and Carver, S. (2011): An Introduction to

Geographical Information Systems, Pearson Education, New Delhi.

- Karlekar, S. (2007): Bhaugolik Mahiti Pranali (GIS), Diamond Publications, Pune.
- Korte, G. B. (2001): The GIS Book, Onward Press, Bangalore.
- Longley, P. A., Goodchild, M. F., Maguire, D. J. and Rhind, D. W. (2002): Geographical Information Systems and Science, John Wiley & Sons, Chichester.
- Lo Albert, C. P., Yeung and Albert K. W. (2002): Concepts and Techniques of Geographical Information Systems, Prentice Hall of India, New Delhi.
- Pandey, J. and Pathak D. (2015): Geographic Information System, TERI Press, The Energy and Resources Institute, New Delhi.
- Paul, A. L., Michel, F. G., Maguire, D. J. and Rhind, D.W. (2002): Introduction to Geographic Information Systems and Science, John Wiley and Sons Ltd.