

**Punyashlok Ahilyadevi Holkar Solapur University,  
Solapur**



NAAC Accredited-2015

'B' Grade (CGPA 2.62)

**Name of the Faculty: Science & Technology**

**CHOICE BASED CREDIT SYSTEM (True Spirit)**

**Syllabus: Geography**

**Name of the Course: M.A./M.Sc. II (Sem.– III & IV)**

**(Syllabus to be implemented from w.e.f. June 2021)**

**M.Sc. II - Geography C B C S w.e.f.2021**

Sem.-III	Code	Title of the Paper	Semester Exam.			L	T	P	Credits
			UA	IA	Total				
		<b>Hard Core</b>							
Geog.	HCT 3.1	Agricultural Geography	80	20	100	4	--	--	4
	HCT 3.2	Settlement Geography	80	20	100	4	--	--	4
<b>Soft Core (Any one)</b>									
	SCT 3.1	Biogeography	80	20	100	4	--	--	4
	SCT 3.2	Geography of Marketing	80	20	100	4	--	--	
<b>Open Elective (Anyone)</b>									
	OET 3.1	Cultural Geography	80	20	100	4	--	--	4
	OET 3.2	Commercial Geography	80	20	100	4	--	--	
<b>Practical</b>									
	HCP 3.1	Quantitative Techniques in Economic Geography	40	10	50	--	--	2	2
	HCP 3.2	Introduction to Computer	40	10	50	--	--	2	2
<b>Soft Core (Any one)</b>									
	SCP 3.1	Applications of Computer in Geography	40	10	50	--	--	2	2
	SCP 3.2	Map Projection and Cartography	40	10	50	--	--	2	
<b>Open Elective (Anyone)</b>									
	OEP 3.1	Quantitative Techniques in Population & Settlement Geography	40	10	50	--	--	2	2
	OEP 3.2	Global Positioning System and Geographical Information System	40	10	50	--	--	2	
		Tutorial		25		-	-	-	1
	<b>Total for Third Semester</b>		<b>480</b>	<b>145</b>	<b>625</b>				25
<b>Semester IV</b>									
-IV	Code	Title of the Paper	Semester Exam			L	T	P	Credits
Geog		<b>Hard Core</b>	UA	IA	Total				
		Practical's							
	HCT 4.1	Regional Planning and Development in India	80	20	100	4	--	-	4
	HCT 4.2	Development of Modern Geography	80	20	100	4	--	-	4
	HCT 4.3	Political Geography	80	20	100	4	--	-	4
<b>Soft Core (Any one)</b>									
	SCT 4.1	Geography of Tourism	80	20	100	4	--	-	4
	SCT 4.2	Geography of Manufacturing	80	20	100	4	--	-	
<b>Practical</b>									
	HCP 4.1	Introduction to Remote sensing and GIS	40	10	50	--	--	2	2
	HCP 4.2	Application of Remote Sensing	40	10	50	--	--	2	2
	HCP 4.3 (MP)	Research Methodology and Project work	80	20	100	--	--	4	4
		Tutorial		25		-	-	-	1
	<b>Total for Forth Semester</b>		<b>480</b>	<b>145</b>	<b>625</b>	-	-	-	25
	<b>Short Term Course - Certificate Course in RS, GIS and GPS</b>		<b>100</b>		<b>100</b>				<b>4</b>

L = Lecture, T= Tutorials, P= Practical, IA= Internal Assessment,4 Credits of Theory = 4 Hours of teaching per week, 2 credits of Practical = 4 Hours per week, HCT= Hard core theory, SCT= Soft core theory, HCP= Hard

core Practical, SCP= Soft core Practical, OET= Open elective theory, OEP= Open elective Practical, MP= Major Project

**Punyashlok Ahilyadevi Holkar Solapur University, Solapur**

**M. A. / M. Sc. Geography II, SEMESTER-III**

**HCT 3.1 - Paper-IX – Agricultural Geography**

Teaching Hours – 60, Credit – 04

Total Marks- 100

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**Learning objective: -**

- 1) To familiarize the students with concept origin and development of agriculture; and to examine the role of agricultural determinants. The course further aims to make familiarize the students with the application of various theories, models, Agricultural system, and productivity.
- 2) To reexamine green revolution in India, contemporary issues & agricultural problems in Solapur district.

**Unit I: Agricultural Geography15**

1.1 Definition, Nature & Scope

1.2 Origin & Evaluation of Agriculture

1.3 Approaches to the study of Agricultural Geography: 1) Systematic 2) Regional

**Unit II: Determinants of Agriculture**

**15**

2.1 Physical, economic and technological Determinants

2.2 World Agricultural systems: Location, distribution, types and characteristics of Shifting Cultivation, Intensive, Extensive, Plantation, Mixed Agriculture and Dairy Farming.

**Unit III: Agricultural regions15**

3.1 Concepts and techniques of delimitation of agricultural regions- Crop combination, Crop Diversification

3.2 Measurements of agricultural Productivity; Agricultural land use Model- Von Thunen's Model, & Jonasson's Model.

**Unit IV:Green Revolution15**

4.1 Green Revolution in India-Nature and impact of Socio-Economic

4.2 Problems and prospects in the adoption of Green Revolution

4.3 Ecological implications of the greenrevolution

4.4 Contemporary issues: food, nutrition and Hunger, Agricultural policies in India.

**Learning Outcome:-**

1. Student will explain fundamentals and development of agriculture geography.
2. Student will list agricultural determinants and Practices.
4. Student will analyze techniques of delimitation of agricultural regions and models in agricultural geography.
5. Student will examine green revolution and Contemporary agricultural issues and policies.

**References:-**

<b>Sr. No.</b>	<b>Name of Books</b>	<b>Name of Authors</b>
1	Geography of Agriculture; Themes in Research. Prentice-Hall Englewood cliff. London.	Gregor H. F. (1970)
2	Agricultural Geography. Oxford University Press, London	Ilbury B.W. (1983)
3	Agriculture and Environment Change John Wiely, London.	Mannlon A. M. (1995)
4	Studies in Agricultural Geography/Rajesh Publication New Delhi	Mohammed Ali. (1978)
5	Agricultural Geography, New Delhi	Singh Jasbir&Dhillon S. S.
6	Agricultural Geography, Newton Abbot	Tarrant J. R. (1974)
7	Poverty Agriculture & Economic Growth, Vikas Publication New Delhi	Bhatia B. M. (1977)
8	The agricultural Systems of the World, Cambridge University Press	Grigg D. B. (1973)
9	Systematic Agricultural Geography, Rawat Publication Jaipur (India)	HusainMajid (1999)
10	Agricultural Geography, London	Symon. (1968)
11	Perspective in Agricultural Geography, Six Volume	Noor Mohammed
12	Green-Revolution How is it? Vishal Publication Kurukshetra.	Jasbir Singh (1973)

**Learning objective: -**

- 1) To familiarize the students with the conceptual, theoretical and empirical development in settlement studies in Geography.
- 2) To provide an idea to the students about the national issues of settlements.

**Unit I: Settlement Geography 15**

- 1.1 Definitions, nature and scope
- 1.2 Significance and evolution of human settlement
- 1.3 Trend and growth of Human Settlement.

**Unit II: Rural Settlement 15**

- 2.1 Site and situation, types & pattern, size and growth of rural settlement,
- 2.2 Functional Classification of Rural settlement,
- 2.3 House types-based on building material,
- 2.4 Environmental, socio-economic, & Cultural Factors influencing the dynamic structure of Rural Settlement.

**Unit III: Urban Geography 15**

- 3.1 Meaning, nature and scope of Urban Geography
- 3.2 Functional classification of Urban centers
- 3.3 Morphological structure of cities-The Concentric Zone Theory, The Sector Theory, The multinuclei Theory.

**Unit IV: Conceptual and theoretical framework in settlement Geography 15**

- 4.1 Theories of Christaller and August Losch and their applications.
- 4.2 Measurement of centrality and hierarchy
- 4.3 Concept of Primate City, city region and Rank-size rule
- 4.4 Issues, perspective and policies on population & human Settlement

**Learning outcome: -**

- 1 Student will explain fundamentals and development of Settlement geography
2. Student will interpret determinants, types, pattern and growth of rural settlement.
3. Student will underline functional classification and morphological structure of urban centers.
4. Student will examine Concepts, issues, policies and theories of Settlement geography.

## Reference Books

Sr. No.	Name of Books
1	Ambrose, Peter, Concepts in Geography Vol.-I Settlement Pattern, Longman 197.
2	Census of India, House types and Settlement Patterns of Villages in India, GOI, New Delhi 1961.
3	Singh R. L. and KashiNath Singh (Editors); Readings in Rural Settlements Geography, National Geographical Society of India. Varanasi, 1975.
4	Ucko, M.J., Ruth Tringham and G.W. Dimbleby (editors), Man, Settlement and Urbanism, Duckworth 1972.
5	United Nations Centre for Human Settlements (HABITAT), An Urbanising World, Global Report on Human Settlements, Oxford University Press for HABITAT 1996.
6	Hudson, F. S. (1977) Geography of Settlement Mcdonadls and Evas New York
7	Singh R. V. Geography of settlement, Rawat Pub. Jaipur
8	Mandel R B (1979): Introduction to Rural settlement

**Learning Objective: -**

- 1) To introduce the student the concept of Biogeography and its interpretation.
- 2) To introduce the students with climate, physical environment and their interactions with the living organisms.
- 3) To introduce the students with the living and nonliving environments and their interactions with special reference to India.
- 4) To make aware about conservation of biodiversity and biotic resources.

**Unit I: Introduction 15**

1.1 Definition, Nature and scope

1.2 Significance and Development.

1.3 Branches of Biogeography

**Unit II: Ecosystem15**

2.1 Concept and Meaning

2.2 Elements & typesHabitat, Plant & Animal association

2.3 Functions of Ecosystem-Food Chain, Food web, energy pyramid with example.

2.4 Concept of Biogeography Region &Biomes; Major Biomes in the World- Tropical & Temperate

Forest, Grassland, Desert& mountain

**Unit III: Introduction to Plant and Zoo Geography:15**

**A . Plant Geography**

3.1 Factors influencing on plants

3.2 World-distribution of forests

3.3 Plant-evolution, adoption, speciation, extinction, colonization & dispersalImportance of Plants.

**B. Zoo Geography:**

3.4 Relationship of zoogeography with the environment.

3.5 Migration& dispersal of animals.

3.6 Causes of mitigation and their effects.

**Unit IV:Paleorecords**

**15**



- 4.1 Paleorecords of plants and animals
- 4.2 Paleorecords of climatic changes
- 4.3 Records of environmental changes in India.

**Conservation of biotic resources:**

- 4.5 National forest policy of India.
- 4.6 Conversation of biotic resources.
- 4.7 Legal protection to plants and animals

**Learning outcome: -**

1. Student will describe the general features of biogeography.
2. Student will explain Concept and Functions of Ecosystem and Major Biomes in the World.
3. Student will examine the geographical features of flora and fauna.
4. Student will analyze Paleorecords and Conversation of biotic resources

**Reference Books**

Sr.No.	Name of Books	Name of Authors
1	Man & Environment in India through ages, Books & Books	Agarwal D. P. 1972
2	Earth an living planet, ELBS, London.	Bradshaw M. J. 1979
3	Biogeography an ecological and evolutionary approach	Cox C.D. & Moore P.D. 1993
4	Environment and Ecology of early man in northern India, R.B. Publication Corp.	Gaur R. 1987
5	Fundamentals of Biogeography Rout ledge, USA	Huggett R. J. 1998
6	Indian geosphere – biosphere, Her Anand Publication Delhi	Khoshoo T.N. & Sharma M. (edi) 1991
7	Encyclopedia of Environmental Science. Megrew Hill.	Lapedes D. N. (edi) 1974
8	Basic Biogeography 2 <sup>nd</sup> edition Longman, London	Pears N. 1985
9	Biogeography, English Language Book Society, London.	Robinson H. 1982
10	Biogeography: - Natural & Cultural Longman, London	Simmon I. G. 1994
11	Biogeography: - A study of plants & ecosphere. 3 <sup>rd</sup> edition. Oliver & Boyd, USA.	Tivyj. 1992

**Punyashlok Ahilyadevi Holkar Solapur University, Solapur**  
**M. A. / M. Sc. Geography II, SEMESTER-III**

**Learning objectives:-**

- 1) To familiarize the students with the aspects of marketing which have a bearing on the subject matter of Geography.
- 2) To acquaint the students with Nature, Scope and Significance of Marketing Geography with locational aspects.
- 3) To understand the morphology of Markets with its concepts, components and shopping centers within and between regions.
- 4) To understand the market channels with different trades and services.
- 5) To understand the theoretical frame work of central places.
- 6) To understand the role of market centers in Regional Planning and development..

**Unit I: Introduction to Geography of Marketing15**

- 1.1 Meaning Nature, Scope, and significance of geography of marketing
- 1.2 Concepts of market- market center, marketing, market area and market cycle
- 1.3 Role of Market Centers in regional planning and development

**Unit II: Market -Analysis15**

- 2.1 Classification of Markets: Based on periodicity, census, status, hierarchy & location.
- 2.2 Locational Analysis: Location in relation to transportation, Agricultural land use, surrounding villages.

**Unit III: Market Morphology15**

- 3.1 Concepts, components, Types of shopping centers
- 3.2 Marketing Channels:- Retailing, whole – selling and services

**Unit IV:Theoretical frame work15**

- 4.1 Central Place theory of Christaller and August Losch,
- 4.2 General attraction theory and Reilly – Break point theory

**Learning outcome: -**

1. Student will describe basic concept of Marketing Geography
2. Student will illustrate the Classification and Locational Analysis of Markets
3. Student will explain Market Morphology
4. Student will examine the theories in marketing Geography.

### Reference Books

Sr. No.	Name of Book	Name of Authors
1	Geography of Marketing, Longman, London	Garnier B.J. & Debber A. (1977)
2	Marketing Geography, Rawat Publication, Jaipur	Saxena H. M. (1990)
3	Geography of Markets centers and Retail distribution, Prentice Hall, Englewood N.J.	Berry B.J.L. (1964)
4	Periodic Markets, Daily Markets and fairs A bibliographic centre for development studies, swan sec	Bronmtey. R. J. (1975)
5	Marketing Geography, Mathewe & Co. London	Daview R.L. (1976)
6	Market towns and spialial development in India, N.C.A.E.R. New Delhi	N.C.A.E.R. (1983)
7	Spatial organization of market centres.	Dixit R.S. (1988)

**Punyashlok Ahilyadevi Holkar Solapur University, Solapur**  
**M. A. / M. Sc. Geography II, SEMESTER-III**  
**OET 3.1 - Paper-XII – Cultural Geography**

**Learning objective: -**

- 1) To understand diversity of culture in the world as well as in India.
- 2) To comprehend the diffusion of various ethnic traits and religions.
- 3) To understand the relationship between culture and pattern of living and economic development.

**Unit I: Introduction to Cultural Geography15**

- 1.1 Evolution, definition, nature, scope
- 1.2 Element and component of culture
- 1.3 Significance of cultural Geography

**Unit II:Cultural Landscapes15**

- 2.1 Bases of cultural diversity, Race, Religion and language
- 2.2 Cultural diversity and regionalization in India
- 2.3 Concept of cultural hearths and cultural diffusion
- 2.4 world cultural realms

**Unit III:Cultural Structure15**

- 3.1 Socio-Cultural development and wellbeing indicators
- 3.2 Cultural pattern of rural and urban society
- 3.3 Social and cultural processes in the developing countries with special reference to India

**Unit IV:Cultural Dimensions15**

- 4.1 Tribal groups, diffusion of Religion and Ethnic traits in the world.
- 4.2 Economic activities and cultural adaptation- Agricultural, Industrial and modern technological changes and their geographic implications.

**Learning outcome: -**

1. Student will explain fundamentals and importance of Cultural geography.
2. Student will interpret the knowledge of cultural diversity
3. Student will analyze cultural processes and pattern.
4. Student will examine the cultural dimensions

**Reference Books**

<b>Sr. No.</b>	<b>Name of Books</b>	<b>Name of Authors</b>
1	Social Geography, Rawat Publication Jaipur	Ahmad Aijarudin (1999)
2	A Geography of Mankind, Mc-grew-K Book Co. New York	Broek, Jan O. M. & Webb. John W. (1973)
3	An introduction to cultural Geography, Unwin Hyman London.	Jackson Peter (1989)
4	Cultural geography, - People places and Environment west Publishing Co. New york.	Jackon, Richard H and Loyd E. Hudman (1990)
5	An Introduction to Social Geography, - Oxford University Press Oxford.	Jones, Emrys and Eyles John (1997)
6	Human Geography – Rawat Publication Jaipur.	MajidHussain (1994)
7	India culture Society and economy Inter India Publication, New Delhi	Mukherjee A. B.K. Arijazuddin A (1985)
8	A place in the world cultures and Globalization, Oxford University, New York	Massey D. K. Jess P. (1995)
9	Cultural Geography – Rout, Ieldge, Publication, London.	Crang Mike (1998)

**M. A. / M. Sc. Geography II, SEMESTER-III**  
**OET 3.2 - Paper-XII – Commercial Geography**

Teaching Hours – 60, Credit – 04

Total Marks- 100

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**Learning objectives:**

1. To understand the basic concept of commercial Geography.
2. To make the student of commerce aware about the relationship between the geographical factors and economic activities.
3. To acquaint the student about dynamic aspect of commercial Geography.
4. To provide the information about concept of population and tourism.

**Unit I: Introduction to Commercial Geography** **15**

- 1.1 Definition, Nature and Scope of Commercial Geography
- 1.2 Approaches to the study of Commercial Geography
- 1.3 Importance of Commercial Geography

**Unit II: Geographical environment and Commerce** **15**

- 2.1 Physical and Cultural Environment
- 2.2 Classification of economic activities
- 2.3 Contribution of economic activities in national development

**Unit III: Trade, Transport and Industries** **15**

- 3.1 Geographical factors affecting on international trade
- 3.2 India's foreign trade
- 3.3 Major International Rail, Sea & Air routes
- 3.4 Importance of transportation in commercial development
- 3.5 Major industries in India-Iron & steel, Cotton Textile, Automobile, IT Industries

**Unit IV: Population and Tourism** **15**

- 4.1 Concept of optimum population, over population and under population
- 4.2 Geographical factor influencing tourism
- 4.3 Tourism industry and Agro-tourism in India.

**Learning outcome: -**

1. Student will describe basic concept of Commercial Geography
2. Student will illustrate the Correlation between Geographical environment and Commerce
3. Student will explain the roll of trade, transport and industries in commercial Geography.
4. Student will explain an importance of Population dimensions and tourism industries in Commercial Geography.

**References:**

1. Alexander J.W. (1976): Economic Geography, Prentice hall of India, New Delhi.
2. Robinson H & Bamford C.G. (1978): Geography of Transport, Macdonald & Evans USA.
3. Commercial Geography – Sir Dudley Stamp
4. Economic and Commercial Geography – Gupta
5. Watts H.D. (1987) : Industrial Geography, Longman Scientific & Technical New York

**Learning objectives:**

- 1) To understand the students to the quantitative techniques in agricultural geography.
- 2) To acquaint the student to the quantitative techniques applied in marketing geography.

**Unit I: Quantitative Techniques in Agricultural Geography 25**

- 1.1 Measurement of agricultural productivity- Kendall’s method, Sapre and Deshpande’s method.
- 1.2 Crop Combination method of Weaver and Doi.
- 1.3 Crop Concentration-Bhatia’s method.
- 1.4 Crop Diversification-Bhatia’s method

**Unit II: Application of Quantitative Techniques in Marketing Geography 20**

- 2.1 Basic Gravity Model.
- 2.2 Law of Retail Gravitation
- 2.3 Breaking Point Theory
- 2.4 Accessibility of Transport network.

**Journal**

**Learning outcome: -**

1. Students will measure the agriculture productivity, crop combination, crop concentration and crop diversification methods by various Quantitative Techniques.
2. Student will examine the quantitative Techniques in Marketing Geography

**Reference Books**

Sr. No.	Name of Books
1	Gregary, S. Statistical Methods and the Geographers. Longman Group Ltd.
2	Hammond. R and McCullogh,-Quantitative Techniques in Geography: an introduction, Clarendon Press, Oxford.
3	Woodcock R. G. & Bailey M. J. – Quantitative Geography, Mac Donald & Erans Ltd.



	London.
4	Elhance D. N. – Fundamentals of Statistics, KitabMahal, Allahbad.
5	MahmoodAslam Statistical Methods in Geography.
6	Cole and king-Quantitative Geography.
7	Saxena. H. M. Geography of Marketing; Concepts and methods, New Delhi
8	Singh Jasbir-An Agricultural Geography, Vishal Publication, Kurukshetra.
9	Clarke. J. I. – Population Geography, Pergamoh Press, London.
10	Chandana and siddhu – Population Geography

**Punyashlok Ahilyadevi Holkar Solapur University, Solapur**  
**M. A. / M. Sc. Geography II, SEMESTER-III**  
**HCP 3.2 - (Practical Paper No. X) – Introduction to Computer**

**Learning objectives: -**

- 1) To understand the terms, concepts, involved in computer.
- 2) To familiarize the student with Internet, Browser and web page.

**Unit I: Introduction to computer 25**

1.1 Definition, characteristics, operating system, Introduction to Dos, Window, excel.

1.2 Application of computer in Geography

**Unit II: Computer and Network 20**

2.1 Importance of information technology in Geographical studies - advantages of Internet. Browsing and surfing the geographical sites Web page. Downloading files

**Journal****Learning outcome: -**

1. Student will explain fundamental concepts and application of computer.
2. Student will describe basic facts of computer Networking.

**Reference Books**

Sr. No.	Name of Books	Name of Authors
1	Computer Programming for Geographer, Longman London	D. J. Unwin & J. A. Dawson (1987)
2	Computer in Geography, Longman Scientific and Technical, London.	David J. Magthre (1989)
3	Computer Application in Geography, John Wiley & Sons, New York U. S. A.	Paul M. Mather (1993)
4	Quantitative Geography	Cole and King (1968)
5	Quantitative Technique in Geography, Clarendon press – Oxford	Himmond B. (1974)
6	Computer System and Application,	Rustan Shorff
7	Computer System and Application, BPB publication, new Delhi	Sinha & Sinha (2005)

**Punyashlok Ahilyadevi Holkar Solapur University, Solapur**  
**M. A. / M. Sc. Geography II, SEMESTER-III**  
**SCP 3.1 - (Practical Paper No. XI) – Applications of Computer in Geography**

**Learning objectives: -**

- 1) To families with geographical data and data structure.
- 2) To acquaint the student to the computer cartography.

**Unit I: Computer and Geographic data****20**

1.1 Scale of measurement- Nominal, Ordinal, Interval, Ratio; Data Structure, Location of data.

**Unit II: Computer in Cartography**

2.1 Simple exercise for representation of Geographical data: Histogram, Bar graph, line graph, multiple line graph, scatter diagram, pie chart (diagram).

2.2 Computation Analysis: Measures of central tendency, Quartile deviation, standard deviation, correlation 'r' value and trend line with help of computer.

**Journal****Learning outcome: -**

1. Student will explain the representation of geographic data using various computational methods by computer.
2. Student will apply knowledge to prepare and design maps and graphs with the help of computer software

**Reference Books**

Sr. No.	Name of Books	Name of Authors
1	Computer Programming for Geographer, Longman London	D. J. Unwin & J. A. Dawson (1987)
2	Computer in Geography, Longman Scientific and Technical, London.	David J. Magthre (1989)
3	Computer Application in Geography, John Wiley & Sons, New York U. S. A.	Paul M. Mather (1993)
4	Quantitative Geography	Cole and King (1968)
5	Quantitative Technique in Geography, Clarendon press – Oxford	Himmond B. (1974)
6	Computer System and Application,	Rustan Shorff
7	Computer System a Application, BPB publication, new Delhi	Sinha & Sinha (2005)

**Punyashlok Ahilyadevi Holkar Solapur University, Solapur****M. A. / M. Sc. Geography II, SEMESTER-III****SCP 3.2 - (Practical Paper No. XI) – Map Projection and Cartography**

**Learning objectives: -**

1. To understand terms and types of map projection.
2. To acquaint the students to the cartographic techniques.

**Unit I: Map Projection****25**

1.1 The Earth: its shape and size; Datum and co-ordinate systems; Geographical co-ordinate, Projected Co- ordinate and grid system.

1.2 Choice and classification of map projections.

1.3 Construction, properties and uses of projections: 1) Stereographic Polar Zenithal projection. 2) Orthographic Polar Zenithal Projection. 3) Bonne's Conical Projection. 4) Conical Equal Area Projection with one standard Parallel 5) Simple Cylindrical Projection. 6) Cylindrical Equal Area Projection.

**Unit II: Cartography 20**

1.1 History and Development of Cartography

1.2 Sources of cartographic data, Scale: types & importance, Cartographic methods and techniques for preparation of maps and diagrams, General maps

1.3 Types and applications, Thematic maps: types and applications

**Journal****Learning outcome: -**

1. Student will illustrate the structural arrangement of Geographical co-ordinate systems and map projections
2. Students will express knowledge about various cartographic techniques for preparation of maps and diagrams.

**References:**

1. Hofmann-Wellenhof, B.,and Moritz, H. (2006):Physical Geodesy (2nd d.),springer, 420pp.
2. Iliffe, J., and Lott, R. (2008):Datums and Map Projections for Remote sensing, GIS, and Surveying (2nd Ed.), Whittles Publishing, 192pp.
3. Kaplan, E.D.,andHegarty, C.J. (2006):Understanding GPS: Principles and Applications (2nd Ed.),Artech house, Norwood, MA, USA, 724pp.
4. Kimerling, J.,Buckley, A.R., Muehrcke, P.C., and Muehrcke, J.O. (2011):Map Use: Reading, Analysis, Interpretation (7th Ed.), ESRI Press, 620pp.
5. Krygier,J., and Wood, D. (2011): Making Maps: A Visual Guide to Map Design for GIS (2nd Ed.),The Guilford Press, New York, 256pp.
6. Lo, C.P.,andYeung, A.K.W. (2006): Concepts and Techniques of Geographic Information Systems (2nd Ed.),Prentice hall, 544pp.
7. Misra, R.P.,and Ramesh, A. (1999): Fundamentals of Cartography,Concept Publishing, New Delhi.
8. Nathanson, J.A.,Lanzafama, M., and Kissam, P. (2010): Surveying Fundamentals and Practices (6th Ed.),Prentice Hall, 360pp.
9. Robinson, A.H.,Morrison, J.L., Muehrcke, P.C., Kimerling, A.J., and Guptill, S.C. (1995): Elements of Cartography (6th Ed.),Wiley, New York, 688pp.
10. Singh, R.L.,and Singh, R.P.B.(1993): Elements of Practical Geography,Kalyani Publishers, New Delhi, India.
11. Slocum, T.A.,McMaster, R.B., Kessler, F.C., and Howard, H.H. (2008): Thematic Cartography and Geovisualization (3rd Ed.),Prentice Hall, 576pp.
12. Dent, B., Torguson, J., and Hodler, T. (2008):Cartography: Thematic Map Design (6th Ed.),McGraw-Hill, 368pp.

**M. A. / M. Sc. Geography II, SEMESTER-III**  
**OEP 3.1 - (Practical Paper No. XII) – Quantitative Techniques in Population and Settlement Geography**

Teaching Hours – 45, Credit – 02

Total Marks- 50

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**Learning objectives: -**

- 1) To understand the students to the quantitative techniques in population geography.
- 2) To acquaint the student to the quantitative techniques applied in settlement geography.

**Unit I: Quantitative Techniques in Population Geography 25**

- 1.1 Measurement of birth rates, age-specific, crude
- 1.2 Measurement of death rates
- 1.3 Population projection by semi Average method.
- 1.4 Population projection by Least Squares method.
- 1.5 Lorenz Curve.

**Unit II: Quantitative Techniques in Settlement Geography 20**

- 2.1 Nelson's method of functional classification of towns.
- 2.2 Nearest Neighbour Analysis.
- 2.3 Rank-Size Rule

**Journal**

**Learning outcome: -**

1. 1. Students will measure birth rates, death rates, Population projection by various Quantitative techniques.
2. Student will examine the various quantitative Techniques in Settlement Geography

**Reference Books**

<b>Sr. No.</b>	<b>Name of Books</b>
1	Gregary, S. Statistical Methods and the Geographers. Longman Group Ltd.
2	Hammond. R and McCullogh,-Quantitative Techniques in Geography: an introduction, Clarendon Press, Oxford.
3	Woodcock R. G. & Bailey M. J. – Quantitative Geography, Mac Donald & Erans Ltd. London.
4	Elhance D. N. – Fundamentals of Statistics, Kitab Mahal, Allahbad.
5	Mahmood Aslam Statistical Methods in Geography.
6	Cole and king-Quantitative Geography.
7	Saxena. H. M. Geography of Marketing; Concepts and methods, New Delhi
8	Singh Jasbir-An Agricultural Geography, Vishal Publication, Kurukshetra.

9	Clarke. J. I. – Population Geography, Pergamoh Press, London.
10	Chandana and Siddhu – Population Geography

**Punyashlok Ahilyadevi Holkar Solapur University, Solapur**  
**M. A. / M. Sc. Geography II, SEMESTER-III**  
**OEP 3.2 - (Practical Paper No. XII) – Global Positioning System and Geographical Information System**

**Learning objectives: -**

1. To be aware of advanced techniques in geography.
2. To understand the use of GIS and GPS techniques in planning and development purposes.

**Unit I: Introduction to GPS****20**

- 1.1 Types of GPS; GPS satellite; data receiver and control points;
- 1.2 Differential GPS; Sources of GPS errors;
- 1.3 Application of GPS in surveying, mapping and navigation.

**Unit II: Cartographic Techniques with the help of GIS****25**

- 1.1 Introduction to ArcGIS and KOSMO, - To Prepare following Maps with the help of ArcGIS and KOSMO-Choropleth Map: i) Shading ii) Colour 2. Dot Map 3. Transformation of Dot map into Isopleths Map 4. Proportional Circle Map: 2D and 3D
- 1.2 Cartographic Techniques in Population Geography: Preparation of Following Maps: 1. Density of Population 2. Concentration of Population 3. Sex Ratio 4. Proportion of Category wise Population 5. Religion wise composition 6. Literacy Rate

**Learning outcome: -**

1. Student will explain concept, components and application of GPS.
2. Student will underline application of GIS to sketch the maps by using GIS software's.
3. Student will formulate different cartographic techniques with the help of GIS

**References:**

1. Bolstad, P. (2007) GIS Fundamentals: A First Text on Geographic Information Systems (3rd Ed.), Eider Press.
2. Brewer, C. (2005): Designing Better Maps: A Guide for GIS Users, ESRI Press.
3. Demers, M.N. (2008): Fundamentals of Geographical Information Systems (4th Ed.), Wiley.
4. Diggelen, F. (2009): A-GPS: Assisted GPS, GNSS, and SBAS, Artech House, Norwood, MA, USA, 400pp.
5. El-Rabbany, A. (2002): Introduction to GPS: the Global Positioning System, Artech House, Norwood, MA, USA, 194pp.



6. Heywood, I., Cornelius, S., and Carver, S. (2011): An Introduction to Geographical Information System (4th Ed.), Prentice hall, 446pp.
7. Longley, P.A., Goodchild, M., Maguire, D.J., and Rhind, D.W. (2010): Geographic Information Systems and Science (3rd Ed.), Wiley, Chichester, UK, 560pp.
8. Reddy, M.A. (2008): Textbook of Remote Sensing and Geographical Information System (3rd Ed.), BS Publications, Hyderabad, 476pp.
9. Taylor, G., and Blewitt, G. (2006): Intelligent Positioning: GIS-GPS Unification, Wiley, Chichester, UK, 194pp.

**Punyashlok Ahilyadevi Holkar Solapur University, Solapur**  
**M. A. / M. Sc. Geography II, SEMESTER-IV**  
**HCT 4.1 - Paper XIII – Regional Planning and Development in India**

**Learning objectives: -**

- 1) To understand and evaluate the concept of region in geography.
- 2) To understand the role and relevance of region in regional planning.
- 3) To identify the causes of regional differences in development, perspectives & policy imperatives.
- 4) To understand the problems of regional development.

**Unit I: The Region 15**

1.1 Concept of Region, Characteristics

1.2 Types of Region-Formal or Natural and Functional

1.3 Classification of Region-Based on Physical, Cultural and Physical-Cultural Variation, Hierarchy of Region.

1.4 Planning-Concept, Types, Regional planning- Concept and Approaches.

**Unit II: Growth and Development 15**

2.1 Concept of Growth and Development

2.2 Indicators of Development, Measurement of Regional Development

2.3 Regional imbalances in India-Agricultural and Industrial.

**Unit III: Theoretical Framework for Regional Planning 15**

3.1 Spread and Backwash Concept

3.2 Central Place Theory

3.3 Growth Pole Theory and Growth Foci Approach.

**Unit IV: Multi-level Planning 15**

4.1 Concept of Multi-level Planning

4.2 Role of Panchayat Raj System in Regional Development (Village, Tahsil and District)

4.3 Regional Development in India and Maharashtra-Problems and Prospects

4.4 Regional Development in Macro, Meso and Micro level- Problems and Prospects.

**Learning outcome: -**

1. Student will describe basic concept of Region and Regional planning
2. Student will illustrate the Indicators of Development in regional planning and Regional imbalances in India.
3. Student will examine the application of theories in Regional Planning
4. Student will explain the Multi-level Planning in Regional Planning

**Reference Books**

Sr.	Name of Books

No.	
1	Bhat L.S.(1973): Regional Planning in India, Statistical Publishing Society, Calcutta
2	Chand M. &Puri V.(1985): Regional Planning in India Allied Publishers Ltd., New Delhi.
3	Gosal, G.S. and Krishan, G: Regional Disparities in Levels of Socio-economic Development in Punjab, Vishal Publication, Kurukshetra, 1984.
4	Government of India, Planning Commission: Third Five Year Plan, Chapter on Regional Imbalances in Development, New Delhi 1961.
5	Kuklinski, A.R. (ed.) Growth Poles and Growth Centres in Regional Planning Mouton, The Hague, 1972
6	Regional Planning concepts Techniques, Polies and case studies concept publishing crop New Delhi 1992
7	Misra, R. P. and Other (editors) Regional Development Planning in India – A Strategy. Institute of Development Studies Mysore, 1974.
8	Myrdal, G: Economic Theory and Under Development Regions Gerald Dockworth, London 1957

**Learning objectives: -**

- 1) To introduce the students to the philosophical and methodological foundations of the subject & its place in the world of knowledge.
- 2) To familiarize student with the major land marks in development of geographic thought at different periods of time.

**Unit I:Development of Modern Geography:Introduction15**

- 1.1 The field of Geography: Its place in the classification of sciences
- 1.2 Development of Geography through ages, the ancient and medieval period
- 1.3 Age of exploration and impact of discoveries on the development of geography.

**Unit II: Dichotomy in Geography15**

2.1 Rise of Dualisms in Geography, dualism the myth & realism, dualism between Regional & Systematic Geography, dualism between Physical and Human geography.

2.2 Development of concepts: Environmental–determinism, Possibilism

**Unit III:Founders of Modern Geography15**

Carl Ritter, Alexander Von. Humboldt, Vidal-de-la-Blache, H. J Mackinder, Richard Hartshorne

**Unit IV:Recent trends in Modern Geography 15**

4.1 Approaches in Geography: - i) Positivism ii) Humanism iii) Radicalism, iv) Behaviouralism

4.2 Measurement and explanation in Geography: Laws, theories and models in geography – Quantitative revolution

4.3 Paradigms & Philosophy in Geography

**Learning outcome: -**

1. Student will describe the initial development Stage of modern Geography
2. Student will distinguish dichotomies in modern Geography
3. Student will explain contribution of eminent Geographers in the development of modern Geography.
4. Student will analyze recent trends in modern Geography

**Reference Books**

Sr.	Name of Books
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No.	
1	Abler, Ronald; Adams, Johan, S. Gould, Pater, Spatial Organization; The Geographer's View of the World, Prentice Hall, N. J. 1971.
2	Ali, S.M. The Geography of Puranas, Peoples Publishing House, Delhi 1966
3	Amedeo, Douglas: An Introduction to Scientific Reasoning in Geography, John Wiley, U.S.A. 1971.
4	Dikshit, R.D. (ed) The Art & Science of Geography-Integrated Readings, Prentice Hall of India, New Delhi, 1994
5	Hartshorne, R.: Perspectives on Nature of Geography, Rand MC Nally & Co. 1959.
6	Husain, M: Evolution of Geographic Thought Rawat Pub. Jaipur, 1984
7	Johnston, R.J. Philosophy and Human Geography Edward Arnold London, 1983
8	Johnston, R.J. The Future of Geography Methoun, London, 1988
9	Minshull, R. The Changing Nature of Geography, Hutchinson University Library, London, 1970.

**Learning objectives: -**

1. To understand the basic concepts in political geography.
2. To enhance awareness of Multi-dimensional nature of geo-political space.
3. To make acquaint the students with nature of Geographical factors influencing the geo-political situations in India and world.

**Unit I: Introduction to Political Geography**

**15**

- 1.1 Definition, Nature and Scope of Political Geography
- 1.2 Approaches of the study Political Geography
- 1.3 Recent trends in political geography
- 1.4 Geographic elements and the state: physical, human and economic elements
- 1.5 Political Geography and environment interface.

**Unit II: Themes in Political Geography**

- 1.1 State and nation, nation-state Nationalism, nation building, Frontiers and Boundaries,
- 1.2 Capital-Classification, functions & world power perspectives on one core periphery

**Unit III: Theoretical Framework of Political Geography**

**15**

- 3.1 Global Strategic Models (Theory of Heartland),
- 3.2 Spykman and Mahans Sea power concept, its relevance to contemporary, world situation
- 3.3 Geopolitical significance of Indian Ocean, Political Geography of SAARC region, south-east Asia, West Asia.

**Unit IV: Recent Issues in Political Geography**

- 4.1 Political geography of contemporary-India with special reference to: the changing Political map of India.
- 4.2 Unity-diversity, central and centrifugal forces, Stability and instability, Inter-state issues (like water disputes, riparian claims) and conflicts resolutions, Insurgency in border state, emergence of new states, federal India- Unity in diversity.

**Learning outcome: -**

1. Student will describe the Fundamentals of Political Geography.
2. Student will explain themes and concepts of Political Geography.

3. Student will underline Theories and Geopolitical significance of different places in political Geography.

4. Student will analyze recent issues in Political Geography.

#### Reference Books

Sr.No.	Name of Books
1	Bhagwati, J. N. (Ed) New International Economic Order – The North –South Debate. M.I.T. Press, London, 1976.
2	Dikshit, R.D. Political Geography: A Contemporary Perspective, Tata McGraw-Hill Publishing Company. New Delhi, 1982
3	Glassner M.I. Political Geography, John Wiley, New York, 1993
4	Panikkar, K.M. Geographical factors in Indian History. Bharatiya Vidya Bhavan, Bombay, 1956
5	Pounds N.T. Political Geography McGraw Hill, New York, 1972
6	Prescott, J.R.V. Political Geography Methouen & Co. London, 1972
7	Schwartzberg, J.E. A Historical Atlas of South Asia, University of Chicago Press, U.S.A. 1993.
8	Short J. R. An Introduction to Political Geography, Routledge and Kegan Paul, London, 1982
9	Taylor P. J. (Ed), Political Geography of the 20th Century – A Global Analysis, New York 1993.
10	Taylor, Peter: Political Geography, Longman, London, 1985.
11	William C.H. (Ed), Political Geography of the New World Order Halsted Ben, New York, 1993.

#### Pedagogy: -

- Fieldwork to understand the political/administrative boundary configurations and people problems and perceptions.
- Consult political maps (Large and small scale)
- Atlases and archival records.
- Collect relevant newspapers items for group discussion.
- Prepare pin-up board for display of important events of geopolitical nature.

**Punyashlok Ahilyadevi Holkar Solapur University, Solapur**

**M. A. / M. Sc. Geography II, SEMESTER-IV**

**SCT 4.1 - Paper XV – Geography of Tourism**

Teaching Hours – 60, Credit – 04

Total Marks- 100

**Learning objective: -**

- 1) Acquiring the knowledge of different Tourist places in the World.
- 2) To understand emerging developing tourism industry.
- 3) To understand the scope and role of tourism in World as well as Indian Economy.
- 4) To familiarize students with tourism industry.
- 5) Encouraging the students to involve in tourism industry.

**Unit I: Basics of Tourism 15**

1.1 Definition of tourism; Factors influencing on tourism:

1.2 Types of tourism-cultural, coastal, Concept of Agro-Tourism and Pro-Poor Tourism,

1.3 Elements of tourism as an industry.

**Unit II: Tourism in India 15**

2.1 State wise regional dimensions of tourist attractions; promotion of tourism. (Role of Center and State) Resources & growth of tourism,

2.2 Tourism policies in India. .

2.3 Role of Infrastructure and support system- accommodation and supplementary accommodation; other facilities and amenities

2.4 Tourism circuits-short and longer detraction – Agencies and intermediaries.

**Unit III: Impacts of tourism 15**

3.1 Physical, economic and social and perceptual;

3.2 positive and negative impacts

3.3 Globalization and tourism.- Role of foreign capital and impact of globalization on tourism. Impact of tourism on Indian Economy

**Unit IV: Tourism in Maharashtra 15**

4.1 Geographical, historical and cultural factors influencing tourism.

4.2 Types of tourism

4.3 Impact of tourism on environment

4.4 Physical and cultural any one Project report on relevant topic such as impact of Tourism on Drought Prone Area Development, Rural Tourism, Agro-Tourism, lakes, historical, cultural centers & beaches in the State of Maharashtra.

**Learning outcome: -**

1. Student will describe the general features of tourism



2. Student will illustrate the Scenario of tourism development in India.
3. Student will analyze the Positive and negative impacts of tourism
4. Student will explain tourism status of Maharashtra.

### Reference Books

Sr. No.	Name of Book
1	Bhatia A.K.: <u>Tourism Development Principles and Practices</u> ; Sterling Publishers, New Delhi 1996.
2	Bhatiya, A.K. <u>International Tourism – Fundamentals and Practices</u> ; Sterling New Delhi (1991).
3	Chandra R.H.: <u>Hill Tourism Planning and Development</u> Kanishka publishers; New Delhi – 1998.
4	Kaul R.K. <u>Dynamics of Tourism &amp; Recreation Inter-India</u> New Delhi 1985.
5	Kaul J: <u>Himalayan Pilgrimages &amp; New Tourism</u> ; Himalayan Books, New Delhi 1985.
6	Lea. J.: <u>Tourism and Development in the Third World</u> , Routledge, London 1988.
7	Milton D: <u>Geography of World Tourism</u> Prentice Hall, New York 1993.
8	Pearce D.G.: <u>Tourism To-day A Geographical Analysis</u> , Harlow, Longman, 1987.
9	Robinson, H. A.: <u>Geography of Tourism</u> , Macdonald and Evans, London, 1996.
10	Sinha P.C. (ed): <u>Tourism Impact Assessment</u> , Anmol Publishers, New Delhi, 1998.

### Pedagogy: -

- Students may be encouraged to gain firsthand knowledge from field excursions. An assignment may be given to the students in one of the followings.
  - a) Visit to a tourist center and talk to some tourists and to write a report.
  - b) Collect the tourist pamphlets and maps from tourism-promotion agencies and to make a review on contents.
  - c) Visit to a tourist place and to list and map the work generation and problems and to suggest remedial measures.
  - d) Study tourism development policy and plans of government of India and the states with which the students is familiar and provide a geographers view point.
  - e) Visit to Ajanta/Ellora/Pandharpur/Tuljapur/Akkalkot / Beaches etc.

**Punyashlok Ahilyadevi Holkar Solapur University, Solapur**

**M. A. / M. Sc. Geography II, SEMESTER-IV**

**SCT 4.2 - Paper XVI – Geography of Manufacturing**

Teaching Hours – 60, Credit – 04

Total Marks- 100

**Learning objective: -**

1. To introduce the nature, development and significance of manufacturing and its links with the world economy.
2. To understand the location of major manufacturing activities with the support of various industrial location theories and models.
3. To discuss problems and impact of manufacturing industries with respect to relocation environmental pollution and occupational health and industrial hazard.

**Unit I: Introduction to Geography of Manufacturing 15**

- 1.1 Meaning, Nature, Scope and Recent developments of Manufacturing,
- 1.2 Factors of localization of manufacturing industries
- 1.3 Inter-relationship between the manufacturing and economic development.

**Unit II: Theoretical Framework of Manufacturing Geography 15**

- 2.1 Theories and models of industrial location: - (a) A. Weber, (b) A. Losch; Modern refinements to Least cost-theory,
- 2.2 Critical review and application of industrial location theories,
- 2.3 Methods of measuring the spatial distribution of manufacturing industries:- (a) Standard Industrial Classification, (b) Neo-classical theory.

**Unit III: Pattern of Manufacturing Industries 15**

- 3.1 Distribution and spatial pattern of manufacturing industries:(a) Iron & steel,(b) Textiles, (c) Chemicals, (d)Automobiles,(e) Hardware & software- industries, with special references to U.S.A., Japan, U.K. & India,
- 3.2 Methods of delineating manufacturing regions
- 3.3 Major manufacturing regions of the world

**Unit IV: Impacts of Manufacturing Industries 15**

- 4.1 Environmental degradation caused by manufacturing industries :(a) Industrial Hazards (b) Occupation and health,
- 4.2 Impact of manufacturing industries on economic development in India.
- 4.3 Effects of Privatization, Liberalization and Globalization on Indian Industries, Changing Industrial Policy in India.

**Learning outcome: -**

1. Student will describe general features of Geography of manufacturing.

2. Student will explain theoretical roll in Geography of manufacturing.
3. Student will underline Patterns of major manufacturing industries and industrial regions in the world.
4. Student will analyze impacts of manufacturing industries..

**Reference Books**

Sr. No.	Name of Books
1	Alexander, J.W.: Economic Geography, Prentice Hall, Englewood Cliffs, 1988.
2	Alexanderson, C: Geography of Manufacturing, Prentice Hall, Bombay, 1967.
3	Hoover, E.M.- The location and space economy, McGraw Hill, New York 1948.
4	Isard, W.: Methods of Regional Analysis, The Technology Press of M.I.T. & John Wiley & Sons, New York 1956.
5	Miller, E. A., Geography of Manufacturing, Prentice Hall, Englewood Cliffs, New Jersey. 1962.
6	Weber, Alfred: Theory of Location of Industries, Chicago University Press, Chicago, 1957.

**Pedagogy: -**

- The teachers should take the students to neighboring industrial area and appraise them the functioning of various industries, difficulties and environmental problems of industries.

**Punyashlok Ahilyadevi Holkar Solapur University, Solapur**  
**M. A. / M. Sc. Geography II, SEMESTER-IV**  
**HCP 4.1 - Practical Paper No.XIII – Introduction to Remote sensing and GIS**

**Learning objectives:-**

- 1) Make students familiar with concept of Remote Sensing and its use in present Geographic studies.
- 2) To give detailed knowledge about Aerial photography.
- 3) Make students familiar with concept of Geographical Information System.

**Unit I: Remote Sensing 25**

- 1.1 Concept of Remote Sensing
- 1.2. Advantages and limitations of Remote Sensing
- 1.3. Application of Remote Sensing in Geography
- 1.4. Types of Platform and Sensors
1. 5.Elements of Aerial Photo interpretation

**Unit II:Geographic Information System: 20**

- 2.1 Definition,
- 2.2 Purpose,
- 2.3 Advantages and disadvantages
- 2.4 Data Structure-Raster and Vector
- 2.5 Components of GIS- Data input and Data Management

**Learning outcome: -**

1. Student will illustrate the structural arrangement and application of the Remote Sensing.
2. Student will explain general features of GIS.

**Reference Books**

Sr. No.	Name of Books
1	Barrett E.C. and L.F. Curtis (1992): <u>Fundamentals of remote sensing and air photo interpretation</u> – Mcmillon, New York
2	Curran Paul. J. (1985): <u>Introduction of remotes sensing</u> , londman, London.
3	Comphell J. (1989): <u>Introduction to remote sensing</u> , Fuildord, New York.
4	Lillesand I. M. and kiefer R. W. (1979): <u>Remote sensing and image interpretation</u> , John Willey & Sons New York
5	Leuder D.R. (1959): <u>Areal Photographic interpretation</u> , Mc grew Hill Book

	Company, New York.
6	Saini R. R. Kalwar S. C. (1991): <u>Remote sensing in geography</u> , pointer Publishers, Jaipur.
7	Sabins F. F. Jour (1987): <u>Remote sensing principal of interpretation</u> , (II edition) W.H. Freeman and Company, New York.
8	Ian, Haywood & others (2006): <u>Geographical Information System</u> , pearson Education, Inc., Delhi.
9	Jamwal, Anil K. (2008): <u>Geographical Information System</u> , JnanadaPrakashan, New Delhi.

**Learning objectives:-**

- 1) Make students familiar with concept of Remote Sensing and its use in present Geographic Studies.
- 2) To give detailed knowledge about Aerial photography.
- 3) Make students familiar with concept of Geographical Information System.

**Unit I:Indexing of aerial photographs 02****Unit II:Tracing with naked eyes. 03****Unit III:Photogrammetry 20**

- 3.1 Determination of scale by various methods,
- 3.2 Determination of height of object
- 3.3 Relief displacement and height determination,
- 3.4 Introduction to parallax, parallax measurement and height determination
- 3.5 Determination of overlap. Determination of photo coverage area and cost of photographs.

**Unit IV:Interpretation and mapping of aerial photographs15**

- 4.1 Land use and land cover
- 4.2 Relief and landforms
- 4.3 Significance of drainage
- 4.4 Cultural landscape mapping
- 4.5 Rock types lineament and structure

**Unit V:Visual interpretation of satellite image.****05**

- a) Land use, b) Landforms

**Learning outcome: -**

1. Students will express knowledge about Indexing and Photogrammetry of aerial photographs.
2. Student will interpret the knowledge of Interpretation and mapping of aerial photographs.
3. Student will explain visual interpretation of satellite image.

**Reference Books**

Sr.	Name of Books
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No.	
1	Barrett E.C. and L.F. Curtis (1992): <u>Fundamentals of remote sensing and air photo interpretation</u> – Mcmillon, New York
2	Curran Paul. J. (1985): <u>Introduction of remotes sensing</u> , londman, London.
3	Comphell J. (1989): <u>Introduction to remote sensing</u> , Fuildord, New York.
4	Lillesand I. M. and kiefer R. W. (1979): <u>Remote sensing and image interpretation</u> , John Willey & Sons New York
5	Leuder D.R. (1959): <u>Areal Photographic interpretation</u> , Mc grew Hill Book Company, New York.
6	Saini R. R. Kalwar S. C. (1991): <u>Remote sensing in geography</u> , pointer Publishers, Jaipur.
7	Sabins F. F. Jour (1987): <u>Remote sensing principal of interpretation</u> , (II edition) W.H. Freeman and Company, New York.
8	Ian, Haywood & others (2006): <u>Geographical Information System</u> , pearson Education, Inc., Delhi.
9	Jamwal, Anil K. (2008): <u>Geographical Information System</u> , JnanadaPrakashan, New Delhi.

**Punyashlok Ahilyadevi Holkar Solapur University, Solapur**

**M. A. / M. Sc. Geography II, SEMESTER-IV**

**HCP 4.3 (MP) - Practical Paper No.XIV – Research Methodology and Project Report**

Teaching Hours – 90, Credit – 04

Total Marks- 100

## Section I: Research Methodology

### Unit I: Fieldwork and data Collection40

- 1.1 Significance of fieldwork in geography
- 1.2 Types of fieldworks (Macro, Meso and Micro) Importance of data
- 1.3 Types of data, methods of data collection
- 1.4 Presentation and Interpretation of data.

### Unit II:Report Writing60

- 2.1 Importance of Sampling in Research
- 2.2 Types of sampling methods
- 2.3 Format of project report, preliminary section, the text and reference Section, Style of writing, quotation, footnotes, reference and bibliography, figures and tables.

## Section II: Project Report

### Unit I: Project Report80

The students individually or a batches of not exceeding 15 are required to select a problem for the project report. They are expected to carry out field work to generate primary data regarding the problem.

By analyzing the data so evolved students should prepare a report and submit it in office for final examination and viva-voce.

### Learning Outcome:

1. Student will explain fieldwork, techniques of data Collection and its Presentation.
2. Student will describe Importance of Sampling in Research and skill of report writing.
3. Student will express knowledge about format of project report.

### Reference Books

Sr. No.	Name of Books
1	Johnes P. A.: <u>Field work in Geography</u> , – Longman
2	Ahuja Ram, – <u>Research Method</u>
3	Kothari C. R. (1996): <u>Research Methodology</u> , – VishwasPrakashan, New Delhi
4	Misra R. P. (1991): <u>Research Methodology in Geography</u> , Concept publication



	New Delhi
5	Archet J. E. Dalton T. H. (1968): <u>The field work in geography</u> , Batsford Ltd., London.
6	HamingLioyed (1975): <u>Scientific Geographic Research</u> , W C Brow Company U.S.A.
7	Borase: <u>An Introduction of Research Method</u> , (2005)
8	Hans Raj (1988): <u>Theory and Practice in Social Research</u> , Surjeet Publication, 7-K, Kolhapur

**Punyashlok Ahilyadevi Holkar Solapur University, Solapur**  
**M. A. / M. Sc. Geography II**

<b>Name of the Certificate Course</b>	<b>Credits</b>	<b>Lectures</b>	<b>Eligible students</b>
Certificate Course in RS, GIS and GPS	04	60	Students of M.A. Second Year

**1. Title of the Certificate Course:**“Certificate Course in RS, GIS and GPS”

**2. Introduction:**Remote Sensing and Geographic Information System are powerful tools which have revolutionized our understanding and approach to the earth’s resources and environment and their management. Remote sensing is the technique of acquiring information about the earth surface from a vantage position in space or air. Thematic maps, the main outputs of remote sensing, form the primary inputs in GIS. Global Positioning System (GPS) is a new technology for defining the geographical location of any data. Today, these three technologies, Remote sensing, GIS and GPS, constitute a powerful combination known as Geoinformation Technology or Geoinformatics.

**3.Objectives:**

- 1) To make students familiars with concept of RS, GIS and GPS.
- 2) To give detailed knowledge about its application in geographical studies.

**4. Course Outcome:** After completion of this course the students will

- 1.undertand the process of Remote Sensing.
2. be able to download data from Bhuvan Portal
3. learn to use of QGIS software and handle of GPS instrument
- 4.be ready for individual or group project on current issues.

**5.Eligibility:** The students doing MA second Year with special Geography subject may take this course.

**6. Course Fee:**Rs.500/- (Per Student)

**7. Syllabus:** The syllabus for the Course will be as follows: { 60 Lectures }

## **Certificate Course in RS, GIS and GPS**

Module	Contents	Number of Lectures	Credit
1	<b>Remote Sensing</b> <ul style="list-style-type: none"> <li>➤ Basic concept of Remote Sensing</li> <li>➤ EMR and its interaction with atmosphere</li> <li>➤ Platforms and Sensors in RS</li> </ul>	06	01
2	<b>GIS</b> <ul style="list-style-type: none"> <li>➤ Introduction, Components and Function of GIS</li> <li>➤ Sources of Data, Data Editing, Data Analysis</li> <li>➤ Application of GIS</li> </ul>	05	
3	<b>GPS</b> <ul style="list-style-type: none"> <li>➤ Introduction, Components of GPS</li> <li>➤ GPS Satellites, Data Receivers and Control Point</li> <li>➤ Application of GPS</li> </ul>	04	
4	<b>GIS Software</b> <ul style="list-style-type: none"> <li>➤ Overview of QGIS and toolbar</li> <li>➤ Creation of Point, Line and Polygon, linking Data table</li> <li>➤ Georeferencing map and toposheet, mosaic and cropping toposheet</li> <li>➤ Data collection using GPS instrument</li> <li>➤ Data Analysis : Spatial and Non Spatial</li> </ul>	15	01
5	<b>Satellite Data Analysis</b> <ul style="list-style-type: none"> <li>➤ Data download from Bhuvan and other source</li> <li>➤ DEM and its application</li> <li>➤ LISS–III data download, composite image, image Analysis- Supervised and Unsupervised</li> <li>➤ Map Composition</li> </ul>	15	01
6	Project	15	01
	Total	60	04

**8. Evaluation** - After completion of the syllabus, exams will be conducted in the following manner

**1. Theory-** 80 marks

**2. Project** - 20 marks