



# **Savitribai Phule Pune University**

*(Formerly University of Pune)*

**Two Year Degree Program in Geography**

**(Faculty of Science & Technology)**

Revised Syllabi for

**M.A./M.Sc. (Geography) Part-I**

**(For Colleges Affiliated to Savitribai Phule Pune University)**

**Choice Based Credit System Syllabus**

**To be implemented from Academic Year 2019-2020**

**Structure of the Syllabus :****Semester – I**

Sr. No.	Course Code	Core Compulsory Theory Paper (CCTP)	Choice Based Optional Paper (CBOP)	Theory / Practical	Core Compulsory Practical Paper (CCPP)		Credit
1	GGUT-111	Principles of Geomorphology	-	-	-		04
2	GGUT-112	Principles of Climatology	-	-	-		04
3	GGUT-113	Principles of Economic Geography	-	-	-		04
4			GGDT-114	Principles of Population and Settlement Geography	-		04
5					GGUP-115	Practical in Physical and Human Geography	04
					<b>Total Credits of Semester I</b>		<b>20</b>

7	Coastal Processes and Landforms	i. Sea waves, currents and tides ii. Coastal processes: erosion, transportation and deposition iii. Coastal landforms: erosional and depositional	06
8	Aeolian Processes and Landforms	i. Aeolian environment ii. Wind processes: erosion, transportation and deposition iii. Aeolian landforms: erosional and depositional iv. Work of water in desert and landforms	06

### Reference Books:

- **Bloom, A.L. (2012):** Geomorphology- A Systematic Analysis of Late Cenozoic Landforms, Prentice-Hall of India, New Delhi
- **Chorley, R.J., Schumm, S. A. and Sugden, D. E. (1984):** Geomorphology, Methuen, London.
- **Gregory, K.J. and Goudie, A.S. (2014):** The SAGE Handbook of Geomorphology, SAGE, London.
- **Christiansen E.H. and Hamblin, W.K. (2008):** The Earths dynamic systems Macmillan, New York and Collier Macmillan London.
- **Holmes, (1944):** Principles of Physical Geology, Thomas Nelson and Sons Ltd, London.
- **Huggett, R.J. (2008):** Fundamentals of Geomorphology, Routledge, London and New York.
- **Goudie A.S. (2004):** Encyclopedia of Geomorphology, Routledge, London and New York.
- **Kale, V.S. (2014):** Landscapes and Landforms of India, Springer, London/New York.
- **Kale, V.S. and Gupta, A. (2010):** Introduction to Geomorphology, Universities Press, Hyderabad
- **Migon, P. (2010):** Geomorphological Landscapes of the World, Springer, London/New York.
- **Ollier, C.D. (1981):** Tectonics and Landforms, Longman, London.
- **Singh, S. (2011):** Geomorphology, PrayagPustakBhawan, Allahabad.
- **Siddhartha, K. (2001):** The Earth's dynamic surface, Kosalaya, Delhi.
- **Spark, B.W. (1972):** Geomorphology, Longman, New York.
- **Steers, A. (1958):** The Unstable Earth, Methuen, London.
- **Strahler, A.H. and Strahler, A.N. (1992):** Modern Physical Geography, John Wiley, New York.

**Semester I****Course: GGUT- 112:Principles of Climatology****No. of Credits: 04 No. of Periods: 60**

<b>Topic No.</b>	<b>Topic</b>	<b>Sub topics</b>	<b>No. of Periods</b>
1	Introduction to Climatology	i. Meteorology and Climatology ii. Nature and Scope of Climatology iii. Development of Climatology iv. Tropical Climatology	06
2	Earth's Atmosphere	i. Evolution ii. Structure and composition of atmosphere iii. The ozone layer depletion iv. Aurora - types	08
3	Insolation	i. Solar and terrestrial radiation ii. Electromagnetic spectrum iii. Factors affecting insolation iv. Latitudinal and seasonal variation v. Effect of atmosphere vi. Greenhouse effect vii. Heat budget viii. Mechanisms of heat transfer	10
4	Temperature	i. Heat and temperature ii. Temperature measurements and controls iii. Lapse rate iv. Temperature inversion v. Types of inversion	06
5	Atmospheric Pressure and Winds	i. Pressure measurement and distribution ii. Factors affecting distribution of pressure iii. Wind observation and measurement iv. Factors affecting wind v. Geostrophic wind and Gradient wind vi. Models of general circulation of the atmosphere vii. Eddy theory viii. Local winds ix. Jet stream x. Cyclones and Anticyclones	12
6	Atmospheric Moisture	i. Atmospheric moisture ii. Hydrologic cycle iii. Evaporation and condensation iv. Forms of condensation v. Precipitation vi. Types of precipitation vii. Measurement of humidity	06

7	Atmospheric Stability	i. Lapse Rate: normal, environmental, dry adiabatic lapse rate and wet adiabatic lapse rate ii. Stable and unstable air iii. Absolute stability iv. Absolute instability v. Conditional instability	06
8	Air Masses and Fronts	i. Introduction to air masses and fronts ii. Types of air masses iii. Types of fronts	06

### Reference Books:

- **Critchfield, H.J. (Rep. 2010):** General Climatology. Prentice Hall, New Delhi.
- **Lal, D.S. (1998):** 'Climatology', Chaitanya Publishing House, Allahabad.
- **Lutgens, Frederic K. & Tarbuck, Edward J. (2010):** 'The Atmosphere: An Introduction to Meteorology', Pearson Prentice Hall, New Jersey.
- **Oliver, John E. & Hidore, John J. (2003):** Climatology: An Atmospheric Science, Pearson Education, Delhi
- **Savindra Singh (2005):** Climatology, PrayagPustakBhawan, Allahabad.
- Trewartha: Introduction to Weather and Climate.
- **More, Pagar, Thorat (2014):** (Marathi), Elements of Climatology & Oceanography, Atharv Publication, Pune
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## Semester I

### Course: GGUT-113 :Principles of Economic Geography

**No. of Credits: 04 No. of Periods: 60**

Topic No.	Topic	Sub topics	No. of Periods
1	Introduction to Economic Geography	i. Definition, nature and scope ii. Approaches :traditional and modern iii. Recent trends in Economic Geography	06
2	Economic Activities	i. Definition and classification of economic activities ii. Factors of location of economic activities: physical, social, economic and technical iii. Location of economic activities: Weber's and Von Thunen's model	10
3	Resources	i. Definition and classification of resources ii. Significance of natural and human resources in economic development iii. Importance of non-conventional energy resources for sustainable development	08

		i.	Definition and concept of economic development	
4	Economic Development	ii.	Measures of economic development	08
		iii.	Classification of countries on the basis of economic development	
		iv.	Rostow's and Myrdal's model	
5	Transport and Communication	i.	Various modes of transport	06
		ii.	Geographical factors and transportation	
		iii.	Various means of communication	
		iv.	Role of transport and communication in economy	
6	Trade	i.	Definition and types of trade	06
		ii.	Factors affecting on international trade	
		iii.	Problems and prospects of international trade with reference to India	
		iv.	E-commerce	
7	Economic Development in India	i.	Pre-and post-independence economic development in India	06
		ii.	Green revolution in India	
		iii.	Need of new green revolution in India	
		iv.	Regional disparities in India	
		v.	Impact of globalization and privatization on economic development	
8	Contemporary Issues	i.	Regional disparities in Maharashtra	10
		ii.	Role of IT industry in economic development in Maharashtra	
		iii.	A case study of one local agro-based industry: Economic analysis, problems and prospects (Sugar factory/ winery/ agro-tourist center etc.)	

#### Reference Books:

- **Alexander, J.W. (1977):** Economic Geography, Prentice Hall of India Pvt. Ltd., New.
- **Chorley, R.J. and Haggett, P. (1970):** Socio Economic Models in Geography, Concept publishing Company Pvt. Ltd., New Delhi.
- **Garnier, B.J. and Delobez, A. (1979):** Geography of Marketing, Longman.
- Hartshorne, T.A. and Alexander, J.W. (2010): Economic Geography, PHI Learning, New Delhi
- **KananChatterjee (2015):** Basics of Economic Geography.
- **Knox, P., Agnew, J. and McCarthy, L. (2008):** The Geography of the World Economy, Hodder Arnold, London.
- **Lloyd, P. and Dicken, B. (1972):** Location in Space: A Theoretical Approach to Economic Geography, Harper and Row, New York Methuen.
- **Mitra, A. (2002):** Resource Studies, Sreedhar publishers, Kolkata.
- **Patil, S.G., Suryawanshi, R.S., Pacharne, S. and Choudhar, A.H. (2014):** Economic Geography, AtharavPrakashan, Pune.
- **Ray, P.K. (1997):** Economic Geography, New Central Book Agency (P) Ltd., Calcutta.

- **Saptarshi, P.G., More, J.C. Ugale, V.R. and Musmade, A.H. (2009):** India A Geographical Analysis Diamond, Pune.
- **Saxena, H.M. (2013):** Economic Geography, Rawat publication, Jaipur.
- **Siddhartha, K. (2000):** Economic Geography: Theories, Process and Patterns, Kisalaya Publications, New Delhi
- **Smith, D.M. (1971):** Industrial Location: An Economic Geographical Analysis, John Wiley and Sons, New York
- **Pagar, Thorat & More (2015):** Agriculture Geography, (Marathi), Atharv Publication, Pune
- **More J. (2014):** Geography & Agriculture For MPSC Examination, (Marathi), Atharv Publication, Pune

## Semester I

### Course: GGD-114 :Principles of Population and Settlements Geography

**No. of Credits: 04 No. of Periods: 60**

Topic No.	Topic	Sub topics	No. of Periods
1	Introduction to Population and Settlement Geography	i. Definition, Nature and scope of Population Geography ii. Development of Population Geography as discipline iii. Approaches to the study of population Geography iv. Definition, subject matter and scope of Settlement Geography v. Development of Settlement Geography vi. Approaches: genetic, spatial and ecological	08
2	Population Distribution	i. Population distribution and factors affecting distribution of population ii. Density : definition and types iii. Factors affecting density of population iv. Population density in India v. Urbanization: definition and stages vi. Trend and level of urbanization in India	08
3	Population Growth and trend	i. Concept of population growth ii. Component of population growth ( Fertility, Mortality, and Migration) iii. Theory of Demographic Transition iv. Malthus Theory v. Population growth and trend in India vi. Migration: concept of migrant and migration, immigration and emigration	08

4	Population Structure and Characteristics	i. Age and sex structure ii. Concept of aging of populations, iii. Dependency ratio iv. Sex Ratio: definition and affecting factors of sex ratio v. Sex ration in India vi. Population Composition: religious, linguistics, ethnic, marital and educational vii. Literacy: definition and measures of literacy viii. Literacy in India	06
5	Fertility and Mortality	i. Concepts: fertility, fecundity, sterility, cohort ii. Crude birth rate, Total fertility rate iii. Concept of baby boom iv. Concepts: mortality and morbidity v. Death rate and its measures vi. Level and trends of mortality in India	06
6	Human Settlement	i. Classification: urban and rural ii. Rural-urban dichotomy iii. Site and situation aspect in settlement iv. Types: compact, semi-compact, hamleted and dispersed v. Patterns of settlement	08
7	Rural Settlements	i. Definition, classification of villages ii. Size and spacing of villages iii. Nearest neighbor analysis iv. Concepts of dispersion and nucleation v. Factors affecting dispersion and nucleation	08
8	Urban Settlements	i. Concept: urban place, urban agglomeration, urban sprawl ii. Urban settlement hierarchy iii. Urban-rural fringe iv. Rank-size rule v. Central Business District (CBD)	08

### Reference Books:

- **Bhende, A. and Kanitkar, T. (2011):** Principles of Population Studies, Himalaya Publishing House, Bombay.
- **Beaujeu, G. J. (1966):** Geography of Population, Longman Group Ltd.
- **Chandna, R.C. (Rep.2010):** Geography of Population, Concepts, Determinants and Patterns, Kalyani Publishers, New Delhi.
- **Clark, J. I. (1973):** Population Geography, Pergamon Press Ltd., Oxford.
- **Clark, J.I. (1984):** Geography and Population: Approaches and Applications, Pergamon Press Ltd., Oxford.
- **Hudson, (1970):** Geography of Settlement, Macdonald & Evans Ltd., London.
- **Khullar, D. R. (2011):** India A Comprehensive Geography, Kalyani Publication, New Delhi.
- **Michel Chisholm (1973):** Studies in Human Geography, London.
- **Mishra, R.S.(1975):** Economics of Growth and Development, Somaiya Publication Pvt. Ltd.



- **Singh R.Y. (Rep. 2010):** Geography of Settlements, Rawat Publication.
- **MusmadeArjun, SonawaneAmit and Jyotiram More,** (2015) Population & Settlement Geography (Marathi) -Diamond Publication Pune.
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## Semester I

### Course: GGUP-115:Practical in Physical and Human Geography

**No. of Credits: 04 No. of Periods: 60**

Topic No.	Topic	Sub topics	Periods (3 hours)
<b>A Geomorphology</b>			
1	Drainage Network	Stream ordering and Bifurcation ratio i. Strahler's method ii. Horton's method	02
2	Drainage Basin Relief Analysis	Relief analysis (for a 3 to 5 order drainage basin; based on grid method) i. Absolute relief map ii. Relative relief map iii. Hypsometric analysis iv. Basin cross profiles v. Block diagram (multiple section)	03
<b>B Climatology</b>			
3	Climatic Element Diagrams	i. Climatograph ii. Climograph iii. Simple wind rose iv. Hythergraph v. Water Budget	03
4	Climatic Classification	i. Koppen's classification	02
<b>C Economic Geography</b>			
5	Crop Combination and Crop Diversification	i. Weaver's method ii. JasbirSingh	02
6	Measures of Network Structure	i. Ratio measure ii. Alpha, beta, gamma, etc. iii. Associated number, cyclomatic number	01
<b>D Population and Settlement Geography</b>			
7	Population Indices and Projection	i. Age-sex pyramid ii. Infant mortality rate iii. Population growth rate iv. Population projection	02
8	Measures of Nucleation and Dispersion	i. Rank size rule ii. Nearest neighbor analysis iii. Calculation of centrality	03

9	Field Visit and Report Writing	i. One day study tour or long tour of geographical interest places anywhere in the country and excursion report	02
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### Reference Books:

- **AsisSarkar (2015):** Practical Geography, A Systematic Approach, Orient Black Swan
- **Carter, H. (1977):** The study of Urban Geography, Edward Arnold, London.
- **Hans, R. (1978):** Fundamentals of Demography, Surjeet, Delhi.
- **Hudson F.S. (1976):** Geography of Settlements, Estover, Macdonald& Evans, England.
- **Liendsor, J.M. (1997):** Techniques in Human Geography, Routledge.
- **Lloyd, P. and Dicken, B. (1972):** Location in Space - A theoretical approach to economic geography, Harper and Row, New York.
- **Michael, E. and Hurse, E.(1974):** Transportation Geography, McGraw-Hill, New York.
- **Pollard, A.H. and FarhatYusu, (1974):** Demographic Techniques, Rushcutters Bay, N.S.W., Pergamon Press, Australia.
- **Singh, J. and Dhillon, (1984):** Agricultural Geography, Tata McGraw-Hill Publishing Company Limited, New Delhi.
- **Yeats, M.H. (1974):** An Introduction to Quantitative Analysis in Human Geography, McGraw-Hill, New York.

**Semester II****Course: GGUT-121:Geoinformatics-I****No. of Credits: 04 No. of Periods: 60**

<b>Topic No.</b>	<b>Topic</b>	<b>Sub topics</b>	<b>No. of Periods</b>
1	Introduction to GIS	i. Definition, potential of GIS, concept of space & time ii. Spatial Information Theory iii. History of GIS iv. Objectives of GIS v. Elements of GIS, hardware & software requirements vi. GIS Applications vii. GIS Tasks- input, manipulation, management, query & analysis, visualization	14
2	Database	i. Spatial: spatial relationship, functional relationship, logical relationship ii. Non-spatial: nominal, ordinal, ratio and cyclic	08
3	Data Models	i. Spatial: Geometric primitives, Raster, Vector, Quad tree tessellation, comparative overview of raster and vector models, layers and coverage ii. Non-spatial: DBMS- Advantages, conceptual models; Implementational models- hierarchical, network and relational	12
4	Structuring of Spatial Data	i. Digitizers: manual, semi-automatic & automatic ii. Editing error: detection & correction, topology building	10
5	Data Analysis (I)	i. Attribute databases: operations from algebraic theory ii. Operations from set theory SQL: attribute query	08
6	Data Analysis (II)	i. Spatial Databases: map algebra, grid Operations: Local, Focal ii. SQL: spatial query	08

**Reference Books:**

- **Burroughs,P. A. and McDonnell,R.A. (2002):** Principles of Geographical Information System, Oxford University Press.
- **George J. (2004):** Fundamentals of Remote Sensing, Universities Press Pvt. Ltd., Hyderabad.
- **Jensen, J. R. (2003):** Remote Sensing of Environment, An Earth Resource Perspective, Pearson Education Pvt. Ltd., New Delhi.
- Kang- Tsung-Chang, Introduction to Geographical Information System, 2002, McGraw Hill.
- **Lillesand, T. M. and Kiefer R. W. (2002):** Remote Sensing and Image Interpretation, John Wiley and Sons, New Delhi.
- **Lo C. P. and Yeung, A.K.W. (2002):** Concepts and Techniques of Geographic Information System, Prentice Hall, India.
- **Paul A. Lonfley, Michel F. Goodchild, D J. Maguire and D W. Rhind, (2002):**Introduction to Geographic Information Systems and Science, John Wiley and Sons Ltd.
- Fundamentals of Remote Sensing, A Canada Centre for Remote Sensing Remote Sensing Tutorial.  
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- **Patil S. G., Suryawanshi R. S., Pacharne S. and Choudhar A. H. (2014):** Economic Geography, AtharavPrakashan, Pune.
- **Pagar S. D., More J. C. & Thorat A. M. (2015):** Agricultural Geography, Atharva Publication, Pune.
- **Randhawa, M.S. (1980):** An History of Agriculture in India Vols. I, II, III, IV, ICAR, New Delhi.
- **Saptarshi P.G., More J.C., Ugale V.R., Musmade A.H. (2009):** India A Geographical Analysis, Diamond, Pune.
- **Sauer, C.O. (1969):** Agricultural Origins and Dispersals. M.I.T. Press, Mass, U.S.A.
- **Singh, J. and Dhillon, S.S. (1988):** Agricultural Geography, 2nd edition, Tata McGraw-Hill, New Delhi.
- **Singh, J. and Dhillon, S.S. (1994):** Agricultural Geography, Tata McGraw Hill, Publishing Co.
- **Symons, Leslie (1970):** Agricultural Geography, G. Belt and Sons Ltd., London.
- **Tarrent, J.R. (1970):** Agricultural Geography, David and Charles, Newton Abbot.
- **Wigley, G. (1981):** Tropical Agriculture: The Development of Production, 4th edition, Arnold, London

## Semester II

**Course: Gg. 213: Population Geography**

**No. of Credits: 04 No. of Periods: 60**

Topic No.	Topic	Sub topics	No. of Periods
1.	Introduction	i. Definitions, nature and scope of Population Geography ii. Sources of population data: census, national sample survey, sample registration survey, NFHS, DLHS data	08
2.	Population Dynamics	i. Population distribution in the world ii. Density of population in the world iii. Determinates of population growth	06
3.	Population Theory	i. Malthus Theory ii. Optimum Population Theory iii. Demographic Transition Model	08
4.	Fertility	i. Concepts and measures of Nuptiality and fertility ii. Levels and trends of fertility in India iii. Determinants of fertility iv. Theories of fertility	08
5.	Mortality	i. Concept of mortality & morbidity ii. Measures of mortality iii. Recent mortality levels in world iv. Mortality trends in India	08
6.	Migration	i. Definition, types (Internal and International) ii. Concept: refugee, brain-drain migration iii. Determinants and consequences of migration.	06

		iv. Lee's Theory of Migration	
		v. Ravenstein's laws of migration	
		vi. Push-pull factors of migration	
7	Population Composition	Population Composition:	08
		i. Demographic	
		ii. Social	
		iii. Economic	
		iv. Cultural	
8	Population Development and Policies	Concept of Population Index:	08
		i. Human Development Index (HDI)	
		ii. Gender Development Index (GDI)	
		iii. Relation between population and development	
		iv. Population policy of India	
		v. New Population policy of China	

### Reference Books:

- **Agarwala, S.N. (1977):** India's population Problems, Tata McGraw Hill publishing Co. Ltd. , New Delhi.
- **Bose Ashis et.al. (1974):** Population in India's Development Vikas Publishing House, New Delhi, 1974.
- **Chandna R.C. (1986) :**Geography of Population concepts, Determinants and Patterns, Kalyani Publishers, New Delhi
- **Clarke J.I :** Population Geography, Pergamon Press, Oxford, 1973.
- **Clarke J.I. (Ed)(1984):**Geography and Population, Approaches and Applications, Pergamon Press, Oxford
- **Crook Nigel :**Principles of Population and Development, Pergamon Press New York, 1997.
- **Garnier B.J. (1970) :**Geography of Population, Longman, London
- **Pathak, K.B. and F.Ram, (1992) :** Techniques of Demographic analysis. Bombay: Himalaya Publishing house
- **Sundaram K.V. and Sudesh Nangia (Ed) (1986):** Population Geography, Heritage Publications, Delhi
- **U N D P (2002) :** Human Development Report, Oxford, 2002.
- **Woods R. (1970) :** Population Analysis in Geography, Longman, London
- **Zelinsky Wilbur (1966) :** A Prologue to Population Geography Prentice Hall
- **Musmade Arjun, Sonawane Amit and Jyotiram More, (2015):** Population & Settlement Geography (Marathi) -Diamond Publication Pune.

**Semester II****Course: GGUT-129: Geography of Rural Settlements****No. of Credits: 04 No. of Periods: 60**

<b>Topic No.</b>	<b>Topic</b>	<b>Sub topics</b>	<b>No. of Periods</b>
1	Introduction to Geography of Rural Settlements	<ul style="list-style-type: none"> <li>i. Definition</li> <li>ii. Evolution of settlements</li> <li>iii. Sequence of occupancy from Neolithic to modern period</li> <li>iv. Historical, cultural and geographical aspects of settlements reflected in place names</li> </ul>	07
2	Growth and Distribution	<ul style="list-style-type: none"> <li>i. Site, situation, location</li> <li>ii. Various factors affecting on settlement site and situations</li> <li>iii. Dispersion and nucleation</li> <li>iv. Factors affecting dispersion and nucleation</li> <li>v. Methods of the measuring degree of dispersion</li> <li>vi. Factors affecting growth of settlements</li> <li>vii. System of land division</li> <li>viii. Water rights system of agriculture</li> <li>ix. Land tenancy system</li> </ul>	12
3	Theories of Rural Land Use	<ul style="list-style-type: none"> <li>i. Intensity of land use</li> <li>ii. Labour cost</li> <li>iii. Marketing of product</li> <li>iv. Von Thunen Theory</li> <li>v. Ricardo Theory</li> </ul>	10
4	Rural Economic Activities	<ul style="list-style-type: none"> <li>i. Functional analysis of service village and <ul style="list-style-type: none"> <li>a. trading Center</li> </ul> </li> <li>ii. Centrality and hierarchy of rural service centers</li> <li>iii. Central Place Theory</li> </ul>	06
5	Morphogenesis of Rural Settlements and Transformation	<p>Morphogenesis:</p> <ul style="list-style-type: none"> <li>i. Social</li> <li>ii. Cultural</li> <li>iii. Economic organization within villages</li> <li>iv. Functional growth</li> <li>v. Socio-economic transformation in rural areas</li> </ul>	06

6	Demographic Characteristics of Rural Settlement	i. Age-Sex, Education, Occupation, Caste ii. Migration: causes & consequence of migration in rural areas iii. Seasonal migration iv. Commuting patterns	07
7	Rural House Types	i. Primitive, vernacular and modern high rise ii. Physical, social, cultural and economic factors iii. Size, functional use and architectural style iv. Building material	06
8	Rural Settlements in Maharashtra	i. Various patterns ii. House types and settlement patterns in the Maharashtra iii. Modern forms of rural settlements	06

### Reference Books:

- **Alam, S.M. et.al. (1982):** Settlement System of India Oxford and IBH Publication Co., New Delhi.
- **Chisholm M. (1967):** Rural Settlement and Land use. John Wiley, New York.
- **Clout, H.D. (1977):** Rural Geography, Pergamon, Oxford.
- **Doniel, P. and Hopkinson, M. (1986):** The Geography of settlement Oliver & Byod, Edinburgh.
- **Grover, N. (1985):** Rural Settlement: A Cultural Geographical Analysis. Inter India Publication, Delhi.
- **Hudson, F.S. (1976):** A Geography of Settlements, Macdonald and Evans, New York.
- **Ramchandran, H. (1985):** Village clusters and Rural Development. Concept Publication, New Delhi.
- **Rao R. N. (1986):** Strategy for Integrated Rural Development. B.R. Publication, Delhi.
- **Sen, L.K. (1972):** Readings in Micro-level Planning and Rural Growth Centers, National Institute of Community Development, Hyderabad.
- **Srinivas M.N. (1968):** Village India, Asia Publication House, Bombay.
- **Wanmati S. (1983):** Service Centers in Rural India, B.R. Publication Corporation, Delhi.
- **Musmade AH, Sonawane AE, More JC, (2015):** Population & Settlement Geography, (Marathi), Diamond Publication, Pune



## Semester II

**Course: GGDT-130: Geography of Tourism**

**No. of Credits: 02 No. of Periods: 30**

Topic No.	Topic	Sub topics	No. of Periods
1	Introduction to Geography of tourism	i. Definition: tourist and tourism ii. Concept of recreation and leisure iii. Importance of tourism iv. Impact of tourism on economy of nation	02
2	Classification and Recent Concepts of Tourism	i. Classification on the basis of: nationality time of travel, number of tourist and purpose ii. Recent concepts: agro-tourism, eco-tourism, heritage tourism and adventure tourism	10
3	Factors of Tourism	i. Physical factors: relief, climate, vegetation, wild life and water bodies ii. Socio-cultural factors: religious, historical and cultural, economic, transportation and accommodation	08
4	Role of Accommodation in Tourism	i. Hotels, motels, inn, saraies, dharmashalas ii. Government accommodation, tourist homes iii. Youth hostels, cottages, tents, caravans iv. Rail yatribhavan, house boats v. Private accommodations and unrecognized accommodations	06
5	Indian Tourism	Case studies i. Hill stations: Manali, Mahabaleshwar ii. Beaches: Kalangut (Goa), Ganpatipule iii. Historical centres: Agra, Pratapgad iv. Caves : Badami, Ajanta v. Religious Centres: Prayagraj (Allahabad), Shirdi vi. National Parks: Kaziranga, Tadoba vii. Dams: Sardar Sarovar, Koyna viii. Waterfalls: Nohkalikai Fall, Thoseghar	04

### Reference books

- **Bhatia A.K. (1996):** Tourism Development: Principles and Practices, Sterling Publishers, New Delhi
- **Bhatiya, A.K.(1991):** International Tourism - Fundamentals and Practices, Sterling, New Delhi,

- **Chandra, R.H.(1998):** Hill Tourism: Planning and Development, Kanishka Publishers, New Delhi,
- Hunter, C and Green, H.(1995): Tourism and the Environment: A Sustainable Relationship, Routledge, London,
- **Inskip, E. (1991):** Tourism Planning: An Integrated and Sustainable Development Approach, Van Nostrand and Reinhold, New York,
- **Kaul, R.K.(1985):** Dynamics of Tourism & Recreation. Inter-India, New Delhi.
- **Kaur, J.(1985):** Himalayan Pilgrimages & New Tourism Himalayan Books, New Delhi,
- **Lea, J.(1988):** Tourism and Development in the Third World, Routledge, London,
- **Milton, D.(1993):** Geography of World Tourism Prentice. Hall, New York,
- **Pearce, D.G.(1987):** Tourism To-day: A Geographical Analysis, Harlow, Longman, Pratap, R. and Prasad, K. (2005): Tourism Geography, Shree Publishers & Distributors, New Delhi.
- **Robinson, H.A.(1996):** Geography of Tourism. Macdonald and Evans, London,
- **Sharma, J.K. (ed.)(2000):** Tourism Planning and Development - A new perspective, Kanishka Publishers, New Delhi,
- **Suryawanshi, R.S.(2012):** Assessment of Potential for Eco- Tourism, Northern Thane District, Maharashtra. Lap Lambert Academic Publishing, Germany
- **Shaw, G. and Williams, A.M.(1994):** Critical issues in Tourism-A Geographical Perspective, Oxford: Blackwell,
- **Sinha P. C. (ed.)(1998):** Tourism Impact Assessment, Anmol Publishers, New Delhi,
- **Theobald, W. (ed.)(1994):** Global Tourism: The Next decade, Oxford, Butterworth, Heinemann, Oxford,
- **Voase, R.(1995):** Tourism: The Human Perspective Hodder& Stoughton, London

## Semester II

**Course: GGDT-132: Geography of Disaster Management**

**No. of Credits: 02 No. of Periods: 30**

Topic No.	Topic	Sub topics	No. of Periods
1	Introduction	Concepts and definitions i. Disaster, Hazard, Vulnerability, Resilience, Risks ii. Classification of disasters	02
2	Natural Disasters	Causes and effects: i. Earthquake, Volcano, Landslide, Tsunami ii. Cyclone, Flood, Drought	10
3	Man-made disaster	Causes and effects: i. Fire, Terrorism, Food poisoning ii. Strike and lockouts, accidents, stampedes iii. Major man-made disaster examples in India	08
4	Disaster management	i. Phases of disaster cycle ii. First aid iii. Role of Armed forces, police forces and NGO'S in disaster management	06
5	Technologies for Disaster Management	i. Application of Modern Technologies for the emergency communication ii. Uses of remote sensing, GIS and GPS in disaster management	04

### Reference books

- **Agarwal, A. and Narain S. (Ed) (1999):** State of India's Environment. The Citizens Report, Centre for Science and Environment, New Delhi
- **Bryant Edward (2000):** Natural Hazards, Cambridge University Press
- **Daly, H.E. (1996):** Beyond Growth, Beacon Press, Boston
- **Daly, H.E and Twonseed K.N. (Ed) (1993):** Valuing the earth – Economics, Ecology and Ethics, MIT Press, London
- **Dupont, R.R. Baxter, T.E. and Theodore, L. (1998):** Environmental Management: - Problems and Solutions, CRC Press
- **Hart M. G. (1986):** Geomorphology, Pure and Applied, George Allen and Unwin, London
- **Morrisawa M (Ed) (1994):** Geomorphology and Natural Hazards, Elsevier, Amsterdam
- **Singh Savindra (2000):** Environmental Geography, ParagPustakBhavan, Allahabad
- **Smith, K. (2001):** Environmental Hazards: Assessing Risk and Reducing Disaster, Routledge
- **Turk J. (1985):** Introduction to Environmental Studies, Saunders, College Publication, Japan
- **Saptarshi PG, More JC, Ugale VR, (2009):** Geography and Natural Hazards, (Marathi), Diamond Publishing
- **Musmade AH, More JC (2014):** Geography of Disaster Management, (Marathi), Diamond Publication, Pune

## Semester II

**Course: GGDP-133: Practical in Map Projections**

**No. of Credits: 02 No. of Periods: 30**

Topic No.	Topic	Sub topics	Periods (3 hours)
1	Map projections	iv. Definition and necessity of projections v. Types- Perspective and non- perspective, conventional vi. Classification based on a) Developable surfaces used b) Position of source of light c) Properties	01
2	Zenithal Projections	iii. Zenithal Polar Gnomonic Projection iv. Zenithal Polar Stereographic Projection	03
3	Conical Projections	vi. Polyconic Projection vii. International Map Projection (Modified Polyconic )	02
4	Cylindrical Projections	i. Mercator's Projection ii. Universal Transverse Mercator (UTM) Projection	02
5	Conventional Map Projections	i. Mollweide Projection ii. Sinusoidal Projection	02

**Graphical construction, properties and uses of following projections (2 exercise of each)**

### Reference books

- **Asis Sarkar (2015):** Practical Geography, A Systematic Approach, Orient Black Swan
- **Maling, DH. (1973):** Coordinate systems and map projections, George Philip, London.
- **Richardus, P. and Adler Ron, K. (1972):** Map projections, North Holland publ. Co., Amsterdam.
- **Saha, P. and Basu, P. (2007):** Advanced Practical Geography, Books and Allied (P) Ltd. Kolkatta.
- **Steers, J.A. (1970):** An Introduction to Study of Map Projections. University of London Press Ltd., London.

## Semester II

**Course: GGUP-134:Practical of Statistical Techniques for Geography**

**No. of Credits: 04 No. of Periods: 60**

Topic No.	Topic	Sub topics	Periods (3 hours)
1	Introduction to Statistical Techniques in Geography	i. Introduction and applications of statistical techniques in Geography ii. Types of statistics: descriptive and inferential statistics iii. Geographical data a) Primary and secondary data b) Spatial and temporal data c) Discrete and continuous data d) Grouped and ungrouped data iv. Scales of measurement: nominal, ordinal, interval and ratio	01
2	Descriptive Statistics	i. Introduction to descriptive statistics ii. Central tendency: mean, mode, median iii. Dispersion: variance and standard deviation iv. Skewness and kurtosis (Calculations of above parameters for ungrouped and grouped data)	03
3	Probability and Probability Distributions	i. Introduction to probability ii. The Normal Probability Distribution iii. The Binomial Probability Distribution iv. The Poisson Probability Distribution	03
4	Inferential Statistics	i. Introduction to inferential statistics ii. Population and sample iii. Hypothesis testing: Null and alternate hypothesis iv. The Chi-square test (Two sample case) v. Student's 't' test (Two sample tests) vi. ANOVA (Analysis of variance)/ F ratio test	05
5	Correlation and Regression Analysis	i. Introduction to bi-variate correlation and regression ii. The product-moment correlation coefficient iii. Significance testing in correlation analysis iv. Linear regression equation v. Exponential regression equation vi. Power-law regression equation vii. Concept of residuals and explained variance	05
6	Time Series Analysis	i. Introduction and definition of time series ii. Applications of time series analysis iii. Components of time series iv. Calculation and plotting of moving averages (3 and 5) v. Curve fitting by method of least squares	02

		i.	Collection of primary and/or secondary data by fieldwork or field visit	01
7	Fieldwork and Data Collection	ii.	Analysis of data by using appropriate statistical technique(s)	
		iii.	Report writing	

### Reference Books:

- **AsisSarkar (2015):** Practical Geography, A Systematic Approach, Orient Black Swan
- **David, E. (1989):** Statistics for Geographers.
- **Elhance, D.L., Elhance, V. and Aggarwal B.M. (2014):** Fundamentals of Statistics, KitabMahal, Allahabad.
- **Hammond, R. and McCullagh, P. (1978):** Quantitative Techniques in Geography, Clarendon Press. Oxford, London.
- **Karlekar, S. and Kale, M. (2006):** Statistical Analysis of Geographical Data, Diamond Publication, Pune.
- **Liendsor, J. M. (1997):** Techniques in Human Geography, Routledge.
- **Norcliffe, G.B. (1977):** Inferential Statistics for Geographers, Hutchinson, London.
- **Rogerson, P.A. (2015):** Statistical Methods for Geography, SAGE Publication, London.
- **Wheller, D., Shaw, G. and Barr, S. (2010):** Statistical Techniques in Geographical Analysis, David Fulton, Routledge, New York.
- **Yeats, M. H. (1974):** An Introduction to Quantitative Analysis in Human Geography.