

**SOLAPUR UNIVERSITY, SOLAPUR**

**FACULTY OF SCIENCE**

**STRUCTURE & SYLLABUS**

**M.A. / M.Sc. Geography**

**(Sem. I & II)**

**Choice Based Credit System Syllabus**

**w.e.f. June 2016**

# Solapur University, Solapur.

## Subject- Geography

### M.A./ M.Sc. Part –I&II

#### Semester-I

Paper No.	Code	Title of the Paper	Semester Exam.			L	T	P	Credit
			UA	IA	Total				
<b>Geog</b>		<b>Hard Core</b>							
Paper I	HCT1.1	Geomorphology- I	70	30	100	4	-	-	4
Paper II	HCT1.2	Climatology- I	70	30	100	4	--	--	4
Paper III	HCT1.3	Oceanography and Geo- hydrology	70	30	100	4	--	--	4
<b>Soft Core (Any One) Elective</b>									
Paper IV	SCT1.1	Human Geography	70	30	100	4	--	--	4
	SCT1.2	Economic Geography	70	30	100	4	--	--	4
		Tutorial				25	1		1
<b>Practicals</b>									
<b>Hard Core</b>									
Practical I	HCP1.1	Practical Course HCP1.1	35	15	50			2	6
Practical II	HCP1.2	Practical Course HCP1.2	35	15	50	--	--	2	
Practical III	HCP1.3	Practical Course HCP1.3	35	15	50	--	--	2	
<b>Soft Core (Any One)</b>									
Practical IV	SCP1.1	Practical Course SCT1.1	35	15	50	--	--	2	2
	SCP1.2	Practical Course SCP1.2	35	15	50	--	--	2	
<b>Total For First Semester</b>			<b>420</b>	<b>180</b>	<b>625</b>				<b>25</b>

## Semester-II

Paper No.	Code	Title of the Paper	Semester Exam.			L	T	P	Credit
			UA	IA	Total				
<b>Geog</b>		<b>Hard Core</b>							
Paper V	HCT2.1	Geomorphology- II	70	30	100	4	-	-	4
Paper VI	HCT2.2	Climatology- II	70	30	100	4	--	--	4
<b>Soft Core (Any One) Elective</b>									
Paper VII	SCT2.1	Population Geography	70	30	100	4	--	--	4
	SCT2.2	Geography of Health	70	30	100	4	--	--	
<b>Open Elective (Any One)</b>									
Paper VIII	OET2.1	Regional Geography of India	70	30	100	4	--	--	4
	OET2.2	Geography of Maharashtra	70	30	100	4	--	--	
		Tutorial				25	1		1
<b>Practicals</b>									
<b>Hard Core</b>									
Practical V	HCP2.1	Practical Course HCP2.1	35	15	50			2	4
Practical VI	HCP2.2	Practical Course HCP2.2	35	15	50	--	--	2	
<b>Soft Core (Any One)</b>									
Practical VII	SCP2.1	Practical Course SCP2.1	35	15	50	--	--	2	2
	SCP2.2	Practical Course SCP2.2	35	15	50	--	--	2	
<b>Open Elective (Any One)</b>									
Practical VIII	OEP2.1	Practical Course OEP2.1	35	15	50	--	--	2	
	OEP2.2	Practical Course OEP2.2	35	15	50	--	--	2	
<b>Total For First Semester</b>			<b>420</b>	<b>180</b>	<b>625</b>				<b>25</b>

M.Sc. II - Geography C B C S w.e.f.2017-18 (Revised Syllabus)									
Sem.-III	Code	Title of the Paper	Semester Exam.			L	T	P	Credits
		<b>Hard Core</b>	UA	IA	Total				
Geog.	HCT 3.1	Agricultural Geography	70	30	100	4	--	--	4
	HCT 3.2	Settlement Geography	70	30	100	4	--	--	4
<b>Soft Core (Any one)</b>									
	SCT 3.1	Biogeography	70	30	100	4	--	--	4
	SCT3.2	Geography of Marketing	70	30	100	4	--	--	
<b>Open Elective (Anyone)</b>									
	OET 3.1	Cultural Geography	70	30	100	4	--	--	2
	OET 3.2	Commercial Geography	70	30	100	4	--	--	
<b>Practical</b>									
	HCP3.1	Practical Course HCP3.1	35	15	50	--	--	2	6
	HCP3.2	Practical Course HCP3.2	35	15	50	--	--	2	
	SCP3.1	Practical Course SCP3.1	35	15	50	--	--	2	
<b>Open Elective (Anyone)</b>									
	OEP3.1	Practical Course OEP3.1	35	15	50	--	--	2	2
	OEP3.2	Practical Course OEP 3.2	35	15	50	--	--	2	
	<b>Total for Third Semester</b>		<b>420</b>	<b>180</b>	<b>600</b>				
<b>Semester IV</b>									
Sem-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	70	30	100	4	--	2	4
	HCT 4.2	Development of Modern Geography	70	30	100	4	--	2	4
	HCT 4.3	Political Geography	70	30	100	4	--	2	
<b>Soft Core (Any one)</b>									
	SCT4.1	Geography of Tourism	70	30	100	--	--	2	4
	SCT4.2	Geography of Manufacturing	70	30	100	--	--	2	
<b>Practical</b>									
	MP 4.1	Project work	140	60	200	--	--	2	8
	<b>Total for Forth Semester</b>		<b>420</b>	<b>180</b>	<b>600</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

**Solapur University, Solapur**  
**Revised Structure of Syllabus**

**For M.A./M.Sc. Par- I**

**Semester –I**

**Paper- I**

**Name of the Paper: Geomorphology-I**

**Paper Code: HCT1.1**

**Total Lectures- 60**

**Total Marks- 100**

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**Objectives:**

To familiarize the students with certain fundamental Geomorphological concepts, focusing on the unity of geomorphology in the earth materials & the processes with or without an element of time.

**Contents of the course:**

<b>Unit No.</b>	<b>Details</b>	<b>Lectures/ Periods</b>
1	Meaning of Geomorphology and Development of Geomorphic Thoughts a Brief Review. Principles of Uniformitarianism, Contribution of Hutton, Gilbert, Dutton and Davis.	15
2	Constitution of Earth's Interior, The Theories of Isostasy- Pratt, Airy And Joly	15
3	Geosynclines- Geosynclinals theory of Kobber. Holms theory of conventional currents.	15
4	Factors contributing landforms Developments- Exogenetic and Endogenitic forces, Denudation process, Earthquake, Volcanoes and associated features, distribution and effect on Mankind.	15

## References:

1. Bloom A.L. (1991) Geom. 2<sup>nd</sup> Ed Englewood Cliffs, M.J. Prentice.
2. Christopherson R.W. (1995) Elementel ecosystem Prentice. Hall, N.J. Oqum (1985) Ecology, London.
3. Chorley, J.R. S.A. Schumm and DE Slogden (1984) Gcom. Methun, N.Y. London.
4. Christopherson, R.W. (1995) Elemental Geosystems : A Foundation in Physical Geography, Prentice Hall Englewood Cliffs, New Jersey.
5. Dayal P. (1996) : A Textbook of Geomorpology, Shukla Book Depot, Patna.
6. Fairbridge, R.W. (ed) : Eneyclopaedia of Geomorphology Reinhold, New York.
7. Thurman, H.V. (1994) : introductory Oceanography 7<sup>th</sup> Ed. Mac Millan Pub. Co. New York.
8. Whittone, J. (1994) Dictionary of Physical Geogaphy, Penguin Books.
9. Spark B.W. : An Introduction to Geomorphology, Longman, London.
10. Spark B.W. : Geomorphology, Longman, London.
11. Savinder Singh (1998) Geomorphology, Prayag Pustak Bhavan, Allahabad.
12. Morgan R.S. & Wooldridge S.W. (1959) L Outline of Geomorphology the Physical basis of Geography, Longmans Green, London.
13. Worcester P. G. (1948) : Textbook of Geomorphology, Princeton, D.van, Nortrand.

## Semester –I

### Paper- II

**Name of the Paper: Climatology-I**

**Paper Code: HCT1.2**

**Total Lectures- 60**

**Total Marks- 100**

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#### Objectives:

1. Provide an understanding of weather phenomena & dynamics of global climate.
2. Provide information about the generation of climatic information & its applications.

#### Contents of the course:

Unit No.	Details	Lectures/Periods
1	Atmosphere: Composition & Structure, Insolation & terrestrial heat balance, Distribution of temperature-Vertical-Horizontal	10
2	Pressure belts & their Shifting, planetary winds, Mechanism of Monsoon Winds, Local & Variable Winds.	15
3	Humidity & the process of Saturation-Atmospheric Equilibrium, Stability & instability, condensation & precipitation-types.	15
4	Air masses-types-properties, frontogenesis & Frontolysis Polar fronts & inter tropical convergence. Atmospheric Disturbances-i)Tropical cyclones-origin-distribution & weather associated with them ii) Midlatitude cyclones-origin, stages of life cycle –Weather associated with them iii)Tomadoes, water spouts	20

#### References:

1. Byrs R.H. : “General Meteorology”, Magraw Hill BK Co. New York.1974.
2. Pellersons: “Intoductionto Meteorology” Mc Gray Hill BK Co. New York.1969.

3. Richi H. : “introduction to Atmosphere” Mc Gray Hill BK Co. New York.1972.
4. Sellers W.D. : “Physical Climatology” University of Chicago Press. 1965.
5. Trewartha G.T. : An Introduction to climate “Mc Graw Hill BK Co. New York. 1968
6. Das P.K. : The Monsoon, Prayag Pustak Bhawan, Allahabad.
7. Shastri Rama : Weather & Weather forecasting, Ministry of Information NBT Dehli.
8. Lal D.S. : Climatology, Prayag Pustak Bhawan, Allahabad.
9. Ramashatri : Weather & Weather forecasting, Ministry of Information & Broadcasting.
10. Savindra Sing (2000) : Climatology, Prayag Pustak Bhawan, Allahabad.
11. Mather J.R. (1975) : Climatology : Fundamental & Applications. Mc Gray Hills Book Co. New York.
12. Hobbs J.E. (1980) : Applied Climatology, Butterworth, London.
13. Crist Field : Principles of Climatology, Prentice Hall, London.
14. Oliver J.E. (1973) : Climatic & Mans Environment, John Wiley & Sons, New York.



**Solapur University, Solapur**  
**Revised Structure of Syllabus**  
**For M.A./M.Sc. Par- I**  
**Semester –I**  
**Paper- III**

**Name of the Paper: Oceanography and Geo-Hydrology**

**Paper Code: HCT1.3**

**Total Lectures- 60**

**Total Marks- 100**

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**Objectives:**

To know many facts of oceans such as properties of sea water, water circulation, structure of ocean basin, evolution of oceans, characteristics of marine environments & impact of man on the marine environment.

**Contents of the course:**

<b>Unit No.</b>	<b>Details</b>	<b>Lectures/ Periods</b>
1	Ocean basin topography-continental shelf, slope, abyssal plain, ocean deeps, submarine hills, ridges, plateaus, trenches, coral reefs, islands, arcs, ocean deposits.	12
2	The heat budget of ocean-Distribution of temperature & Salinity	12
3	Ocean water- circulation-factors affecting ocean currents, currents in Atlantic, Pacific & Indian Ocean. EL Nino & La Nina. Man & Oceans: Oceans as a store house of Minerals & Food resources, Hydrological cycle	16
4	Surface &Subsurface water resources: Occurrence of Groundwater- origin & age of groundwater, Rocks properties affecting on groundwater, Distribution , Zone of Aeration, Zone of Saturation, types of Aquifers, groundwater basins, groundwater movement-Darcy's law, permeability, groundwater flow rates, flow direction, dispersion.	20

## References:

1. Chorley R.J. (1967) : Introduction to geographical Hydrology, Methuen, London.
2. Dakshinamarthy C. et al (1973) : Water resource of India & their utilization in Agriculture, Indian Agricultural Res. Inst. New Dehli.
3. Eskstein O. (1965) : Water Resource Development, harvard University Press, Cambridge, Mass.
4. Facon R. (1963) : The Problem of Water- A world survey, Faber & Faber.
5. International Water Resource Association & Central Board o Irrigation & Power. (1975).
6. Water for Human needs wol. II, III, IV & V, proceedings of second world congress on waters resource 1-b-Dec. New Dehli.
7. Sing R.A. & Singh S.R. ( 1979) : Water management, Principles & Practices, Tara Publication, Varanki.
8. Todd D.K. (1959) :Ground Water Hydrology, John Wiley, New York.
9. Negi, S.S. (1994) : Geographical Science & Water resource Management, Printwell Jaipur ( India )
10. Joseph W & Howard P : Introductory oceanography, McGraw Hill, Lognkusha, Ltd. New Delhi. ( International Student Education )
11. Peter K. W. ( 1970): Oceanography: An Introduction to the marine Environment, John Wiley & Sons Inc. New York.
12. Sharma R.C. (1970) : Oceanography for Geographers, Chaitanya Publishing House, Allahabad.
13. Negi B.S. (1994-95) : Climatology & Oceanography, Kedarnath Ramanath Meerat, New Delhi.
14. Michael A. M. (1978) : Irrigation, theory & practices, Vikas Pub. House, New Dehli.
15. Savinder Singh ( 1999) L: Physical Geograpy, Prayag Pustak Bhavan, Allahabad.
16. Straher A. (1996) : physical Geography, Science & System of the Human Environment, New York, Jahu Wiley.
- 17 Siddhartha K (1999) : Oceanography A Brief Introduction. Kaisalya Pub. New Dehli.

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**For M.A./M.Sc. Par- I**  
**Semester –I**  
**Paper- IV (Elective)**

**Name of the Paper: Human Geography**

**Paper Code: SCT1.1**

**Total Lectures- 60**

**Total Marks- 100**

**Objectives:**

1. To acquaint the students with the nature, scope of human geography and races and religions.
2. To identify and understand environment and population in terms of their growth and spatial distributional pattern to comprehend the theories of population
3. To acquaint the students with the human settlements & human development.

**Contents of the course:**

<b>Unit No.</b>	<b>Details</b>	<b>Lectures/ Periods</b>
1	Introduction to Human Geography: Definition, Nature & scope of human Geography. Determinism, possibilism, cultural or social determinism.	15
2	Races & Religions: Races of Man, Racism, Ethnic groups. Religions: Classification religions, religions & natural features- Christianity, Buddhism, Hinduism & Tribal religions.	15
3	Population: Population growth and distribution, Population composition, Theories of Population- Malthus, Marxian & Demographic Transition Theory	15
4	Settlement & Human Development: Settlement: Types & functions of rural and urban settlements, Trends & Pattern of World Urbanization. Human Development: Historical Perspective, Human development Index & its indicators, Spatial pattern of HDI, computing the HDI, Population- Resource Relationship	15

**Reference Books**

1. Chandana R. C. (2010): Population Geography, Kalyani, Dehli
2. Hassan M. I. (2005): Population Geography, Rawat publication Jaipur
3. Danial P. A. & Hopkinson M. F. (1989): The Geography of Settlement, Oliver & Boyd, London.
4. Johnston R.: Gregory D. Pratt G. et al. (2008): The Dictionary of Human Geography, Blackwell Publication
5. Hussain Majid (2012): Human Geography, Rawat publication Jaipur

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**Revised Structure of Syllabus**  
**For M.A./M.Sc. Par- I**  
**Semester –I**  
**Paper- IV (Elective)**

**Name of the Paper: Economic Geography**

**Paper Code: SCT1.2**

**Total Lectures- 60**

**Total Marks- 100**

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**Objectives:**

The economy of the world is changing very fastly in recent times. The changes in primary, secondary & tertiary stage is dynamic in nature. In view of this the objectives of this course are to integrate the various factors of economic development to acquaint the students about dynamic aspects of economic geography.

**Contents of the course:**

<b>Unit No.</b>	<b>Details</b>	<b>Lectures/ Periods</b>
1	Definitions, Nature & Scope of economic geography, Approaches. Basic Economic Processes, production, exchange & consumption. Classification of economic activities- primary, secondary, tertiary & quaternary – their characteristics.	15
2	Principles of Industrial Location. Substitution- interdependence- Territorial production complexes- Location theories Weber & Losch.	15
3	Resources- renewable & non renewable- World energy situation- Sources of energy- coal, oil, energy crisis.	15
4	Models of transportation & transportation cost- Accessibility & connectivity. Inter regional & international –Ullman’s triad-complementarily intervening opportunity- transferability. Evolution of world trade- Structure & Pattern of trade after world war second. The trends during post world war second-Trade organization, GATT, OPEC, WTO & EEC	15

## References :

1. Alexander J.W. : (1976) : Economic Geography , Prentice Hall of India, New Dehli.
2. Alcxandersson G. (1988) : Geogaphy of manufctureing. Prentice Hall of India.
3. Berry, Conkling & Ray (1988) : Economic Geography Prentice Hall of India, New Dehli.
4. Hurst Ellion (1986) : Geography of Economic Behavior, Unwin, London.
5. Johnson R. J. & Taylor D.J. (1989) : A world in crisis. Basil-Blackwell, Oxford.
6. Losch : (1954) : Economics of Location. Yale University, New York.
7. Redeliff M (1987) : Development of & the environmental crisis, Methuen, London.
8. Sinha B.N. (1971) : Industrial Geography of India.
9. Watts H.D. (1987) : Industrial Geography, Longman Scientific & Technical New York.
10. Haggett, Peter : Modern Synthesis in Geography.
11. Robinson H & Bamford C. G. (1978) : Geography of Transport, Macdonald & Evans USA.
12. Misra R. P. : Regional Planning, Concepts, New Dehli.
13. Jones & Darkenwald : Economic Geography.

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**For M.A./M.Sc. Par- I**  
**Semester –I**  
**Practical Paper- I**

**Name of the Paper: Representation of Landform and Topographical Map**

**Paper Code: HCP1.1**

**Total Practical- 30**

**Total Marks- 50**

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**Objectives:**

1. To identify the different landforms on the topographical maps.
2. To examine the different drainage patterns.

**Contents of the course:**

<b>Unit No.</b>	<b>Details</b>	<b>Lectures/ Periods</b>
1	A) Maps-Definitions-Types of maps Indexing of Topographical Sheets. B) Methods of Representation of Relief: i) pictorial ii) mathematical.	15
2	Identification of Landforms from Topographical maps: Ridge, ii) Saddle, iii) Col, iv) Pass, v) Spur, vi) Plateau, vii) Escarpment, viii) Cliff, ix) 'V' Shaped Valley	15

**References:**

1. Davis, Peter. (1974) Science in Geography Data Description & presentation, Vol.3, Oxford University Press, London.
2. Hanwell, J.D. & Newson, M.D. (1973) Macmillan Education Ltd, London.
3. Mishra, R.P. ( 1973) : Elements of Cartography, Prasaranga, University of Mysore.
4. Monkhouse, F.JR & Wilkinson, H.R. Maps & Diagrams, Mathwn & Company, London.
5. Robinson, A.H. & Sale R.D. : Elements of Cartography. Johns House & Sons, London.
6. Sing R. L. ( 1996) : Map Work & Practical Geography, Central Book Dept. Allahabad.
7. Singh & Kannujin (1973) : Map Work & Practical Geography, Central Book Dept. Allahabad.

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**For M.A./M.Sc. Par- I**  
**Semester –I**  
**Practical Paper- II**

**Name of the Paper: Study of Weather maps**  
**Paper Code: HCP1.2**

**Total Practical- 30**  
**Total Marks- 50**

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**Objectives:**

To understand the method of collection & analysis of the climatic data & interpret the same.

**Contents of the course:**

<b>UnitNo.</b>	<b>Details</b>	<b>Lectures/ Periods</b>
1	I) Nature & Sources of climatic data, II) Indian daily weather reports, formats, Reading & interpretation III) Satellite images- interpretation & forecast IV) Analysis of upper air data (Tephigraph).	15
2	I) Wind Roses- Simple, Compound & Octagonal II) Isolines Interpretation-Isotherms, Isobars, Isohyets, Climograph.	15

**References :**

1. Ashis Sarakar : Practical Geography A Systematic approach, Orient Longman Ltd. Kolkatta.
2. Critchfield : Principles of Climatology.
3. Lawrence, G.R.P. : Cartographic methods, Mathur Co. London.
4. Mather J.R. (1974) Climatogogy, Fundamental & applications. Mc Graw Hill Book Co. New York.
5. Monkhouse, F.J.R. : Maps & Diagrams, Wilkinson, H.R. Methuen & Co. London.
6. R. L. Singh & Rana P.B. Singh: Element of Practical Geography, Kalyani Pub. New Dehli.(1999)
7. Trewartha G.T. : An Introduction to climate McGraw – Hill Book Co. , New

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**For M.A./M.Sc. Par- I**  
**Semester –I**  
**Practical Paper- III**

**Name of the Paper: Analysis of Climatic Data**  
**Paper Code: HCP1.3**

**Total Practical- 30**  
**Total Marks- 50**

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**Objectives:**

To understand the method of collection & analysis of the climatic data & interpret the same.

**Contents of the course:**

<b>Unit No.</b>	<b>Details</b>	<b>Lectures/ Periods</b>
1	Trend Line graphs- moving averages line, semi-averages line & its graphical analysis	15
2	Dispersion graphs- Rainfall dispersion diagram, Temperature dispersion diagram, correlation of climatic variables (Graphical analysis).	15

**References :**

1. Ashis Sarakar : Practical Geography A Systematic approach, Orient Longman Ltd. Kolkatta.
2. Critchfield : Principles of Climatology.
3. Lawrence, G.R.P. : Cartographic methods, Mathur Co. London.
4. Mather J.R. (1974) Climatogogy, Fundamental & applications. Mc Graw Hill Book Co. New York.
5. Monkhouse, F.J.R. : Maps & Diagrams, Wilkinson, H.R. Methuen & Co. London.
6. R. L. Singh & Rana P.B. Singh: Element of Practical Geography, Kalyani Pub. New Dehli.(1999)
7. Trewartha G.T. : An Introduction to climate McGraw – Hill Book Co. , New



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**For M.A./M.Sc. Par- I**  
**Semester –I**  
**Practical Paper- IV**

**Name of the Paper: Analysis of Socio-Economic Data**

**Paper Code: SCP1.1**

**Total Practical- 30**

**Total Marks- 50**

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**Objectives:**

1. For understanding various techniques of Analysis of Socio Economic Data.

**Contents of the course:**

<b>Unit No.</b>	<b>Details</b>	<b>Lectures/ Periods</b>
1	Choropleth Maps: Mapping of Socio- phenomena	5
2	Dot Method & its relevance to distribution maps.	5
3	Flow line charts & maps of transport flow.	5
4	Maps with proportional circles	5
5	Maps with divided proportional circles.	5
6	Maps with proportional spheres.	5

**References:**

1. Lawrence, G.R.P. (1973) : Cartographic methods, Methuen & Co. London.
2. Mishra, R. P. (1982) : Fundamental of cartography, Prasaranga, University Mysore.
3. Monkhouse, F.J.R & Wilkinson, H.R.: Maps & diagrams, Methuen & Co. London.
4. Raisz , Erwin : Principles of cartography, McGraw- Hill Book Co. , New York.
5. Robinson A.H. & Sale R.D. : Element of Cartography, John House & Sons Ltd. London.
6. Singh R. L.: Elements of Practical Geography.

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**For M.A./M.Sc. Par- I**  
**Semester –I**  
**Practical Paper- IV**

**Name of the Paper: Representation of Socio-Economic Data**

**Paper Code: SCP1.2**

**Total Practical- 30**

**Total Marks- 50**

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**Objectives:**

To understanding various techniques of Representation of Socio-Economic Data.

**Contents of the course:**

<b>Unit No.</b>	<b>Details</b>	<b>Lectures/ Periods</b>
1	Representation of Data by One Dimensional Diagrams: Graphs- Line, Multiple Line, Simple Bar Graph, Joint Bar Graph, Compound Bar Graph.	10
2	Two dimensional diagrams: Proportional Square, Proportional Circle, Divided Rectangle, Divided Circle.	10
3	Three dimensional diagrams: Cube Diagrams,	10

**References:**

1. Lawrence, G.R.P. (1973) : Cartographic methods, Methuen & Co. London.
2. Mishra, R. P. (1982) : Fundamental of cartography, Prasaranga, University Mysore.
3. Monkhouse, F.J.R & Wilkinson, H.R.: Maps & diagrams, Methuen & Co. London.
4. Raisz , Erwin : Principles of cartography, McGraw- Hill Book Co. , New York.
5. Robinson A.H. & Sale R.D. : Element of Cartography, John House & Sons Ltd. London.
6. Singh R. L.: Elements of Practical Geography.

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**For M.A./M.Sc. Par- I**  
**Semester –II**  
**Paper- V**

**Name of the Paper: Geomorphology-II**

**Paper Code: HCT2.1**

**Total Lectures- 60**

**Total Marks- 100**

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**Objectives:**

1. To acquaint the students with the theories of evolution of continents and Ocean basins.
2. To amiliarize the students with the concept of erosion and applied geomorphology..

**Contents of the course:**

<b>Unit No.</b>	<b>Details</b>	<b>Lectures/ Periods</b>
1	Evolution of continents & ocean basins, Wegener's continental drift & plate tectonics.	15
2	Concept of cycle of erosion by W.M. Devis Dynamic agencies of denudation & their work- Fluvial, Glacial, Marine, Aeolian & Karst.	15
3	Slope development- Views of Davis, Penk, Wood & Kings.	15
4	Applied Geomorphology & Recent Trends in Geomorphology, Geomorphic Hazards.	15

**References :**

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2. Chistopherson R.W. 1995: Elements ecosystem Prentice Hall. N.J.
3. Chorley, J.R. S.A. Sehum & DE Slogden 1984 Geom. Methuen. N.Y. London
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**Semester –II**  
**Paper- VI**

**Name of the Paper: Climatology-II**

**Paper Code: HCT2.2**

**Total Lectures- 60**

**Total Marks- 100**

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**Objectives:**

3. To provide an understanding of Classification of climate and climatic regions.
4. To acquaint the students with the Climate and clothing, Climatic problems.

**Contents of the course:**

<b>Unit No.</b>	<b>Details</b>	<b>Lectures/ Periods</b>
1	Basis of climatic classification according to Koppen & Thornthwaite- Climatic regions of the world.	10
2	Agro climatology- Droughts, Irrigation Scheduling- Agro climatic regions of India.	15
3	Climate clothing- Role of clothing providing insulation to human body. Physical climatology – (i) Climate & Human comfort, (ii) Climate & health, (iii) Urban climate & heat island, (iv) Air pollution, (v) Global warning, (vi) Ozone layer depletion.	15
4	Paleo Climatology- (i) Climatic changes of the geological past- Causes & effects, (ii) Recent climatic changes – Causes & consequences.	20

## References:

1. Critchfield: "General Climatology" Printice Hall, London.
2. Mather J. R. (1974) : "Climatology – fundamental & Application" McGraw Hill Book Co. New York.
3. Oliver J.E. (1973) : "Climate & Man's Environment- An Introduction Applied Climatology", John Wiley & Sons, New York.
4. Lutgens F.K. & Tarbuck, E.J. (5<sup>th</sup> Ed.) The Atmosphere- An Introduction to meteorology, Printice Hall, New Jersey.
5. Miller G.T. (Jr.) (9<sup>th</sup> Ed.) : "Living the Environment" Wadsworth Publishing Co. New York.
6. Savinder Singh (1999) : Physical Geography, Prayag Pustak Bhavan, Allahabad.
7. Mamoria C.B. : Agricultural Geography of India.
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**Semester –II**  
**Paper- VII (Elective)**

**Name of the Paper: Population Geography**

**Paper Code: SCT2.1**

**Total Lectures- 60**

**Total Marks- 100**

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**Objectives:**

Understand & evaluate the association between demographic & socio economic attribute of population & the resultant level of social-well-being & economic development.

**Contents of the course:**

<b>Unit No.</b>	<b>Details</b>	<b>Lectures/ Periods</b>
1	Population Geography- Definition, Scope & Significance: Source of population data	10
2	Factor affecting population distribution & density- Population distribution pattern- World & India. Population composition- Sex Ratio, Occupation.	16
3	Population change –fertility & mortality factor affecting them- population growth & changes in India –demographic transition theory.	18
4	Population & Resources –Optimum population : over population & under population-Malths theory of Population, Population problems & policies in India.	16

**References:**

1. Barred H. R. (1992) : Population Geography, Oliver and Boyd Longman House, Harlow.
2. Bhende Asha & Kanitkar Tara (1975) : Principles of population Studies, Himalaya Publishing House, Bombay.

3. Chandana R. C. & Manjit K. Siddhu (1980) : Introduction to population Studies Geography, Kalyani Publishers New, Delhi.
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10. Kingsley davis(1951) : Population of India & Pakistan, Princeton University Press, Princeton.
11. Ravenstein E(1889) : The Laws of Migration, Journal, Royal Statistical Society. 49,pp241-305.
12. Sinha V.C. (1979) : Dynamics of India's Population Growth, National Publishing House, New Delhi.
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14. Trewartha, G.T. (1953) : A case for Population Geography, Annals of the Association of Geographers, June, pp 71-97.
15. Trewartha,G.T. (1959) : A Geography of Population; World patterns, John Wiley & Sons Inc. New York.
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**Semester –II**  
**Paper- VII (Elective)**

**Name of the Paper: Geography of Health**

**Paper Code: SCT2.2**

**Total Lectures- 60**

**Total Marks- 100**

**Objective: - The objectives of this course are.**

- 1) To acquaint the students with the role of geographical factors, viz; Physical, demographic social & economic, influencing the spatial distribution of diseases:
- 2) To highlight the relation of health with nutrition, environmental degradation & urbanization.
- 3) To decipher the causes of the changing disease pattern and
- 4) To make the students abreast of existing health care facilities, so as to train them with better health care planning for the country.

**Contents of the course**

Unit No.	Details	Lectures ☐ Periods
I	Introduction to geography of health.: - i) Nature, Scope and significance of geography of health ii) Development of this area of specialization iii) Its distinction from medical science.	15
II	Geographical factors affecting human health and diseases arising from them. i) Physical factors – relief, climate, soils and vegetation ii) Social factors – Population density, literacy, social customs and poverty iii) Economic factors – food and nutrition iv) Environmental factors – Urbanization and pollution.	15
III	Classification of diseases: - i) Communicable and non-communicable ii) Occupational and deficiency diseases. iii) WHO’s classification of diseases. iv) Pattern of World distribution of major diseases	15

IV	Ecology, etiology and transmission of major diseases: - i) Cholera, malaria, tuber culosis, hepatits, leprosy, cancer, & AIDS ii) Diffusion of diseases and causes. iii) Problems of mal-nutrition in India.	15
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## References

Sr.No.	Name of Books
1	Banerjee B. and Hazra J: Geo-Ecology of Cholera in West Bengal, University of Calcutta, 1980
2	Hazra J. (ed): Health care planning in Developing countries, university of Calcutta, 1997
3	Learmonth A. T. A: Patterns of Disease and hunger, A study in medical Geography; David & Charles Victoria, 1978.
4	May J. M.: Studies in Disease Ecology, Hafner Publication, New York, 1961.
5	May J. M.: Ecology of Human Disease, M. D. Publication, New York, 1959.
6	May J. M.: The World Atlas of Diseases, Nal Book Trust, New Delhi, 1970.
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8	Pyle G: Applied medical Geography, Winston Halsted Press, Silver springs Md, U.S.A., 1979.
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10	Cliff. A and Haggett, P.: Atlas of Disease Distribution Basil Blackwell, Oxford, 1989.
11	Digby, A and stewart, L. (Eds) Gender, Health and welfare, Routledge, New York, 1996.
12	Narayan K. V.: Health and Development. Inter Sectoral Linkages in India. Rawat Pub. Jaipur, 1997.
13	Phillips, D. R: Health and Health care in the third world, Longman, London, 1990.
14	Shanon, G.M. et. al: The Geography of AIDS, Guilford press, New York, 1987.
15	Smit, D: Human Geography – A welfare Approach, Arnold Heinemann, London 1997.
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18	S. C. Sinha- Medical Geography, Rawat Publication, Jaipur
19	Ishtiaq A. Mayer- Medical Geography, Rawat Publication, Jaipur

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**Semester –II**  
**Paper- VIII (Open Elective)**

**Name of the Paper: Regional Geography of India**

**Paper Code: OET2.1**

**Total Lectures- 60**

**Total Marks- 100**

**Objectives:**

Understand India in terms of various regional divisions, their important characteristics. Intra- regional & inter- regional linkages, to analyse the natural & management resource endowments, their conservation & management.

**Contents of the course:**

Unit No.	Details	Lectures/ Periods
1	India: A) Location B) Physiographic divisions C) Climatic types D) Drainage system E) Types of Nature vegetation F) Types of soils & its conservation	12
2	Agriculture : A) Irrigation – Mode of irrigation (wells, tanks, canals) B) Cereal crops – Rice, Wheat. C) Cash crops – sugar cane, cotton. D) Agro climatic regions of India	12
3	Resources & Industries A) Mineral & Power Resources their distribution and production. i) Mineral Resources: Iron ore, Bauxite & Manganese ii) Power Resources: Coal & Petroleum B) B) Industry: i) Cotton Textile, ii) Iron & Steel Industry, iii) Industrial Regions of India	16
4	Basis of regionalization: geo-political climatic, agro- climatic, physiographic, historical, demographic, socio- economic dimensions of regionalization, case studies. Case studies of Meso / Micro level region in detail (one from each of division) A) Natural / Physical: Like suderbans Delta – India – gangatic plain, coastal India. B) Political: New state of India – Jharkhand, Uttaranchal& Chhatisgarh.	20

## References:

- 1) Center for science & Environment ( 1988 ) state of India's Environment  
New Delhi
- 2) Deshpande C.D. India : a regional Interpretation ICSSR and Northern Book  
Center 1992.
- 3) Dreze, Jean and Amartya sen ( Ed. ) India Economic Development and  
social opportunity : Oxford University press, New Delhi 1996.
- 4) Kundu A. Raza Moonis : Indian Economy : The Regional Dimension,  
Spectrum Publishers New Dehli. 1982.
- 5) Robinson Francis : The Cambridge encyclopedia of India, Pakistan,  
Bangladesh, Sri Lanka, Nepal, Bhutan & Maldives, Cambridge University  
Press London 1989.
- 6) Sing R. L. ( ed ) : India Regional Geography National Geography Society,  
India , Varanasi 1971.
- 7) Spate OHK and ATA Learmonth – India and Pakistan Menthuen London  
1997.
- 8) Tirtha R. & Gopal Krishna, Emerging India Reprinted by Rawat  
publication, Jaipur 1986.

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**Semester –II**  
**Paper- VIII (Open Elective)**

**Name of the Paper: Geography of Maharashtra**

**Paper Code: OET2.2**

**Total Lectures- 60**

**Total Marks- 100**

**Objectives:**

1. To understand Maharashtra in terms of Physical divisions, Climate, Soils and Drainage.
2. To analyze the natural & management resource endowments, their conservation & management.

**Contents of the course:**

<b>Unit No.</b>	<b>Details</b>	<b>Lectures/ Periods</b>
1	Maharashtra – Physical Bases -1)Location, 2)Physiography, 3)Climate, 4)Drainage System, 5)Soils, 6)Vegetation	12
2	Maharashtra – Minerals, Power Recourses & Industries, (Production & distribution) 1)Minerals - i)Iron ore ,ii)Bauxite, 2)Power Recourses – i)Coal ii)Petroleum 3)Industries - i)Cotton-Textile ii)Automobile Industry.	12
3	Maharashtra –Agriculture & Irigation,1)Agriculture (Production & distribution) Major crops i)Rice, ii)Wheat, iii)Sugarcane, 2)Irrigation (Major Sources & Distribution).	16
4	Maharashtra –Transportation, Tourism 1) Transportation (Importance & distribution) -i) Roads ii) Railways, 2) Tourism-Major Tourist Centers in Maharashtra, ii) Concept of Eco-tourism.	20

## References:

- 1) Arunachalam B.: Regional Geography of Maharashtra.
- 2) Britannica Encyclopedia Volumes.
- 3) Center for science & Environment ( 1988 ) state of India's Environment  
New Delhi
- 4) Department of Agriculture: Maharashtra State Research Bulletins.
- 5) Deshpande C.D.: Geography of Maharashtra
- 6) Deshpande C.D. India: a regional Interpretation ICSSR and Northern Book  
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- 7) Dreze, Jean and Amartya sen ( Ed. ) India Economic Development and  
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- 8) Economic Survey of Maharashtra 2003-4- Government of Maharashtra.
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of Maharashtra.
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Spectrum Publishers New Dehli. 1982.
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Public Relations.
- 12)Maharashtra State Forest Centenary Souvenir- Maharashtra Forest  
Department.
- 13)Robinson Francis: The Cambridge encyclopedia of India, Pakistan,  
Bangladesh, Sri Lanka, Nepal, Bhutan & Maldives, Cambridge University  
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, Varanasi 1971.
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- 16)Tirtha R. & Gopal Krishna, Emerging India Reprinted by Rawat  
publication, Jaipur 1986.

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**Semester –II**  
**Practical Paper- V**

**Name of the Paper: Study of Landforms Analysis Techniques**

**Paper Code: HCP2.1**

**Total Practical- 30**

**Total Marks- 50**

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**Objectives:**

3. To identify the different landforms on the topographical maps.
4. To examine the different drainage patterns.

**Contents of the course:**

<b>Unit No.</b>	<b>Details</b>	<b>Lectures/ Periods</b>
1	Identification and Mapping of Drainage Pattern: Dendritic, Trellies, Radial, Centrifugal, Stream Ordering Calculation of Bifurcation Ratio, Drainage Density.	8
2	Identification and Mapping of Slopes, Calculation of Gradient, Types of Slope: Steep, Uniform, Gentle, Concave, Convex, Terraced (Two Examples each).	7
3	Profile: Serial, Superimposed, Projected, Composite, Transverse, Longitudinal (Two Examples each).	8
4	Slope Determination: G.H. Smith's Method, C.K. Wentworth, Other methods of Slope Analysis: Area height diagram and Hypsometric curve	7

## References:

8. Davis, Peter. (1974) Science in Geography Data Description & presentation, Vol.3, Oxford University Press, London.
9. Hanwell, J.D. & Newson, M.D. (1973) Macmillan Education Ltd, London.
10. Mishra, R.P. ( 1973) : Elements of Cartography, Prasaranga, University of Mysore.
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12. Robinson, A.H. & Sale R.D. : Elements of Cartography. Johns House & Sons, London.
13. Sing R. L. ( 1996) : Map Work & Practical Geography, Central Book Dept. Allahabad.
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**Semester –II**  
**Practical Paper- VI**

**Name of the Paper: Statistical Techniques in Geography- I**

**Paper Code: HCP2.2**

**Total Practical- 30**

**Total Marks- 50**

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**Objectives:**

To introduce some basic statistical procedures to the students to be applied to various themes in geography.

**Contents of the course:**

<b>Unit No.</b>	<b>Details</b>	<b>Lectures/ Periods</b>
1	Definition of statistics; importance & use of statistical techniques in Geography. Frequency Distribution- Histogram, Polygon, Ogive Curve.	10
2	Measures of Central Tendency- Calculation of mean, Median & Mode- Quartile from grouped & ungrouped data.	10
3	Measure of dispersion: Absolute measurements- Mean Deviation, Quartile Deviation& Standard Deviation.	10

**References:**

1. Cole, J.P,& King, C.A.M.( 1968) : Quantitative Techniques inGeography, John Wiley & Sons.
2. Elhance, D.N. (1972) : Fundamentals of statistics, Kitab Mahal, Allahabad.
3. Gregory, S. (1968) : Statistical methods and the geographer. Longman, London.
4. Gupta C.B. ( 1978) : An introduction to statistical Methods, Vikas Pub. House, New Delhi.
5. Hoel P.G. : Elementary Statistics, Wiley, New York.
6. King, L.J(1991) : Statistical Analysis in Geography, Printice Hall, Englewood Cliff N.J.
7. Hemawati : Statistical Methods for Geographers.
8. Singh R. L. : Elements of Practical Geography.

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**Semester –II**  
**Practical Paper- VII**

**Name of the Paper: Statistical Techniques in Geography\_ II**

**Paper Code: SCP2.1**

**Total Practical- 30**

**Total Marks- 50**

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**Objectives:**

To introduce some basic statistical procedures to the students to be applied to various themes in geography.

**Contents of the course:**

<b>Unit No.</b>	<b>Details</b>	<b>Lectures/ Periods</b>
1	Relative Measurements: Co-efficient of Mean Deviation, Coefficient of Quartile Deviation, Co efficient of Variations,	10
2	Index Variability & relative Variability- Karl Pearson's and Bowley's Method.	10
3	Correlation Analysis: Kark Pearson's product moment, co-relation co-efficient Spearman's rank order.	10

**References:**

1. Cole, J.P,& King, C.A.M.( 1968) : Quantitative Techniques in Geography, John Wiley & Sons.
2. Elhance, D.N. (1972) : Fundamentals of statistics, Kitab Mahal, Allahabad.
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5. Hoel P.G. : Elementary Statistics, Wiley, New York.
6. King, L.J(1991) : Statistical Analysis in Geography, Printice Hall, Englewood Cliff N.J.
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**Semester –II**  
**Practical Paper- VII**

**Name of the Paper: Practical in Population Geography**

**Paper Code: SCP2.2**

**Total Practical- 30**

**Total Marks- 50**

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**Objectives:**

To understanding various techniques of Population Geography.

**Contents of the course:**

<b>Unit No.</b>	<b>Details</b>	<b>Lectures/ Periods</b>
1	Age-sex pyramid, Child-women ratio, Dependency ratio, Infant mortality rate, Age specific mortality	10
2	Rate of Population Change, Population Projection	10
3	Methods of representing and mapping of population data: Dot Method, Choropleth Method	10

**References:**

1. Liendsor, J. M. (1997): Techniques in Human Geography, Routledge, London
2. Lloyd P. and Dicken, B. (1972): Location in Space: A Theoretical Approach to Economic Geography, Harper and Row, New York
3. Wood, A. and Roberts, S. (2011): Economic Geography: Places, Network and Flows, Routledge, London
4. Chorley, R. J. and Hagget, P. (1972) Socio-economic Models in Geography, Methuen and Co., London
5. Monkhouse, F. J. and Wilkinson, H. R. (1971): Maps and Diagrams, Methuen and Co., London

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**Practical Paper- VIII**

**Name of the Paper: Analysis of Socio-Economic Data- II**

**Paper Code: OEP2.1**

**Total Practical- 30**

**Total Marks- 50**

**Objectives:**

For understanding various techniques of Analysis of Socio Economic Data.

**Contents of the course:**

<b>Unit No.</b>	<b>Details</b>	<b>Lectures/ Periods</b>
1	Compound Pyramids.	5
2	Superimposed Pyramids.	5
3	Triangular graph-linear- relationship variables	5
4	Cumulative graph.	5
5	Deviational graph	5
6	Scatter diagram	5

**References:**

1. Lawrence, G.R.P. (1973) : Cartographic methods, Methuen & Co. London.
2. Mishra, R. P. (1982) : Fundamental of cartography, Prasaranga, University Mysore.
3. Monkhouse, F.J.R & Wilkinson, H.R.: Maps & diagrams, Methuen & Co. London.
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**Semester –II**  
**Practical Paper- VIII**

**Name of the Paper: Surveying**

**Paper Code: OEP2.2**

**Total Practical- 30**

**Total Marks- 50**

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**Objectives:**

To understanding various surveying methods and preparation of plans.

**Contents of the course:**

<b>Unit No.</b>	<b>Details</b>	<b>Lectures/ Periods</b>
1	Definition and Meaning of Survey, Classification of Surveying; Terms used in leveling: Benchmarks, spot heights, reduced levels, interpolation and contouring,	10
2	Preparation of Plan with the help of following instruments: <b>Chain and Tape Survey:</b> Triangulation, Open and Close Traverse Method. <b>Plane Table Survey:</b> Radial, Intersection, Open and Close Traverse Method. <b>Prismatic Compass:</b> Radial, Intersection, Open and Close Traverse Method.	10
3	<b>Dumpy level: The Instrument-</b> Various components, Common terms used in dumpy level survey, adjustments in dumpy level; <b>Methods of computation-</b> Collimation method, Rise and Fall method; <b>Field survey methods-</b> Profile drawing and Block contouring	10

## References:

1. Singh & Kanujia : Map work and Practical Geography.
2. Maslov A.V. Gordeev A.V.,Batrakov Yu.G. Geodetic surveying,1984, Mir Publishers, Moscow
3. Kanetakar T.P. & Kukarni S.V. 1986. Surveying & leveling, Pune Vidyarthi Griha Prakshan, Pune
4. V. Natarajan P., Adler Ron K. Advanced Surveying, B.1 Publ. Bombay
5. Richardus P., Adler Ron K.: Map projections, 1972, North Holland publ. Co.Amsterdam
6. Maling D.H. ,1973 Co ordinate systems and map projections, George Philip, London.
7. Rangwala S.C. 2011. Surveying and Leveling, Charotar Publishing HousePvt. Ltd. Anand,(GJ)