SNDT Women's University

1, Nathibai Thackersey Road, Mumbai- 400020

Syllabus

(Revised-2020)

M.A.-Geography

Syllabus - Approved as per Agenda Item No. 8, V) a. in the Academic Council held on 18 June 2020.

SNDT Women's University

1, Nathibai Thackersey Road, Mumbai- 400020

M. A. Geography- Revised 2020

Faculty Name:	**Humanities**
Name of the Programme:	**M. A.**
Total Credits:	**80**

Eligibility:

A student is being eligible for admission to M.A. in Geography as per the eligibility norms prescribed by the university.

Programme Specific Outcomes (PSOs)

- Clearly understanding of the concepts and applications in the discipline of Geography.
- Ability of making comprehensive analysis, interpret spatio-temporal problems, suggest proper solutions by using theoretical, methodological and instrumental knowledge of Geography.
- Awareness about the global to local environmental issues and enhancement of social sensitivity.
- Acquired skills that will be useful in personal and professional life.
- Development of research interest to solve critical and emerging issues related to Geography and surrounding environment.

General Instructions:

- The Duration of M. A. programme is of four semesters and of 80 credits. There are five courses per semester. Each course will be of 4 credits. Each semester is of 20 credits. (5 x 4 = 20 Credits)
- For the M. A., courses are classified into Core (compulsory) Courses, Elective (optional) courses and CBCS (Choice Based Credit System) courses.
- In Semester I, and Semester II, students have to study total five courses in each semester.
- In Semester III, if student selects 'Research Component' as elective course, then she has to complete 2 courses of Research Component i.e. total 8 credits.
- In semester IV, if student selects 'Internship Component' as elective course, then she has to complete 2 courses of Internship Component i.e. total 8 credits.
- Students from any disciplines can opt for CBCS courses.
- In semester I, II, III and IV, students have an option to choose CBCS course each of 4 credits.

Evaluation:

- For Geography, each course will have 25% Internal Evaluation (i.e. assignments, projects, seminar- papers, presentations, reports on field visits etc.) and 75% External Evaluation.
- Minimum 40% marks are required in Internal & External assessment separately for passing in each Course.

- Student needs to clear internal assessment to be eligible to appear for semester end (external) examination.

(1) Programme Structure - Approved as per the Resolution of Agenda Item No. 21 in the Academic Council held on 20 November 2019
(2) Evaluation Pattern - Accepted as per the Resolution of Agenda Item No. 8, V) b. in the Academic Council held on 18 June 2020.

Syllabus Format

Scheme: Semester I

Sr. No	Code No.	Subjects	L	Cr.	P/T	D	TP (E)	Internal	P/V	T
Core Courses										
1	107501	Geomorphology	4	4	--	2.5	75	25	--	100
2	107502	Climatology	4	4	--	2.5	75	25	--	100
3	107503	Practicals in Physical Geography	4	4	--	2.5	--	25	75	100
Elective Course: (any one of the following)										
4	107601	Economic Geography	4	4	--	2.5	75	25	--	100
4	107602	Social and Cultural Geography	4	4	--	2.5	75	25	--	100
Elective Course/CBCS (any one of the following)										
4	107701	Population Geography	4	4	--	2.5	75	25	--	100
5	107702	Geography and International Relations	4	4	--	2.5	75	25	--	100
		Total	20	20	--		250	125	75	500

Scheme: Semester II

Sr. No	Code No.	Subjects	L	Cr.	P/T	D	TP (E)	Internal	P/V	T
Core Courses										
1	207501	Research Methodology	4	4	--	2.5	75	25	--	100
2	207502	Statistical Techniques in Geography	4	4	--	2.5	75	25	--	100
3	207503	Practicals in Human Geography	4	4	--	2.5	--	25	75	100
Elective Course (any one of the following)										
4	207601	Gender Geography	4	4	--	2.5	75	25	--	100
4	207602	Geography of Soils	4	4	--	2.5	75	25	--	100
Elective Course/CBCS (any one of the following)										
5	207701	Geography of Environment	4	4	--	2.5	75	25	--	100
5	207702	Geography of Maharashtra	4	4	--	2.5	75	25	--	100
		Total	20	20	--		250	125	75	500

Scheme: Semester III

Sr. No	Code No.	Subjects	L	Cr.	P/T	D	TP (E)	Internal	P/V	T
Core Courses:										
1	307501	Regional Geography of India	4	4	--	2.5	75	25	--	100
2	307502	Geography of Rural Development	4	4	--	2.5	75	25	--	100
3	307503	Advanced Cartography (Practical)	4	4	--	2.5	--	25	75	100
Elective Course: (any one of the following)										
4	307601	Research Component (Writing Research Proposal & Review of Literature)	4	4	--	2.5	--	25	75	100
4	307602	Principles of Regional Planning	4	4	--	2.5	75	25	--	100
Elective Course/CBCS (any one of the following)										
5	307701	Research Component (Dissertation & Viva Voce)	4	4	--	2.5	--	25	75	100
5	307702	Tourism Geography	4	4	--	2.5	75	25	--	100
		Total	20	20	--		150/300	225	150/75	500

Scheme: Semester IV

Sr. No	Code No.	Subjects	L	Cr.	P/T	D	TP (E)	Internal	P/V	T
Core Courses:										
1	407501	Urban Geography	4	4	--	2.5	75	25	--	100
2	407502	Agriculture Geography	4	4	--	2.5	75	25	--	100
3	407503	Practicals in Remote Sensing	4	4	--	2.0	--	25	75	100
Elective Course: (one of the following)										
4	407601	Internship Component	4	4	--	2.5	--	25	75	100
4	407602	Geography of Health	4	4	--	2.5	75	25	--	100
Elective Course/CBCS (any one of the following)										
5	407701	Internship Component	4	4	--	2.5	--	25	75	100
5	407702	Geography of Resources	4	4	--	2.5	75	25	--	100
		Total	20	20	--		150/300	225	150/75	500

L = No. of Lectures / week, Cr. = Credits, P/T = Practical / Tutorial in hrs., D = Duration of Theory paper for Examination in hrs., TP (E) = Theory paper for Examination marks, Internal = Internal Assessment in marks, P / V = Practical / Viva Voce – marks, T = Total.

SEMESTER – I

Sr. No	Code No.	Subjects	L	Cr.	P/T	D	TP (E)	Internal	P/V	T
Core Courses										
1	107501	Geomorphology	4	4	--	2.5	75	25	--	100
2	107502	Climatology	4	4	--	2.5	75	25	--	100
3	107503	Practicals in Physical Geography	4	4	--	2.5	--	25	75	100
Elective Course: (any one of the following)										
4	107601	Economic Geography	4	4	--	2.5	75	25	--	100
4	107602	Social and Cultural Geography	4	4	--	2.5	75	25	--	100
Elective Course/CBCS (any one of the following)										
4	107701	Population Geography	4	4	--	2.5	75	25	--	100
5	107702	Geography and International Relations	4	4	--	2.5	75	25	--	100
		Total	20	20	--		250	125	75	500

M.A Part-I (Sem-I)

Title: **Geomorphology**

Credits: 4	**Marks: 100**
Code No: 107501	**Hours: 60**

Objectives:

- To sensitise the students towards the judicial use of natural resources and particularly the land resource which is most immobile in nature.
- To understand the development of geomorphic thought, as well as review of fundamental geomorphic processes and theories of evolution of earth.
- To know various geomorphic processes and resultant landforms.
- To understand and application of geomorphic knowledge for land resource management and planning.

Course Content

Unit-1	**Nature and Scope of Geomorphology** Definition, Nature and scope of Geomorphology, History & development of Geomorphic Thoughts, Various Fundamental concepts, Approaches, Principle of Uniformitarianism, Recent Trends in Geomorphology
Unit-2	**Earth Movements** Interior of the Earth Sources of Knowledge, Endogenic Forces, Isostasy, Wegener's Continental Drift Theory, Sea Floor Spreading, Plate Tectonics
Unit-3	**Geomorphic Processes** Endogenetic and Exogenetic forces, denudational processes: Mass movement, Weathering, Erosion, Different Weathering Processes, Different Mass Movement Processes, Fluvial Processes, Aeolian Processes, Coastal Processes, Glacial Processes
Unit-4	**Applied Geomorphology** Slope and models of slope development, Applied geomorphology, Terrain Evaluation, Geomorphic Mapping, Application of geomorphology in land resource management planning.

Course Outcomes (COs): Students will able to

- Analyse the fundamental geomorphic processes in the formation of various landforms and theories of evolution of earth.
- Evaluate land natural resources and the conservation of landforms.
- Apply the geomorphic knowledge for the available land resource management and planning.

Suggested Reading

1. Allaby, Michael (2008): Oxford Dictionary of Earth Science, Oxford University Press, New York.
2. Bloom, A.L. (1991): Geomorphology, 2nd Ed Englewood Cliffs, M.J. Prentice Hall.
3. Brierley, G.J. &Fryirs, K.A. (2005): Geomorphology and River Management, Blackwell Publishing, Oxford UK.
4. Briggs, K. (1985): Physical Geography Process and System, Hodder and Stoughton, London.
5. Chorley, R.J. Schumm,S.A.& Sugden, D.E. (1985): Geomorphology, Methuen & Co. Ltd., London, New York.
6. Cook, R.U. &Doornkamp, J.C.(1974): Geomorphology in Environmental Management, an Introduction.
7. Fairbridge, R.W., ed. (1968): Encyclopaedia of Geomorphology Reinhold, New York.
8. Goudie A.S. et.al (1990):(Edt) "*Geomorphological Techniques*", Routledge, London.
9. Goudie, A.S. (2004): (Edt). "*Encyclopedia of Geomorphology*", Routledge, London. London.
10. Hart, M.G. (1986): Geomorphology Pure and Applied, George Allen and Unwin, London.
11. Kale, V.S. and Gupta, A. (2001): "*Introduction to Geomorphology*", Orient Longman, Calcutta.
12. King C.A.M. (1967): "*Techniques in Geomorphology*", Edward Arnold Publishers Ltd.
13. Leopold, L.B. Wolman, M.G. & Miller, J.P.(1964): Fluvial Processes in Geomorphology, W.H.Freeman, San Fransisco.
14. Lobeck, A.K. (1939): Geomorphology, McGraw Hill, New York. .
15. Moor, W.G. (1949): A Dictionary of Geography, Penguin Books, England.
16. Morgan, R.S. & Wooldridge S.W (1959): Outline of Geomorphology the Physical basis of Geography, Longmans Green, London.
17. Ollier, C (1981): "*Tectonics and Landforms*", Longman Group Ltd.
18. Robinson, Harry (1969): Morphology and Landscape, University Tutorial Press Ltd. London.
19. Selby M.J. (1986): "*Earth's Changing Surface*", Oxford University Press.
20. Singh Savindar (2002): "*Geomorphology*", PrayagPustakBhawan, Allahabad
21. Singh, Savindra (1991): Environmental Geography, PrayagPustakBhavan ,Allahabad.
22. Sparks, B.W (1972): "*Geomorphology*", Longman Group Ltd.
23. Strahler, A.H and Strahler A.N (1992): "*Modern Physical Geography*", John Wiley and Sons (Asia) Pvt. Ltd.
24. Strahler, A.N (1969): Physical Geography. John Wiley & Sons Inc., NewYork.
25. Thornbury, W.D. (I960) : "*Principles of Geomorphology*", John Wiley and Sons, New York
26. Wadia, D.N. (1993): Geology of India, Tata McGraw Hill Edition, New Delhi.
27. Worcester, P. G. (1948): Textbook of Geomorphology, Princeton, D.Van, Nortrand.
28. Young A. (1975) : "*Slopes*", Longman publishing Group

M.A Part-I (Sem- I)

Title: **Climatology**

Credits: 4	**Marks: 100**
Code No: 107502	**Hours: 60**

Objectives:

- The course aims at training students in basic principles of climatology
- To analyze Solar and Terrestrial radiation and Heat Budget.
- To understand vertical and horizontal distribution of temperature.
- To make Diagrammatic representation and explanation of Hydrological cycle.
- To understand Mechanism of Indian monsoon.
- To sensitize students about the climatic influence on society, emerging issues such as global climate change and its consequences.

Course Content

Unit-1	**Nature and Scope:** Climate, Weather, Sub-divisions of Climatology, Development of Modern Climatology. **Earth's Atmosphere:** Vertical structure and chemical composition. **Insolation and Heat Balance:** Solar Energy; Electromagnetic spectrum,; basic processes of heating and cooling (conduction, convection, radiation, absorption, reflection, scattering, transmission, advection), Factors affecting insolation, Latitudinal and Seasonal variation, Effects of Atmosphere, Albedo, Heat Balance of Earth-atmospheric systems. **Temperature:** Heat and temperature, measurement and controls; Vertical temperature patterns (lapse rate and temperature inversions), horizontal distribution of temperature.
Unit-2	**Atmospheric Pressure and Wind** Pressure Measurement, Factors affecting air Pressure and Observed distribution of surface pressure Wind observation and measurement, factors affecting wind (Pressure gradient, Coriolis force and frictional force), Geostrophic wind and Gradient wind, Local winds. **Circulation of the Atmosphere** Scales of Atmospheric Motion- Primary, Secondary, Tertiary. Local winds, Jet stream and its effect on the surface weather conditions.

Unit-3	**Atmospheric Moisture** Humidity measurement, forms of precipitation (rain, freezing rain, Sleet, Drizzle, Snow, Hail), types of precipitation (Convectional, Orographic, Frontal, Convergent); hydrological cycle. **Atmospheric Stability** Stable and unstable atmosphere, Environmental lapse rate, dry and wet adiabatic lapse rate and Absolute stability, Absolute instability, Conditional instability.
Unit-4	**Air Masses**: Source region, classification and modifications - (a) Mechanical (b) Thermodynamic; Fronts - Characteristics and Types. **Cyclones:** Tropical and extra-tropical cyclones, life cycle, anticyclones. **Monsoon:** Mechanism of Indian Monsoon, Monsoon and Indian economy. **Weather forecasting:** Methods**;** Climate Change- global warming and its effects.

Course Outcomes (COs): Students will able to

- Analyse Heat transfer and atmospheric processes.
- Examine vertical and horizontal distribution of temperature.
- Make Diagrammatic representation and explanation of Hydrological cycle.
- Evaluate the variations of weather systems in terms of Stability and Instability of atmosphere
- Evaluate the mechanism of Indian monsoon.
- Sensitize others about the climatic influence on society, emerging issues such as global climate change and its consequences.

Suggested Readings

1. Barry, R. G. and Chorley P. J. (1998): Atmosphere, Weather and Climate, Routledge, London and New York.
2. Critchfield, J. H. (1993, Rep. 2010): "*General Climatology*", Prentice Hall, India, New Delhi.
3. Das, P. K. (2005): "*Monsoons*", Natinal Book Trust, New Delhi.
4. Fein, J.S. and Stephens, P.N. (1987): "*Monsoons*", Wiley Interscience.
5. India Meteorological Department (2011): "*Climatological Tables of Observatories in India*", Government of India.
6. Indian Weather Reports, (www.**imdpune**.gov.in)
7. Lal, D. S. (1986): "*Climatology*", Chaitanya Publications, Allahbad.
8. Lal, D. S. (Ed 2003): "*Climatology*", Sharda Pustak Bhawan,11, University road Allahabad.
9. Lutgens, Frederic K. & Tarbuck, Edward J. (2010): "*The Atmosphere: An Introduction to Meteorology*", Prentice Hall, New Jersey
10. Lydolph, P. E. (1985): "*The Climate of the Earth*", Rowman, 1985.
11. McKnight T.L., (1987): 'Physical Geogrphy: A landscape appreciation, Prentice-Hall, Inc., Englewood Cliffs., N.J.
12. Navarra J. G. Atmosphere, (1979): "*Weather and Climate: An Introduction to Meteorology*", W.B. Saunders Company.
13. Pant G. B. and Rupa Kumar K. (1997): "*Climates of South Asia*", John Wiley and Sons.
14. Robinson, P. J. and Henderson S. (1999): "*Contemporary Climatology*", Henlow.
15. Savindra Singh (Rep. 2011): "*Climatology*", Prayag Pustak Bhawan, Allahabad.
16. Thompson, R. D. and Perry, A (1997): (edt), "*Applied Climatology, Principles and Practice*", Routledge, London.
17. Triwanta Glenn T. (1943): "*An Introduction to Weather and Climate*", New York and London.

M.A Part-I (Sem-I)

Title: **Practicals in Physical Geography**

Credits: 4	**Marks: 100**
Code No: 107503	**Hours: 60**

Objectives:

- To identify identification of types of slopes, micro-geomorphic features on the ground and their interrelationship.
- To get skills of climatic data representation, measurement of weather parameters and weather forecasting procedure.

Course Content

Unit-1	**Representation of Relief** Methods of relief representation, Profile- longitudinal profile, Cross profile, Superimposed and composite profile, Methods of slope analysis, Block diagrams
Unit-2	**Interpretation of SOI and Foreign Topographical maps** Marginal Information, Index System, Interpretation of SOI sheets, Introduction to Foreign topographical maps
Unit-3	**Representation of Climatic Data** Climograph, Simple and compound wind roses, Hythergraph, Koppen's classification of climate, Water Budget
Unit-4	**Indian Weather Reports** Analysis of Indian weather reports (based on online data) Field visit or survey

Course Outcomes (COs): Students will able to

- Differentiate and compare the various relief features and their characteristics.
- Interpret the topographical maps and apply this knowledge at ground surface.
- Achieve the skills of climatic data representation, analysis and able to develop their skill in future weather forecasting.

Suggested Readings:

1. Crone, G. R. (1966) , " *Maps and Their Makers*", 3rd Edition, Hutchinson, London.
2. Goudie A.S. and et.al (1990): (Edt) "*Geomorphological Techniques"*, Routledge, London.
3. Indian Weather Reports, (*www.**imdpune**.gov.in)*
4. Kanetkar, T. P. and Kulkarni S. V. (2014), "*Surveying and Leveling*", Pune Vidyarthi Prakashan, Pune.
5. King, C. A.M (1966): "*Techniques in Geomorphology*", Edward Arnold, London
6. Lutgens, Frederic K. & Tarbuck, Edward J. (2010) : *"The Atmosphere: An Introduction to Meteorology*", Prentice Hall, New Jersey
7. Miller, Austin (1953) : "*The skin of the Earth"*, Methuen & Co. Ltd. London
8. Monkhouse, F. J. and Wilkinson, H. R., (1976): "*Maps and Diagrams"*, Methuen & Co.
9. Rashid, S. M. , Ishtiaq M. (1974) : " *Practical Geography*", Jawahar Publishers and Distributors, New Delhi.
10. Robinson A., Sale R. , Morrison J. (1978) : " *Elements of Cartography*", John Wiley and Sons, U.S.A.,
11. Sarkar Ashis (1997) : " *Practical Geography: A Systematic Approach*", Orient Black-Swan.
12. Singh R. L. & Rana P. B. Singh (2005) : " *Elements of Practical Geography*", Kalyani Publisher, New Delhi.
13. Singh R. L. (1979) : " *Elements of Practical Geography*", Kalyani Publisher,New Delhi.
14. Tamaskar, B. G. (1974) : "*Geographical Interpretation of Indian Topographical Maps"*, Orient Logman.

M.A Part-I (Sem- I)

Title**: Economic Geography**

Credits: 4	**Marks: 100**
Code No: 107601	**Hours: 60**

Objectives:

- To comprehend the basic concepts in economic geography in the view of modernization of world economy.
- To understand theoretical models along with technological advancement and make their application for the economic development of lagging regions of the country and people therein.
- To assess the association between trade and transportation and its impact on economic development.

Course Content

Unit-1	**Introduction to Economic Geography** Definition, Nature and Scope of Economic Geography; Approaches of Economic Geography ; Classification of Economic activities ; Economic Landscape; Economic System; Recent trends in Economic Geography
Unit-2	**Industrial Location Theory and Industrial Regions** Factors of Industrial Location ; Industrial Location Theory-Weber's and August Losch's Theory; Industrial Region of the world and India
Unit-3	**Transportation and Trade** **Transportation :** Types of Transportation- Roadways, Railways, Waterways, Air ways and Pipelines; Variation in Transportation Cost **Trade :** Types of Trade and Factors affecting International Trade; Trading Blocs Problems and Prospects International Trade ; Ricardo's Trade Theory
Unit-4	**Development : Concepts and Measurements** Concept of Growth and Development; Measurements of Development – Geographical, Economic, Social, Demographic Measures; Rostow's Model; Patterns and Problems of World Economic Development; Impact of Pandemics (Covid-19) on Indian Economic Development

Course Outcomes (COs): Students will able to

- Apply the basic concepts of economic geography in classification of economic activities and relate it with changing world economy.
- Criticize the theoretical models with technological advancement and assess their application in current industrial pockets.
- Evaluate the significance of trade and transportation in the local to global scenario with reference to economic development.

Suggested Reading

1. Goh cheng Leong, Gillian C. Moran (2009): "*Human and Economic Geography*", Oxford Uni.Press, Honk Kong Second edition.
2. Hanink, D.M. (1997): "*Principles and Applications of Economic Geography, Economy, Policy, Environment*", John Wiley and Sons, New York.
3. Janaki, V.A. (1985): "*Economic Geography*", Concepts Publishing Co.
4. K. Siddhartha, (2009): "*Economic Geography: Theories, Process and Patterns*", Kisalaya Publications Pvt. Ltd., Delhi.
5. Kanan Chatterjee (2015): 'Basics of Economic Geography', Concept publishing Company Pvt. Ltd., New Delhi.
6. Knox P. and J. Agnew (1998): "*The Geography of the World Economy*"; Arnold, London.
7. Masjid Hussain, (2008): "*Models in Geography*", Rawat Publications, New Delhi.
8. Masjid Hussain, (2018): "*Economic Geography*", Rawat Publications, New Delhi.
9. Mitra, A (2002): 'Resource Studies', Sreedhar publishers, Kolkata.
10. Ray, P. k. (1997): '*Economic Geography*',New Central Book Agency (P) Ltd., Calcutta.
11. Saxena, H. M. (2013): '*Economic Geography'*, Rawat publication, Jaipur.
12. Shelar S. K. (2013): '*Principles of Economic Geography*' Chandralok Prakashan, Kanpur.
13. Smith D.W.L.: "*A Geography and Industrial Location*", John Wiley, McGraw Hill Co. New York.
14. Truman A Hartshorn, John W. Alexander (2010): "*Economic Geography*" PHL Learning Private Limited, New Delhi.

M.A Part-I (Sem-I)

Title**: Social and Cultural Geography**

Credits: 4	**Marks: 100**
Code No: 107602	**Hours: 60**

Objectives:

- The course attempts to examine the impact of human society and culture on the earth's surface.
- It seeks to understand how places develop meaning for people, through the analysis of socio- cultural processes, landscapes and their identity.

Course Content

Unit-1	**Concept in Social Geography:** Definition, scope and content of Social Geography, Evolution of Social Geography: recent methodologies. Measures of social wellbeing (quantitative and qualitative methods) **Approaches:** Possibilistic, Behavioural, Radical, Humanist, Positivism and Welfare approach; Concept of space and region, types of regions: functional and types.
Unit-2	**Geography of social wellbeing and Development:** Nutrition and Health in India, Gender ratio, women equity and empowerment indicators & measures. Urbanization as a socio- economic indicator, Migration slums and poverty. Social exclusion in rural India, Ageing in India & impact of globalization. **Indicators of development of the nations of the world:** social, economic and demographic characteristics , Human Development Index (Nations of World & States of India)
Unit-3	**Cultural Geography** Concept of culture in Geography; definition, scope and content of Cultural Geography. Methodologies and approaches. Characteristics of culture, Cultural assimilation and diffusion , Cultural regions , Cultural areas and Cultural landscape , **Globalisation:** Socio-cultural change, Cultural identity and implications, case study one global and India.
Unit-4	**Mosaic of culture, Race, Religion and language:** Race and ethnic group, basis of racial classification, global Racial calcification (Mongoloids, Caucasians, Negroids and their sub groups), racial & ethnic groups in India. Evolution of religions of the world, their characteristics and distributions, religious and racial conflicts and its implications. Language and their importance, language families and their distribution, Linguistic classification India. Socio – cultural regions in India. Racial and religious conflicts and management.

Course Outcomes (COs): Students will able to

- Analyse the impact of human society and culture on the earth's surface.
- Evaluate socio- cultural processes, landscapes and their identity in social wellbeing.

Suggested Readings:

1. Aijazuddhin Ahmad (1999): "*Social Geography*", Rawat Publications, Jaipur
2. Atkinson David, et .al (2005): "*Cultural Geography*", Rawat Publication, Jaipur
3. Carter John & Jones Trevor: "*Social Geography: An Introduction to Contemporary Issues*", Arnold, London
4. D.Stanley Etizen and Maxine Baca Zinn, (2000): "*Social Problems",* (8 th edition). Allyn and Bacon, Boston.
5. H. J.de Blij and Alexander, B. Murphy, (1999): "*Human Geography: Culture, Society and Space",* (6th Edition), John Wiley and Sons Inc, Newyork.
6. Haq Mahbulul (2000): "*Reflections on Human Development*", Oxford University Press, New Delhi.
7. Hussain Masjid, (2008): "*Human Geography*", Rawat Publications, New Delhi.
8. John.A.Perry and Erna.K.Perry, (2000), "*Contemporary Society: An Introduction to Social Science"* (9th Edition), Allyn and Bacon, Boston.
9. Mohanty G S (ed) (2005): "*Social & Cultural Geography*", Isha Books, New Delhi
10. Pain, Rachel et.al (2001): "*Introducing Social Geographies*", Arnold, London.
11. Sawant et al Globalisation (2009): "*Issues and Challenges for India*", Published by Indian Institute of Geographers and Smt. Parvatibai Chowgule College, Goa
12. Sen Amartya & Droze Jean, (1996): "*Indian Development: Selected Regional Perspective*", Oxford University Press.

M.A Part-I (Sem- I)

Title: **Population Geography**

Credits: 4	**Marks: 100**
Code No: 107701	**Hours: 60**

Objectives:

- To introduce the fundamental concepts of Population Geography.
- To explain determinants of population growth and distribution in spatio- temporal perspective.
- To comprehend population dynamics and migration, issues and policies in developed and developing countries.
- To understand and analyse issues and challenges of population in the context of India.

Course Content

Unit-1	**Introduction to Population Geography** a) Definition , Nature and Scope b) Historical development of Population Geography c) Approaches of Population Geography d) Sources of population data with special reference to India, e) Brief history of Census, census classification Overview of census of India 2011/2021.
Unit-2	**Population Growth and Distribution Characteristics** a) Definition and influencing Factors of Fertility and Mortality, Demographic transition Model b) Overview of Population growth and Density Population explosion , Malthus and Karl Marx Theory of Population Growth c) Over population, under population and optimum population , Population Projections
Unit-3	**Population Migration** a) Introduction to Migration, importance of migration, types of migration , causes and impacts of migration b) Human migration with special reference to India (forced & voluntary, internal and external) c) Migration Theories : Lee's theory, Zelinsky's Mobility transition model d) Recent issues related to Migration : COVID 19 & migration, Migration and Politics: Fiji Islands, reversal migration of brain drain to brain gain
Unit-4	**Population Issues and Population Policies** a) India: Population growth & Population Dividend b) India: Gender issues & equality (Sex ratio , literacy, health) c) Concept of Human Development Index : Global and national analysis d) National Population Policy (NPP) 2000 : Targets , achievements and challenges

Course Outcomes (COs): Students will able to

- Assess the determinants of dynamic population, characteristics, recent trends and its importance in the overall development of any region.
- Collect the world and national demographic data through various sources and critically examine the changing pattern of population characteristics.
- Compare various population theories and analyze the stages of population transition in context of India.
- Evaluate major issues and challenges, population policies and it's criticize implementation at world and national level.

Suggested Readings:

1. Bhende, A. and Kanitkar, T. (2006): Principles of Population Studies, Himalaya Publishing House, Mumbai.
2. Bose Ahish (2000): "*India Towards Billion Plus*", Vikas Publishing House.
3. Chandana, R.C. (2015) : Geography of Population: Concepts, Determination and Patterns, latest edition, Kalyani Publishers, New Delhi.
4. Clarke, J.I. (1992): Population Geography, Second Edition, Pergamon Press, Oxford England.
5. Crook, N. (1997): Principles of Population and Development, Pergamon, New York.
6. Daugherty, H.G., Kenneth C.W.K. (1998): An Introduction to Population (Second Edition), The Guilford Press, New York, London.
7. Garnier, B.J. (1970) : Geography of Population, Longman, London.
8. Hassan Mohammed (2005) : Population Geography, Rawat Publication, New Delhi
9. Lal Punna (2015) Population Geography Anmol Publications PVT. LTD , New Delhi
10. Majumdar P K (2013) : India's Demography: Changing Demographic Scenario in India, Rawat Publication, New Delhi
11. Mamoria C.B. (1981): India's Population Problems, Kitab Mahal, New Delhi.
12. Premi M.K. (1991): India's Population: Heading Towards a Billion, B.R. Publishing, New Delhi.
13. Roy Rajeshwar (2013) Handbook Of Population Geography, Anmol Publications PVT. LTD Anmol.
14. UNDP Report (2012): Oxford University Press, Oxford.
15. Verma L.N. (2006): "*Urban Geography"*, Rawat Publications, New Delhi

M.A. Part-I (Sem-I)

Title: **Geography and International Relations**

Credits: 4	**Marks: 100**
Code No: 107702	**Hours: 60**

Objectives:

- To expose the student to geopolitical concepts and their impact on changing strategic order.
- To expose the student to understand changing nature of world strategic order.
- To encourage the student to explore the reasons behind the changing order.

Course Content

Unit-1	Geographic elements of state-Physical elements (Location, size, shape, topography, climate, natural resources etc.) and cultural elements (Economic, social, demographic etc.).Study of following concepts-state, nation and nation-state, geopolitics and geostrategy. Heartland and Rimland theories.
Unit-2	**Frontiers and boundaries:** Classification of boundaries. Laws of the sea and maritime boundaries. Problems associated with international land and maritime boundaries. Transnational riparian disputes with reference to India.
Unit-3	International relations-Meaning, significance and importance. Concepts of trans-nationalism, Balance of power and National power. Changing historical perspective since 1900 A.D.to the present.(Peak of British Empire, WW-I,WW-II, Cold War, Disintegration of USSR, Unification of Germany, Rise of China etc.)
Unit-4	Globalization and the new world order. Major international institutions and pacts. (Including GATT, WTO and SAARC). Geopolitics of oil. India and adjacent countries with reference to national security. India and Indian Ocean.

Course Outcomes (COs): Students will able to

- Correlate the knowledge of geography and international relations.
- Develop ideas of changing nature of world strategic order.
- Explore the reasons of the spatio-temporal changes in strategic order.

Suggested Readings:

1. Cohen (S L). (2010): *"Geopolitics: The Geography of International Relations"* Rowman and Littlefield, New York.
2. Dikshit R. D , (1994): *"Political Geography: The Discipline and its Dimensions"* Tata Macgraw Hill, New Delhi
3. Dikshit, R.D. (1996): *"Political Geography: A Contemporary Perspective,"* Tata McGraw Hill, New Delhi.
4. Dikshit, R.D. (1999): *"Political Geography: A Century of progress",* Sage, New Delhi.
5. Harm j. Di Blij, (1973): *"Systematic Political Geography"*, John Wiley and Sons, New York.
6. Panikkar K.M. (1959): *"Geographical Factors in Indian History",* 2 Vols. Asia Publishing House, Bombay.
7. Peet Richard, Richard Peet, Paul Robbins, and Michael Watts (Ed) (2011): *"Global Political Ecology*". Routledge, 2 Park Square, Milton Park, Abingdon, Oxon.
8. Peltier Louis and G. Etzel Perarcy, (1981): *"Military Geography",* East West Publications, New Delhi
9. Presscot J. R. V, (1972): *"Political Geography",* Methuem and Co, London.
10. Stott , Philip and Sullivan S, (2000): *"Political Ecology: Science",* Myth and Power.
11. Sukhwal B. L, (1985): *"Modern Political Geography",* Sage Publication, New Delhi
12. Taylor P. J, (1895): *"Political Geography: World Economy, Nation Stae and Locality",* Longman, London.

SEMESTER – II

Sr. No	Code No.	Subjects	L	Cr.	P/T	D	TP (E)	Internal	P/V	T
		Core Courses								
1	207501	Research Methodology	4	4	--	2.5	75	25	--	100
2	207502	Statistical Techniques in Geography	4	4	--	2.5	75	25	--	100
3	207503	Practicals in Human Geography	4	4	--	2.5	--	25	75	100
	Elective Course: (any one of the following)									
4	207601	Gender Geography	4	4	--	2.5	75	25	--	100
4	207602	Geography of Soils	4	4	--	2.5	75	25	--	100
	Elective Course/CBCS (any one of the following)									
5	207701	Geography of Environment	4	4	--	2.5	75	25	--	100
5	207702	Geography of Maharashtra	4	4	--	2.5	75	25	--	100
		Total	20	20	--		250	125	75	500

M.A. Part-I (Sem-II)

Title**: Research Methodology**

Credits: 4	**Marks: 100**
Code No: 207501	**Hours: 60**

Objectives:

- To make the students research oriented.
- To acquaint the students with the methods and techniques in Geographical research.
- To enable and encourage the students to undertake independent research work or dissertation of a selected area.

Course Content

Unit-1	**Introduction to Research** Basic concepts, Research and its types Theories in research, Explanation in Geography, Recent Trends in Geographic research. Approaches to Geographical Research: Interdisciplinary, trans –disciplinary and multi- disciplinary.
Unit-2	**Research Methods and Geographical Data** Research Methods in Geography, Collection of data: sources, primary and secondary data, collection and classification, Sampling Methods: Techniques and types of sampling techniques, Hypothesis: Types, Characteristics, Formulation and testing
Unit-3	**Research design** Meaning of Research Design, its need, Formulation of research problem, analytical framework, designing of a questionnaire, Review of literature survey, its type and role of internet. Computer based analysis e.g. techniques of analysis spatio temporal changes etc.
Unit-4	**Report Writing /Thesis Writing** Organization of a research report/ thesis. the preliminaries (Pre writing considerations) Format of report writing, Abstract Writing, Synopsis Writing, Techniques of writing a scientific paper, steps in report/thesis writing, Language and presentation (form and style)References and Bibliography, Use of computer/ internet in report/Thesis writing.

Course Outcomes (COs): Students will able to

- Compare and classify the types of research and basic concepts of research.
- Apply the various techniques in Geographical research.
- Achieve the research skill to select any research problem and design the framework of their future dissertation work.

Suggested Readings:

1. Basil Gomez and John Paul Jones, (2010): "*Research Methods in Geography: A Critical* I*ntroduction (Critical Introductions to Geography)*", Wiley-Blackwell.
2. Davies Wayne K.D. (ed.), (1972): *"The Conceptual Revolution in Geography",* University of London Press Ltd., London.
3. DydiaDeLyser,Steve Herbert, Stuart Aitken and Mike A Crang, (2009) : *"The SAGE Handbook of Qualitative Geography*", Sage Publications Ltd.
4. Har Prasad,(1992): *"Research Methods and Techniques in Geography"*, Rawat Publications.
5. Harvey D., (1973): *"Explanation in Geography",* Edward Arnold, London.
6. Iain Hay, (2010): *"Qualitative Research Methods in Human Geography",* Oxford University Press, USA.
7. Keith Hoggart, Loretta Lees and Anna Davies, (2002): *"Researching Human Geography",* Oxford University Press, USA.
8. Misra R. P., (1989): *"Research Methodology: A Handbook",* Concept Publishing Company, New Delhi.
9. Murthy, K.L.Narasimha (1999): ,Geographical Research , Concept Publishing copany
10. Nicholas Clifford, Shaun French and Gill Valentine, (2010): *"Key Methods in Geography",* Sage Publications Ltd.
11. Robert Kitchin and Nick Tate, (1999): "*Conducting Research in Human Geography: theory, methodology and practice",* Benjamin Cummings.

M.A Part-I (Sem-II)

Title: **Statistical Techniques in Geography**

Credits: 4	**Marks: 100**
Code No: 207502	**Hours: 60**

Objectives:

- To understand the basic concept of descriptive statistics and its applications.
- To get acquainted about statistical tools and techniques to be used in further research.
- To develop the ability of Computer application to compute and interpret data statistically.

Course Content

Unit-1	**Basics of Statistics** Definitions of statistics, Importance, use and applications of statistical techniques in geography, Sources of statistical data in geography; Scales of measurement: Nominal, Ordinal, Interval and Ratio; Frequency Distribution, Typical Patterns of Frequency Distribution.
Unit-2	**Statistical Measurements and assessment** Measurement of Central Tendencies - Mean, Median and Mode; Measurement of Dispersion - Variance, Standard deviation, Mean deviation, Quartiles; Normal Distribution Curve, Gaussian curve and its properties; Computation of Index of Skewness and Kurtosis, Concept of probability assessment, Probability assessment of discrete and continuous random variable.
Unit-3	**Hypothesis Testing** Concept of Population and sample, Sampling Methods, Testing of hypothesis, Hypothesis-Null hypothesis and Alternative hypothesis, Parametric and Non-parametric Tests, Student's 't' test and Chi square test .
Unit-4	**Techniques of Bivariate Analysis :** Concept of covariance and correlation, Pearson's Product-moment Correlation Coefficient, Spearman's Rank Correlation Coefficient, Straight line regression equation, Demonstration and Use of Ms-Excel for all units.

Course Outcomes (COs): Students will able to

- Develop the basic concepts of statistics and its application in geographical research.
- Apply the appropriate statistical tools and techniques in their further research.
- Achieve the ability of computer application in data analysis and its interpretation.

Suggested Readings:

1. Alvi, Z. (1995): "*Statistical Geography: Methods and Applications*", Rawat Publications, Jaipur
2. David Ebdon (1989) : "*Statistics in Geography-A Practical Approach*", 2nd Edn., Blackwell Publishing.
3. Gupta, C.B. (1978) : "*An Introduction to Statistical Methods*", Vikas Pub.House, New Delhi.
4. Jog, S.R. and Saptharshi, Pravin (1980): " *Sankhyki Bhugol*", Narendra Prakashan Pune.
5. John Matthews, (1981) : "*Quantitative & Statistical Approaches to Geography: A Practical Manual*", Pergamon Press.
6. Karlekar Shrikant (2007): "*Statistical Methods in Geography*", Diamond Publication, Pune.
7. Karlekar, Shrikant and Kale, Mohan (2006) : "*Statistical Analysis of Geographical Data*", Diamond Publication, Pune.
8. King, L.J. (1991): " *Statistical Analysis in Geography*", Prentice Hall, Englewood.
9. Mahmood, A.(1977): "*Statistical Methods in Geographical Studies*", Rajesh Publications, New Delhi.
10. Mandal, R. B. (1981): "*Statistics for Geographers & Social Scientists*", Rawat Publication.
11. Pal, Saroj K (1982): "*Statistical Techniques, A Basic Approach to Geography*", Tata McGraw Hill Publishing Comp. Ltd. New Delhi.
12. Peter Rogerson: "*Statistical Methods for Geography*", 3rd Edn. Sage Publishing New Delhi.
13. Rogerson P.A. (2001) : "*Statistical for Geography*", SAGE publication, New Delhi.
14. Shaw G. & Wheller D. (1985) : "*Statistical Techniques in Geogrphical Analysis*", John Wiley & Sons, New York.

M.A Part-I (Sem-II)

Title: **Practicals in Human Geography**

Credits: 4	**Marks: 100**
Code No: 207503	**Hours: 60**

Objectives:

- To understand basic concepts, techniques and application of surveying.
- To explain various methods and data analysis techniques in human geography.
- To acquire the skill of data collection, analysis and report writing.

Course Content

Unit-1	**Surveying** Definition, History and Development in Surveying; Classification of surveying - Plane table and Prismatic compass; Introduction to Theodolite surveying, Tachometric Survey and contour plan / Interpolation; Importance and application of surveying in geography
Unit-2	**Agriculture and Transportation** Crop Combination: Weavers and Thomas Methods; Agricultural Efficiency: Kendall's Method; Measures of Network Structure: Alpha, Beta and Gama; Lorenz Curve
Unit-3	**Population and Settlements** Fertility **:** General Fertility Rate, Crude Birth Rate**;** Mortality : Infant Mortality Rate, Crude Death Rate; Child women ratio, Sex Ratio, Age sex pyramid; Population growth rate, Population projection**;** Rural Settlement Dispersion Methods - Demangeon and R. B. Mandal's Method and Rank size Rule
Unit-4	**Field work** Socio Economic survey – Village / City Survey and Report writing

Course Outcomes (COs): Students will able to

- Develop their own ideas about the basic concepts, techniques and application of surveying.
- Apply appropriate methods in various sectors data analysis which support for further planning in agriculture, transportation etc.
- Achieve the skill of data collection through field visit, analysis, report writing and map making.

Suggested Readings:

1. Alka Gautam (2012): *"Agricultural Geography"* Sharda Pustak Bhawan, Allahabad.
2. Bhaduri, S. (1992) : " *Transport and Regional Development: A Case Study of Road. Transport of West Bengal*", Concept Publication, New Delhi.
3. Clarke, J.I. (1992): "*Population Geography*" Second Edition, Pergamon Press, Oxford England.
4. Crook, N. (1997): "*Principles of Population and Development*", Pergamon, New York.
5. Daugherty, H.G., Kenneth C.W.K. (1998): "*An Introduction to Population*" (Second Edition), The Guilford Press, New York, London.
6. Grigg David (1995): *"An introduction to agricultural geography",* (second edition), Routledge, London and New York
7. H. J.de Blij and Alexander. B.Murphy, (1999): "*Human Geography: Culture, Society and Space",* (6th Edition), John Wiley and Sons Inc, Newyork.
8. Haq Mahbulul (2000): "*Reflections on Human Development*", Oxford University Press, New Delhi.
9. Hussain Masjid, (2008): "*Human Geography*", Rawat Publications, New Delhi.
10. Kanetkar, T. P. and Kulkarni S. V. (2014), "*Surveying and Leveling*", Pune Vidyarthi Prakashan, Pune.
11. Liendsor, J. M. (1997): *Techniques in Human Geography*, Routledge.
12. Perpillon A. (1966): "*Human Geography*", Longman, London.
13. Robinson, H. And Bamford, C.G. (1978): " *Geography of Transport*", London: Macdonald
14. Sarkar Ashis (1997): "*Practical Geography: A Systematic Approach*", Orient Black-Swan.
15. Singh Jasbir and Dhillon S.S. (1994): "*Agricultural geography"*, Tata McGraw Hill Publication, New Delhi
16. Singh R. L. & Rana P. B. Singh (2005): " *Elements of Practical Geography*", Kalyani Publisher, New Delhi.
17. Singh R.L. et al (1975): "*Reading in Rural Settlement Geography"*, National Geographical society of India, Varanasi.

M.A Part-I (Sem-II)

Title: **Gender Geography**

Credits: 4	**Marks: 100**
Code No: 207601	**Hours: 60**

Objectives:

- To introduce the fundamental concepts of Gender Geography.
- To comprehend various variables of gender and its impact on the development.
- To explore how gender relations and geography are mutually structured and transformed spatially.
- To understand and analyze the gender inequality and bridging gender gap in the context of India.

Course Content

Unit-1	**Introduction to Gender Geography** Definition, nature and Scope of Gender Geography; Emergence of Gender Geography; Concept of interdependence between men and women; Approaches and trends in Gender Geography
Unit-2	**Gender Variables and Gender Development:** Historical Variables, Socio-Cultural, Demographic, Economic, Political, Administrative and institutional variables, Role of gender variables in development
Unit-3	**Gender Gap** Concept of Gender Gaps , Parameters of Gender Gap, Gender Gap Analysis- Education, Education attainment, Health care and nutrition, Life expectancy, livelihood, participation in politics and enfranchisement; Global Scenario of Gender Inequality; Spatial Gender Inequality in India
Unit-4	**Bridging Gender Gap** Concept of Gender Audit, Role of Gender Budget in bridging Gender Gap; Bridging Gender Gap - Empowerment of women with education, economic opportunities, access to reproductive health services, involvement in decision making processes in various sectors

Course Outcomes (COs): Students will able to

- Develop and apply the knowledge of geography in various fundamental concepts of Gender Geography.
- Analyse different variables of gender and its impact on the development.
- Critically evaluate the causes of gender inequality and develop their own ides to bridge gender gap in the context of India.

Suggested Readings:

1. Boserup, E. (1989) : " *Women's Role in Economic Development*" . Earthscan, London.
2. Dankelman, I. & Davidson, J. (1989) : "*Women and Environment in the Third World*" Earthscan, London.
3. Deblig, H. J. (1996) : " *Human Geography-Culture, Society and Space*", 5th ed., John Wiley, New York.
4. Haraway, D. (1991) : " *Simians, Cyborgs and Women*", The Reinvention of Nature, Routledge, New York.
5. Johnston, R.J. et.al (eds.) (1996) : " The Dictionary of Human Geography", Blackwell, Oxford.
6. James K. S. (2010) : " *Population , Gender and Health in India*", , Academic Foundation Radiant Book.
7. Koblinsky, M. et.al (eds.) (1993) : " The Health of Women-A Global Respective", Westview Press, Boulder.
8. Lee, D. (1988) : Women in Geography-A Comprehensive Bibliography. Boca Raton, Florida.
9. Lewis, R. (1995) : "*Race, Feminity and Representation*", Routledge, New York.
10. Momsen, J. H. & Townsend, J. (eds.) (1987) : Geography of Gender in the Third World, Albany, New York
11. Reagent, A.C. & Monk J.J. (eds.) (1982) : " *Women and Spatial change*" Kendell & Hunt, Dubuque, Iowa.
12. Rhodda, A. (1991) : " *Women and Environment*", Zed, London.
13. Seager, J.& Olson, A.: " *Women in the world - An International Atlas*".
14. Sharma, K. L. (ed) (2001), "*Social Inequality In India*", Berkeley, University of California Press.
15. Sivant, R.L.: Women-A World Survey. World Priorities Washington, D.C., 1985.
16. Skjelsback, I & Smith, D.: Gender, Peace and Conflict. Sage, London, 2001.
17. Sowell, T.: Race and culture -A World View. Basic Books, New York, 1994.
18. UNICEF: The Lesser Child-the Girl in India. United Nations, Geneva, 1990.
19. United Nations: The World's Women, 1970-1990. United Nations, New York, 1991.
20. United Nations: World Resources 1994-95. Chapter 3: Women and Sustainable Development. United Nations, New York, 1995.

M.A Part-I (Sem-II)

Title**: Geography of Soils**

Credits: 4	**Marks: 100**
Code No: 207602	**Hours: 60**

Objectives:

- To understand the concepts and process of soil formation.
- To study the Plant-water-soil relationship
- To study the classification of soils and the distribution in India and Maharashtra. .
- To understand the physical, chemical and biological properties of soils and their significance in soil fertility and productivity.
- To sensitize the students with the issues, related to soil resources.
- To understand the significance of soil conservation and methods practiced in India with special reference to Maharashtra.

Course Content

Unit-1	**Introduction** Soil and Soil Science, Concept of land and soil; Plant-water-soil relationship; Importance of Soil and its conservation, Constituents of Soil- soil minerals, organic components, soil air, soil water, soil organism. Soil as a system of Dynamic Equilibrium in Nature; Soil and Land relationship.
Unit-2	**Soil Formation and Classification** Soil formation factors - Physical: parent rock, time, topography and climate; Process of soil formation- weathering, humification, in-situ and transported soils; Soil Profile; Genesis and Classification of soils, Podsol, Chernozem and Laterite-their sub-types. Types of soils in India and Maharashtra.
Unit-3	**Soil Properties**: Physical properties - colour, texture, pore space, bulk density, infiltration, moisture content; Chemical properties - pH, salinity, ion-exchange capacity; Biological properties - soil organisms, bacteria, fungi, algae, protozoa, earthworms; Soil organic matter - total organic matter, humus, effect of organic matter on physical and chemical properties of soil; Concept of soil fertility and plant productivity - Soil organisms and Micro-organisms and their relation with soil fertility; Role of physico-chemical properties in soil fertility and productivity.
Unit-4	**Soils of India**: Problems and prospect of utilisation of different soils in India; Soils in Agro-climatic regions of Maharashtra: Soil-crop relationship in terms of Fertility, Productivity and Choice of crops; Soil Degradation- Factors, process and resultant forms in different parts of India. Conservation of major soils of India with special reference to Maharashtra.

Course Outcomes (COs): Students will able to

- Analyse the process of soil formation, distribution of soil in India and Maharashtra.
- Classify and differentiate physical, chemical and biological properties of soils and their significance in soil fertility and productivity.
- Examine the Plant-water-soil relationship and evaluate the soil erosion
- Create the soil conservation plans for the regions in India.

Suggested Readings:

1. Biswas, T.D., and Mukherjee, S.K. (1987). *Textbook of soil science*. New York: McGraw-Hill.
2. Boul, S.W., Hole, F.D., and McCracken, R.J. (1993). *Soil genesis and classification*. New Delhi: Affiliated East-West Press.
3. Brady, N.C., and Weil, R.R. (1996). *The nature and properties of soil.* London: Longman
4. Bridges,E. M. (1970): World Soils, Cambridge University Press, U.K.
5. Chapman, J.L., and Reiss, M.J. (1993). *Ecology: principles and applications*. Cambridge: Cambridge University Press.
6. Coleman, D.C., and Crossby, J. (1996). *Fundamentals of soil ecology*. San Diego: Academic Press.
7. Daji, J .A.(1970): A Text Book of Soil Science, Asia Publication House, Mumbai.
8. De, N.K. and Sarkar, H.K. (l993): Soil Geography, Sribhumi Publishing Company, Calcutta.
9. Dohahue, E.L., et. al., (1987): Soils: An Introduction to Soil and Plant Growth, Prentice Hall of India, New Delhi.
10. Foth, H.D. & Turk, L.M.(l972): Fundamentals of Soil Science, John Wiley & Sons, Inc., Canada.
11. Foth, H.D. & Schafer, F.W. (l980): Soil Geography and Landuse, John Wiley & Sons, Inc., Canada.
12. Khan T.O. (2013): Soil: Principles, Properties and Management, Springer, New York
13. Miller, R.W. et. al., (1995): Soil in Our Environment, Prentice Hall, U.S.A.
14. Myers, A.A., and Giller, P.S. (1988). *Analytical biogeography: an integrated approach to the study of animal and plant distributions*. London: Chapman and Hall.
15. Odum, E.P. (1997). Ecology: *a bridge between science and society*. Sunderland: Sinauer Associates Inc. Publishers.
16. Pitty, A.F. (1978): Geography and Soil Properties, Methuen and Co. Ltd., London.
17. Paton, T. R., Humphreys, G.S., Mitchell, P. B. (1995): Soils: A New Global View, U.C.L. Press, London.
18. Rajan, G.S.V. and Rao G.H.G. (1978): *Studies on Soils of India*, Vikas, New Delhi.
19. Raychaudhari, S.P. (1958): Soils of India, ICAR, New Delhi.
20. Sharma, P.D., and Sharma, P.D. (2010). *Ecology and environment*. UP:Rastogi Publications.
21. Steila, D. (1976): *The Geography of Soils*, Prentice Hall, New Jersey.
22. U.S. Department of Agriculture (1957): Soil, The Year Book of Agriculture, New York.

Websites:

1. Soil and Land Use Survey of India (http://slusi.dacnet.nic.in/)
2. National Bureau of Soil Survey and Land Use Planning (https://www.nbsslup.in/)
3. IIRS, Agriculture and Soils Department (https://www.iirs.gov.in/agricultureandsoilsdepartment)
4. Farmer's Portal, Govt. of India (https://farmer.gov.in/)
5. Department of Agriculture, Govt. of Maharashtra (http://krishi.maharashtra.gov.in/1001/Home)

M.A. Part-I (Sem-II)

Title**: Geography of Environment**

Credits: 4	**Marks: 100**
Code No: 207701	**Hours: 60**

Objectives:

- To provide students with a general understanding of the processes and spatial distribution of the Earth's primary physical systems.
- To enhance students understanding about the ways in which humans interact with these systems.
- To develop a historical, geographical & humanistic foundation for understanding the environment & plethora of environmental issues at the regional, national & global levels.
- To make them aware about the need of environmental conservation and management.

Course Content

Unit-1	**Concept**: Meaning, development, nature and scope of Environmental Geography, Recent Dimensions of Environmental studies in Geography; Major physical and cultural elements of environment; Functioning of environmental systems - role of biotic and abiotic elements; Biodiversity meaning, genetic, species and ecological diversity, factors influencing biodiversity.
Unit-2	**Ecosystem Approach in Environmental Studies** - Ecosystem Structure and function, terrestrial and aquatic ecosystems; Principle of ecology; human ecological adaptation; influence of man on ecology and environment; bio-geo-chemical cycles. Energy flow in an ecosystem; food chain, food web and Ecological pyramids.
Unit-3	**Environmental Degradation and Hazards:** Water, Air, Noise and Solid waste problems in urban-industrial Environment, Water and soil pollution in rural landscape (with reference to India), Major pollutants: types, sources and effects. Global issues- Climatic Hazards and Management, Social Response to Climatic Hazard, Human response to Flood, Drought, Landslide, Earthquake and Cyclone, Forest Fires. Impact of Green revolution
Unit-4	**Conservation and management of environment**: Environmental Perception, Environment Conservation and challenges in developing countries, Environmental Movements in India*: Bisnoi*, *Chipko*, Silent valley and Narmada. Environmental issues, policies and efforts in India, Concept of sustainable development, Significance of environmental laws, EIA (Environmental Impact Assessment).

Course Outcomes (COs): Students will able to

- Analyse correlation between human interaction and environment, various environmental problems and related solutions.
- Develop a historical, geographical & humanistic foundation for understanding the environment & plethora of environmental issues at the regional, national & global levels.
- Critically evaluate the necessity of environmental conservation and management at various level.

Suggested Readings:

1. Agarwal, A. and Narain S. (Ed) (1999**):** *State of India's Environment. The Citizens Report*, Centre for Science and Environment, New Delhi
2. Agarwal, D.P. (1992): *Man and Environment in India through Ages*, Books & Books, New Delhi.
3. Arthur N. Strahler and Alan H. Strahler (1973 1st Ed): *"Environmental Geoscience – Interaction between natural systems and man",* Wiley International Ed.
4. Balakrishnan, M., 1998: *Environmental Problems and Prospects in India*, Oxford & IBH Pub., New Delhi.
5. Barrow, C. J. (2003): *Environmental Change and Human Development*. Arnold Publication.
6. Bhaduri, S., and Basu, R. (2006): *Society Development and Environment*. Progressive Publishers.
7. Blowers, Andrews, (1993): *"Planning for a sustainable Environment,"* Earthscan Publication, London.
8. Botkin, D.B., and Keller, E.A. (2013): *Environmental Science*, Wiley, New Delhi
9. CSE. (2017): *Environment Reader for Universities.* New Delhi: Centre for Science and Environment.
10. Ehrlich, P.R. and Ehrlich, A.H. (1996): *Eco-science: Population, Resources and Environment*, W.H. Freeman and Company, San Francisco.
11. Goel R.S., (2000): *Environment Impacts Assessment of Water Resources Projects-Concerns, Policy Issues Perceptions and Scientific Analysis*, Oxford & IBH Publishing Co. Pvt. Ltd, New Delhi.
12. Gole, P., (2001): *Nature Conservation and Sustainable Development in India*, Rawat Pub., Jaipur
13. Goudie, A. (1986): *The Human Impact on the Natural Environment*, 2nd edition, Blackwell Pub. Co., London
14. Goudie, A. (20001): *The Nature of the Environment*, Blackwell Publishers, Oxford, U.K.
15. Hugget, R. And Cheesman, I.(2002): *Topography & The Environment*, Prentice Hll, New York, London.
16. Hussain, M., (ed. 1996): *Environmental Management in India*, Rawat Pub., Jaipur
17. J. Edwin Becht and L. D. Belzung (1975): *"World Resources Management",* Prentice Hall, Inc., New Jersey.
18. Kates, R.W. & Burton, I (ed. 1986): *Geography, Resources and Environment*,Vol I & II, University of Chicago Press, Chicago,.
19. Lohani, B. N. (1997). *Environmental impact assessment for developing countries in Asia (Vol 1).* Manila: ADB.
20. Mannion, A.M. (1995): *Agriculture and Environment Change*. John Wiley, London.
21. Marsh, W.M. and Grossa, J.M. (1996): *Environmental Geography: Science, Landuse and Earth Systems*, John Wiley and Sons Inc., New York.
22. Mitchell, B. (1997): *Resources and Environment Management*, Addison Wesley Lon~an Ltd., Harlow.
23. Quershi. S. (1989): *Regional Perspective on Dry Farming: Tribal Societies and Development through Environmental Regeneration*, Oxford, New Delhi.
24. Redcliff, M. (1987): *Development & the environmental crisis*. Methuen. London.
25. Savindra Singh (2004): *Environmental Geography*, Prayog Pustak Bhawan, Allahabad, India.

26. Smith, K. (2001): *Environmental Hazards: Assessing Risk and Reducing Disaster*, Routledge
27. Stahler, A.N. and Stahler A.N. (1997): *Geography and Man's Environment*, John Wiley and Sons, New York
28. Winin Pereira and Jeremy Sea Brook (1996): *"The spread of unsustainable development"* The Other India Press Mapusa 403507, Goa, India.
29. Wright, R.T. and Boorse, D.F. (2011): *Environmental Science: Toward A Sustainable Future*, PHI Learning Private Limited, New Delhi

M.A. Part-I (Sem-II)

Title**: Geography of Maharashtra**

Credits: 4	**Marks: 100**
Code No: 207702	**Hours: 60**

Objectives:

- To familiar the students with basic knowledge and to orient the physical and economic settings of Maharashtra.
- To create geographical interest in the state and motivate the students to carry out further study and research in these areas through field visits in Maharashtra.
- To aware the students with available natural resources and need of conservation and protection.
- To prepare students for NET, SET and competitive examinations.

Course Content

Unit-1	**Introduction to Maharashtra:** Geographical Setting Location: Relative and Absolute, Areal extent. Physical Divisions: Mountains, Plains and Plateaus, Geology and Mineral Wealth, Climate, River Drainage systems and lakes, Soil, Flora and Fauna
Unit-2	**Human Resources/ Cultural:** History and creation of Maharashtra as State, Socio-Cultural Characteristics of Maharashtra. Administrative Divisions, Population Distribution, Density Age-sex structure, Literacy and Education, Rural- Urban composition, Migration, Occupational structure.
Unit-3	**Resource and Development:** Power resources and its limitations (Hydel and Thermal), Water Resources and Irrigation Projects, Agricultural Resources, Role of water resources on agriculture, Transport and Communication Network, Industrialization, Tourism, Health care scenario, Educational attainments. Information Technology (IT)
Unit-4	**Regional Disparity and Regional Imbalance:** Disparities and types of disparities. Social, Economic and cultural disparities lead to regional imbalance. Identifications of regions of various disparities, Remedies/ strategies to overcome, Regional Imbalance, Socio-Economic Development and Regional imbalance in Maharashtra, causes and effects. Various measures and efforts to minimise regional imbalance and disparities. Contemporary issues like Environmental Pollution and Degradation, Natural Disasters

Course Outcomes (COs): Students will able to

- Analyse physical and economic settings of Maharashtra.
- Evaluate the existing distribution of natural resources, need of conservation and planning for sustainable development.
- Critically classify environmental, social and economic issues, their causes and effective solutions at local level and state level.
- Develop the research oriented approach among the students.

Suggested Readings

1. Arunachalam B. (1967), Maharashtra - A Study in Physical and Regional Setting, A. R. Sheth and Co., Mumbai
2. Dasatane S. (1992), Glimpses of Maharashtra, Dastane Ramchandra and Co., Pune
3. Deshpande, C.D (1971) Geography of Maharashtra National Book Trust, India;
4. Diddee Jaymala and et.al.(2002) Geography of Maharashtra Rawat Publications, New Delhi
5. Dikshit K. R. (1971), Maharashtra Region in India, A Regional Geography Singh R. H. (Ed.), Thinkers Library, Varanshi.
6. Dikshit, K.R (1981) Maharashtra in Maps Maharashtra State Board for Literature and Culture, Bombay
7. Dikshit K. R. (1981), The Western Ghats, A Geographic view in perspectives in Geography, Thinkers Library Allahabad
8. Gadgil G. and Deshpande A. (1988) Maharashtra, Problems, Potential and Prospects, Somaiya Publications Pvt. Ltd., Bombay.
9. Karve I. (1975), Maharashtra, Land and Its people, Maharashtra State, Gazetteer, Directorate of Government Printing, Stationery & Publication, Maharashtra State.
10. Savadi, A.B. (2012); The Mega State Maharashtra, Nirali Prakashan Pune

Websites

1. http://mahenvis.nic.in/
2. https://www.maharashtra.gov.in/
3. https://mahades.maharashtra.gov.in/
4. https://www.maharashtra.gov.in/ (Economic Survey of Maharashtra by Directorate of Economic and Statistics, Planning Department Government of Maharashtra ,Mumbai

SEMESTER – III

Sr. No	Code No.	Subjects	L	Cr.	P/T	D	TP (E)	Internal	P/V	T
Core Courses:										
1	307501	Regional Geography of India	4	4	--	2.5	75	25	--	100
2	307502	Geography of Rural Development	4	4	--	2.5	75	25	--	100
3	307503	Advanced Cartography (Practical)	4	4	--	2.5	--	25	75	100
Elective Course: (any one of the following)										
4	307601	Research Component (Writing Research Proposal & Review of Literature)	4	4	--	2.5	--	25	75	100
4	307602	Principles of Regional Planning	4	4	--	2.5	75	25	--	100
Elective Course/CBCS (any one of the following)										
5	307701	Research Component (Dissertation & Viva Voce)	4	4	--	2.5	--	25	75	100
5	307702	Tourism Geography	4	4	--	2.5	75	25	--	100
		Total	20	20	--		150/ 300	225	150 /75	500

M.A Part-II (Sem-III)

Title**: Regional Geography of India**

Credits: 4	**Marks: 100**
Code No: 307501	**Hours: 60**

Objectives:

- To understand India in terms of various regional divisions, their important characteristics, Intra-regional and inter-regional linkages
- to analyse the natural and human resource endowments, their conservation and management
- To sensitize the students with development issues and policies and programmes designed for regional development.

Course Content

Unit-1	**Regionalization**: Concept of regional personality and perception of regional issues. Elements of regional enquiry; **Physiographic Regions**, Drainage Systems, Climatic Characteristics, Natural Vegetation and Soil. Geopolitical conditions/characteristics
Unit-2	**Agriculture**: nature, problems and prospects; Infrastructure: Irrigation, fertilizers, power, seeds, and farm technology; Green revolution and its socio-economic and ecological implications; Livestock resources and white revolution; Aquaculture; Sericulture; Apiculture and poultry; Agricultural regionalization; Agro-climatic regions; Agro-ecological zones.
Unit-3	**Industry:** New industrial policy: Globalisation and liberalisation; Industrial complexes and industrial regions; Industrial houses and complexes including public sector undertakings; Industrial regionalization; Multi-nationals and liberalization, Special economic zones.
Unit-4	**Population characteristics and composition** (Age, Sex, Literacy, Sex, work structure, etc.); Population problems and policies. **Contemporary Issues**: Environmental Pollution and degradation, Natural Disasters – Pandemic, Regional Disparities, Globalization and Indian Economy.

Course Outcomes (COs): Students will able to

- Delineate various regional divisions of India, their important characteristics, Intra-regional and inter-regional linkages
- Analyse the natural and human resource endowments, their conservation and management
- Evaluate development issues, policies and programmes designed for regional development.

Suggested Readings:

1. Alka Gautam (2009): ***Geography of India***, Sharada pustak bhawan, University Road, Allahabad – UP.

2. Centre for Science & Environment (1988): ***State of India's, Environment***, New Delhi

3. Deshpande, C.D. (1992): ***India: A Regional Interpretation***, ICSSR & Northern Book Centre, New Delhi.

4. Dreze, J. & Sen A. (ed.) (1996): ***India's Economic Development and Social Opportunity,*** Oxford University Press, New Delhi.

5. Gautam, A. (2009): ***Advanced Geography of India,*** Second Edition, Sharada Pustak Bhawan, Allahabad.

6. Husain, M. (2008): ***Geography of India,*** Tata McGraw-Hill, New Delhi.

7. Khullar, D.R. (2009): ***India: A Comprehensive Geography***, Kalyani Pub., New Delhi.

8. Kundu A. and Raza, M. (1982): ***Indian Economy: The Regional Dimension***. Spectrum Publishers, New Delhi.

9. Majid Husain (2008): ***Geography of India***, Tata Mc. Graw hill publishing co. ltd. N. Delhi.

10. Robinson, F. (1989): ***The Cambridge Encyclopedia of India, Pakistan, Bangladesh, Sri Lanka, Nepal, Bhutan & Maldives,*** Cambridge University Press, London.

11. Pritivish Nag and Smita Sengupta (1992) ***Geography of India***, Concept Publishing Company, New Delhi – 59.

12. Sharma TC and Coutinho O (2005): ***Economic and Commercial geography of India***, Vikas Publishing House ltd., New Delhi-14

13. Singh R.L. (ed.) (1971): ***India-A Regional Geography,*** National Geographical Society of India, Varanasi.

14. Spate, O.H.K. & Learmonth, A.T.A. (1967): ***India & Pakistan***, Methuen, London.

15. Tirtha R. and Gopal Krishna, (1996): "***Emerging India***" Rawat Publications, Jaipur.

16. Tiwari, R.C. (2010): ***Geography of India,*** Prayag Pustak Bhawan, Allahabad.

17. India: Year Books- 2015-2020.

Websites

1. https://knowindia.gov.in/
2. https://knowindia.gov.in/profile/
3. https://www.mapsofindia.com/

M.A. Part-II (Sem-III)

Title: Geography of Rural Development

Credits: 4	**Marks: 100**
Code No: 307502	**Hours: 60**

Objectives:

- The course provides an overview of the Geography of Rural Development and the role of geography in rural development.
- It aims to shed light on the indicators and factors affecting the rural development, changing dimensions of the rural society and rural economy, and the problems of the rural areas and its planning.
- Besides, the course shall take account of rural development strategies in India.

Course Content

Unit-1	**Introduction to Geography of Rural Development** a) Definition, Nature, and Scope of Geography of Rural Development b) Concept of Rural, Development and Rural Development c) Indicators of Rural Development d) Role of Geography in rural development e) Approaches to rural development, f) Factors affecting rural development - Geographical, Economic, Demographic, Social, Government Policy, etc.
Unit-2	**Rural Society and Economy** a) Concept of Rural Society and changing dimensions of the rural society b) Basic Rural services and Infrastructural facilities c) Contribution of Agriculture, Forestry, Animal Husbandry, Other Allied Agricultural Activities, etc. in Rural Development d) Changing Rural Economic Structure e) Role of Resource-Based Industries in Rural Development f) Post-COVID 19 Rural social and economic structure
Unit-3	**Major Rural issues and planning** a) Issues related to fragmentation of land parcels and changing land-use patterns b) Issues related to agriculture, water, transport, poverty, health, etc. c) Rural Planning for rural development and types of rural planning d) Integrated Watershed Management for Integrated Rural Development

	e) Success stories of Rural Development - A Case Study of Ralegan Siddhi
Unit-4	**Rural Development Strategies in India-** a) Rural Development Approaches after independence b) Rural Development Programmes in 21st Century in India: Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS), Deen Dayal Upadhyay Grameen Kaushal Yojna: Swachchh Bharat Mission, Sansad Adarsh Gram Yojna c) Applications of Remote Sensing and GIS in Rural Planning and Development

Course Outcomes (COs): Students will able to

- Differentiate the indicators and factors affecting the rural development.
- Assess the changing dimensions of the rural society and rural economy.
- Evaluate major rural issues and their planning with reference to the specific case study of Maharashtra.
- Classify different types of rural development strategies and evaluate its impact on rural development in India.

Suggested Readings :

1. Chaudhari Shankar R. (2018) : "Research Techniques and Applications in Rural Settlement Geography", Prshant Publications, Jalgaon.
2. Chaudhari C. B. (2015): "Geographical Study of Rural Service Centres in Ahmadnagar District of Maharashtra State, Unpublished thesis submitted to North Maharashtra University, Jalgaon.
3. Daniel, P. and Hopkinson, M. (1986): "*The Geography of Settlement*" Oliver & Byod, Edinburgh.
4. Grover, N. (1985) : " *Rural Settlements - A Cultural Geographical Analysis*", Inter-India Publication, Delhi.
5. Jha, Hetukar (1991) : "*Social Structure of Indian Villages: A Study of Rural Bihar*", New Delhi, Sage Publications.
6. Lalith, N. (2004) : "*Rural Development in India Emerging Issues and trends*", Dominant Publications, New Delhi.
7. M. V. Rao, V. Suresh Babu, K. Suman Chandra, Ravindra Chary, " *Integrated Land Use Planning for Sustainable Agriculture and Rural Development*" Apple Academic Press;
8. Madan, Vandana (ed.) (2002) : " *The village in India*" Oxford University Press.

9. Mandal R. B.(1978), "Introduction to Rural Settlements" Concept Publishing Company, New Delhi.
10. Mandal, R.B. (1989): 'Systems of Rural Settlements in Developing Countries', Concept Publishing Company, New Delhi.
11. Okore F.C., and Onokerhoraye A.G., (1994) : "*Rural Systems and land Resources Evaluation for Africa*", Benin, City Social Science for Africa University of Benin.
12. Patil Sardar A. (2015): "*Application of Geo-Spatial Technology for the Sustainable Rural Development: A Case study of Village Panutre*", An unpublished Minor Research Project Funded by the University of Mumbai during the academic year 2014-15.
13. Ramchandran, H.(1985): "*Village Clusters and Rural Development*", Concept Publication, New Delhi.
14. Rao, E.N. (1986): "*Strategy for Integrated Rural Development*". B.R. Publication Cor., Delhi.
15. Sandanshiv L.P. (2010) : "Levels of Economic Development Western Satpura region India", Unpublished thesis submitted to North Maharashtra University, Jalgaon.
16. Sharma, K. L. (ed) (2001), "*Social Inequality In India*", Berkeley, University of California Press.
17. Singh Katar (1986) "*Rural Development Principles and Policies and Management*", Sage Publication, New Delhi.
18. Srinivas, M.N. (1996), "*Village, Caste, Gender and Method*", Delhi, Oxford University Press.
19. Wanmali, S.(1983): "*Service Centres in Rural India*", B.R. Publication Cor., New Delhi.

M.A. Part-II (Sem-III)

Title: **Advanced Cartography (Practical)**

Credits: 4	**Marks: 100**
Code No: 307503	**Hours: 60**

Objectives:

- To explain basic concepts cartography, tools and techniques of geographical analysis.
- To make student aware about the modern techniques like GIS.
- To get acquainted hands on training of map making.

Course Content

Unit-1	**Cartographic Techniques** Definition of Cartography, History and Development of Cartography; Representation of Statistical Data. One Dimensional figures: Line graphs. Two Dimensional figures: Bar, Circle, Pie.
Unit-2	**Computer Cartography** Isopleth, Choropleth, Choroschematic, Dot maps. Three dimensional figures: Cube, Sphere Maps. Representation of data and map making using computer (MS-Excel)
Unit-3	**Introduction to GIS** Definition, History of GIS, Components of GIS, Computer Hardware, GIS Softwares; Sources of data : Maps, Images and other records; Data and Data models
Unit-4	**Map Making** Georeferencing – Co-ordinate systems, Digitization; GPS mapping; Applications of GIS

Course Outcomes (COs): Students will able to

- Apply appropriate cartographic techniques to analyze the any geographical data in their further research.
- Achieve the skill of modern geographical tool like GIS and GPS.
- Handle the online free softwares to prepare various thematic maps.

Suggested Readings:

1 Bernhardsen, Tor (1999): *"Geographic Information Systems: An Introduction",* John Wiley and Sons.

2 Burroughs, P. A (1986*): "Principles of Geographical Information Systems for land Resources Assessment",* Oxford University Press.

3 Chang, Kang-taung (2002): *"Introduction to Geographic Information Systems",* Tata McGraw-Hill.

4 Clarke, Keith C. (1999): *"Getting Started with Geographic Information Systems",* Prentice Hall.

5 Demers, Michael N. (2000): *"Fundamentals of Geographic Information Systems",* John Wiley.

6 Environmental Systems Research Institute (1993): *"Understanding GIS: The Arc Info method".*

7 Haywood, Ian (2000): *"Geographical Information Systems",* Longman.

8 Sarkar Ashis (1997) : " *Practical Geography: A Systematic Approach*", Orient Black-Swan.

9 Singh R. L. & Rana P. B. Singh (2005) : " *Elements of Practical Geography*", Kalyani Publisher, New Delhi.

10 Training Course for GIS for resource management and development planning: Lecture notes, V1: *"GIS Fundamentals and Techniques",* Government of India.

M.A. Part-II (Sem-III)

Title: **Principles of Regional Planning**

Credits: 4	**Marks: 100**
Code No: 307602	**Hours: 60**

Objectives:

- To understand and evaluate the concept of region in geography and its role and relevance in regional planning and development
- To identify the issues relating to the development of the region through the process of spatial organization of various attributes and their inter relationship.
- To identify the causes of regional disparities in development, perspectives and policy imperatives.

Course Content

Unit-1	**Introduction to Region** a) Meaning of Area and Space a) Concept of Region b) Regions in Geography c) Type of Regions d) Delineation of Regions e) Methods of Regionalisation
Unit-2	**Role of Geography in Regional Planning** a) Concept and Need of Planning. b) Objectives of Regional Planning. c) Types and Hierarchy of Planning d) Planning Scenario in India and trend e) Concept of Planning region f) Role of Geographer in Regional Planning
Unit-3	**Theories in planning and their application to India (Brief)** a) Christaller's Central Place Theory b) Perrox's Growth Pole Theory c) Gunnar Myrdal's Cumulative Causation d) Hirchmann's Polarization and Trickle Down Effects e) Friedman's Core-Periphery Model
Unit-4	Developmental Planning in India a) Concept of development: indicators and measurement of regional development, Development of under development b) Planning Regions of India: Need and Classification. Various Planned development in India e.g. Hilly Area, Tribal Area, Metropolitan Region, Rural – Urban Region, Drought -Prone Area c) Regional Disparities: Causes, effects and Appraisal with reference to above regions.

Course Outcomes (COs): Students will able to

- Concept of region and its relevance in planning and development.
- Delineate the regions and the different processes required to the delineation for planning region to minimise regional imbalance.
- Recognise causes of regional disparities and able to prepare various planning strategies to overcome these disparities.

Suggested Readings:

1. Abler, R., et. al.: Spatial Organisation: The Geographer's View of the World, Prentice Hall, Englewood Cliffs, N.J., 1971.
2. Bhat, L.S. et al.: Micro-Level Planning: A Case Study of Karnal Area, Haryana, K.B. Publications, New Delhi, 1976.
3. Bhat, L.S.: Regional Planning in India, Statistical Publishing Society, Calcutta, 1973.
4. Chand, Mahesh and Puri, Vinay Kumar (1983) : Regional Planning in India, Allied Publishers Pvt. Ltd., New Delhi.
5. Chandana, R.C. (2000): "Regional Planning – A Comprehensive Text", Kalyani Publishers, Ludhiana.
6. Chorley, R.J. and Hagget, P.: Models in Geography, Methuen, London, 1967.
7. Christaller, W.: Central Places in Southern Germany, Translated by C.W. Baskin, Prentice Hall, Englewood Cliffs, New Jersey, 1966.
8. Friedmann, J. and Alonso, W.: Regional Development and Planning - A Reader, M.I.T. Press, Cambridge, Mass, 1967.
9. Friedmann, J. and Alonso, W.: Regional Development Policy- A Case Study of Venezuela, M.I.T. Press Cambridhge, Mass, 1966.
10. *Glasson,John* An Introduction to *Regional Planning*: Concepts, Theory and Practice. (University of California, Berkeley)Hutchinson, 1978
11. Glikson, Arthur: Regional Planning and Development, Netherlands Universities foundation for International Co-operation, London, 1955.
12. Gosal, G.S. and Krishan, G.: Regional Disparities in Levels of Socio-Economic Development in Punjab, Vishal Publications, Kurukshetra, 1984.
13. Government of India, Planning Commission: Third Five Year Plan, Chapter on Regional Imbalances in Development, New Delhi,1961.

14. Hirchmann, A. O. (1958) : The Strategy of Economic Development, Yale University Press,
15. Indian Council of Social Science Research: Survey of Research in Geography, Popular Prakashan, Bombay,1972.
16. Johnson, E.A.J.: The Organisation of Space in Developing Countries, Harvard University Press, Cambridge,1970.
17. Kuklinski, A.R.(ed.): Growth Poles and Growth Centres in Regional Planning, Mouton, The Hague,1972.
18. Kundu, A. and Raza, Moonis: Indian Economy- The Regional Dimension, Spectrum Publishers, New Delhi,1982.
19. Losch, A.: The Economics of Location, University Press, Yale, New Haven,1954.
20. Mishra, R.P. et. al. Multi-Level Planning Heritage Publishers, Delhi. 1980.
21. Misra, R.P. and Others (editors): Regional Development Planning in India-A Strategy, Institute of Development Studies, Mysore,1974.
22. Misra, R.P.: Regional Planning: Concepts, Techniques and Policies, University of Mysore, Mysore, 1969.
23. Mitra, A.: Levels of Regional Development, Census of India, Vol.I, Part IA(I) and (ii), New Delhi 1965.
24. Myrdal, G.: Economic Theory and Under-Development Regions, Gerald Duckworth, London,1957.
25. NangiaSudesh, Delhi Metropolitan Region Rajesh Publication, Delhi, 1976.
26. Rangwal, S. C. (1989) : Town Planning (Eighth Revised & Enlarged Edition), Charotar Publishing House, Anand-388 001, India.
27. Raza Moonis (editer) Regional Development Heritage Publishers Delhi. 1988.
28. Richardson, H.W.: Regional Economics, Weidenfeld and Nicolson, London, 1969.
29. Sundaram, K.V.(ed.): Geography and Planning, Essays in Honour of V.L.S. Prakasa Rao, Concept Publishing Co., New Delhi,1985.
30. Tarlok Singh India's Development Experience, Mc Millan New Delhi, India, 1974.

M.A. Part-II (Sem-III)

Title: **Tourism Geography**

Credits: 4	**Marks: 100**
Code No: 307702	**Hours: 60**

Objectives:

- To know the fundamental concepts of Geography of Tourism.
- To understand new trend of sustainable tourism and its various types.
- To make aware the students about the impacts and contemporary issues of tourism, its planning and changing scenario in context of India.

Course Content	
Unit-1	**Basics of Tourism** Definition of Tourism, Nature, Scope of Tourism Geography, Approaches of Tourism Geography, Role of geography in tourism; Brief history of Tourism; Types of tourism and tourists; Factors affecting tourism; Role of Tourism in Indian Economy.
Unit-2	**New trends for Sustainable Tourism** Concept of Sustainable Tourism, Silent features of Sustainable Tourism, Sustainable Tourism- Ecotourism, Cultural Tourism, Agro-Tourism, Medical Tourism.
Unit-3	**Tourism Impacts** Impacts of Tourism – Positive and negative impact of Tourism, Economic, socio-cultural, Environmental impacts; Tourism Impact Analysis**;** Impact of Pandemics on International Tourism and Indian Tourism.
Unit-4	**Tourism Planning and Development** Concept of Tourism planning and Tourism Development, Strategic Tourism Planning and Tourism Policy Issues; Changing Scenario of Tourism Development in India; Assessment of tourism potential and Development prospects in Maharashtra; Role of Tourism Information System (TIS) in Sustainable Development.

Course Outcomes (COs): Students will able to

- Apply the fundamental concepts of Tourism Geography in the development of tourist's center.
- Evaluate recent trends of tourism in developed and developing countries.
- Assess the role of tourism in economic development in context of India.
- Criticize different contemporary issues of tourism and suggest appropriate solutions for the sustainable tourism.

Suggested Readings:

1. Bhatia A.K. (1996): *"Tourism Development: Principles and Practices",* Sterling Publishers
2. Bhatia, A.K. (1991): *"International tourism – Fundamentals and Practices",* Sterling Publishers, New Delhi
3. Chawla Romila (2003): *"Tourism in 21st Century",* Sonali Publication, New Delhi
4. Chawla Romila. (2002 1st ed.): *"Tourism research planning and development",* Sonali publications New Delhi.
5. Hunter C and Green H (1995): *"Tourism and the Environment-A Sustainable Relationship"*, Routledge, London.
6. Inskeep. E (1991): *"Tourism Planning : An Integrated and Sustainable Development Approach",* Van Nonstrand and Reinhold, New York,
7. Kaul R.K.; (1985): *"Dynamics of Tourism & Recreation",* Inter-India, New Delhi.
8. Kaur J. (1985): *"Himalayan Piligrimages & New Tourism Himalayan Books",* New Delhi.
9. Lea J. (1988): *"Tourism and Development in the Third World",* Routledge, London.
10. Lundberg, D.E. (1996): The Tourist Business cehners Books. Internationa, Boston. 6.
11. McLeod Donald VL (2006): *"Tourism globalization and cultural change",* An island community perspective viva book private limited.
12. Milton D. (1993): *"Geography of World Tourism Prentice",* Hall, New York.
13. Mujumdar D. Mishra L. (2010): *"Contemperory Tourism Development- issues and challenges",* Rajat publications, New Delhi.
14. Pearce D.G. (1987): *"Tourism To-day: A Geographical Analysis",* Harlow, Longman.
15. Robinson, H.A. (1996): *"Geography of Tourism"*, Macdonald and Evans, London,
16. Sharma J.K. (2000): *"Tourism Planning and Development – A new perspective",* Kanishka Publishers, New Delhi.
17. Sinha P.C. (1998): *"Tourism Impact Assessment",* Anmol Publishers, New Delhi.
18. Wabah Salah, Pigram J.J.J (1997): *"Tourism and sustainability policy considerations Rutledge"*.
19. Williams Stephen (1998): *"Tourism Geography",* Routledge, Contemporary Human Geography, London.

SEMESTER – IV

Sr. No	Code No.	Subjects	L	Cr.	P/T	D	TP (E)	Internal	P/V	T
Core Courses:										
1	407501	Urban Geography	4	4	--	2.5	75	25	--	100
2	407502	Agriculture Geography	4	4	--	2.5	75	25	--	100
3	407503	Practicals in Remote Sensing	4	4	--	2.0	--	25	75	100
Elective Course: (one of the following)										
4	407601	Internship Component	4	4	--	2.5	--	25	75	100
4	407602	Geography of Health	4	4	--	2.5	75	25	--	100
Elective Course/CBCS (any one of the following)										
5	407701	Internship Component	4	4	--	2.5	--	25	75	100
5	407702	Geography of Resources	4	4	--	2.5	75	25	--	100
		Total	20	20	--		150/ 300	225	150 /75	500

M.A. Part-II (Sem-IV)

Title: **Urban Geography**

Credits: 4	**Marks: 100**
Code No: 407501	**Hours: 60**

Objectives:

- To acquaint the students with the spatial and structural characteristics of urban settlements.
- To bring about awareness of/on special issues related to urban settlements enabling them to research and understand the practical applications of the same.
- To acquire knowledge of, understand, and critique key paradigms and approaches in urban geography (e.g., industrial location, urban form, urban growth, neoliberalism, gentrification, inequality, etc.).
- To develop ability to evaluate critically different theories and analytical approaches in process of urbanisation

Course Content

Unit-1	Definition, nature and scope of urban geography – approaches, development of urban geography. Definition of urban places : Global, including UN and India: problem in defining an urban Place, Process of Urbanization, World Urbanization, Trends and patterns of urbanization in India.
Unit-2	Site and situations of urban places, Functional classification of towns. Urban growth and theories. Central Place Theory of Christaller and Losch; Theories of Peroux and Boudeville
Unit-3	Urban morphology and land use structure, Changing Land use and relevance, Classic models of the city: Contemporary models of the city, New urban order, gentrification and the inner city, Suburbanization and land use conflicts, Hierarchy of Urban settlements, City - Region concept, structure of city regions, Urban expansion, umland and periphery, Metropolitans : Case study of Mumbai
Unit-4	Contemporary urban issues: urban poverty, urban renewal, urban sprawl, slums; transportation, housing, urban infrastructure; urban finance; Urban environmental pollution (air, water, noise, solid waste,) urban crime, issues of Urban health. Trends of Urban Research in India. Smart cities and sustainability of cities Application of GIS and RS in Urban issues.

Course Outcomes (COs): Students will able to

- Know the spatial and structural characteristics of urban places to tackle the various urban issues.
- Acquire knowledge of various theories associated with urban settlements and their application for the changing nature of urban dynamics.
- Critically examine various issues of urbanisation and suggest remedies to achieve sustainable urbanization.

Suggested Readings:

1. ApteMadhusdhan(2013) Urban Growth Strategies : Mumbai Lessons, Leadstart Publishing Pvt Ltd, Mumbai –India
2. Carter: The Study of Urban Geography, Edward Arnold Publishers, London, 1972.
3. Chandana R C (2006): *"Regional Planning"*, Kalyani Publication, New Delhi.
4. Doniwal H K (2009): *"Urban Geography",* Gnosis, Delhi.
5. Dutt Ashok, Misra H N and Chatterjee (2008): *"Explorations in Applied Geography",* Prentice Hall of India Private Limited, New Delhi.
6. Fyfe Nick & Kenny Judith (2005) The Urban Geography Reader, Routledge , Abindgon, UK
7. Jonas Andrew, McCann Eugene & Thomas Mary (2015) Urban Geography: A Critical Introduction , 1st Edition, Wiley-Blackwell, New Jersey, USA
8. Kundu A (1992): *"Urban Development and Urban research in India",*Khanna Publication, New Delhi.
9. Kundu, A.: Urban Development and Urban Research in India, Khanna Publication, 1992.
10. Mayer and Kohn (2000): "*Readings in Urban Geography",* University of Chicago Press, Chicago.
11. Meyor, H.M. Kohn C.F. (eds.): Readings in Urban Geography, University of Chicago Press, Chicago, 1955.
12. Ramachandran R (2007): *"Urbanisation and Urban Systems in India",* Oxford University Press, New Delhi.
13. Rao V.L.S.P.: Urbanisation in India: Spaial Dimensions. Concept Publishing Co. New Delhi Concept, New Delhi.
14. Rao V.L.S.P.: The Structure of an Indian Metropolis: A study of Bangalore Allied Publishers Bangalore, 1979.
15. Schwanen Tim &Kempen Ronald (2019) Handbook of Urban Geography , Edward Elger Publishing , Cheltenham, UK
16. Sidhartha and Mukherjee (2007): "Cities, *Urbanisation and Urban System",*KisalayaPublications , New Delhi
17. Verma L N (2006): *"Urban Geography",* Rawat Publications, New Delhi

M.A. Part-II (Sem-IV)

Title: **Agriculture Geography**

Credits: 4	**Marks: 100**
Code No: 407502	**Hours: 60**

Objectives:

- To familiarize the students with the concept, origin and development of agriculture.
- To discuss physical, economic, technological and institutional factors and its impact on the agricultural sector with special reference to India.
- To examine the characteristics of agricultural types, agriculture regionalization and the problems and prospects of Indian agriculture.

Course Content

Unit-1	**Introduction to Agriculture Geography** a) Definition, Nature and Scope of Agriculture Geography, b) Development of agriculture geography, c) Approaches to the study of Agricultural Geography d) Significance of Agriculture in World Regions, e) Role of Agriculture in Indian Economy.
Unit-2	**Determinants of Agriculture** a) Factors influencing agriculture – a) Physical- Relief, Climate, Soil b) Economic-Landholding, marketing, Transport c) Technological factors- Irrigation, Seeds, Fertilizers, Power d) Institutional Factor- Land Reforms,Von Thunen's Theory of Agricultural Location
Unit-3	**World Agricultural Typology** a) Shifting cultivation b) Intensive Subsistence Tillage c) Mixed farming d) Commercial grain farming e) Plantation agriculture
Unit-4	**Agricultural regions, Problems and Prospects** a) Regionalization : Concept and Criteria, Methods of regionalization b) Agricultural regions of India c) Problems and Prospects of Indian Agriculture d) Emerging Perspectives in Agriculture and Government Initiatives for Sustainable agriculture e) National agriculture policy

Course Outcomes (COs): Students will able to

- Analyze the impact of various economic and technological on various types of agriculture and its importance in economic development.
- Critically examine the agricultural model and its implementation in various regions.
- Evaluate problems and emerging perspectives in agriculture and role of Government Initiatives for Sustainable agriculture.

Suggested Readings:

1. Alka Gautam (2012): *"Agricultural Geography"* Sharda Pustak Bhawan, Allahabad.
2. Bryant, C.R., Johnston, T.R. (1992), "*Agriculture in the City Countryside*", Belhaven Press, London.
3. Burch, D., Gross, J. and Lawrence, G. (eds.) (1999), "*Restructuring Global and Regional Agriculture*", Ashgate Publishing Company, Burlington.
4. Cakmak, I. and Welch, R. M. (eds) (2009), "*Impacts of agriculture on Human Health and Nutrition*", EOLSS Publications, UK.
5. Ferroni, Marco (2013): "*Transforming Indian agriculture- India 2040: Productivity, Markets and Institutions*", Sage Publications, New Delhi.
6. Grigg David (1995): *"An introduction to agricultural geography",* (second edition), Routledge, London and New York.
7. Illbery, B.W. (1985): "*Agricultural Geography, Social & Economic Analysis*", Oxford University Press.
8. Mohammad, N. (1992): "*New Dimension in Agriculture Geography*", Vol. I to VIII, Concept Publishing Company, New Delhi.
9. Mohammad, N. and Rai, S.C. (2014): "*Agricultural Diversification and Food Security in the Mountain Ecosystem*", Concept Publishing Company, New Delhi.
10. Randhawa, M.S. (1980): "*A History of Agriculture in India*", Vols. I, II, III, IV ICAR, New Delhi.
11. Roling, N.G., and Wageruters, M.A.E. (eds.) (1998): "*Facilitating Sustainable Agriculture*", Cambridge University Press, Cambridge.
12. Shafi, M. (2006): "*Agricultural Geography*", Pearson Education, Delhi.
13. Sing Jasbir and Dhillon, S.S. (1994): *"Agricultural Geography"* Tata McGraw Hill, New Delhi.
14. Shrivastava, Sahay, Vidyarti and Singh (2010): *"Second Green Revolution Vs.Rainbow Revolution".*
15. Tiwari, R. and Singh, B. (1994): "*Krishi Bhoogol*", Prayag Pustak Bhandar, Allahabad. (Hindi). 15. White P. (2007): "*Emergence of agriculture: A global view*", Routledge, London.
16. Wright J. (2009): "*Sustainable agriculture and food security in an era of oil scarcity*", Earthscan, London.
17. Young, A. (1998): "*Landuse Resources: Now and for the Future*", Cambridge University Press, Cambridge.

M.A. Part-II (Sem-IV)

Title: **Practicals in Remote Sensing**

Credits: 4	**Marks: 100**
Code No: 407503	**Hours: 60**

Objectives:

- To introduce to the students the basic principles of Remote sensing
- To indicate the methods of visual and digital interpretations of satellite images and Arial photography.
- To outline the application value of Remote Sensing.

Course Content

Unit-1	**Remote Sensing** History and Development of Remote Sensing; Elements of RS- Solar energy, platform and sensor ; Solar Energy-EMS, (Electro – Magnetic - Spectrum) ; Interaction with Atmosphere and Earth surface; Types of satellite Remote sensing.
Unit-2	**Platforms** Types of Platforms , Satellite orbits, Sensors; Aerial photographs – camera, film; Satellite Remote sensing – Types of Sensors, Sensors used in Indian Satellites Image resolution and resolution types- Spatial, Temporal, Spectral and Radiometric
Unit-3	**Elements of Aerial Photo photogrammetry** Scale of Aerial Photo, Flight management, Image displacement, Errors in Aerial Photo, 3D visualization of Aerial Photos, Visual Interpretation of Aerial Photo (Area measurement)
Unit-4	Image Analysis Visual Analysis Interpretation, Data products, Application of Remote Sensing.

Course Outcomes (COs): Students will able to

- Evaluate the basic principles of Remote sensing
- Analyze the elements of photogrametry
- Measure Scale of Aerial Photo, Flight management, Image displacement
- Interpret Satellite Images and Arial photography visually

Suggested Readings :

1 Burroughs, P. A (1986*): "Principles of Geographical Information Systems for land Resources Assessment",* Oxford University Press.

2 Guha P.K. (2003): *"Remote Sensing for the Beginner"*, Affiliated East-West Press Pvt. Ltd. New Delhi.

3 Lillesand T.M. and Kiefer R.W. (2010): *"Remote Sensing and Image Interpretation",* John Wiley & Sons Pvt. Ltd.

4 Karlekar Shrikant (2007): "*DoorSamvedan*", Daimond Publication, Pune.

M.A Part-II (Sem-IV)

Title: **Geography of Health**

Credits: 4	**Marks: 100**
Code No: 407602	**Hours: 60**

Objectives:

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

Course Content

Unit-1	**Introduction:** Geography and Health, nature, scope and significance of geography of health. Development of this area of specialization; its distinction from medical science. Mapping of disease, Access, delivery and planning of health services. Health care delivery system in India.
Unit-2	Geographical factors affecting human health and diseases arising from them, viz. (i) Physical factors- relief, climate, soils and vegetation. (ii) Social factors- population density, literacy, social customs and poverty. (iii) Economic factors-food and nutrition occupation and standard of living (iv) Environmental factors- urbanization and congestion, water, air and noise pollution and solid waste, green spaces and disease.
Unit-3	**Classification of diseases:** genetic, communicable and non-communicable; occupational and deficiency diseases. WHO classification of diseases, Pattern of World distribution of major diseases. Rural urban deprivation in India with respect to health care.
Unit-4	Ecology, etiology and transmission of major diseases: cholera, plague, malaria, dengue, tuberculosis, hepatitis, cardiovascular, cancer, AIDS, Swine Flu and Corona. Pandemics, Diffusion of diseases and causes for the same. Deficiency disorders and problems of mal-nutrition in India.

Course Outcomes (COs): Students will able to

- Examine the role of geographical factors, viz., physical, demographic, social and economic, influencing the spatial distribution of diseases;
- Analyse the relation of health with nutrition, environmental degradation and urbanization;
- Decipher the causes of the changing disease pattern
- Make better health care planning for the country.

Suggested Readings:

1. Banerjee, B. and Hazra J.: Geo-Ecology of Cholera in West Bengal, University of Calcutta, Calcutta 1980.

2. Cliff, A. and Haggett, P.: Atlas of Disease Distribution. Basil Blackwell, Oxford, 1989.

3. Digby, A. and Stewart, L. (eds.): Gender, Health and Welfare. Routledge, New York, 1996.

4. Hazra, J. (ed.): Health Care Planning in Developing Countries. University of Calcutta, 1997.

5. Learmonth A.T.A.: Patterns of Disease and Hunger. A Study in Medical Geography. David & Charles, Victoria, 1978.

6. May, J.M.: Studies in Disease Ecology, Hafner Pub., New York, 1961.

7. May, J.M.: Ecology of Human Disease, M.D. Pub., New York, 1959.

8. May, J.M.: The World Atlas of Diseases, Nat. Book Trust, New Delhi, 1970.

9. Mc. Glashan, N.D.: Medical Geography, Methuen, London, 1972.

10. Narayan, K.V.: Health and Development- Inter-Sectoral Linkages in India. Rawat Pub., Jaipur, 1997.

11. Phillps, D.R.: Health and Health Care in the Third world. Longman, London, 1990.

12. Pyle, G.: Applied Medical Geography. Winston Halsted Press, Silver Springs, Md, U.S.A., 1979.

13. Rais, A. and Learmonth, A.T.A.: Geographical Aspects of Health and Diseases in India. Curriculum Development Committee in Geography 137

14. Shannon, G.M. et.al: The Geography of AIDS. Guilford Press, New York, 1987.

15. Smith, D.: Human Geography - A Welfare Approach. Arnold Heinemann, London, 1997.

16 Sochin, A.A: Fundamentals of Medical Geography, Dept. of Army Tran, M.J. 5264, Washgington D.C, 1968.

17. Stamp, L.D.: The Geography of Life and Death. Cornell University, Ithaca, 1964.

M.A Part-II (Sem-IV)

Title: Geography of Resources

Credits: 4	**Marks: 100**
Code No: 407702	**Hours: 60**

Objectives:

- To understand the concepts and geography of resources
- To get acquainted with the changing perception about the resources with the stages of development of a region.
- To get comprehensive knowledge of natural resources available in the world and related crises.
- To analyse human resources, its strength and regional disparities.
- To design a plan for the conservation and management of the resources.

Course Content

Unit-1	**Introduction:** Nature, scope and significance of the Geography of Resources, Definition and concept of Resources – Resource development and changing perception with stages of economic, technological and cultural development; Classification of Resources on the basis of biogenesis, renewability, availability and distribution condition.
Unit-2	**Natural Resources:** a) Land: Use and misuse: protective measures to check. b) Water resources: Domestic, agricultural and industrial use, hazards from pollution. c) Forest resources: Use and misuse; Ecological Implications. d) Mineral and energy resources: Availability and utilization, conservation and sustainability of mineral resources, conventional to non-conventional sources of energy, Resource-value enhancement.
Unit-3	**Human Resources:** Concept; importance, Qualitative and quantitative aspects; Concept of Human Development and its measurement, Disparities between developed and developing regions with special reference to India.

Unit-4	**Conservation and Management of Resources:** a) Meaning and methods of Conservation. b) Judicious use of land, water, forest, mineral and energy resources c) Concept of Sustainability and Development goals. d) Natural Resource Management in India, development Policy and Planning.

Course Outcomes (COs): Students will able to

- Explain the concepts and geography of resources
- Analyse the changing perception about the resources with the stages of development of a region and to make an inventory of natural resources available in the world and related crises.
- Analyse human resources, its strength and regional disparities.
- Design a plan for the conservation and management of the resources.

Suggested Readings:

1. Adams, W. M. (1990): Green Development, Environment and Sustainability in the Third World, Routledge, London.
2. Beck, U. (1992): Risk Society: Towards a New Modernity, Sage, London.
3. Borton, I. and Kates, R.W. (1984): **Readings in Resource Management and Conservation**, University of Chicago Press, Chicago.
4. Bruce, M. (1989): **Geography and Resource Analysis**, John Wiley, New York.
5. Burton I & Kates R.W. (1978): "*Readings in Resources Management & Conservation*", Mc Graw Halls, New York.
6. Ehrlich P.R., Ehrlich R.H. & holdlen J.P. (1998) : "*Eco science, Population, Resources & Development",* Freeman & Company, San Francisco.
7. Elcome D (1998): "*Natural Resources: Their use and Abuse*", Nelson Thomes.
8. Eliot Hurst, M.E. (1972): **A Geography of Economic Behaviour: An Introduction**, Duxbury Press, California.
9. Elliott, J.A. (1999): An Introduction to Sustainable Development, Routledge.
10. Guha, J.L. and Chattroj, P.R. (1994): **Economic geography- A Study of Resources**, The World Press, Calcutta
11. Harper, C.L. (2001): Environment and Society, Human Perspectives on Environmental Issues, Prentice Hall, New Jersey.
12. Holechek J.L. etal (2000) : "*Natural Resources, Ecology, Economics & Policy*", Prentice Hall, New Jersey.
13. Martino, R.L. (1969): **Resource Management**, McGraw Hill, London.
14. Mather, A.S. and Chapman, K. (1995): Environmental Resources, Longman Scientific and Technical, London.
15. Mc Lavan D.J. & Skinnet B.J. eds (1986): "*Resources & World Development*", John Wiley & Sons New York
16. Mitchel Bruce (1979) : "*Geography& Resource Analysis*", Longman Group, London.

17. Mitra A.(2000): "*Resource Studies*", Shridhar Publishers, Kolkata
18. Negi, B.S. (2000): **Geography of Resources**, Kedar Nath and Ram Nath, Meerut.
19. Owen S. & Owens P.L. (1991): "*Environment Resources & Conservation*", Cambridge University Press, New York.
20. Owen, O.S., (1971), **Natural Resource Conservation: A Ecological Approach**,
21. Peet, R. Watts, M. (eds.) (1996): Liberation Ecologies: Environment, Development, Social Movements, Routledge, London.
22. Potter, R.B., Binns, T. Elliott, J.A. and Smith, D. (1999): Geographies of Development, Longman.
23. Raja, M. (1989): **Renewable Resource Development**, Concept, New Delhi.
24. Ramesh, A. (1984): in **Resource Geography** (Ed.) R.P. Misra, Contribution to Indian geography, Heritage Publishers, New Delhi.
25. Redicliff. M. (1987): Sustainable Development: Exploring the Contradictions, Melhuen, London.
26. Rees J (1988): "*Natural Resources: Allocation, Economics & Policy*", Mathuen, London
27. Riccardo Petrella, Translated by Patrick Camiller, (2001): The Water Manifesto Arguments For A World Water Contract, Books for Change, Bangalore, India.
28. Robbias Paul, Hirtz J & Moore Sarah (2010) : "*Environment & Society : A Critical Introduction*", wdey, Backwell
29. Roy, P. K (2001): Economic Geography, A Study of Resources, New Central Book Agency, Kolkata.
30. Sarre, P. and Blunder, J. (1995): An Overcrowded World Population, Resources and the Environment, the Open University, Oxford
31. Singh, A. and Raja, M. (1982): **Geography of Resources and conservation** (Hindi Edition) Pragati Parkashan, Meerut.
32. Zimmermann, E.W. (1951): **World Resources and Industries**, Harper, New Delhi.

Websites:

1. Mineral Resources Data System (MRDS) (https://mrdata.usgs.gov/mrds/)
2. Natural Resources Data Management System **(**https://dst.gov.in/natural-resources-data-management-system);
3. Department of Land resources (https://dolr.gov.in/)
4. Ministry of Rural Development (Land resources) (https://rural.nic.in/documents/policies-acts-bills/department-land-resources);
5. Ministry of Jalshakti Department of Water Resources (http://mowr.gov.in/);
6. Water Resources Reports **(**http://jalshakti-dowr.gov.in/annual-report)
7. Indian Institute of soil and water conservation (http://www.cswcrtiweb.org/);
8. Environment and Forest (https://www.india.gov.in/topics/environment-forest);
9. Forest survey of India (http://www.fsi.nic.in/);
10. Annual Report, MoE,F and CC (http://moef.gov.in/wp-content/uploads/2019/08/Annual-Report-2018-19-English.pdf);
11. Ministry of Human Resource Development (https://mhrd.gov.in/)

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