

SAURASHTRA

UNIVERSITY

STRUCTURE OF THE COURSES

OF

SUBJECT : GEOGRAPHY

M.A./M.SC. ALL SEMESTER

(Revised Syllabus in Force from: June-2019)

SAURASHTRA UNIVERSITY
ARTS FACULTY
REVISED SYLLABUS
(Introduced from June, 2016)
M.A /M.Sc. (GEOGRAPHY) ALL SEMESTERS

Sr No	Level	Sem	Course Group	Course (Paper) Title	Course (Paper) No	Credit	Internal Marks	External Marks	Practical /Viva Marks	Total Marks	Course (Paper) Unique Code
			Core / Elective/ Practical								
1	PG	1	CORE	Principals of Geomorphology-I	1	4	30	70	-	100	
			CORE	Regional Geography of India-I (Physical Division)	2	4	30	70		100	
			Elective	Philosophy of Geographic Thought	3	4	30	70		100	
			Elective	Urban Geography	4	4	30	70		100	
			Practical	Advanced Cartography-I (Practical)	5	8	-	-	100	100	
2	PG	2	CORE	Principals of Geomorphology-II	6	4	30	70		100	
			CORE	Geography of India-II (Socio-Economic Division)	7	4	30	70		100	
			Elective	Bio-Geography	8	4	30	70		100	
			Elective	Resource Geography of Gujarat	9	4	30	70		100	
			Practical	Advanced Cartography-II (Practical)	10	8	-	-	100	100	
3	PG	3	CORE	Climatology-I	11	4	30	70	-	100	
			CORE	The Geography of Natural Hazards and Management	12	4	30	70		100	
			Elective	Fundamentals of & Remote sensing & GIS	13	4	30	70		100	
			Elective	Geography Of Population	14	4	30	70		100	
			Practical	Quantative Techniques in Geography (Practical)	15	8	-	-	100	100	
4	PG	4	CORE	Hydrology & Oceanography	16	4	30	70	-	100	
			CORE	The Geography of Human Hazards and Management	17	4	30	70		100	
			Elective	Men & Environment	18	4	30	70		100	
			Elective	Geography of Tourism	19	4	30	70		100	
			Practical	Dissertation/ Field work	20	8	-	-	100	100	

Note :

1. Each paper and practical consist of 100 marks external and 30 marks internal.
2. Each semester consists of 4 Theory , 1 practical.
3. Figures at the end of each topic of all the courses (Theory and Practical) indicate tentative number of lecture to be delivered on respective topic of theory paper or exercise to be conducted in case of Practical.
4. Students can Carry Stencil Maps in the Examination.
5. Drawing maps and diagrams necessary in each papers.

Teaching Programme and Conditions:

1. The total number of courses to be offered by a student will be 20, spread over four semesters. All the 20 courses will be University Courses.
2. Each theory and practical course will be covered in at least 45 lectures. There shall be four periods each of 55 minutes per week, per theory course.
3. There will be a continuous assessment of the student through class tests and / or seminars and home assignments.
4. There shall be a batch of 15 students for each Practical Course. There shall be Three Practical of six (6) hours duration, per week, per practical course.
5. The students will have to declare the option for Dissertation at the beginning of the 3rd semester.
6. The students will maintain a journal for all the practical courses and it will be certified by Head of the Department and will be reassessed at viva-voce. In the semester-end examination, the viva-voce (10) and journal (20) will carry 30 marks.

Subject: Geography
Course (Paper) Name & No : Principals of Geomorphology-I Paper No-1
Course (Paper) Unique Code :
Course Exam Time Duration : 45 Lectures

Name of Course	Semester	Core/ Elective/ Practical	Paper Code	Paper Title	Credit	Internal Marks	External Marks	Practical/ Viva/ Exam. Marks	External Exam. Time Duration
M. A.	1	Core		Principals of Geomorphology- I	3	30	70		2.15 hrs

Course Objective

The objective of the course is to familiarize the students with the need for understanding of geomorphology with reference to certain fundamental concepts, focusing on the unity of geomorphology in the earth materials and the processes with or without an elements of time process component. Geomorphology is segmented into the internal and external processes of landscape evolution.

Course Content

Unit - 1

Fundamentals of Geomorphology- Meaning , Definition, History and Development of geomorphology : A brief Review principle of uniformitarianism , Contribution of Hutton, Gilbert, Dutton, and Davis.

Unit-2

Tectonics and Geomorphology- Inferred Knowledge (Density, Temperature, Pressure), Holmes Convection current Theory, Contribution of the earth's interior ,The Theory of Isostasy - Views of Airy and Pratt.

Unit-3

Factors controlling landforms Development- Endogenetic forces – Epiorogenic and Orogenic movement, Compression, Tension , Folds-Type and Landforms, Fault-Types and Landforms.

Unit-4

Evolution of continent and ocean- Wegener's Continental Drift Theory, Plate Tectonics,

Suggested Readings

1. Chorley, R. J. : Spatial Analysis in Geomorphology, Methuen, London, 1972.

2. Cooke, R. U. and Doornkamp, J. C. : Geomorphology in Environmental Management - A Introduction, Clarendon Press, Oxford, 1974.
3. Dury, G. H. : The Face of the Earth, Penguin Harmondsworth, 1959.
4. Fairbridge, R. W. Encyclopeida of Geomorphyology, Reinholdts, New York, 1968.
5. Goudie, A. : The Nature of the Environment, Oxford & Blackwell, London, 1993.
6. Garner, H. F. : The Origin of landscape - A Synthesis of Geomorphology, Oxford University Press, London, 1974.
7. Mitchell, C. W. : Terrain Evaluation, Longman, London, 1973.
8. Ollier, C. D. : Weathering, Longman, London, 1979.
9. Pitty, A. F. Introduction to Geomorphology, Methuen, London, 1971.
10. Stoddart, D. R. (ed.) : Process and Form in Geomorphology, Routledge, New York, 1996.
11. Skinner, B. J. & Porter, S.C. : The Dynamic Earth John Wiley, New York, 1995.
12. Sparks, B. W. Geomorphology, Longaman, London, 1960.
13. Sharma, H. S. (ed.) : Perspectives in Geomorphology, Concept, New Delhi, 1980.
14. Singh, S.: Geomorphology, Prayag Publication, Allahabad, 1998.
15. Thorunbury, W. D. Principles of Geomorphology, John Wiley, New York, 1960.

Subject: Geography
Course (Paper) Name & No : Regional Geography of India-I
(Physical Division)

Paper No-2

Course (Paper) Unique Code :

Course Exam Time Duration : 45 Lectures

Name of Course	Semester	Core/ Elective/ Practical	Paper Code	Paper Title	Credit	Internal Marks	External Marks	Practical/ Viva/ Exam. Marks	External Exam. Time Duration
M. A.	1	Core		Geography of India-I	3	30	70		2.15 hrs

Course Objectives:

To understand India in terms of various regional divisions, their important characteristics, Intra-regional and inter-regional linkages; to analyze the natural 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

Location & Space Relations, Topographic- Structure, relief and Physiographic Divisions of India, Drainage system of India , Climate types-Regional variations

Unit-2

Soil Resource- Soil types and distribution, problems, and their remedies. Natural Vegetation - Classification , types and distribution pattern of forests.
Live stock in India .

Unit-3

Water Recourses-water resources of India and their utilization, Distribution of irrigated areas and sources of irrigation, main canals of India

Unit-4

Mineral Recourses - Mineral Belts, Mineral production and conservation of minerals. Classification of major minerals and their distribution. ,
Energy Resources - Conventional and non conventional energy resources.

Suggested Readings :

1. Singh R. L. : India-A Regional Geography (National Geographical Society India Varansasi-1971)
2. Agarwal G. N. : India's Population Problems (Tata-Mc Graw Hill Co.)
3. Spate OHK & ATA : Learmonth - India & Pakistan (Methuen London-1967)
4. Sharma T. C. : Economic and Commercial Geography of India (Vikas Publishing House Pvt. Ltd.)
5. Sinha B. M. : Industrial Geography of India (World Press Pvt. LTd. Calcutta)
6. Bharangar L. P. : Transport in Modern India (Kishore Publishing House - Kanpur)
7. Prasan Amba : Indian Railways (Asia Publishing House)
8. Dhenckey M. R. : Air Transport in India Growth and Problems (Vora & Co. - Mumbai)
9. Roa K. L. : India's Water Wealth (Orient - Longmans)
10. Wadia D. N. : Minerals of India (National Book Turst)
11. Dubey R. N. : Economic Geography of India.
12. Singh Josbir : Agricultural Atlas of India.
13. Centre ofr Science & Environment (1988) State of India's Environment (New Delhi).
14. Deshpande C. D. : India a Regional Interpretation (ICSSR & Northern Book Centre - 1992)
15. Hrtha R & Gopal Krishna : Emerging India (Reprinted by Rawal Publications Jaipur-1996).
16. Das P. K. : The Monsoons (National Book Turst)

Subject: Geography
Course (Paper) Name & No : Geographical Thought
Course (Paper) Unique Code :
Course Exam Time Duration : 45 Lectures

Paper No-3

Name of Course	Semester	Core/ Elective/ Practical	Paper Code	Paper Title	Credit	Internal Marks	External Marks	Practical/ Viva/ Exam. Marks	External Exam. Time Duration
M. A.	1	Elect		Geographic Thought	3	30	70	Exam. Marks 100	2.15 hrs

Course Objectives:

This introductory paper is intended to acquaint the students with distinctiveness of geography as a field of learning in social science as well as in natural science. The philosophy, History and methodology of the subject is discussed in such way that students develop a keen interest in the subject and pursue it for higher studies.

Course Content

Unit I:

Nature and scope of Geography: Geography as a spatial science, as interdisciplinary and integrated discipline.

Place of Geography in the system of Sciences (Physical and Human Sciences).

Unit II:

Classical – Greek, Roman and Indian.

Medieval – Age of Discovery and Arab Geographical Tradition.

Modern – Humbolt & Ritter , European and American schools of thought

Unit III:

Dualism in geography. Environmental Determinism , Possibilism, Neo-Determinism and Probablism

Unit IV:

Quantitative Revolution; and model building(Concentric Zone Theory, Von Thunen Theory ,Walter Christaller`s Theory)

Suggested Readings :

1. Abler, R., Almae, J., and Guld P. 1972, Spatial Organization-Prentice Hall.
2. Ackerman, E. A., 1965. The Science of Geography, Washington.
3. Ali, S. M.; _____ Geography, Aligarh Mulsim University Press-Aligarh.
4. Ali, S. M., The Geography of Paranas. Aligarh.
5. Banbary, E. H., 1883. A History of Aneieat Geography, Methuen, London.
6. Davies, W. K., 1972. Conceptual Revolution in Geography, London.
7. Dickinson, R. E., 1969, The Makers of Modern Geography, Routlege and Kegan Paul, London.
8. Freeman, T. W., 1961, A Hundred Years of Geography, London.
9. Harvey D., 1969, Explanation in Geography, Arnold.
10. Harvey, M.E. and Holly, B. P. 1983, Themes in Geographic Thought, London.
11. Chorley and Haggett, (eds.) 1967, Models in Geography, Methuen, London.
12. Hartshorne, 1961, The Nature of Geography, Lancaster.
13. James, P. E., 1972, All possible Worlds : A History of Geographical Ideas, New York.
14. James, P. E. and Jones, C. E. (eds.) 1954, American Geography : Inventory and Prospect, Association of American Geographers, Washington.
15. Johnston, R. J., 1983, Geography and Geographers, Arnold-Heinamann, London.
16. Kimble, G.H.T., 1952, Geography 'During the Middle Ages; 'University Press, London.
17. Minshull, R. 1970, The Changing Nature of Geography, London.
18. Mandal, R. B., Recent Trends in Geography, Concept, New Delhi.
19. Taylor, G., Geography in the 20th Century, Methuen.
20. Wooldridge, S. W. 1951. The Geographer as scientist, T. Nelson, London.
21. Wooldridge, and East, 1955, The Spirit and Purpose of Geography, Hutchinsion, London.
22. Board, C. and other; 1959, Progress in Geography, vol. I to IX, Edward Arnold, London.
23. Majid Hussin, 1990, Evolution of Geographical Thought, (If Edition), Rawat Publications, Jaipur

Subject: Geography
Course (Paper) Name & No : Urban Geography
Course (Paper) Unique Code :
Course Exam Time Duration : 45 Lectures

Paper No-4

Name of Course	Semester	Core/ Elective/ Practical	Paper Code	Paper Title	Credit	Internal Marks	External Marks	Practical/ Viva/ Exam. Marks	External Exam. Time Duration
M. A.	1	Elect		Urban Geography	3	30	70		2.15 hrs

Course Objectives:

The objectives of this course is to make the students understand the process of urbanization and origin, growth and classification of urban settlements with relevant theories and models; Examine the changing economic base and structure of the contemporary cities; Relate urbanization process and the evolution of urban system; Examine the contemporary urban issues and suggest new urban planning and urban policy perspectives.

Course Content:

Unit - I:

Urban geography: Meaning, definition and scope of urban geography, Relationship of urban geography with other disciplines. Approaches to the study of urban geography.

Unit - II:

Urban growth: Factors affecting origin and evolution of urban, stages of urban growth. Site and situation of urban: Meaning and essential elements of site and situation, Factors affecting the site and situation of urban, classification of the site and situation of urban. Central place theory of Christaller, theories of urban internal structure (concentric zone theory, sector theory and multiple nuclei theory)

Unit - III:

Urban morphology: Definition, constituents and factors affecting urban morphology, types of urban layout – out plan, problems of improvement and reconstruction of urban layout – out, outer Shape of urban. Urban Planning: meaning, definition and aims of urban planning, types of urban planning, Concepts of urban planning, urban planning in India.

Unit - IV:

Urban Problems: environmental, transport, water, electricity, healthy and other.

Urban Slums: Definition, characteristics and responsible factors the Slums, effects and remedy of slums.

Selected Readings

1. Alam, S. M. : Hyderabad-Secunderabad Twin Cities Asia Publishing House, Bombay, 1964.
2. Berry, B.J.L. and Horton F.F. Geographic Perspectives on Urban Systems, Prentice Hall, Englewood Cliffs, New Jersey, 1970.
3. Carter : The Study of Urban Geography, Edward Arnold Publishers, London, 1972.
4. Chorley, R. J. O., Haggett P. (ed.) : Models in Geography, Methuen, London, 1966.
5. Dickinson, R. E. : City and Region, Routledge, London, 1964.
6. Dwyer, D. J. (Ed.). The City as a Centre of Change in Asia, University of Hong Kong Press, Hongkong, 1971.
7. Gibbs J. P. : Urban Research Methods D. Van Nostrand Co. Inc. Princeton, New Jersey, 1961.
8. Hall P. : Urban and Regional Planning, Routledge, London, 1992.
9. Hauser, Philip M. and Schnore Leo F. (ed.) : The Study of Urbanization, Wiley, New York, 1965.
10. James, P. E. and Jones C. F. (eds.) : American Geography, Inventory and Prospect, Syracuse University Press, Syracuse, 1954.
11. Kundu, A. : Urban Development and Urban Research in India, Khanna Publication, 1992.

Subject: : **Geography**

Course (Paper) Name & No : Advanced Cartography (Practical) Paper No-5

Course (Paper) Unique Code :

Course Exam Time Duration : 45 Lectures

Name of Course	Semester	Core/ Elective/ Practical	Paper Code	Paper Title	Credit	Internal Marks	External Marks	Practical/ Viva/ Exam. Marks	External Exam. Time Duration
M. A.	1	Pract		Advanced Cartography	6	-	100	70+30	5 hrs

Note :

1. One practical of Five hours duration.
2. The Course shall be covering three practical sessions per week. Each practical session shall of two periods each period of 1(one) hours.
3. Diagramic Representation of Statistical Data using population, agriculture, industry and transportation data

Course Content

Unit-1 –

Cartography – Nature and Scope , Scales - Concept and application, Conversion of Scale, Representative Fraction, Construction of Plain, Comparative and Diagonal Scales.

Unit -2

Relief and Climatic Diagrams –Cross Profile , Long Profile, Indivisibility of Terrain Study and Exercise on Contour Maps-Slope and Gradients. Profiles: i) superimposed ii) projected iii) composite iv) longitudinal profile v) Transverse Profile

Unit-3

Introduction to Survey of India (SOI) Toposheet, Numbering , Scale, Grid Reference, Signs and Symbols , Study and Interpretation of SOI

Unit -4

Field report Recorded in Journal. & viva-Voce

Note-

- 1 Candidate shall record their practical working the journal and the journal duly certified by the professor In -charge and the certificate should be produced at the time of examination. Candidates who have no journal or completed the practical should not be appear at the Examination.
- 2 Draw and interpretation of diagrams and use
3. 100 marks Paper external, paper no internal marks.

4. Scheme of Evolution yearly

- a) Practical Exam-70
- b) Viva-Voce and journal - 20+10=30 Marks
- c)Time -5 Hours

Suggested Readings :

1. Singh. R.L: Elements of Practical Geography
- 3 Misra R. P. : Fundamentals of Cartography (Prasaranga University- Maysore)
4. Singh and Dutt : Elements of Practical Geography (Students friend - Allahabad)
5. Monkhouse and Wikinson : Maps and Diagrams (Methuen)
6. Birch T. W. : Geographical and Statistical Maps (Oxford University Press)

Subject: : Geography
Course (Paper) Name & No : Principals of Geomorphology-II Paper No-6
Course (Paper) Unique Code :
Course Exam Time Duration : 45 Lectures

Name of Course	Semester	Core/ Elective/ Practical	Paper Code	Paper Title	Credit	Internal Marks	External Marks	Practical/ Viva/ Exam. Marks	External Exam. Time Duration
M. A.	2	Core		Principals of Geomorphology-II	3	30	70		2.15 hrs

Course Objectives

The objective of the course is to familiarize the students with the need for understanding of geomorphology with reference to certain fundamental concepts, focusing on Denudational process , Weathering and Erosional process of geomorphology in the earth materials and the processes with or without an elements of time process component. Geomorphology is segmented into the internal and external processes of landscape evolution.

Course Content

Unit-1

Denudational processes- weathering, Types of Weathering-Physical, Chemical and Biological , Erosion and mass wasting, Mass Movement-Slides, Falls, Flow and Creep. The Concept of cycle of Erosion-. Penk's , Davis ,Slope development-Views of Davis, Penk's ,Wood and King

Unit-2

Fluvial Processes (River)-Drainage Basin and Drainage Patterns, Mechanisms of Erosion, Transportation and Deposition , Erosional Landforms, Depositional landforms

Unit-3

Glacial Processes –Types of Glaciers, Mechanisms of Erosion, Transportation and Deposition , Erosional Landforms, Depositional landforms
 Karst Process- Mechanisms of Erosion, Transportation and Deposition , Erosional Landforms, Depositional landforms

Unit-4

Arid and semi Arid Process(Wind)- Landforms produced by Water and wind in the Desert, Concept of Pediplaination. Mechanisms of Erosion, Transportation and Deposition.

Sea waves Coastal Process- Machines of Erosion, Transportation and Deposition ,
Erosional Landforms, Depositional landforms

Suggested Readings

1. Chorley, R. J. : Spatial Analysis in Geomorphology, Methuen, London, 1972.
2. Cooke, R. U. and Doornkamp, J. C. : Geomorphology in Environmental Management - A Introduction, Clarendon Press, Oxford, 1974.
3. Dury, G. H. : The Face of the Earth, Penguin Harmondsworth, 1959.
4. Fairbridge, R. W. Encyclopeida of Geomorphyology, Reinholdts, New York, 1968.
5. Goudie, A. : The Nature of the Environment, Oxford & Blackwell, London, 1993.
6. Garner, H. F. : The Origin of landscape - A Synthesis of Geomorphology, Oxford University Press, London, 1974.
7. Mitchell, C. W. : Terrain Evaluation, Longman, London, 1973.
8. Ollier, C. D. : Weathering, Longman, London, 1979.
9. Pitty, A. F. Introduction to Geomorphology, Methuen, London, 1971.
10. Stoddart, D. R. (ed.) : Process and Form in Geomorphology, Routledge, New York, 1996.
11. Skinner, B. J. & Porter, S.C. : The Dynamic Earth John Wiley, New York, 1995.
12. Sparks, B. W. Geomorphology, Longaman, London, 1960.
13. Sharma, H. S. (ed.) : Perspectives in Geomorphology, Concept, New Delhi, 1980.
14. Singh, S.: Geomorphology, Prayag Publication, Allahabad, 1998.
15. Thorunbury, W. D. Principles of Geomorphology, John Wiley, New York, 1960.

Subject: : Geography
Course (Paper) Name & No : Geography of India-II Paper No-7
Course (Paper) Unique Code :
Course Exam Time Duration : 45 Lectures

Name of Course	Semester	Core/ Elective/ Practical	Paper Code	Paper Title	Credit	Internal Marks	External Marks	Practical/ Viva/ Exam. Marks	External Exam. Time Duration
M. A.	2	Core		Regional Geography of India-II (Socio-Economic Division)	3	30	70		2.15hrs

Course Objectives

The course is aimed at presenting a comprehensive , integrated and empirically based profile of India. The objective is highlight the agricultural, Industrial and socio-economic aspects on the basis of various linkages of India and regional development.

Course Content

Unit-1

Agriculture-Principal crops (Rice, Wheat, Maize, Sugarcane, Groundnut, Tea, Coffee, Cotton, Jute, Rubber, Tobacco and cropping regions, Agro-climatic Zones; agro-ecological regions,

Unit-II Industrialization and Major Industries,

- (i) iron and steel industries, Aluminum, Copper, Lead.
- (ii) Cotton, Jute,
- (iii) Heavy Engineering, Electronic and information Technology (IT).
- (iv) Petrochemical, Fertilizer Drug and Pharmaceutical, Cement
- (v) Sugar Industry, Agro based Industries etc.

Industrial regions of India, New Industrial Pockets, special economic zones, tourism and its types.

Unit-3 Population Growth and Distribution; Religious structure,Density, Composition, Occupational Structure,

Unit-4

Road, railways, airways and pipe line network and their roles in regional development, Trade policy, Development of communication and information technology.

Suggested Readings :

1. Singh R. L. : India-A Regional Geography (National Geographical Society India Varansasi-1971)
2. Agarwal G. N. : India's Population Problems (Tata-Mc Graw Hill Co.)
3. Spate OHK & ATA : Learmonth - India & Pakistan (Methuen London-1967)
4. Sharma T. C. : Economic and Commercial Geography of India (Vikas Publishing House Pvt. Ltd.)
5. Sinha B. M. : Industrial Geography of India (World Press Pvt. Ltd. Calcutta)
6. Bharangar L. P. : Transport in Modern India (Kishore Publishing House - Kanpur)
7. Prasan Amba : Indian Railways (Asia Publishing House)
8. Dhenckey M. R. : Air Transport in India Growth and Problems (Vora & Co. - Mumbai)
9. Roa K. L. : India's Water Wealth (Orient - Longmans)
10. Wadia D. N. : Minerals of India (National Book Turst)
11. Dubey R. N. : Economic Geography of India.
12. Singh Josbir : Agricultural Atlas of India.
13. Centre of Science & Environment (1988) State of India's Environment (New Delhi).
14. Deshpande C. D. : India a Regional Interpretation (ICSSR & Northern Book Centre - 1992)
15. Hrtha R & Gopal Krishna : Emerging India (Reprinted by Rawal Publications Jaipur-1996).
16. Das P. K. : The Monsoons (National Book Turst)

Subject: : Geography
Course (Paper) Name & No : Soil and Bio-Geography Paper No-8
Course (Paper) Unique Code :
Course Exam Time Duration : 45 Lectures

Name of Course	Semester	Core/ Elective/ Practical	Paper Code	Paper Title	Credit	Internal Marks	External Marks	Practical/ Viva/ Exam. Marks	External Exam. Time Duration
M. A.	2	Core		Soil and Bio-Geography	3	30	70		2.15 hrs

Course objectives-

The purpose of this paper is to appraise the students of the interrelationships among the living organisms within the environment and the importance of conservation of biosphere and biodiversity.

Course contain

UNIT I

Definition, meaning, scope and significance of Bio-geography.

Bio energy cycle in terrestrial ecosystem.

Energy budget of the earth, tropic levels and food chain.

UNIT II

Soil: Formation, Process, Erosion and Conversation

Ecological regions of India in relation to their plant and animal life, their interrelations, problems conservation. i) Mangrove ii) Tropical rainforest iii) Desert iv) Mountain v) Fresh water & marine vi) Deciduous Forests

UNIT III

Communities- nature of communities and ecosystem; Bio-diversities, human activity & threat to biodiversity, hot spots of biodiversity decay and conservation” Methods of Conservation.

UNIT IV

Conservation of wildlife and forests, soil conservation of forestation, re forestry, social forestry, National policies and International policies.

International and national efforts for conserving biological resources; Biosphere reserves;

Suggested Readings :

1. M.J.Bradshaw: Earth and Living Planet, ELBS, London,1979.
2. C.B.Cox and P.D. Moore: Biogeography: An Ecological and Evolutionary Approach, 5th Edition . Blackwell,1993.
3. J.B.Hogt: Man and the Earth,Prentice Hall,USA,1992.
4. R.J.Huggett: Fundamentals of Bigeography, Routledge,USA,1998.
5. B.M.Bansereau: Bio-geography-An Ecological Perspective, Ronald Press, New York,1957.
6. T.Joy: Bio-geography: A Study of Plants in the Ecosphere, Oliver & Boyd, Edinburgh,1977.
7. M.S.Masi (Ed): Bio-geography of India,The Hogue,1975.
8. C. Martin: Plant Geography,Methuen, London,1975.
9. H.S.Mathur: Essentials of Bio-geography,Any Printers,Jaipur,1998.
10. N.Pears: Basic Bio-geography, Education,Longman, London,1985.
11. H Robinson: Bio-geography,Mc Donald, London,1982
12. G.H.Smith: Conservation of Natural Resources,Wiley & Sons, London,1962.
13. H.A.Viles: Bio-geomorphology, Oxford Basil Blackwell, 1988.
14. S.S.Negi: Biodiversity and its Conservation in India: Indus Publishing Co. New Delhi,1993.
15. J.H.Brown and A.C.Gibson: Biogeography, St. Louis, Mesby,1983.
16. B.Seddon: Introduction to Bio-geography, Duckworth, London,1971.

Subject: : Geography
Course (Paper) Name & No : Resource Geography of Gujarat Paper No-9
Course (Paper) Unique Code :
Course Exam Time Duration : 45 Lectures

Name of Course	Semester	Core/ Elective/ Practical	Paper Code	Paper Title	Credit	Internal Marks	External Marks	Practical/ Viva/ Exam. Marks	External Exam. Time Duration
M. A.	2	Elect		Resource Geography of Gujarat	3	30	70		2.15 hrs

Course objectives

The objective of this paper is to provide an overview of resource of Gujarat and its interface with environment. The course aims to provide an understanding of the existing reality of resource utilization and environmental depletion; further aims to sensitize the students to the concept of sustainable resource use and sustainable development.

Course Contents:

Unit - I:

Meaning of resources, Resource creating factors.

Water resources: Major Rivers and multipurpose irrigation projects in Gujarat.

Unit - II:

Forest resources: Types, distributions and utility in Gujarat.

Animal resources: Major types of animals in Gujarat and its biproducts - milk, milk products, wool, meat etc.

Unit - III:

Mineral resources: Importance and distribution in Gujarat (Fluorspar, Limestone, Bauxite and China clay)

Conventional and non conventional energy resources sources in Gujarat, Importance and utility emerge in Gujarat. (Lignite, Mineral oil, Natural gas, solar, wind and biogas)

Unit - IV:

Human resource: Growth, density and distribution. Conservation of resources,
Resource regions of Gujarat, Resources related problems in Gujarat.
Resource Policy of Gujarat

Suggested Readings:

- 1) દવે મંજુલાબેન બી.: ગુજરાતની આર્થિક અને પ્રાદેશિક ભૂગોળ (યુનિ. ગ્રંથ નિર્માણ બોર્ડ, અમદાવાદ)
- 2) સી. સી. ડોક્ટર: ગુજરાતની વસ્તી (યુનિ. ગ્રંથ નિર્માણ બોર્ડ, અમદાવાદ)
- 3) નકશામાં ગુજરાત: (યુનિ. ગ્રંથ નિર્માણ બોર્ડ, અમદાવાદ)
- 4) Dikshit K.R. Geography of Gujarat (National Book Trust of India)
- 5) Spate O.H.K. India and Pakistan.
- 6) Kapadia – Animal Life in Gujrat.
- 7) Bhatt – Ports of Gujarat.
- 8) Statistical Beaur Government of Gujarat – Statistical Atlas of Gujarat.

Subject: : Geography
Course (Paper) Name & No : Advanced Cartography-II (Practical) Paper No -10
Course (Paper) Unique Code :

Course Exam Time Duration : 45 Lectures

Name of Course	Semester	Core/ Elective/ Practical	Paper Code	Paper Title	Credit	Internal Marks	External Marks	Practical/ Viva/ Exam. Marks	External Exam. Time Duration
M. A.	2	Practical		Advanced Cartography-II	6	-	100	70+30	5 hrs

Course Objective

The objectives of this course are to train the student in the art of representing demographic and Socio-economic data base o any area through simple statistical techniques and cartograms. The techniques and map projections necessary for accurate geographical positioning and preparing physical plans of an area also form parts of the practical exercise. This course thus train the preparing different types of Cartographic maps and Cartograms diagrams

Note :

1. Practical's each of Five hours duration.
2. The Course shall be covering three practical sessions per week.
Each practical session shall of two periods each period of 1(one) hours.
3. Diagramic Representation of statistical Data using Climatic ,population, agriculture, industry and transportation data

Unit-1 –

Representation of Statistical Data-

Compound Bar Graph , Compound Pyramid, Divided Rectangle, Pie Diagram, Wind rose, Triangular graph- (three variables), Circle , Sphere

Unit -2

Mapping of Climatic, Socio –Economic Phenomomena (Map-India/ Gujarat)

Dot method , Bar Graph ,Pie Diagram, Block Diagram, Circle ,Sphere ,Chloropleth map , Isopleth Map ,Flow Chart relevance to distribution

Unit-3

Indian daily Weather report- Weather Elements and Weather Instruments, Weather Signs and Symbols, Study and Analyses of weather Reports.

Unit-4 Field Toor

Recorded in Journal. & viva-Voce

Note-

- 1 Candidate shall record their practical working the journal and the journal duly certified by the professor in charge and the certificate should be produced at the time of examination. Candidates who have no journal or completed the practical should not be appear at the Examination.
2. There shall be one Practical's Session of five hours duration.
3. 100 marks Paper external, paper no internal marks.
4. Scheme of Evolution Semesters wise
 - Practical Exam-70
 - Viva-Voce and journal - 20+10=30 Marks
 - Time -5 Hours

Suggested Readings :

1. Singh. R.L: Elements of Practical Geography
- 3 Misra R. P. : Fundamentals of Cartography (Prasaranga University- Maysore)
4. Singh and Dutt : Elements of Practical Geography (Students friend - Allahabad)
5. Monkhouse and Wikinson : Maps and Diagrams (Methuen)
6. Birch T. W. : Geographical and Statistical Maps (Oxford University Press)

Subject: : Geography
Course (Paper) Name & No : Climatology Paper No-11
Course (Paper) Unique Code :
Course Exam Time Duration : 45 Lectures

Name of Course	Semester	Core/ Elective/ Practical	Paper Code	Paper Title	Credit	Internal Marks	External Marks	Practical/ Viva/ Exam. Marks	External Exam. Time Duration
M. A.	3	Core		Climatology	3	30	70		2.15 hrs

Course Objectives:

The objectives of this course is to make the students.

The aim of the course is to provide an understanding of weather phenomena; dynamics of global climates and generation of climatic information and their application.

Course Contents:

Unit-1

Climatology -Definition and Scope, Sub divisions of Climatology and Meteorology and Climatology. Insolation, factors affecting the Insolation and distribution of Insolation, Heat Budget of the Earth. Temperature, Controls of temperature, distribution of temperature, Temperature Inversions, Methods of Heating and Cooling of Atmosphere.

Unit-2

Temperature Zone, Pressure Belts, Factor effecting the Pressure, Distribution of Atmospheric pressure.

Condensation and Precipitation – Types, Factors affecting Rainfall and World Distribution of Rainfall, Mechanism of monsoon.

Unit-3

Types of Air masses and Fronts - its properties, Atmospheric disturbances: Cyclones and its kind, (tropical and temperate cyclones) Climatic classification; basis of Koppen's classification and types - distribution, Characteristics.

Unit-4

Global climatic Change, Role of Man in World Climatic Change, Consequences of Climatic Change , Applied Climatology; Clothing, Health, Architecture, Agriculture, Industries, Tourism and Transport.

Suggested Reading.

1. પ્રા. મહેન્દ્રકુમાર આર. શાહ અને પ્રા. કાનજીભાઈ એન. જસાણી : ભૌતિક ભૂગોળ, ગુજરાત ગ્રંથ નિર્માણ બોર્ડ.
2. Barry, R. G. and Cherey P. J. : Atmosphere, Weather and Climate, Routledge, London and New York, 1998.
3. Critchfield, J. H. : General Climatology, Prentice Hall, India, New Delhi, 1993.
4. Das, P. K. : Monsoons National Book Trust, New Delhi, 1987.
5. Fein, J. S. and Stephens, P. N. : Monsoons, Wiley Interscience, 1987.
6. India Met. Deptt. : Climatological Tables of Observatories in India, Govt. of India, 1968.
7. Lal, D. S. : Climatology, Chaitanya Publications, Allahabad, 1986.
8. Lydolph, P. E. : The Climate of the Earth, Rowman, 1985.
9. Menon, P. A. : Our Weather, N.B.T., New Delhi, 1989.
10. Peterson, S. : Introduction of Meteorology, Mc Graw Hill Book, London, 1969.
11. Robinson, P. J. and Henderson S. : Contemporary Climatology, Henlow, 1999.
12. Thompson, R. D. and Perry, A (ed.) : Applied Climatology, Principles and Practice, Routledge, London, 1997.

Subject: : Geography
Course (Paper) Name & No : Geography of Natural Hazards Paper No-12
Course (Paper) Unique Code :
Course Exam Time Duration : 45 Lectures

Name of Course	Semester	Core/ Elective/ Practical	Paper Code	Paper Title	Credit	Internal Marks	External Marks	Practical/ Viva/ Exam. Marks	External Exam. Time Duration
M. A.	3	Core		Geography of Natural Hazards	3	30	70		2.15 hrs

Course Content

To introduce student to the study of Natural Hazards and men`s role in its causes. Its information and their application Prediction, Control Measures and Planning for Natural Hazards.

UNIT I

Types and Distribution of natural hazards-Earthquake, Tsunamis, Volcanic eruptions, Landslides, Avalanches, Floods, famines and Droughts, Cyclones,

UNIT II

Hazard prone areas of the world and India; Man`s role in natural hazard.

Natural Hazards in India: Seismic zones, Tsunamis, Landslides prone areas, Flood prone areas, Drought prone areas;

UNIT III

Damager due to natural hazards in India; Some natural hazards of recent history - Earthquakes, Tsunamis , Landslides ,Floods, Cyclones and Drought prone areas of India.

UNIT IV

Management of Natural Hazards- Prediction of natural hazards; Control measures for natural hazards; Planning for natural hazards

Recommended Books:

1. C.Enbleton: Natural Hazards and Global Change,I.T.C. Journal,1989,3/4,pp. 169-178.
2. W.J.Petak and A.D.Atkinson: Natural Hazard Risk Assessment and Public Policy, Spinger-Verlay,New York,1982.
3. L. Tianch: Landslide Hazard Mapping and Management in China, ICIMOD, Nepal,1996.
4. K.S.Valdiya: Environmental Geology,Tata Mc Graw Hill Co.Ltd.New Delhi,1987.
5. Q.Zareba and V. Mance : Landslides and their Control, Elsevier Amsterdam,1969.

6. G.F.White (Ed): Natural Hazards: Local ,National,Global, Oxford University Press,London,1974.
7. H.K.Gupta: Dans and Earthquakes,Elsever, Amsterdam,1976.
8. I.Burton et al: The Environment as Hazard, O.P.U. New York,1978.
9. B.A.Bolt et al (Ed):Geological Hazards,Spinger Verlay,New York,1950.

Subject: : Geography
Course (Paper) Name & No : Remote Sensing and Geographical Information System (GIS) Paper No -13

Course (Paper) Unique Code :
Course Exam Time Duration : 45 Lectures

Name of Course	Semester	Core/ Elective/ Practical	Paper Code	Paper Title	Credit	Internal Marks	External Marks	Practical/ Viva/ Exam. Marks	External Exam. Time Duration
M. A.	3	Core		Remote Sensing and Geographical Information System (GIS)	3	30	70		2.15 hrs

Course Contain

To introduce

- To the students the basic Principals of Air Photograph, Remote Sensing & Geographical Information System (GIS).
- To Indicate the fundamentals of Visual and Digital Interpretation of Satellite Images ,
- To outline the application value of Air Photo, Remote Sensing & GIS

UNIT I

Aerial photograph -Definitions and concepts; Scope of photography, Development of Air photo interpretation technique ,Types of Areal Photography,. Areal Photograph versus Maps

UNIT II

Remote Sensing – definition, types and historical development; Process and stages of Remote sensing , Electromagnetic waves and types , characteristics of Indian Remote Sensing Imageries .Comparison of Air photos and satellite imageries,

UNIT III

Platforms of Remote Sensing , comparison of Airphotos and satellite imageries, Application of remote sensing ,Advantage of Remote Sensing , Remote Sensing Programmes of India.

UNIT IV

GIS-Meaning, Definition, Importance, Objectives, Development and Elements ,
spatial Data models of GIS , Remote Sensing & Data Integration , Applications of GIS

Suggested Reading.

1. F.F. Sabins (Jr) Remote Sensing: Principles and Interpretations, John Wiley and sons, New york,1987.
2. J.R.Jenson: Digital Image Processing.
3. P.R.Wolf: Elements of Photogrammetry.
4. T.M. Lillesand and R.W. Keifer : Remote Sensing and Image Interpretation, John Wiley and Sons, New York, 1979.
5. American Society of Photogrammetry: Manual of Photogrammetry, 3rd Ed. Virginia 1966.
6. American Society of Photogrammetry: Manual of Remote Sensing, Virginia 1975.
7. T.E.Avery and G.L.Berlin: Fundamentals of Remote Sensing and Airphoto Interpretation, 5th Ed. Mac Millan, Publishing co. New York 1983.
8. P.J.Curran: Principles of Remote Sensing; ELBS Edn.Longman Hong Kong 1988.
9. Robert G.Reeves (Ed): Manual of Remote Sensing (2 vols),The American Society of Photogrammetry.
10. R.N.Colwell (Ed): Manual of Remote Sensing,2nd Ed. Falls Church Va: American Society of Photogrammetry,1983
11. J.Campbell: Introduction to Remote Sensing, Guilford, New York.
12. R.M.Hard: Gigittal Image Processing of Remotely Sensed Data, Academic Press,New York.
13. C.P.Lo: Applied Remote Sensing, Longman ,Scientific and Technical

Subject: : Geography
Course (Paper) Name & No : Population Geography Paper No -14
Course (Paper) Unique Code :

Course Exam Time Duration : 45 Lectures

Name of Course	Semester	Core/ Elective/ Practical	Paper Code	Paper Title	Credit	Internal Marks	External Marks	Practical/ Viva/ Exam. Marks	External Exam. Time Duration
M. A.	3	Elect		Population Geography	3	30	70		2.15hrs

Course Contain

The course is meant to provide an understanding of Spatial and Structural dimensions of Population and the end the immerging issues.

The course is further aimed at familiarizing the students with global and regional level problems and also equip them for Comprehending the Indian situation.

Unit-1

Population Geography -Scope and objectives, development of population, population geography , Theories in population, distribution and growth, world pattern and their determinates, Factors affecting to distribution population, density and growth patterns, concepts of under-population and over population.

Unit-2

Population composition.-Age and sex, family and households, literacy and education, religion, caste and tribes, rural and urban, occupational structure gender issues;

Unit-3

Population Dynamics ,Measurement of Fertility and Mortality, Migration - Types of Migration, National and international etc.

Unit-4

Population and development- Population resource regions, regions and levels of population and socio-economic development, India's population policies.

Population issues and policies.

Suggested Readings

1. Bilasborrow, Richard E and Daniel Hogan, Population and Deforestation in the Humid Tropics, International Union for the Scientific Study of Population, Belgium 1999.
2. Bogue, D. J. Principles in Demography, John Wiley, New Yourk 1969.
3. Bose, Ashish et. al. : Population in India's Development (1947-2000); Vikas Publishing House, New Delhi 1974.

4. Census of India, India : A State Profile, 1991.
5. Chandna, R. C. Geography of Population; concept, Determinants and Patterns. Kalyani Publishers, New York 2000.
6. Clarke, John I., Population Geography, Pergamon Press, Oxford 1973.
7. Crook, Nigel Principles of Population and Development. Pergamon Press, New York, 1997.
8. Daugherty, Helen Gin, Kenneth C. W. Kammeyir, An Introduction to Population (Second Edition), The Guilford Press, New York, London 1998.
9. Garnier, B. J. Geography of Population Longman, London, 1970
10. Kochhar, Rajesh, The Vedic People : Their History and Geography Orient Longman Ltd., New Delhi 2000.
11. Mamoria C. B. India's Population Problem, Kitab Mahal New Delhi 1981.
12. Mitra, Ashok, India's Population : Aspects of Quality and Control. Vol. I & II, Abhinav Publications, New Delhi 1978.
13. Premi M. K., India's Population : Heading Towards a Billion, B. R. Publishing Corporation, 1991.
14. Srinivasan K. and M. Vlassoff, Population Development Nexus in India : Challenges for the New Millennium. Tata McGraw-Hill, New Delhi, 2001.
15. Srinivasan, K. Basic Demographic Techniques and Applications Sage Publications, New Delhi, 1998.
16. Sundaram K. V. and Sudesh Nangia, (ed.) Population Geography, Heritage, Publications, Delhi 1986.
17. UNDP : Human Development Report. Oxford University Press, Oxford 2000.
18. United Nations, Methods for Projections of Urban and Rural Populations, No. VIII, New York. 1974.
19. Woods R. Population Analysis in Geography. Longman, London, 1979.
20. Zelinsky Wilbur, A Prologue to Population Geography, Prentice Hall, 1966.

Subject: : **Geography**
Course (Paper) Name & No : **Quantitative Techniques in Geography (Practical)**
Paper No -15

Course (Paper) Unique Code :
Course Exam Time Duration : 45 Lectures

Name of Course	Semester	Core/ Elective/ Practical	Paper Code	Paper Title	Credit	Internal Marks	External Marks	Practical/ Viva/ Exam. Marks	External Exam. Time Duration
M. A.	3	Pract		Quantitative Techniques in Geography	6	-	100	70+30	5 hrs

Course objectives

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

-To indicate the assumptions, limitations and interpretation of these procedures and results.

-To train the students to handle these statistics towards analyzing the geographical problems.:

Note:-

1. Practical's each of Five hours duration.
2. The Course shall be covering three practical sessions per week.
Each practical session shall of two periods each period of 1(one) hours.
3. Diagramic Representation of statistical Data using Climatic ,population, agriculture, industry and transportation data

Course contain

Unit 1

Research- Research Procedure, Types of Research

Unit 2

Definition of Statistics, Importance & use of statistical techniques in geography.
 Statistical methods - Frequency Distribution- class intervals, frequency, frequency Distribution, cumulative and relative frequency, Histogram, Polygon,

Unit 3

Measures of central tendency- Calculation of mean, Median, (Group and Un Group Data)

Quartiles , Correlation Analysis- Karl Person's and Spearman's method

Note-

- 1 Candidate shall record their practical working the journal and the journal duly certified by the professor in charge and the certificate should be produced at the time of examination. Candidates who have no journal or completed the practical should not be appear at the Examination.
2. There shall be one Practical's Session of five hours duration.
3. 100 marks Paper external, paper no internal marks.
4. Scheme of Evolution Semesters wise
 - Practical Exam-70
 - Viva-Voce and journal - 20+10=30 Marks
 - Time -5 Hours

Suggested Readings

- 1.Cole J.P & King, C.A.M (1968) : Quantitative Techniques in Geography. John Wiley & sons
- 2.Elhance, D.N.(1972):Fundamentals of Geography, Kitab Mahal
3. Gregory,S (1968) Statistical methods and the geography methods and the geographer Longman, London
- 4.King,L.J (1991) Stastical Analysis in Geography Prentice Hall, Englewood
- 5 Singh .R.L : Elements of Practical Geography

Subject: : Geography
Course (Paper) Name & No : Oceanography Paper No-16

Course (Paper) Unique Code :
Course Exam Time Duration : 45 Lectures

Name of Course	Semester	Core/ Elective/ Practical	Paper Code	Paper Title	Credit	Internal Marks	External Marks	Practical/ Viva/ Exam. Marks	External Exam. Time Duration
M. A.	4	Core		Oceanography	3	30	70		2.15 hrs

Course Objectives:

The objectives of this course is to make the students

- 1.The objectives of the course are to introduce students to the many facets of Oceans, such as, evolution of the oceans,
- 2.Physical and chemical properties of sea water, atmospheric and oceanographic circulation,
- 3.The fascinating world of marine life and the characteristic of marine environment and the impact of man on the marine environment.

Course Contents:

Unit-1

Nature and scope of oceanography, Relevance of oceanography in earth and atmospheric sciences: Definition of Oceanography , Distribution of land and water. Submarine relief of Ocean, Ocean floor, continental shelf, continental slope, abyssal plain, mid-oceanic and oceanic trenches.

Unit-2

Distribution of temperature and salinity of oceans and seas, Circulation of oceanic waters: waves their influence, tides and its theories their influence, currents and their influence - currents of the Atlantic, pacific and Indian Ocean.

Unit-3

Formation theories of Coral Reefs reefs and atolls, Marine deposits, types and distribution of deposits, Oceanic biological life.

Unit-4

Geographical important of Ocean as storehouse of resources for the future, Impact of Humans on the Marine Environment.

Suggested Readings

1. પ્રા. કાનજીભાઈ એન. જસાણી : સમુદ્રશાસ્ત્ર, યુનિવર્સિટી ગ્રંથનિર્માણ બોર્ડ.
2. પ્રા. મહેન્દ્રકુમાર આર. શાહ અને પ્રા. કાનજીભાઈ એન. જસાણી : ભૌતિક ભૂગોળ, યુનિવર્સિટી ગ્રંથનિર્માણ બોર્ડ.
3. Davis Richard J.A. Oceanography : An introduction to marine Environment W.M.C. Brownlowa 1986.
4. Duxbury C.A. and Duxbary B. An introduction to the world's oceans - (Brown lowa 2nd Ed. 1996).
5. Garriosn, T. : "Oceanography - An Introduction to Marine Science, Books/Cole, Pacific Grove, USA, 2001.
6. Gross, M. Grant : Oceanography, a View of the earth, Prantice - Hall Inc. New Jersy, 1987.
7. King. C.A.M. Oceanography for Geographers 1962.
8. Sharma, R.C. "The Oceans", Rajesh N. Delhi. 1985.
9. Ummerkutty, A.N.P. Science of the Oceans and Human life, NBT, New Delhi, 1985.

Subject: : Geography
Course (Paper) Name & No : Geography of Human Hazards
Paper No-17
Course (Paper) Unique Code :

Course Exam Time Duration : 45 Lectures

Name of Course	Semester	Core/ Elective/ Practical	Paper Code	Paper Title	Credit	Internal Marks	External Marks	Practical/ Viva/ Exam. Marks	External Exam. Time Duration
M. A.	4	Core		Geography of Human Hazards Management	3	30	70		2.15 hrs

Course contain

To introduce the student about the Hazards , the concept of Human Hazards and its impacts on society and nature and their application, interaction between them.

UNIT-I

Introduction Types of man made hazards – physical, chemical, biological,
Man induced Physical Hazards

UNIT-II

Biological Hazards induced by man – effects of over exploitation ,adverse impact on biodiversity.

UNIT-II

Chemical Hazards- Nuclear Hazards, release of toxic elements in the air, soil and water, oil spills etc.

UNIT-III

Population – Types of pollution- causes, consequences and measurements.

UNIT-IV

Global issue and National issues of Global Warming , Effects of global warming, Ozone depletion ,Carbon budgeting, Global terrorism

Reference Books :

1. Turk J. (1985) : Introduction to Environmental Studies, Saunders, College Publication, Japan
2. Singh Savindra (2000) : Environmental Geography, Parag Pustak Bhavan, Allahabad
3. Morrisawa M (Ed) (1994) : Geomorphology and Natural Hazards, Elsevier, Amsterdam
4. Hart M. G. (1986) : Geomorphology, Pure and Applied, George Allen and Unwin, London

5. Valdiya K. S. (1987) : Environmental Geology, Tata McGraw Hill, New Delhi
6. Bryant Edward (2000) : Natural Hazards, Cambridge University Press
7. Daly Herman E. (1996) : Beyond Growth, Beacon Press, Boston
8. Daly Herman E and Twonseed Keneth N (Ed) (1993) : Valuing the earth – Economics, Ecology and Ethics, MIT Press, London
9. Agarwal Anil and Narain Sunita (Ed) (1999) : State of India’s Environment The Citizens Report, Centre for Science and Environment, New Delhi
10. Rangachari R, Sengupta Nirmal, et al (2000) : WCD Case Study Large Dams : India’s Experience Final Report, Secretariate of World Commission on Dams
11. Dupont, R.R. Baxter, T.E. and Theodore, L. (1998) : Environmental Management :- Problems and Solutions, CRC Press
12. Smith, K. (2001) : Environmental Hazards : Assessing Risk and Reducing Disaster, Routledge.

Subject: : Geography
Course (Paper) Name & No : Men and Environment System Paper No-18
Course (Paper) Unique Code :
Course Exam Time Duration : 45 Lectures

Name of	Semester	Core/ Elective/ Practical	Paper Code	Paper Title	Credit	Internal Marks	External Marks	Practical/ Viva/	External Exam. Time
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Course								Exam. Marks	Duration
M. A.	4	Elect		Men and Environment System	3	30	70		2.15 hrs

Course objectives

The basic objectives of this course are to familiarize the students with the interrelationship between man and environment within which he lives and his linkages with other organisms. The importance of conserving biodiversity to maintain ecological balance has also been emphasized in the course. Examples of some man induced ecological changes have been highlighted and restoration measures suggested.

Unit-1

Introduction- Nature and Scope of Environmental Geography - Perspective of environment relationship, Historical perspective of men – environment ,Classification of Environment-Physical, Biological, Social, Economic and Ecological etc.

Unit-2

Approaches Environmental Studies -Landscape ecology, economic approach environmental approach , Hazards- Nature and causes, Pollution—Types of Pollution -Air, Water, Noise, Land, etc, Origen and Causes, Characteristics and Consequences

Unit-3

Ecology-Types of ecosystem, structure and function of Ecosystem, The Water cycle, Carbon cycle, Oxygen cycle, Nitrogen cycle, Mineral cycle, Ecological Balance,

Unit-4

Study of any two Ecological regions of India in relation to their plant and animal life in their relations, Environmental Planning- Approaches towards maintaining and re starring ecological balance,-Integrated environmental planning.

Suggested Readings

1.Ackerman, E. A., Geography as a Fundamental Research Disciplin, University of Chicago Research Papers, 1958.

2. Agarwal, A. and Sen, S. : The Citizens Fifth Report, Centre for Science and Environment New Delhi, 1999.
3. Bertalanffy, L. General Systems Theory, George Bragiller New Yourk, 1958.
4. Bodkin, E. : EnvironmentalStudies, Charles E. Merril Pub. Co., Columbus, Ohio, 1982.
5. Chandna, R. C. Environmental Awareness, Kalyani Publishers, New Delhi, 1998.
6. Chorley, R. J., Geomorphology and General Systems Theory, U.S.G.S. Professional Paper, 500 B, 1962.
7. Eyre, S. R. and Jones, G.R.J. (eds.), Geography as Human Ecology, Edward Arnold, London, 1966.
8. Kormondy, E. J. : Concepts of Ecology, Prentice Hall, 1989.
9. Manners, I. R. and Mikesell, M.W. (eds.), Prespectives on Environment, Commision on College Geography. Publ. No.13, Washington, D. C., 1974.
10. Nobel and wright : Environmental Science, prentice Hall, New York, 1996.
11. Odum, E. P. : Fundamentals of Ecology, W. B. Saunders, Philadelphia, 1971.
12. Russwurm, L. H. and Sommerville, E. (eds.) : Man's Natural Environment - A systems Approach, Duxbury, Massachusetts, 1985.
13. Sharma, H. S. : Ranthambhore Sanctuary - Dilemma of Eco-development, Concept, New Delhi, 2000.
14. Simmons, I. G. Ecology of Natural Resources, Edward Arnold, London, 1981.
15. Singh, S. : Environmental Geography, Prayag Publications, Allahabad, 1991.
16. Smith, R. L. : Man and his Environment : An Ecosystem Approach, Harper & Row, London, 1992.
17. U.N.E.P. : Global Environmental Outlook, U. N. Pub., New Yourk, 1998.
18. World Resources Institue : World Resources, Latest Report) Washington D. C.
19. World Watch Institute : State of the World, (Latest Report) Washington, D.C.

Subject: : **Geography**
Course (Paper) Name & No : **Geography of Tourism Paper No-19**
Course (Paper) Unique Code :
Course Exam Time Duration : **45 Lectures**

Name of Course	Semester	Core/ Elective/ Practical	Paper Code	Paper Title	Credit	Internal Marks	External Marks	Practical/ Viva/ Exam. Marks	External Exam. Time Duration
M. A.	4	Elect		Geography of Tourism	3	30	70		2.15 hrs

Course Objectives:

The objectives of this course are:

- to familiarize the students with aspects of tourism which have a bearing on subject matter of geography;
- to orient the students to the logistics of tourism industry and the role of tourism in regional development;
- to understand the impact of tourism on physical and human environments.

Course Contain

Unit-I

Definition , Nature, and Scope of Tourism, Relationship between Geography and tourism, Factors affecting Tourism.

Unit-II

Types of Tourism -Nature tourism, Heritage Tourism, Medical Tourism, Pilgrimage Infrastructure– Transport, Facilitations and Hospitality Industry and Support system for Tourism, Development and Planning for Tourism.

Unit-III

Economic, Social, physical, and Cultural impacts of Tourism, Evolution of Tourism potential.

Unit-IV

Impact of Tourism - Economy, Environment and Society; Concept of Ecotourism Globalization and Tourism, Environmental Laws and Tourism

Suggested readings

- 1.Robinson, H (1996)- A Geography of Tourism, Macdonald and Evans, London
- 2.Bhatia ,A.K (1996)- Tourism Development, Principles and Practices, Sterling Publisher Ltd. New Delhi
- 3.Bhatia, A.K. (1991)- International Tourism –fundamentals and Practices, Sterling Publisher Ltd. New Delhi
- 4.Das, M ,(1999)- India, A tourist Paradise , Sterling Publisher Ltd. New Delhi

5 .Smith, L J.S. (2010)- Tourism Analysis, A Hand book , Halsted Press, Sydeny

6.Pearce, D.G.(1987)- Tourism Today, A Geographical Analysis, Longman, Harlow

Subject: : Geography

Course (Paper) Name & No :Dissertation (Practical & Field work) Paper No-20

Course (Paper) Unique Code :

Course Exam Time Duration : 45 Lectures

Name of Course	Semester	Core/ Elective/ Practical	Paper Code	Paper Title	Credit	Internal Marks	External Marks	Practical/ Viva/ Exam. Marks	External Exam. Time Duration
M. A.	4	Practical		Dissertation	6		100	70+30	5 hrs

Course Objectives:

The main objective of the field work (Physical) is to conduct an extensive survey of a contiguous wider region and identify salient landforms; their genesis and their impact on human life, flora and fauna.

(1) Dissertation (Assessment of thesis record)

1. A candidate may write a dissertation of at text 75 to 100 types page (single space - typed pages) on any Geographical region or problems making use of cartographic techniques; field methods, statically methods and library work under the supervision of recognized post Graduate Teachers.
2. A candidate is expected to write a dissertation individually on any approved subject evincing capacity for independent investigation on geographical problems.
3. The topic and working plan of the dissertation should be finalized in the beginning of the first term of M.A. Part-II

Note-

1. The dissertation in three written copies (Typed with CD) should be submitted one month before the semester ends of University examination.
2. Presentation of thesis viva by modern technique.
3. No internal exam , 100 marks external exam.

SCHEME OF EVOLUTION : (OUT OF 70)

- A) Evolution Dissertation : -70 Marks
- B) Seminar/Presentation/ Viva- Voce - 30 Marks