

THREE YEARS B. A. DEGREE PROGRAMME
MAJOR: GEOGRAPHY
F.Y.B.A.
SEMESTER - I
GP-01: INTRODUCTION TO MAN'S PHYSICAL WORLD

OBJECTIVE:

This introductory paper is intended to acquaint the students with distinctiveness of Geography as a field of learning. The philosophy of the subject is to be taught in order to develop a keen interest in the subject and to pursue it for higher studies.

UNIT NO.	COURSE CONTENT	MARKS WEIGHTAGE	TEACHING PERIODS
I	Evolution of geography as a discipline, definition, meaning, nature and scope of geography; Geography as interdisciplinary science recent trends in geography. Major divisions of geography: 1. General v/s Regional 2. Physical v/s Human Geography, Regional and Systematic geography. Geographical perspective; Imperatives for the future; Career opportunities for geographer.	15	10
II	Major themes and sub-themes; Geography as a study of Man and Environment relationship; Ecology and Ecosystem; Environmental Determinism, Possibilism, Neo-Determinism (stop and Go Determinism)	15	10
III	The Universe, Galaxies, Stars, Theories of origin of the Solar System and the Earth (Nebular, Tidal, Binary Star, (Coppler) of Earth & Moon i.e. Rotation, Revolution, Eclipse, Phases of Moon	15	
IV	Domains of Geography: Meaning and Definition of Lithosphere, Atmosphere, Hydrosphere and Biosphere. Lithosphere: Distribution of oceans and continents. Scheme of endogenic and exogenic forces. Orders of relief - I, II, III. Types of mountains, plateaus and plains. Ocean Relief: Continental shelf, Slope, Deep Sea Plain and Trenches. Soils: Formation of soil, soil profile, factors affecting soil profile, classification of soils.	15	10
V	Atmosphere: Weather and Climatic elements, Insolation, Electromagnetic spectrum, factors affecting insolation. Temporal and Spatial distribution. Pressure belts and planetary wind systems. Hydrosphere: Hydrological cycle, evaporation, condensation and precipitation, types of rainfall and distribution of water: ground and surface.	15	10

Weightage: I.S.A: 15 + S.E.I: 60 Total= 75.

INSTRUCTION

1. Maximum thrust to be given to local and national examples.
2. Questions should be set with due weightage to all the units as specified above and/or on university.

REFERENCES

1. Dikshit R.D.: The Arts, Science of Geography, Integrated Readings Prentice Hall of India, New Delhi, 1994
2. Dikshit R.D.: Geographical Thought - A Contextual History of Ideas. Prentice Hall of India Pvt. 2000
3. Hartshorne, Richard: perspective on Nature of Geography, Rand McNally and Co, Chicago, 1959.
4. Harvey, David: Explanation in Geography, Edward - Arnold, London, 1972.
5. Hussain, Majid: Evolution of Geographical Thought, Rawat Publications, Jaipur, 1984
6. Lal . D. S. : Climatology, Pushtak mahal, Allahabad.
7. Goh Cheng Leong : Certificate Physical and Human geography , Oxford university press, New Delhi.
8. Das Gupta and Kapoor: Principles of Physical geography.
9. Leong and Morgan: Human and Economic Geography
10. Brook and Webb: Geography of Mankind,
11. Perpillou A, Human Geography, Longman Press, London.

12. Savindra Singh: Environmental geography.

PRACTICAL-I
INTRODUCTION TO CARTOGRAPHY – I

OBJECTIVE: To impart training on map making techniques with Field and Laboratory Exercises/data.

UNIT NO.	COURSE CONTENT	MARKS WEIGHTAGE	NO. OF PRACTICALS
I	Introduction to Cartography: its significance in geography; shape of the Earth; location of places on the globe, latitude, longitude and time, time zones.	10	6
II	Globe and map; enlargement and reduction of maps, Maps: maps as an integral part of geography, Definition, Classification of maps, Base maps, format of a map. Finding directions, measurement of distances and area on the map. Scale and its types - plain, linear, statement - diagonal and comparative, representative Fraction. Conversion of scale, times and distance scale.	10	6
III	Journal & Viva	5	

Weightage: 25.

INSTRUCTIONS

1. Every candidate shall complete the laboratory course prescribed by the University entering all the experiment exercise in the laboratory journal, which shall be produced at the time of Practical Examination along with a certificate signed both by the course Teacher and the Head of the Department of Geography of the concerned college to the effect that he/she has completed the prescribed course in a satisfactory manner.
2. A batch shall consist of not more than 20 students.
3. Workload - one lab session of 2 hrs (i.e. 3 lectures per week per batch).
4. The duration of practical exam: 3 hrs carrying 50 marks. (weighted finally to 25)
5. Practical examination is to be conducted at the end of Semester prior to the Theory (exam) in Geography laboratory or exclusively designated place.

REFERENCE

1. Gopal Singh : Map works and practical Geography
2. Singh and Kanaujia : Elements of Practical Geography
3. Monkhouse F. J. : Maps and Diagrams
4. Raise: Principles of Cartography
5. Mishra R. P. and Ramesh : Fundamentals of Cartography

SEMESTER - I
FC:01: RESOURCE GEOGRAPHY OF GOA

OBJECTIVE:

The main objective of the papers is to orient the students of first and second year level of degree courses to know about the physical and cultural setting of the state and enable them to appreciate the prospects of the state of Goa and the problems, if any. The content of the paper would also enable the students to visit places of interest in the state and write the details in the form of a report, which may enable the policy matters to implement the suggestions, if any.

UNIT NO.	COURSE CONTENT	MARKS WEIGHTAGE	TEACHING PERIODS
I	Location and extent: Latitudinal, Longitudinal and areal extent, bordering states, seas, structure, relief, geology, physical divisions: mountain, plains, plateaus, drainage (river system), climate (temperature, humidity, wind systems, rainfall, seasons). General description of climate and its influence on economic activities in Goa), Soils: laterite, alluvial, sandy coastal, wet/marshy and saline. Natural vegetation – types and regions, geographical	40	15

	factors contributing to these variations and their economic importance.		
II	Human resources: Qualitative & quantitative aspects of population, number, distribution, density, growth, age-sex structure, literacy and education, rural-urban composition, internal and external migration, occupational structure and future of population	20	15
III	Geography of Resource Utilization: Infrastructural facilities for resource utilization, power, transport, communication (traditional & modern), major factors associated with resource utilization, stages of socio-economic development (pre-independence & post independence), technology, quality of population, levels of development (high, medium and low) in coastal, mid-land and western regions, factors responsible for variation in levels of development.	40	20

Weightage: I.S.A: 20 + S.E.E: 80 Total= 100.

INSTRUCTIONS

1. Maximum thrust may be given to local regional and national examples.
2. Questions should be set with due weightage to all the units as specified

Pedagogic suggestion: The Current topic of Regional & National interest have to be updated by referring to subject journals - Down to Earth, Current Science, Yojna and Other relevant materials

REFERENCE:

1. Gazetteer of Goa, Daman & Diu, Govt. Printing Press, Panaji-Goa
2. An economic review of Goa – Angle P.S.
3. Goa through the ages – Vol I, II & III, Goa University Publications.
4. Geography of India – C.B. Mumoria
5. Regional plan for Goa 2001, Govt. of Goa (1988) Govt. Printing Press, Panaji, Goa.
6. Statistical Pocket Books, Govt. of Goa, Govt Printing Press, Panaji .
7. Fish Curry and Rice, An Eco-Farm Publication.
8. Techno Economic Survey of Goa by NCAER (Govt Printing Press, Panaji)
9. Thirty years of Economic Development by Goa Chamber of Commerce and Industry, 1992, Panaji.
10. Daily newspapers published from Goa (Publication House).

SEMESTER - I

EE :01: ENVIRONMENTAL EDUCATION - I

UNIT NO.	COURSE CONTENT	MARKS WEIGHTAGE	TEACHING PERIODS
I	The Multidisciplinary nature of environmental studies Definition, scope and importance Need for public awareness.	10	4
II	Natural Resources: Renewable and non-renewable resources: Natural resources and associated problems. a) Forest resources: Use and over-exploitation, deforestation, case studies. Timber extraction, mining, dams and their effects on forests and tribal people. b) Water resources: Use and over-utilization of surface and ground water, floods, drought, conflicts over water, dams benefits and problems. c) Mineral resources: Use and exploitation, environmental effects of extracting and using mineral resources, case studies. d) Food resources: World food problems, changes caused by agriculture and overgrazing, effects of modern agriculture, fertilizer-pesticide problems, water logging, salinity, case studies e) Energy resources: Growing energy needs, renewable and non- renewable energy sources use of alternate energy sources. Case studies. f) Land resources: Land as a resource, land degradation, man induced landslides, soil erosion and desertification. Role of an individual in conservation of natural resources.	15	8

	Equitable use of resources for sustainable lifestyles.		
III	<p>Ecosystems</p> <p>Concept of an ecosystem.</p> <p>Structure and function of an ecosystem.</p> <p>Producers, consumers and decomposers.</p> <p>Energy flow in the ecosystem.</p> <p>Ecological succession.</p> <p>Food chains, food webs and ecological pyramids.</p> <p>Introduction, types, characteristic features, structure and function of the following ecosystem:</p> <p>a. Forest ecosystem</p> <p>b. Grassland ecosystem</p> <p>c. Desert ecosystem</p> <p>d. Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries)</p>	15	8
IV	<p>Biodiversity and its conservation</p> <p>Introduction - Definition: genetic, species and ecosystem diversity.</p> <p>Bio-geographical classification of India</p> <p>Value of biodiversity: consumptive use, productive use, social, ethical, aesthetic and option values</p> <p>Biodiversity at global, National and local levels.</p> <p>India as a mega-diversity nation</p> <p>Hot-spots of biodiversity.</p> <p>Threats to biodiversity: habitat loss, poaching of wildlife, man-wildlife conflicts</p> <p>Endangered and endemic species of India</p> <p>Conservation of biodiversity: In-situ and Ex-situ conservation of biodiversity.</p>	10	8

Weightage: I.S.A: 10 + S.E.E: 40 Total= 50.

INSTRUCTIONS

- 1 Maximum thrust may be given to local regional and national examples.
2. Questions should be set with due weightage to all the units as specified above and/or by the university.

Pedagogic suggestion: The Current topic of Regional & National interest have to be updated by referring to subject journals - Down to Earth, Current Science, Yojna and Other relevant materials.

REFERENCES

1. Agarwal, K.C. 2001 Environmental Biology, Nidi Pub!. Ltd. Bikaner.
2. Bharucha Erach, The Biodiversity of India, Mapin Publishing Pvt. Ltd. , Ahmedabad - 380013, India, Email: mapin@icenet.net (R)
3. Brunner RC., 1989, Hazardous Waste Incineration, McGraw Hill Inc. 480p
4. Clark RS., Marine Pollution, Clarendon Press Oxford (TB)
5. Cunningham, W.P. Cooper, TH. Gorhani, E & Hepworth, M. T2001, Environmental Encyclopedia, Jaico Pub!. House, Mumbai, 1196p
6. De A.K., Environmental Chemistry, Wiley Eastern Ltd.
7. Down to Earth, Centre for Science and Environment(R)
8. Gleick, H.P. 1993. Water in crisis, Pacific Institute for Studies in Dev., Environment & Security. Stockholm Env. Institute. Oxford Univ. Press. 473p
9. Hawkins R.E, Encyclopedia of Indian Natural History, Bombay Natural History Society, Bombay (R)
10. Heywood, VH & Watson, R.T. 1995 . Global Biodiversity Assessment. Cambridge Univ. Press 1140p.
11. Jadhav, H & Bhosale, VM. 1995. Environmental Protection and Laws. Himalaya Pub. House, Delhi 284 p.
12. McKinney, M.L. & SchocJ', R.M. 1996. Environmental Science systems & Solutions, Web enhanced edition. 639p.
13. Mhaskar A.K, Matter Hazardous, Techno-Science Publications (TB)
14. Miller TG. Jr., Environmental Science, Wadsworth Publishing Co. (TB)
15. Odum, E.P. 1971. Fundamentals of Ecology. W.B. Saunders Co. USA, 574p
16. Rao M N. & Datta, A.K. 1987. Waste Water treatment. Oxford & IBH Pub!. Co. Pvt. Ltd. 345p
17. Sharma B.K., 2001. Environmental Chemistry. Goel Pub!. House, Meerut

18. Survey of the Environment, The Hindu (M)
19. Townsend C. , Harper J, and Michael Begon, Essentials of Ecology, Blackwell Science (TB)
20. Trivedi R.K., Handbook of Environmental Laws, Rules, Guidelines, Compliances and Standards, Vol I and II, Enviro Media (R)
21. Trivedi R.K. and P.K.Goel, Introduction to air pollution, Techno-Science Publications (TB)
22. Wagner K.D.,1998. Environmental Management. W.B. Saunders Co. Philadelphia, USA 499p

(M) Magazine

(R)Reference

(TB)Textbook

SEMESTER – II
GP:02: GEOGRAPHY OF CULTURAL ENVIRONMENT

OBJECTIVE:

- 1.To understand the evolution and distribution of man in relation to his environment
- 2.To understand cultural diversity in the world

UNIT NO.	COURSE CONTENT	MARKS WEIGHTAGE	TEACHING PERIODS
I	Introduction to culture, Environment and regions. Basis of classification of cultural regions, Approaches to cultural geography and major themes.	15	10
II	Geography of Language-Global linguistic mosaic origin and characteristic, diffusion of languages and linguistic classification in India.	15	10
III	Geography of religion-Origin and distribution of religions, Religion Culture and Conflict. Case study- Global and India.	15	10
IV	Geography and development-Types of economies (LDC AND MDC) on social economic and demographic patterns	15	10
V	Contemporary Issues- Gender and inequality, Race-ethnicity and equality, Nutrition health and disease.	15	10

Weightage: I.S.A: 15 + S.E.E: 60 Total= 75.

INSTRUCTIONS

- 1 Maximum thrust may be given to local regional and national examples.
2. Questions should be set with due weightage to all the units as specified

Pedagogic suggestion: The Current topic of Regional & National interest have to be updated by referring to subject journals - Down to Earth, Current Science, Yojana and Other relevant materials.

REFERENCE

1. Bergwan, Edward E.: Human Geography: Culture, Connections and Landscapes, Prentice Hall, N.J.
2. Carr M. : Pattern, Processes and Change in Human Geography, Macmillan, London.
3. Fellman J. L. : Human Geography: Landscapes of Human Activities, Brown & benchman, Usa.
4. De Blij H. J.and Alexandar: Human Geography, Culture, Society and Space, John Wiley, New York.
5. Majid Hussain : Human Geography, Rawat Publishers, Jaipur.

PRACTICAL-II
PRACTICALS IN HUMAN GEOGRAPHY

OBJECTIVE:

To impart training on map-making techniques in geomorphology with laboratory exercises

UNIT NO.	COURSE CONTENT	MARKS WEIGHTAGE	NO. OF PRACTICALS
I	Cartographic Representation of Population Data- Line and Bar Graph and its types; Pie Diagram; Age-Sex Pyramid and types; Urban-Rural pyramid; Ergo-graph (Circular), Tri-Linear Chart, Flow Diagrams.	10	6
II	Cartograms - Dot Maps, Choropleth, Proportional circles, Spheres, Pictograms and chorochromatic maps.	10	6
III	Journal and Viva	5	

Weightage: 25.

INSTRUCTION

1. Every candidate shall complete the laboratory course prescribed by the University entering all the experiment exercises in the laboratory journal, which shall be produced at the time of Practical Examination along with a certificate signed both by the course Teacher and the Head of the Department of Geography of the concerned college to the effect that he/she has completed the prescribed course in a satisfactory manner.
2. A batch shall consist of not more than 20 students.
3. Workload - one lab session of 2 hrs (i.e. 3 lectures per week per batch).
4. The duration of practical exam: 3 hrs carrying 50 marks. (finally weighted from 25)
5. Practical examination is to be conducted at the end of Semester prior to the Theory (exam)

REFERENCE

- i. Gopal Singh: Map works and practical Geography
- ii. Singh and Kanaujia: Elements of Practical Geography
- iii. Monkhouse F. J: Maps and Diagrams
- iv. Raise: Principles of Cartography
- v. Mishra R. P. and Ramesh: Fundamentals of Cartography.

SEMESTER - II

FC:02:ECONOMIC DEVELOPMENT OF GOA

OBJECTIVE:

The main objective of the papers is to orient the students of first and second year level of degree courses to know about the physical and cultural setting of the state and enable them to appreciate the prospects of the state of Goa and the problems, if any. The content of the paper would also enable the students to visit places of interest in the state and write the details in the form of a report, which may enable the policy matters to implement the suggestions, if any.

UNIT NO.	COURSE CONTENT	MARKS WEIGHTAGE	TEACHING PERIODS
I	Land use- Agriculture-major characteristics and associated problems, crops their association and distribution under natural and human conditions, cereal crops (Rice, millets), cash crops (cashew, sugarcane), garden crops (coconut, Beetle nut, spices) Livestock resources – Live stock products (Dairy, poultry) and distribution, its place in economy. Fishery resource, types, season, species, fishing points, marketing, problems and prospects.	30	15
II	Mineral Resources and Manufacturing minerals: Distribution and production of Iron ore, Manganese, Bauxite and their place in the economy (Goan/ Indian). Manufacturing: Major, medium and small industries and their association with different natural and human factors. Industrial estates and household industries, Extractive industries, sugar, chemicals, fertilizers, shipbuilding, dairy and forest based industries. Industrial development and environmental problems, environmental movements and their bearing on industrialization in Goa.	30	15

III	Tertiary sector Tourism: Types, Tourist centers, tourist season, benefits and problems. Transport: Development of transport network, modes and their functional significance (air, land and water routes), problems of transport system. Trade: Internal and external, composition and changes, trade centers, permanent and seasonal. Ports: Marmugao and Panaji and their hinterlands, prospects and problems.	30	15
IV	Study tour and report* Local study tour to a place of physical, social, economic and cultural importance is compulsory.	10	05

Weightage: I.S.A: 20 + S.E.E: 80 Total= 100

INSTRUCTIONS

1. Maximum thrust may be given to local regional and national examples..
2. Questions should be set with due weightage to all the units as specified.
3. Wherever field trip is mentioned in the curriculum in the practical programme, the workload per day is considered for 5 hours. The field trip is to enable the students to undergo authentic geographic environment for data collection.
4. Duration of Local trip is not more than two days for FY/SY B.A.B.Sc
Duration for long tour for TYBA/B.Sc will not be more than 3 to 12 days.
The Deputed faculty members will be entitled for the T.A/D.A.

Pedagogic suggestion: The Current topic of Regional & National interest have to be updated by referring to subject journals - Down to Earth, Current Science, Yojna and Other relevant materials

REFERENCE:

1. Gazetter of Goa, Daman & Diu, Govt. Printing Press, Panaji-Goa
2. An economic review of Goa – Angle P.S.
3. Goa through the ages – Vol I, II & III, Goa University Publications.
4. Geography of India – C.B. Mumoria
5. Regional plan for Goa 2001, Govt. of Goa (1988) Govt. Printing Press, Panaji, Goa.
6. Statistical Pocket Books, Govt. of Goa, Govt. Printing Press, Panaji.
7. Fish Curry and Rice, An Eco-Farm Publication.
8. Techno Economic Survey of Goa by NCAER (Govt. Printing Press, Panaji)
9. Thirty years of Economic Development by Goa Chamber of Commerce and Industry, 1992, Panaji.
10. Daily newspapers published from Goa (Publication House).

SEMESTER - II

EE:02: ENVIRONMENTAL EDUCATION- II

UNIT NO.	COURSE CONTENT	MARKS WEIGHTAGE	TEACHING PERIODS
I	<p>Environmental Pollution a) Definition a) Air pollution b) Water pollution c) Soil pollution d) Marine pollution e) Noise pollution f) Thermal pollution g) Nuclear hazards</p> <p>Solid waste Management: Causes, effects and control measures of urban and industrial wastes. Role of an individual in prevention of pollution. Pollution case studies.</p> <p>Disaster management: floods, earthquake, cyclone and landslides.</p>	10	8

II	Social Issues and the Environment From Unsustainable to Sustainable development Urban problems related to energy Water conservation, rain water harvesting, watershed management. Resettlement and rehabilitation of people; its problems and concerns. Case studies. Environmental ethics: Issues and possible solutions. Climate change, global warming, acid rain, ozone layer depletion, nuclear accidents and holocaust. Case studies. Wasteland reclamation. Consumerism and waste products. Environment Protection Act. Air (Prevention and Control of Pollution) Act. Water (Prevention and control of Pollution) Act Wildlife Protection Act Forest Conservation Act Issues involved in enforcement of environmental legislation. Public awareness	10	8
III	Human Population and the Environment Population growth, variation among nations. Population explosion - Family Welfare Programme. Environment and human health. Human Rights. Value Education. HIV; AIDS. Women and Child Welfare. Role of information Technology in Environment and human health. Case Studies.	10	8
IV	Field work Visit to a local area to document environmental assets-river /forest/ Grassland/ hill/ mountain Visit to a local polluted site - Urban! Rural! Industrial! Agricultural Study of common plants, insects, birds. Study of simple ecosystems-pond, river, hill slopes, etc. (Field work Equal to 5 lecture hours).	10	05

Weightage: I.S.A: 10 + S.E.E: 40 Total= 50.

INSTRUCTIONS

1 Maximum thrust may be given to local regional and national examples.

2. Questions should be set with due weightage to all the units as specified

Pedagogic suggestion: The Current topic of Regional & National interest have to be updated by referring to subject journals - Down to Earth, Current Science, Yojna and Other relevant materials.

REFERENCES

1. Agarwal, K.C. 2001 Environmental Biology, Nidi Pub!. Ltd. Bikaner.

2. Bharucha Erach, The Biodiversity of India, Mapin Publishing Pvt. Ltd. , Ahmedabad - 380013, India, Email: mapin@icenet.net (R)

3. Brunner RC., 1989, Hazardous Waste Incineration, McGraw Hill Inc. 480p

4. Clark RS., Marine Pollution, Clanderson Press Oxford (TB)

5. Cunningham, W.P. Cooper, TH. Gorhani, E & Hepworth, M. T2001, Environmental Encyclopedia, Jaico Pub!. House, Mumbai, 1196p

6. De A.K., Environmental Chemistry, Wiley Eastern Ltd.

7. Down to Earth, Centre for Science and Environment(R)

8. Gleick, H.P. 1993. Water in crisis, Pacific Institute for Studies in Dev., Environment & Security. Stockholm Env. Institute. Oxford Univ. Press. 473p

9. Hawkins R.E, Encyclopedia of Indian Natural History, Bombay Natural History Society, Bombay (R)
 10. Heywood, V.H & Watson, R.T. 1995. Global Biodiversity Assessment. Cambridge Univ. Press 1140p.
 11. Jadhav, H & Bhosale, V.M. 1995. Environmental Protection and Laws. Himalaya Pub. House, Delhi 284 p.
 12. McKinney, M.L. & Schoc', R.M. 1996. Environmental Science systems & Solutions, Web enhanced edition. 639p.
 13. Mhaskar A.K, Matter Hazardous, Techno-Science Publications (TB)
 14. Miller T.G. Jr., Environmental Science, Wadsworth Publishing Co. (TB)
 15. Odum, E.P. 1971. Fundamentals of Ecology. W.B.Saunders Co. USA, 574p
 16. Rao M N.& Datta, A.K. 1987. Waste Water treatment. Oxford & IBH Publ. Co. Pvt.Ltd.
 17. Sharma B.K., 2001. Environmental Chemistry. Goel Publ. House, Meerut
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 19. Townsend C. , Harper J, and Michael Begon, Essentials of Ecology, Blackwell Science (TB)
 20. Trivedi R.K., Handbook of Environmental Laws, Rules, Guidelines, Compliances and Standards, Vol I and II, Enviro Media (R)
 21. Trivedi R.K. and P.K.Goel, Introduction to air pollution, Techno-Science Publications (TB)
 22. Wagner K.D.,1998. Environmental Management. W.B. Saunders Co. Philadelphia, USA 499p
- (M) Magazine
 (R)Reference
 (TB) Textbook

**S.Y.B.A
GEOGRAPHY**

**SEMESTER – III
GP:03: GEOGRAPHY OF NATURAL RESOURCE DEVELOPMENT**

OBJECTIVE:

To acquaint the students with the bases of spatial and temporal aspects of economic activity.

UNIT NO.	COURSE CONTENT	MARKS WEIGHTAGE	TEACHING PERIODS
I	Economic Geography Today: Bases of world Economy- Physical, Cultural and Technological, Economic bases of Economic activities. Classification of Economic activities.	15	10
II	Historical Evolution of world economic systems. Medieval feudal economies. The rise of Mercantilism & its economic benefits. Emergence of colonialism & its economic benefits. Mechanism of modern economic systems.	15	10
III	World Agriculture: Types of Agriculture- a) Intensive and Extensive farming b) Subsistence and commercial farming, c) Mixed and Plantation Agriculture. Crops: Cereals - Rice & Wheat Cash Crops: Beverages-Tea, Coffee Industrial Crops: Cotton, Sugarcane.	15	10
IV	A) World Fisheries: factors & distribution of major fishing grounds B) Forest Resources: Tropical & Temperate Forestry. C) Forest Products.	15	10
V	Natural Resources: Distribution and Development of a) Metallic: Ferrous - Iron Ore Mining, Non-Ferrous - Bauxite Mining b) Fuel & Power resources: Fossil Fuels - Coal, Petroleum Renewable: Hydel power. c) Non-Conventional Energy Resources - Solar, Tidal, Wind & Geothermal	15	10

Weightage: I.S.A: 15 + S.E.E: 60 Total= 75.

INSTRUCTIONS

1. Maximum thrust may be given to local regional and national examples.
2. Questions should be set with due weightage to all the units as specified
3. Due weightage for maps, a diagram in teaching as well as in paper setting is mandatory.

REFERENCE

1. Boesch, H: A Geography of World Economy, Van Nostrand Co., New York, 1964.
2. Chapman J. D.: Geography and Energy, Longman, London, 1989.
3. Hartshorne T.N. & Alexander J.W.: Economic Geography, Prentice Hall, New Delhi, 1988.
4. Jones C. F. and Darkenwald G.G: Economic Geography, Macmillan & Co, New York, 1975
5. Smith, D. M: Industrial location: An Economic Geographical Analysis, John Wiley, New York, 1971.
6. Bengston & Van, G. H. Royan: Fundamentals of Economic Geography, Prentice Hall, New Delhi, 1988
7. G.C. Leong & G. H. Morgan - Human and Economic Geography, Oxford University Press - New York.

SEMESTER – III PRACTICALS – III
S.Y.B.A.
PRACTICALS IN CARTOGRAPHIC TECHNIQUES

UNIT	COURSE CONTENTS	MARKS WEIGHTAGE	NO. OF PRACTICALS
I	a) Projections: Definition, classification of projection, Uses and properties. b) Construction of zenithal projection, zenithal gnomonic projection, zenithal stereographic projection, zenithal orthographic projection, zenithal equal projection. c) Construction of conical projection: Simple conical projection with one standard parallel; Simple conical projection with two standard parallel. d) Construction of cylindrical projection: Cylindrical equidistant/simple cylindrical projection; Cylindrical equal area projection e) Choice of projection.	10	6
II	Methods of Representation of Relief features – spot heights, Bench Marks, Hachures, Hill shading Contours diagrams – hills, plateaus, mesa, cliff, V-shaped valley, waterfall, escarpment, spur, U-shaped valley, Hanging Valley, Volcano with crater, Ria coast, Fiord coast, Profile drawing and types.	10	6
III	Journal and viva voce	5	

Marks: 25

INSTRUCTION

1. Every candidate shall complete the laboratory course prescribed by the University entering all the experiment exercises in the laboratory journal, which shall be produced at the time of Practical Examination along with a certificate signed both by the course Teacher and the Head of the Department of Geography of the concerned college to the effect that he/she has completed the prescribed course in a satisfactory manner.
2. A batch shall consist of not more than 20 students.
3. Workload - one lab session of 2 hrs (i.e. 3 lectures per week per batch).
4. The duration of practical exam: 3 hrs carrying 50 marks. (finally weighted to 25)
5. Practical examination is to be conducted at the end of Semester prior to the Theory (exam)

REFERENCE

- i Gopal Singh : Map works and practical Geography
- ii Singh and Kanaujia : Elements of Practical Geography
- iii Monkhouse F. J. : Maps and Diagrams
- iv Rais: Principles of Cartography
- v Mishra R. P. and Ramesh : Fundamentals of Cartography

SEMESTER -III
FC: 03: POPULATION GEOGRAPHY-I

OBJECTIVES:

The course is meant to provide an understanding of spatial and structural dimensions of population and the emerging 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 NO.	COURSE CONTENT	MARKS WEIGHTAGE	TEACHING PERIODS
I	Nature, scope and contents of Population Geography, source of data.	30	15
II	Spatial pattern of distribution - distribution, density and growth of population; determinants of world regional patterns, the Indian Scene.	35	15
III	Composition of Population: Age and Sex composition; rural-urban composition, economic composition; determinants; world regional patterns; composition of population in India.	35	20

Weightage: I.S.A: 20 + S.E.E: 80 Total= 100.

REFERENCES

1. Beaujeu-Garnier, J. : Geography of Population (Translated by Beaver, S. H.) Longmans, London, 1966.
2. Census of India 2001 Series - I India Provisional Population Totals, Published by Registrar General & Census Commissioner, India, 2001.
3. Census of India, 1991 India: A State profile Published by office of the Registrar General of India, Census Operations, New Delhi.
4. Chandna, R.C. : Geography of Population: Concepts, Determinants and Patterns, Kalyani Publishers, New Delhi, 2000.
5. Clark J. I: Population Geography, Permagon Press, New York, 1965.
6. Sundaram K.V. & Nangia Sudesh, (editors): Population Geography, Heritage Publishers, delhi, 1986.
7. Peters: G.L. and Larkim R.P: Population Geography: Problems, Concepts and Prospects Kendele-Hunt Iowa,1979.
8. Srinivasan K. and M. Viasoff Population Development nexus in India: challenges for the new millennium. Tata McGraw Hill Publishing Co Ltd., New Delhi 2001.
9. Trewartha, G.T. : The More Development Realm: A Geography of its Population Pergamon Press, Oxford, 1978.
10. Trewartha, G. T.: The Less Developed Realm - A Population Geography, McGraw Hill, New York, 1972.
11. Trewartha, G.T. : A Geography of Population : World Patterns, John Wiley & Sons Inc., New York, 1969.
12. UNDP: Human Development Report, Oxford University Press 2001.
13. Zelinsky, W.: A Prologue to Population Geography, Prentice-Hall, Englewood Cliffs, 1966.

SEMESTER - III AC:01: TOURISM GEOGRAPHY - I

OBJECTIVES:

- a) Imparting knowledge of tourism and its fields.
- b) Studying of Tourism as a multidisciplinary subject.
- c) Develop skill orientation amongst the students.
- d) Enhance confidence level of the students to achieve gainful employment.

UNIT NO.	COURSE CONTENT	MARKS WEIGHTAGE	TEACHING PERIODS
I	Leisure, Recreation and Tourism: Concept of Leisure, Recreation and Tourism Tourism in the past and its growth, Motivators of tourism, types of tourism, Tourism as an industry.	25	12
II	Basics of tourism: Dynamics of tourism, factors influencing tourism - historical, natural, socio-cultural, economic and political. Elements of tourism.	25	12
III	Geography and Tourism. Tourism as spatial affinity, areal and Locational dimensions, Emerging in tourism with special reference to eco-tourism, responsible tourism and sustainable tourism, case study of coastal, adventure, hill station tourism, national and international tourism.	25	12
IV	Impacts of Tourism Positive and negative impacts - Social, economic, political and environmental. Case study of coastal/environmental degradation.	25	12

Weightage: I.S.A: 20 + S.E.E: 80 Total= 100.

INSTRUCTION

1. Maximum thrust may be given to local regional and national examples.
2. 3. Questions should be set with due weightage to all the units as specified
3. Unit VIII carries 20 marks and the remaining units carry equal weightage of marks.

REFERENCE

1. Neumeyer, M.H. and Neumeyer, E. S. (1949), "Leisure and Recreation", A.S. Burnes and Company, New York.
2. Robinson, H. (1976), "A Geography of Tourism", Macdonald and Evans, London.
3. Cosgrove, I and Jackson, R. (1972), "The Geography of Recreation and Leisure", Hutchinson, London.
4. Bhatiya, A. K. (1991) " International Tourism - Fundamentals and Practices", Sterling, New Delhi.
5. Kaul, R.K. (1985) "Dynamics of Tourism and Recreation Inter - India, New Delhi.
6. Singh, J.C. (1975) "Tourism and Tourist Industry", New Height, Delhi.

Books for further reading:

1. Larvery, P (1971) "Recreational Geography", Douglas David and Charles Ltd. Vancouver.
2. Singh, S.N. (1986) "Geography of Tourism and Recreation" Inter-India, New Delhi.
3. Meyer, H. D and Brightbill, C.K. (1956) "Community Recreation"- Prentice Hall Inc., Englewood Cliffs, N.J.
4. Kaur, J (1985) "Himalayan Pilgrimages and New Tourism", Himalayan Books, New Delhi.
5. Miles, C. W. N and Seabrooke, W. (1977) "Recreational and Management" E & F. N, Span Ltd. London.
6. Fesenmaker, L (1983) "Recreation Planning and management" ventures Publications, USA.
7. Douglas, P. " Tourism Today: A Geographical Analysis.
8. Pearce, D.G.: Towards Geography of Tourism.

SEMESTER - IV

GP:04: GEOGRAPHY OF SECONDARY AND TERTIARY ACTIVITIES

UNIT NO.	COURSE CONTENT	MARKS WEIGHTAGE	TEACHING PERIODS
I	Manufacturing theories & trends, Manufacturing processes & locations, Classical locations principles- 1) Least Cost Theory 2) Profit Maximization Theory 3) Behavioural Location Theory. 4) Structural Approach.	15	10
II	Changing order in Textile Apparel Production, Capital-intensive Steel & Automobile Industry. Knowledge intensive high technology activities: Electrical, Electronic, Biotechnology & Telecommunication industry	15	10
III	Cities as service centres: World City patterns, Rank Size Rule, Central Place Theory, Break Point Theory, Trade areas analysis, Changing physical structures-emerging polycentric city ribbon corridors, metropolitan hierarchies, Wholesale and Retail structures.	15	10
IV	World Transport System: Land (Road & Railways) Water (North Atlantic and Suez Routes) (Canals; Suez & Panama) Air Transportation Communication System: Importance of Media, Newspaper, Radio, T.V., Satellite, Remote Sensing, IT Revolution	15	10
V	World Trade: Geography of International Business: Dynamics, Strategies, changing form of international business, Free trade initiatives and GATT	15	10

Weightage: I.S.A: 15 + S.E.E: 60 Total= 75.

INSTRUCTIONS

1. Maximum thrust may be given to local regional and national examples.
2. Questions should be set with due weightage to all the units as specified
4. Due weightage for maps, diagrams in teaching as well as in paper setting are mandatory.

REFERENCE

1. Boesch, H: Geography of World Economy, Van Nostrand Co., New York, 1964.
2. Chapman J. D.: Geography and Energy, Longman, London, 1989.
3. Hartshorne T.N. & Alexander J.W.: Economic Geography, Prentice Hall, New Delhi, 1988.
4. Jones C. F. and Darkenwald G.G: Economic Geography, Macmillan & Co, New York, 1975

5. Smith, D. M : Industrial location: An Economic Geographical Analysis, John Wiley, New York, 1971.
 6. Bengston & Van, G. H. Royan : Fundamentals of Economic Geography, Prentice Hall, New Delhi, 1988
 7. G.C. Leong & G. H. Morgan - Human and Economic Geography, Oxford University Press - New York.

**SEMESTER – IV
 PRACTICALS – IV
 S.Y.B.A.**

PRACTICALS IN CARTOGRAPHIC TECHNIQUES

UNIT NO.	COURSE CONTENT	MARKS WEIGHTAGE	TEACHING PERIODS
I	Sampling Techniques: Significance in Research & Data collection vs Census method, Types: i) Random Sampling ii) Systematic Sampling iii) Stratified sampling iv) Cluster Sampling v) Purpose in Sampling.	10	6
II	Representation of Agricultural, Industrial and transport data by statistical methods – Graphs and Diagrams.	10	6
III	Field survey: Socio-economic (a report of the field survey to be attached with the journals)	5	

Weightage: 25

INSTRUCTION

1. Every candidate shall complete the laboratory course prescribed by the University entering all the experiment exercises in the laboratory journal, which shall be produced at the time of Practical Examination along with a certificate signed both by the course Teacher and the Head of the Department of Geography of the concerned college to the effect that he/she has completed the prescribed course in a satisfactory manner.
2. A batch shall consist of not more than 20 students.
3. Workload - one lab session of 2 hrs (i.e. 3 lectures per week per batch).
4. The duration of practical exam: 3 hrs carrying 50 marks.
5. Practical examination is to be conducted at the end of Semester prior to the Theory (exam)

REFERENCE

- i Gopal Singh : Map works and practical Geography
- ii Singh and Kanaujia : Elements of Practical Geography
- iii Monkhouse F. J. : Maps and Diagrams
- iv Raise: Principles of Cartography
- v Mishra R. P. and Ramesh : Fundamentals of Cartography

FC: 04: POPULATION GEOGRAPHY-II

OBJECTIVES:

The course is meant to provide an understanding of spatial and structural dimensions of population and the emerging 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 NO.	COURSE CONTENT	MARKS WEIGHTAGE	TEACHING PERIODS
I	Migration: Classification, determinants and consequences of migration; world regional patterns; migration in India.	40	20
II	Population and environment interface: Cause-effect syndrome; global and Indian profile.	40	20
III	Field/Trip /Report: A Case Study on any one of the relevant topics of the above course for one day (local).	20	10

Weightage: I.S.A: 20 + S.E.E: 80 Total= 100.

REFERENCES

1. Beaujeu-Garnier, J.: Geography of Population (Translated by Beaver, S. H.) Longmans, London, 1966.
2. Census of India 2001 Series - I India Provisional Population Totals, Published by Registrar General & Census Commissioner, India, 2001.
3. Census of India, 1991 India: A State profile Published by office of the Registrar General of India, Census Operations, New Delhi.
4. Chandna, R.C.: Geography of Population: Concepts, Determinants and Patterns, Kalyani Publishers, New Delhi, 2000.
5. Clark J. I: Population Geography, Permagon Press, New York, 1965.
6. Sundaram K.V. & Nangia Sudesh, (editors): Population Geography, Heritage Publishers, Delhi, 1986.
7. Peters: G.L. and Larkim R.P: Population Geography: Problems, Concepts and Prospects Kendele-Hunt Iowa, 1979.
8. Srinivasan K. and M. Viasoff Population Development nexus in India: challenges for the new millennium. Tata McGraw Hill Publishing Co Ltd., New Delhi 2001.
9. Trewartha, G.T.: The More Development Realm: A Geography of its Population Pergamon Press, Oxford, 1978.
10. Trewartha, G. T.: The Less Developed Realm - A Population Geography, McGraw Hill, New York, 1972.
11. Trewartha, G.T.: A Geography of Population: World Patterns, John Wiley & Sons Inc., New York, 1969.
12. UNDP: Human Development Report, Oxford University Press 2001.
13. Zelinsky, W.: A Prologue to Population Geography, Prentice-Hall, Englewood Cliffs, 1966.

SEMESTER - IV
AC:02: TOURISM GEOGRAPHY - II

OBJECTIVES:

- a) Imparting knowledge of tourism and its fields.
- b) Studying of Tourism as a multidisciplinary subject.
- c) Develop skill orientation amongst the students.
- d) Enhance confidence level of the students to achieve gainful employment.

UNIT NO.	COURSE CONTENT	MARKS WEIGHTAGE	TEACHING PERIODS
I	Infrastructure and support system Accommodation and supplementary accommodation, travel agencies and tour operators, tour planning, role of guides.	25	15
II	Geographical aspect of tourism and Goa Tourism resources of Goa-natural and cultural: climate, physiography, Water resources, places of worship, culture and folklore, cuisine.	25	15
III	Tourism Development: Spatio-temporal aspects, promotion of tourism, current thrust areas, sustenance of tourism: problems and prospects.	25	15
IV	Mini Project Report/field work involving aspects of tourism.	20	10

Weightage: I.S.A: 20 + S.E.E: 80 Total= 100.

INSTRUCTION

1. Maximum thrust may be given to local regional and national examples.
2. Q. No. 1 being objective it should include questions from all units of the term.
3. Questions should be set with due weightage to all the units as specified

REFERENCE

1. Neumeyer, M.H. and Neumeyer, E. S. (1949), "Leisure and Recreation", A.S. Burnes and Company, New York.
2. Robinson, H. (1976), "A Geography of Tourism", Macdonald and Evans, London.
3. Cosgrove, I and Jackson, R. (1972), " The Geography of Recreation and Leisure", Hutchinson, London.
4. Bhatiya, A. K. (1991) " International Tourism - Fundamentals and Practices", Sterling, New Delhi.
5. Kaul, R.K. (1985) "Dynamics of Tourism and Recreation Inter - India, New Delhi.

6. Singh, J.C. (1975) "Tourism and Tourist Industry", New Height, Delhi.

Books for further reading:

1. Larvery, P (1971) "Recreational Geography", Douglas David and Charles Ltd. Vancouver.
2. Singh, S.N. (1986) "Geography of Tourism and Recreation" Inter-India, New Delhi.
3. Meyer, H. D and Brightbill, C.K. (1956) "Community Recreation"- Prentice Hall Inc., Englewood Cliffs, N.J.
4. Kaur, J (1985) "Himalayan Pilgrimages and New Tourism", Himalayan Books, New Delhi.
5. Miles, C. W. N and Seabrooke, W.(1977) "Recreational and Management" E & F. N, Span Ltd. London.
6. Fesenmaker, L (1983) "Recreation Planning and management" ventures Publications, USA.
7. Douglas, P. " Tourism Today: A Geographical Analysis.
8. Pearce, D.G.: Towards Geography of Tourism.

**T.Y.B.A.
GEOGRAPHY**

**OPTION I – 3 UNITS (GENERAL)
SEMESTER V**

GP: 05: PRINCIPLES OF GEOMORPHOLOGY

OBJECTIVE:

The objective of this course is to introduce the latest concepts in physical geography, essentially geomorphology to the students of geography in a brief but adequate manner.

UNIT NO.	COURSE CONTENT	MARKS WEIGHTAGE	TEACHING PERIODS
I	Distribution of Oceans and continents, Interior of the earth. Formation and structure of continents and ocean basins. Wegner's continental drift hypothesis and isostatic-equilibrium - the concept of Plate tectonics; Shield areas and Mobile zones.	20	10
II	Earth movements - orogeneic and epeirogenic, Structural landforms, earthquakes, volcanoes; Volcanic landforms, e.g. The Deccan trap Landscape, Materials of the earth crust; Minerals and rocks - rock types and their mode of formation. Denudation and weathering and types; weathering landforms. Mass wasting processes and landform effects climate and landforms; Morphogenetic regions.	20	10
III	Geomorphic agents and processes: Geomorphological landscapes: River moulded landscapes - Glacial landscapes in mountains and plains, Aeolian landscape in hot desert; karst landscape, coastal land forms in relation to sea-level changes and wave action.	20	10
IV	Major geomorphological cycle concepts of (excluding slope analysis) W.M. Davis, Penck. Geomorphology and development, its relevance to mining and agricultural land use.	20	10
V	Applied Geomorphology Application of Geomorphology in environment management, transport development and urbanization.	20	10

Weightage: I.S.A: 20 + S.E.E: 80 Total= 100.

INSTRUCTION

- 1) Treatment in this paper will be with reference to India; Regional and local examples may be chosen wherever possible.
- 2) The objective of this course is to introduce the latest concepts in Geomorphology in a brief but adequate manner. The main thrust is to highlight the place of Geomorphology as a main discipline in order to understand Geo-physical processes responsible for initial development of landforms with different concepts or theories and their processes responsible for sculpturing the landscapes as to stress applied aspects of Geomorphology.

REFERENCE

- 1) Strahler, A.H. Modern Physical Geography, John Wiley and Sons, 1983.
- 2) Strahler A. M. and Stratler A.H. - Elements of Physical Geography, John Wiley and Sons, 1983.
- 3) Bunnett R.B. - Physical geography in Diagrams (Longmans, 1993)
- 4) Tikka - R.N. - Physical Geography.
- 5) Monkhouse, F.J. - Physical Geography (Latest Edition).
- 6) Dayal, P. - A text Book of Geomorphology, Shukla Book Dept, Patna.
- 7) Sharma V.K. - Geomorphology: Processes and Forms, Tata McGraw Hill, New Delhi.
- 8) A. Holmes - Principles of Physical Geology (ELPS Thomas Nelson).
- 9) A. K. Lobeck - Geomorphology (McGraw Hill)
- 10) C.R. Twidale - Analysis of Landforms (J. Wiley, 1976)
- 11) P. Birot general Physical Geography (Longmans, Green & Co)

SEMESTER - V
GP: 06: GEOGRAPHY OF INDIA

OBJECTIVE:

- To acquaint students with Indian Geography Resource potential development and disparities in regional development and future vision.

UNIT NO.	COURSE CONTENT	MARKS WEIGHTAGE	TEACHING PERIODS
I	Location: a) The kaleidoscope of Time-Space Relation, India & its neighbours. b) Unity in Diversity of physical & cultural environment. c) Triple Tectonic Divisions/Morphological divisions. d) Water Resources without referring Drainage System e) Climate: Factors, Seasons, Regional characteristics of Monsoons.	20	10
II	Resource Bases: a) Natural Resources - Soil, Forest, Mineral, Power Production and Conservation problems. b) Population resources, Composition and distribution, Racial, Religious & Ethnic Groups, Urban-Rural, Worker - Non-Worker Structure, Trends of Migration.	20	10
III	A) Resource development-Indian Agriculture 1.Traditional agriculture and present transformation before and after Independence (1947). 2. New Technology and Green Revolution Achievements. B) Regional Cropping pattern-Food-Non Food Grains, Agriculture types & problems, Growth and fluctuation Spatio-temporal trend.	20	10
IV	Manufacturing Industries 1. Contemporary Behavioral & Structural Approach 2. Changing Order: Textile, Capital Intensive, Iron & Steel & Automobile Industry. 3. Knowledge Intensive High Technology Activity: Electrical, Electronic	20	10
V	Transport & Communication: Modes of transport, development of transport system, Transportation Planning.	20	10

Weightage: I.S.A: 20 + S.E.E: 80 Total= 100.

INSTRUCTION

- 1.Maximum thrust may be given to local regional and national examples.
- 2.Questions should be set with due weightage to all the units as specified

REFERENCE

1. Deshpande C.D: India-A Regional Interpretation Northern Book Centre, New Delhi, 1992.
2. Learmonth, A.T.A. et.al(ed): Man and Land of South Asia Concept, New Delhi.
3. Mitra, A.: levels of Regional Development India Census of India, Vol.I, Part I-A (i) and (ii) New Delhi,1967.
4. Routray, J.K.: Geography of Regional Disparity Asian Institute of technology, Bangkok, 1993.
5. Shafi, M: Geography of South Asia, McMillan & Co., Calcutta, 2000.
6. Singh, R.L.(ed): India: A Regional Geography. National Geographical Society. India, Varnasi, 1971.
7. Spate, O.H.K. and Learmonth, A.T.A.; India and Pakistan - Land, People and Economy Methuen & Co., London, 1967.
8. Valdiya, K.S.: Dynamic Himalaya, University Press, Hyderabad, 1998.
9. Wadia, D.N.: Geology of India, McMillan & Co., London, 1967.
10. Economic and Commercial Geography of India, Sharma and O.Coutinho.

UNIT NO.	COURSE CONTENT	MARKS WEIGHTAGE	TEACHING PERIODS
I	A) Topographical Sheets: Introduction/comparison with respect to types, scales, grid reference, signs and symbols and colour schemes of SOI, Ordinal maps of UK / United States Geological Survey Maps (USGS). B) Topographical map interpretation Study and interpretation of Indian topographical maps of survey of India (Series - 1: 50000 or 1: 25000), Four maps of coastal plateau Mountainous and plain or desert landscapes, (detail study of topography, drainage, vegetation, landuse pattern, settlements, transport and communication and other aspects).	40	20
II	Weather maps interpretation Study and interpretation of Indian daily weather report, Weather report of four seasons i) Summer seasons ii) S.W Monsoons iii) Retreating Monsoons iv) Winter Season. v) Weather forecasting-Practical aspect. Preparation of weather Station Model.	40	20
III	Journal & Viva	20	

Weightage: Total= 100.

INSTRUCTION

1. Every candidate shall complete the laboratory course prescribed by the University entering all the experiment exercises in the laboratory journal, which shall be produced at the time of Practical Examination along with a certificate signed both by the course Teacher and the Head of the Department of Geography of the concerned college to the effect that he/she has completed the prescribed course in a satisfactory manner.
2. A batch shall consist of not more than 20 students.
3. Workload - one lab session of 2 hrs (i.e. 3 lectures per week per batch).
4. The duration of practical exam: 4 hrs carrying 100 marks.
5. Practical examination is to be conducted at the end of Semester prior to the Theory (exam).

SEMESTER – V

(Skilled Based Course)

SBP: 1: FIELD SURVEY TECHNIQUES-I

OBJECTIVE:

The main objective of the fieldwork 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. It also provide the students with the understanding of ground reality of a chosen village/town by observation; mapping of land quality, land use and cropping pattern and conducting Socio-economic survey of the households with the help of a specially prepared questionnaire.

UNIT NO.	COURSE CONTENT	MARKS WEIGHTAGE	TEACHING PERIODS
I	Introduction to Field Survey Meaning, Definition, Importance and scope utility to social sciences, course work v/s field study, Subjects involving field study.	1	5
II	Requirements for field study: Planning, Resources, Manpower, number of days (Minimum-Maximum), Sources of expenditure, incentives for field study, weightage, Grade, Marking v/s experience	20	10

III	Planning for Field Study in Geography: Statement of purpose/Project, collection of background information, Location on maps, globes, Toposheets. Routes, days, batch formation, distribution of responsibilities, selection of places, selection of Routes, Accommodation, Rules and Regulations during tour, items to be carried, items not to be carried, equipments and infrastructures, local acquaintance administrative requirements.	20	10
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Weightage: I.S.A: 10 + S.E.A: 40 Total= 50.

Suggested Reading

1. Research Methodology by C.P. Kothari - John Wiley.
2. Research Methodology in Geography by R.P. Mishra.
3. Statistical Methods in Geography by A. Ahmed.
4. Practical Geography by B. Ramesh
5. Field Survey Manuals.

SEMESTER VI GP: 08: CLIMATOLOGY AND OCEANOGRAPHY

UNIT NO.	COURSE CONTENT	MARKS WEIGHTAGE	TEACHING PERIODS
I	Atmosphere in general: Weather and climate; Meaning and definition and Significance of climatology, Climatic elements. The Atmosphere - its composition & structure, Insolation: Horizontal & Vertical Distribution.	20	10
II	Factors affecting temperature: Temporal distribution of temperature, inversions horizontal heat transport, Theories of precipitation and spatio-temporal patterns of precipitation.	20	10
III	Dynamics of Atmosphere. Atmospheric motion: Laws of horizontal motion, types of winds, Divergences, vertical motion; local winds, global pressure variations and wind belts; seasonal shifts, recent views on circulation: Jet streams; Air masses, Fronts and Depressions: Concept, classification, properties, frontogenesis, warm and cold fronts, Occlusions, Zones of frontal development - frontal depressions.	20	10
IV	Atmospheric Disturbances: Tropical Weather; climate; Tropical and temperate cyclones: characteristics, origin and tracks with special reference to Indian seas. The Asian and Indian monsoon: recent views, jet stream. Classification: Basis of Koppen's and Thornthwaite's climatic classification and types.	20	10
V	Oceanography Oceans: Their configuration and relief, A detailed study of Indian Ocean relief. Water characteristics; salinity, density, temperature, their regional and global distributional patterns. Ocean Circulations: Waves, tides, currents, their effects, tide theories. Surface current, circulation of the Pacific, Atlantic and Indian Oceans; deep-water circulation, natural catastrophes of Lithosphere, Atmosphere, Hydrosphere.	20	10

Weightage: I.S.A: 20 + S.E.E: 80 Total= 100.

INSTRUCTION

1. Treatment in this paper will be with reference to India; Regional and local examples may be chosen wherever possible.
2. The objective of this course is to introduce the latest concepts in Climatology in a brief but adequate manner. The main thrust is to highlight the place of Climatology as a main discipline in order to understand the Land-Atmosphere-Oceans interactions with different concepts or theories and their processes responsible for changes in their interactions.

REFERENCE

1. Strahler, A.H. Modern Physical Geography, John Wiley and Sons, 1983.
2. Strahler A. M. and Strahler A.H. - Elements of Physical Geography, John Wiley and Sons, 1983.
3. Bunnett R.B. - Physical geography in Diagrams (Longman, 1993)
4. Tikka - R.N. - Physical Geography.
5. Monkhouse, F.J. - Physical Geography (Latest Edition).
6. P. Birot, General Physical Geography (Longman, Green & Co)
7. Trewartha - Introduction to climate
8. Critchfield - General Climatology
9. Barry & Charley - Atmosphere, weather & climate
10. Lal - Climatology
11. Stringer - Foundation of Climatology
12. Tikka - Physical Geography
13. Negi - Climatology & Oceanography
14. Gerald - General Oceanography
15. King - Oceanography
16. Sharma & Vetal - Oceanography for geographers.

SEMESTER VI

GP: 09: REGIONAL DEVELOPMENT OF INDIA

OBJECTIVE:

- To acquaint students with Indian Geography Resource potential development and disparities in regional development and future vision.

UNIT NO.	COURSE CONTENT	MARKS WEIGHTAGE	TEACHING PERIODS
I	Regional Development: Need and Concept A) Concept of development Planning regions, Multilevel Planning.	20	10
II	Regions of regional disparity: Physical & Cultural bases. 1) North-Eastern States 2) Jammu & Kashmir 3) Jharkhand	20	
III	A) Case studies of selected area 1) Metropolitan Regions: Mumbai Metropolitan Region 2) River Project: Narmada Project, Damodar Valley Corporation, North-Eastern States, Hydel Power Projects, Tehri project 3) Rural Development/Reconstruction e.g. Anand Dairy Farming, Narmada Bachav Andolan. 4) Tribal Development Block - Bastar Plateau	20	10
IV	A) Regional Development and Contemporary Issues 1) Globalization 2) Border issues 3) Water Disputes. 4) Socio -Ethnic Tension	20	10
V	Regional Development: Future Vision 1) Indian Suez Canal 2) Konkan Railway Corporation Plans. 3) Golden Quadrangle 4) Oil and gas Pipe Line (Iran and India). 5) River-Linking Projects 6) Antarctica Expeditions	20	10

Weightage: I.S.A: 20 + S.E.A: 80 Total= 100.

INSTRUCTION

1. Maximum thrust may be given to local regional and national examples.
2. Questions should be set with due weightage to all the units as specified

REFERENCES

1. Deshpande C.D: India-A Regional Interpretation Northern Book Centre, New Delhi, 1992.
2. Learmonth, A.T.A. et.al(ed) : Man and Land of South Asia Concept, New Delhi.
3. Mitra, A. : levels of Regional Development India Census of India, Voll, Part I-A (i) and (ii) New Delhi,1967.
4. Routray, J.K.: Geography of Regional Disparity Asian Institute of technology, Bangkok, 1993.
5. Singh, R.L.(ed): India: A Regional Geography. National Geographical Society. India, Varnasi, 1971.
6. Spate, O.H.K. and Learmonth, A.T.A.; India and Pakistan - Land, People and Economy Methuen & Co., London, 1967.
7. Valdiya, K.S.: Dynamic Himalaya, University Press, Hyderabad, 1998.
8. Economic and Commercial Geography of India, Sharma and O.Coutinho.

SEMESTER –VI

GP: 10: PRACTICALS-VI: REMOTE SENSING AND GIS

UNIT NO.	COURSE CONTENT	MARKS WEIGHTAGE	TEACHING PERIODS
I	Basics of Remote Sensing - Definition, nature and scope of remote sensing, Evolution of remote sensing, Application of remote sensing, Aerial photography and its components scale, Resolution, stereo model and mosaic, Angle of photograph, Interpretation of Aerial photographs- landuse study (2 photographs to be interpreted).	40	15
II	a) Satellite imageries - Components of EMR-Electro Magnetic Radiation and remote sensing systems, types of satellites. b) Introduction to GIS-definition & development of GIS, Application of GIS, Components of GIS, Hardware & Software. Elements of GIS, Data Models.	40	15
III	Field Work/Field Tour, Journal & Viva	20	20

Weightage: 100

INSTRUCTION

1. Every candidate shall complete the laboratory course prescribed by the University entering all the experiment exercises in the laboratory journal, which shall be produced at the time of Practical Examination along with a certificate signed both by the course Teacher and the Head of the Department of Geography of the concerned college to the effect that he/she has completed the prescribed course in a satisfactory manner.
2. A batch shall consist of not more than 20 students.
3. Workload - one lab session of 2 hrs (i.e. 3 lectures per week per batch).
4. The duration of practical exam: 4 hrs carrying 100 marks.
5. Practical examination is to be conducted at the end of Semester prior to the Theory (exam).
6. Duration of Local trip is not more than two days for FY/SY B.A.B.Sc
Duration for long tour for TYBA/B.Sc will be between 3 to 12 days.
The Deputed faculty members will be entitled for the T.A/D.A

References:

1. Ian Haywood, Sarah Cornelius and Steve Carver (2000), An introduction to Geographical Information System, Addison Wesley Longman Ltd., New York.
2. Arnoff, S. (1991), Geographic Information Systems - A management perspective, WDL Publications, Ottawa, Canada.
3. Kang Tsung Chang (2002), Introduction to Geographical Introduction Systems, Tata McGraw Hill Publishing Co. Ltd., New Delhi.
4. Star, J. and J.E. Estes, (1990), Geographical Introduction Systems: An introduction, New Jersey, Prentice Hall.
5. David J. Maguire, Michael F. Goodchild and David W. Rhind ed. (1991), Geographical Introduction Systems, Longman Scientific and Technical Co. Published in the USA with John Wiley and Sons, Inc., New York
6. Pail J. Gibson, (2000), Introductory Remote Sensing, Routledge, New York.
7. Lillesand, T. and Keifer (2000), Introduction to Remote Sensing and Image Interpretation, John Wiley and Sons, Inc., New York.
8. Avery, T.E. and G. L. Berlin (1992), Fundamentals of Remote Sensing and Air Photo Interpretation, McMillan Publishing Co., New York.

9. James B. Campbell (1996), Introduction to Remote Sensing, Taylor & Francis, London.
10. Rampal, K.K. (1999), Handbook of Aerial photography and interpretation, Concept Publishing Co., New Delhi.
11. Jensen, J.R. (2003), Remote Sensing of the Environment, Pearson Education Ltd., Delhi.
12. Joseph, G. (2003), Fundamentals of Remote Sensing, Universities Press, Hyderabad.

SEMESTER – VI
(Skilled Based Course)
SBP: 1: FIELD SURVEY TECHNIQUES-II

UNIT NO.	COURSE CONTENT	MARKS WEIGHTAGE	TEACHING PERIODS
I	Preparation of Questionnaire, Schedule, Pilot Study, Coding, Tabulation, use of computer, field book. Social mapping. Field experience, Diary maintenance during field visits, Random checking, code of conduct of field study, Photography Slides.	20	15
II	Analysis of the field data, Report writing, Presentation of Draft report, finalization of the report, ground updation, submission of the Report. Layout of a field/Project report. Conduct of Viva voce or interview. Preparation of map, flow chart, presentation of photography.	20	15
III	Application of field Data in planning and Administration, Marketing of products, future prospects study. Corrective measurers, limitations of field survey	10	5

Weightage: I.S.A: 10 + S.E.E: 40 Total= 50.

Suggested Reading

1. Research Methodology by C.P. Kothari - John Wiley.
2. Research Methodology in Geography by R.P. Mishra.
3. Statistical Methods in Geography by A. Ahmed.
4. Practical Geography by B. Ramesh
5. Field Survey Manuals.

OPTION II – 6 UNITS (GENERAL)
SEMESTER –V
GP: 11 (A): GEOGRAPHY OF RURAL SETTLEMENT

OBJECTIVES:

1. To acquaint the students with the spatial and structural characteristics of human settlements.
2. To bring about awareness of/on special issues related to urban and rural settlements.

UNIT NO.	COURSE CONTENT	MARKS WEIGHTAGE	TEACHING PERIODS
I	Definition, Nature, approaches and scope of geography of rural settlements. Development of geography of rural settlements.	20	10
II	Evolution of Rural settlements and the process of settling. (With special reference to India).	20	10
III	Spatial organization of rural settlements: size, shape, distribution and hierarchy of settlements.	20	10
IV	Settlement sites, internal morphology and functions, house types and field patterns.	20	10
V	Salient features of rural settlements in Goa. Impact of urbanization on rural settlements and changing face of rural India. Need for planning.	20	10

Weightage: I.S.A: 20 + S.E.E: 80 Total= 100.

INSTRUCTION

1. Maximum thrust may be given to local regional and national examples.

2. Q. No. 1 being objective it should include questions from all units of the term.
3. Questions should be set with due weightage to all the units as specified

REFERENCE BOOKS

1. Clout R.D.: Rural geography, London, Pergamon Press 1970.
2. Money D.C.: Patterns of Settlements: Evan Brothers, London, 1972
3. Mukherjee R. K.: Man and his habitation, Popular books, Bombay.
4. Singh R.L. et al: Reading in rural settlement: Geography Varnasi.
5. Misra H.N.: Rural development Heritage Publishers, New Delhi.
6. Perdillon A.: Human Geography: Longman, London, 1966.
7. Carter, Harold: The study of Urban Geography; Edward Arnold, London, 1972.
8. Johnson J.H.: Urban Geography: An Introductory Analysis.
9. Meyer. H.M. & Kohn C.F.: Readings in Geography
10. Nangia Sudesh: Delhi Metropolitan Region
11. Singh R.L.: Varnasi - Tara Publications, Varnasi.

SEMESTER V

GP: 11 (B): AGRICULTURAL GEOGRAPHY-I

OBJECTIVES:

- To familiarize the students with the concept, origin, and development of agriculture; to examine the role of agricultural determinants towards changing cropping patterns, intensity, productivity, diversification and specialization. The course further aims to familiarize the students with the application of various theories, models and classification schemes of cropping patterns and productivity;
- To discuss environmental, technological and social issues in agricultural sector with special reference to India.

UNIT NO.	COURSE CONTENT	MARKS WEIGHTAGE	TEACHING PERIODS
I	Nature origin & dispersal of Agriculture	20	10
II	Agricultural Activity: Physical & Cultural Environment. The Agricultural Systems of the World	20	10
III	The Agricultural Regions of the World - (Whittlesey's Scheme). Classification of Agricultural Regions: Land use & Land use capability, Landuse Efficiency.	20	10
IV	Regional Agricultural Specialization: Models/Theories of Agricultural location - Von Thunen Landuse theory, Landuse Analysis in India.	20	10
V	Land use pattern: Approaches & References, Selected Agricultural concepts a) Measurements of Agricultural Productivity, Crop Combinational Analysis, Crop Diversification Analysis. b) Measurement of Regional Disparities in Agricultural production.	20	10

Weightage: I.S.A: 20 + S.E.E: 80 Total= 100.

INSTRUCTIONS

1. Maximum thrust may be given to local regional and national examples.
2. Questions should be set with due weightage to all the units as specified

REFERENCES

1. Bayliss Smith, T.P.: The Ecology of Agricultural Systems. Cambridge University Press, London, 1987.
2. Berry, B.J.L. et. al.: The Geography of Economic Systems. Prentice Hall, New York, 1976.
3. Brown, L. R.: The Changing World Food Prospects - The Nineties and Beyond. World Watch Institute, Washington D.C., 1990.
4. Dyson, T.: Population and Food - Global Trends and Future Prospects. Routledge, London, 1996.
5. Gregor, H.P.: Geography of Agriculture. Prentice Hall, New York, 1970.
6. Grigg, D.B.: The Agricultural Systems of the World. Cambridge University Press. New York 1974.

7. Hartshorne, T.N. and Alexander, J.W.: Economic Geography. Prentice Hall, New Delhi, 1988.
8. Mannion, A. M.: Agriculture and Environment Change. John Wiley, London, 1995.
9. Morgan W. B. and Norton, R.J.C. : Agricultural Geography. Mathuen, London, 1971.
10. Morgan, W. B.: Agriculture in the Third World - A Spatial Analysis. Westview Press, Boulder, 1978.
11. Sauer, C. O.: Agricultural Origins and Dispersals. M.I.T. Press, Mass, U.S.A., 1969.
12. Singh, J and Dhillon, S.S.: Agricultural Geography, Tata McGraw Hill Pub.; New Delhi, 1988.
13. Tarrant, J.R.: Agricultural Geography. Wiley, New York, 1974.

SEMESTER V
GP: 11 (C): POLITICAL GEOGRAPHY-I

OBJECTIVES:

- 1) To facilitate students with geographical factors which have a bearing on the political and administrative organizations of space.
- 2) To enhance an awareness of multidimensional nature of geo-political space

UNIT NO.	COURSE CONTENT	MARKS WEIGHTAGE	TEACHING PERIODS
I	Nature, scope and subject matter of political geography. A new perspective: scope, redefined and recent trends	20	10
II	Organic states, Geopolitik and Geopolitics Conceptual states: i) Spencer and Scuffle ii) Friedrich Ratzel iii) Rodolf Kjella Geopolitik and Geopolitics - a new dimension	20	10
III	Approaches to the study of political geography and its contemporary relevance 1) Law- Landscape approach of Whittlesey 2) Functional approach of Hartshorne 3) Political partitioning model of Gottmann 4) Unified field theory of Jone	20	10
IV	Concept of Territoriality, state, nation, nationalism, nation building 1) Location, size, shape of states 2) Spatial functions of states	20	10
V	Frontiers and Boundaries Concept of frontiers and distinction between frontiers and boundaries	20	10

Weightage: I.S.A: 25 + S.E.E: 75 Total= 100.

INSTRUCTIONS

1. Maximum thrust may be given to local regional and national examples.
2. Questions should be set with due weightage to all the units as specified
3. Wherever possible Indian examples should be given first priority with world reference.

REFERENCES

1. Bhagwati, J.N. (ed): New International Economic Order - The North-South Debate, M.I.T. Press, London, 1976.
2. Dikshit, R.D. : Political Geography: A Contemporary Perspective, Tata McGraw-Hill Publishing Co., New Delhi, 1982 (also latest edition).
3. Glassner M. I. : Political Geography, John Wiley, New York, 1993.
4. Panikkar, K.M. Geographical factors in Indian History. Bharatiya Vidya Bhavan, Bombay, 1956
5. Pounds N.T.: Political Geography Mc Graw Hill, New York, 1972.
6. Prescott, J.R.V.: Political Geography, Methuen & Co., London, 1972.
7. Schwartzberg, J.E.: A Historical Atlas of South Asia, University of Chicago press, U.S.A. 1993.
8. Short, J.R.: An Introduction to Political Geography, Routledge and Kegan Paul, London, 1982.
9. Sudeepa Adhikari, Political Geography, Rawant Publications, Jaipur, New Delhi.
10. Taylor P.J (ed): Political Geography of the 20th Century - A Global Analysis. New York, 1993.
11. Taylor, Peter: Political Geography, Longman, London, 1985.

12. William C. H. (ed): Political Geography of the New World Order Halsted Ben, New York, 1993.

SEMESTER V
GP: 12: PRINCIPLES OF REGIONAL PLANNING
(CONCEPTS AND APPLICATIONS)

OBJECTIVES:

- To understand and evaluate the concept of region in geography and its role and relevance in region planning;
- 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.

UNIT NO.	COURSE CONTENT	MARKS WEIGHTAGE	TEACHING PERIODS
I	Philosophy of Planning - need and scope, concept of space, area of locational attributes. Areal basis of planning: Economic, Social, Demographic Ecological implications.	20	10
II	Regional Planning - Definition, Scope & Significance Geography and Planning: Sectoral/areal: Physical/perspective, Planning unit on the basis of the river basins; nodal regions, resource regions - Land use planning.	20	10
III	Regions: Formal/functional - Regions for planning criteria, Methods of regionalisation; agglomerative, divisive.	20	10
IV	Regional policy and Regional Planning, Planning at various level; National, State, Local Planning.	20	10
V	Case Study - U.K., China, Cuba	20	10

Weightage: I.S.A: 20 + S.E.E: 80 Total= 100.

INSTRUCTIONS

Major thrust should be given for the local and regional environment.

REFERENCE

- 1) Gadgil D.R. : Planning in India. Asia Publishing House Bo
- 2) Mishra R. P. Regional Planning: A Reader; Concepts Tools, Techniques and case studies, Mysore University Pr
- 3) Chand, Mahesh and Puri K.: Regional Planning in India: All Publishers, New Delhi - 1983.
- 4) Glicksen .A. : Regional Planning and Development: Leiden, Hagle, 1955
- 5) Freeman T.W. : geography and Planning, (Hutchinsen University , London 1958)
- 6) Sundaram K.V.: Urban and Regional Planning in India (Vikash Publishing House, New Delhi 1977).
- 7) Sengupta P. & Edasyuk Galina: Economic Regionalisation of India Problems & Approaches, Monograph Series. Vol I No.8 Indian Census, Delhi 1968)
- 8) Prakas Rao V.L.S.: Regional Planning.

**GP: 13:PRACTICALS VII:
QUANTITATIVE TECHNIQUES IN GEOGRAPHY- I**

OBJECTIVES:

1. To introduce students with some basic statistical techniques, relevant to geographical research as the Project/Dissertation is compulsory at UG/PG level.
2. To acquaint students about their potentials & utilization: The knowledge of drawing inferences using the geographical database.
3. To provide students for an understanding and appreciation of the mutual dependence of different techniques and their relevance.
4. Data related to course content of all the theory papers must be used to co-related theory & practical aspects.

UNIT NO.	COURSE CONTENT	MARKS WEIGHTAGE	TEACHING PERIODS
I	Geographical Database a) The Nature of Geography b) Areal limits on geographical data-base c) Geographical research and Statistical Techniques.	20	10
II	A)Measurement – scales in statistical geography. Nominal, ordinal, interval and ratio scale/ measurements	10	05
	B) Descriptive Statistics-I a) Classification, Tabulation and types b) Tabulation, (format) and types of table c) Graphical presentations, Frequency distribution and typical pattern of frequency distribution: Histogram and Frequency Polygon	10	05
III	Measures of central tendency and partition values, Arithmetic & Geometric Mean, Median, Mode, Quartiles, Deciles, Percentiles (Grouped & Ungrouped data)	20	10
IV	Descriptive statistics - II (Measures of Dispersion) a) Absolute measures of dispersion and skewness: Range, Quartile Deviation, Mean Absolute Deviation, Standard Deviation, Variance and Combined mean.	20	10
V	Relative measures of dispersion: Coefficient of variation (C.V.), Lorenz curve, and standard distance.	20	10

Weightage: 100.

INSTRUCTION

1. Maximum stress must be given to Indian statistical database related to other theory papers.
2. The weekly workload for this paper should be two labs. Two Sessions of two hours each (3 lectures each).
3. The University examination will be of four hours consisting 90 marks & Journal viva 10 marks i.e. total 100 marks.
4. Question No.1 is of objective type (15 marks) and then Q. No.2 to 6 each will carry 15 marks with sub questions.

REFERENCE

1. Dr. Negi B.S.: Statistical Geography: Kedarnath- Ramanath, Meerut
2. Gregory: Statistical methods and the Geographer, Longman S. London, 1963.
3. Gupta S.P.: practical statistics
4. Johnson R.J. : Multivariate statistical Analysis in Geography, Longman
5. Khan Z.A: Text book of practical Geography – New Delhi-1998
6. Pal Saroj K.: Statistical Techniques: A basic approach to Geography: Tata –Mc Graw Hill, New Delhi.
7. P.K. Majumda : STATISTICS: A Tool for Social Sciences, Rawat Publications: Jaipur & New Delhi.
8. Rastogi R.S.: Elementary Statistics: Rohit Publications – Delhi-110 006
9. Succheti D.C. and Kapoor V.K. - statistics (theory, methods and application)

SEMESTER – V
SBP: III: SKILLS IN PHYSICAL GEOGRAPHY-I

OBJECTIVES:

- 1) The course content allows students who need to acquaint with a different presentation of Earth Science than they have seen/perceived in the class.
- 2) It is less as a textbook, but more as skilled presentation.
- 3) Since important connections of natural surroundings are lost in the dry facts and abstract concepts the discussion with example orientation will give the reader a complete knowledge.
- 4) It supplements the classroom teaching and experiences.
- 5) Practice questions & exercises designed to reinforce a new way of learning with new material/technical data. Ultimately a firm grasp of the concepts of how and why our world works makes us partners in a relationship with nature as we are all immersed in every day as we are neither foreign objects or subjects rather than victims of it.

UNIT NO.	COURSE CONTENT	MARKS WEIGHTAGE	TEACHING PERIODS
I	Introduction to Earth Science: Observation & Inferences, Patterns of change, Metric measurements, Density, Gradient rate & time, Percent deviation.	5+5	6
II	Dimensions of the Earth: Shape and size of earth, parts of the earth, Positions on the earth, Use of contour maps.	5+5	6
III	Minerals and Rocks: Minerals, Rock formation. Types of rocks - Igneous, Sedimentary, Metamorphic.	5+5	6
IV	Earthquakes & volcanoes: Movements of the crust, plate boundaries, plate tectonics, Earthquakes & analysis of seismic waves, finding the epicentre of the earthquakes.	5+5	6
V	Weathering & Erosion: Physical & Chemical weathering, Weathering rates, Erosion, Stream erosional-Depositional Systems, Other erosional depositional systems.	5+5	6

Weightage: 25+25=50

INSTRUCTION

1. The teachers can refer all the books related to practicals in Geography, both related to Cartography & Statistical Analysis

SEMESTER –VI
GP: 14 (A) GEOGRAPHY OF URBAN SETTLEMENT

OBJECTIVE:

1. To acquaint the students with the spatial and structural characteristics of human settlements.
2. To bring about awareness of/on special issues related to urban and rural settlements.

UNIT NO.	COURSE CONTENT	MARKS WEIGHTAGE	TEACHING PERIODS
I	Nature, approach and scope of urban geography. Development of urban geography. Definition of urban places, problems of defining urban places.	5+15	10
II	Site and situations of urban places (towns and cities) functional classification of towns.	5+15	10
III	Hierarchy of Urban settlements, Urban morphology, theories related to urban landuse. City- Region, concept, urban systems; rank size and Private City Model.	5+15	10
IV	Trends and patterns of urbanization - India and Goa. Case study metropolitan i.e. Mumbai, Kolkata, Delhi (any one suggested by BOS)	5+15	10

V	Problems of urbanization with special reference to slums, pollution, urban climate, garbage management. Urban planning and sustainable development of cities.	5+15	10
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Weightage: I.S.A: 20 + S.E.E: 80 Total= 100.

INSTRUCTION

1. Maximum thrust may be given to local regional and national examples.
2. Q. No. 1 being objective it should include questions from all units of the term.
3. Questions should be set with due weightage to all the units as specified

REFERENCE BOOKS

1. Clout R.D.: Rural Geography, London, Pergamon Press 1970.
2. Money D.C.: Patterns of Settlements: Evan Brothers, London, 1972
3. Mukherjee R. K.: Man and his habitation, Popular books, Bombay.
4. Singh R.L. et al: Reading in rural settlement: Geography Varnasi.
5. Misra H.N.: Rural development Heritage Publishers, New Delhi.
6. Perdillon A.: Human Geography: Longman, London, 1966.
7. Carter, Harold: The study of Urban Geography; Edward Arnold, London, 1972.
8. Johnson J.H.: Urban Geography: An Introductory Analysis.
9. Meyer. H.M. & Kohn C.F.: Readings in Geography
10. Nangia Sudesh: Delhi Metropolitan Region
11. Singh R.L.: Varnasi - Tara Publications, Varnasi.

SEMESTER VI

GP: 14 (B): AGRICULTURAL GEOGRAPHY-II

OBJECTIVE:

- To familiarize the students with the concept, origin, and development of agriculture; to examine the role of agricultural determinants towards changing cropping patterns, intensity, productivity, diversification and specialization. The course further aims to familiarize the students with the application of various theories, models and classification schemes of cropping patterns and productivity;
- To discuss environmental, technological and social issues in agricultural sector with special reference to India.

UNIT NO.	COURSE CONTENT	MARKS WEIGHTAGE	TEACHING PERIODS
I	Agricultural Transformation in India since 1947, Green Revolution, White Revolution	20	10
II	Cropping Patterns: Food Crops & Non- food Crops, Spatio-Temporal Analysis.	20	10
III	Contemporary issues, Spatio-temporal growth & fluctuation in production. Agricultural policy.	20	10
IV	Components of Agro meteorological study: Agro climatic Regions of India.	20	10
V	Green Revolution and New techniques: Case Study of India.	20	10

Weightage: I.S.A: 20 + S.E.E: 80 Total= 100.

INSTRUCTIONS

1. Maximum thrust may be given to local regional and national examples.
2. Questions should be set with due weightage to all the units as specified

REFERENCES

1. Bayliss Smith, T.P.: The Ecology of Agricultural Systems. Cambridge University Press, London, 1987.
2. Berry, B.J.L. et. al.: The Geography of Economic Systems. Prentice Hall, New York, 1976.
3. Brown, L. R.: The Changing World Food Prospects - The Nineties and Beyond. World Watch Institute, Washington D.C., 1990.
4. Dyson, T.: Population and Food - Global Trends and Future Prospects. Routledge, London, 1996.
5. Gregor, H.P.: Geography of Agriculture. Prentice Hall, New York, 1970.

6. Grigg, D.B.: The Agricultural Systems of the World. Cambridge University Press. New York 1974.
7. Hartshorne, T.N. and Alexander, J.W.: Economic Geography. Prentice Hall, New Delhi, 1988.
8. Mannion, A. M.: Agriculture and Environment Change. John Wiley, London, 1995.
9. Morgan W. B. and Norton, R.J.C. : Agricultural Geography. Mathuen, London, 1971.
10. Morgan, W. B.: Agriculture in the Third World - A Spatial Analysis. Westview Press, Boulder, 1978.
11. Sauer, C. O.: Agricultural Origins and Dispersals. M.I.T. Press, Mass, U.S.A., 1969.
12. Singh, J and Dhillon, S.S.: Agricultural Geography, Tata McGraw Hill Pub.; New Delhi, 1988.
13. Tarrant, J.R.: Agricultural Geography. Wiley, New York, 1974.

SEMESTER VI

GP: 14 (C): POLITICAL GEOGRAPHY-II

OBJECTIVES:

- 1) To facilitate students with geographical factors which have a bearing on the political and administrative organizations of space.
- 2) To enhance an awareness of multidimensional nature of geo-political space

UNIT NO.	COURSE CONTENT	MARKS WEIGHTAGE	TEACHING PERIODS
I	Elements of Spatial structural state. The core area & capital cities.	20	10
II	Territorial sea and maritime boundaries. Territorial sea and maritime boundaries jurisdiction zone. Delimitation of maritime boundaries, measurement of the territorial seas. The median line boundaries, continental sea, the EEZ.	20	10
III	Global Strategic views 1. The views of Mackinder (Heartland), Spykman (Rimland) 1744. Critical assesment of Heartland & Rimland Model.	20	10
IV	Federalism: (World with special reference to India) Federalism as a geographical phenomenon. Desirability development pattern of Federalist, Concept of symmetry & Asymmetry Model of federalist.	20	10
V	Underdevelopment International Policies, North-South Dialogues, New International Economic Order. International tensions identification-factors consisting to such tensions. Case study of West Asia, Indian Ocean Region, Regionalism & International relations.	20	10

Weightage: I.S.A: 20 + S.E.E: 80 Total= 100.

INSTRUCTIONS

1. 1.Maximum thrust may be given to local regional and national examples.
2. Questions should be set with due weightage to all the units as specified
3. Wherever possible Indian examples should be given first priority with world reference.

REFERENCES

1. Bhagwati, J.N. (ed): New International Economic Order - The North-South Debate, M.I.T. Press, London, 1976.
2. Dikshit, R.D. : Political Geography: A Contemporary Perspective, Tata McGraw-Hill Publishing Co., New Delhi, 1982 (also latest edition).
3. Glassner M. I. : Political Geography, John Wiley, New York,1993.
4. Panikkar, K.M. Geographical factors in Indian History. Bharatiya Vidya Bhavan, Bombay,1956
5. Pounds N.T.: Political Geography Mc Graw Hill, New York, 1972.
6. Prescott, J.R.V.: Political Geography, Methuen & Co., London,1972.
7. Schwartzberg, J.E.: A Historical Atlas of South Asia, University of Chicago press, U.S.A. 1993.
8. Short, J.R.: An Introduction to Political Geography, Routledge and Kegan Paul, London, 1982.
9. Sudepta Adhikari, Political Geography, Rawant Publications, Jaipur, New Delhi.
10. Taylor P.J (ed): Political Geography of the 20th Century - A Global Analysis. New York, 1993.
11. Taylor, Peter: Political Geography, Longman, London, 1985.
12. William C. H. (ed): Political Geography of the New World Order Halsted Ben, New York, 1993.

SEMESTER – VI
GP: 15: REGIONAL PLANNING IN INDIA

UNIT NO.	COURSE CONTENT	MARKS WEIGHTAGE	TEACHING PERIODS
I	Regional Planning: Need in India context & Strategy.	10	10
II	Manpower Planning In India. Planning problems, Objectives and priorities in India.	10	10
II I	Indicies of economic development, Resource regionalisation of India - Industrial regions.	10	10
I V	Growth centre strategy; District Planning. Metropolitan Planning. Case study of 2 regional plans of two contrast regions.	10	10
V	Planning in Goa. Tribal and coastal region, drought and flood region, Local Government and Planning.	10	10

Weightage: I.S.A: 20 + S.E.A: 80 Total= 100.

INSTRUCTIONS

Major thrust should be given for the local and regional environment.

REFERENCE

1. Gadgil D.R. : Planning in India. Asia Publishing House Bo
2. Mishra R. P. Regional Planning: A Reader; Concepts Tools, Techniques and case studies, Mysore University Pr
3. Chand, Mahesh and Puri K.: Regional Planning in India: All Publishers, New Delhi - 1983.
4. Glicksen .A. : Regional Planning and Development: Leiden, Hagle, 1955
5. Freeman T.W. : geography and Planning, (Hutchinsen University , London 1958)
6. Sundaram K.V.: Urban and Regional Planning in India (Vikash Publishing House, New Delhi 1977).
7. Sengupta P. & Edasyuk Galina : Economic Regionalisation of India Problems & Approaches, Monograph Series. Vol I No.8 Indian Census, Delhi 1968)
8. Prakas Rao V.L.S. : Regional Planning.

SEMESTER - VI
GP: 16: QUANTITATIVE TECHNIQUES IN GEOGRAPHY- II

OBJECTIVES

1. To introduce students with some basic statistical techniques, relevant to geographical research as the Project/Dissertation is compulsory at UG/PG level.
2. To acquaint students about their potentials & utilization: The knowledge of drawing inferences using the geographical database.
3. To provide students for an understanding and appreciation of the mutual dependence of different techniques and their relevance.
4. Data related to course content of all the theory papers must be used to co-related theory & practical aspects.

UNIT NO.	COURSE CONTENT	MARKS WEIGHTAGE	TEACHING PERIODS
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I	Non- Parametric Statistics Co-relation and Regression analysis a) Scatter Diagram b) Karl Person's Co-efficient correlation c) Spearman's rank correlation d) Kendall's rank correlation regression analysis.	20	10
II	Parametric Statistics Sampling Techniques a) Significance in research and data collection. b) Sampling Plan c) Methods of sampling d) Sampling estimates Non-Parametric Hypothesis testing a) Meaning, types of hypothesis b) Testing of hypothesis i) Chi-square test ii) Variance analysis.	20	10
III	Matrices & Indices c) Elementary introduction to geographic matrices d) Index numbers: unweighted, weighted indices and cost of living index	20	10
IV	Application of Computer Cartography Simple exercises for representation of geographic data.	20	10
V	Field trip & Survey Report. Journal and viva voce	20	10

Weightage: 100.

INSTRUCTIONS

1. Maximum stress must be given to Indian statistical database related to other theory papers.
2. The weekly workload for this paper should be two labs. Two Sessions of two hours each (3 lectures each).
3. The University examination will be of four hours consisting 90 marks & Journal viva 10 marks i.e. total 100 marks.
4. Question No.1 is of objective type (15 marks) and then Q. No.2 to 6 each will carry 15 marks with sub questions.

REFERENCES

1. Dr. Negi B.S.: Statistical Geography: Kedarnath- Ramanath, Meerut
2. Gregory: Statistical methods and the Geographer, Longman S. London, 1963.
3. Gupta S.P.: practical statistics
4. Johnson R.J. : Multivariate statistical Analysis in Geography, Longman
5. Khan Z.A: Text book of practical Geography – New Delhi-1998
6. Pal Saroj K.: Statistical Techniques: A basic approach to Geography: Tata –Mc Graw Hill, New Delhi.
7. P.K. Majumda : STATISTICS: A Tool for Social Sciences, Rawat Publications: Jaipur & New Delhi.
8. Rastogi R.S.: Elementary Statistics: Rohit Publications – Delhi-110 006
9. Succheti D.C. and Kapoor V.K. - statistics (theory, methods and application)
10. Zamir Alvi: Statistical Geography: Method and Applications Rawat Publications, New Delhi

SEMESTER – VI

SBP: IV: SKILLS IN PHYSICAL GEOGRAPHY-II

OBJECTIVES:

- 1) The course content allows students who need to acquaint with a different presentation of Earth Science than they have seen/perceived in the class.
- 2) It is less as a textbook, but more as skilled presentation.
- 3) Since important connections of natural surroundings are lost in the dry facts and abstract concepts the discussion with example orientation will give the reader a complete knowledge.
- 4) It supplements the classroom teaching and experiences.
- 5) Practice questions & exercises designed to reinforce a new way of learning with new material/technical data.

6) Ultimately a firm grasp of the concepts of how and why our world works makes us partners in a relationship with nature as we are all immersed in every day as we are neither foreign objects or subjects rather than victims of it.

UNIT NO.	COURSE CONTENT	MARKS WEIGHTAGE	TEACHING PERIODS
I	Meteorology and Energy in the Atmosphere: Structure & Composition of Atmosphere, Atmospheric temperature, Pressure, Moisture, Winds, Air masses and Storms.	10	6
II	Water Cycle & climate: Hydrological Cycle, Water budget, ground water, Water Divides.	10	6
III	Motions of the Earth: Earths rotation & revolution.	10	6
IV	Astronomy: Eclipses, The moon, tides, solar system	10	6
V	Scientific Notations (exercises).	10	6

Weightage: I.S.A 10 +S.E.E 40= 50

INSTRUCTION

- The teachers can refer to all the books and instruments related to practicals in Geography, Cartography & Statistical Analysis.

OPTION III – 8 UNITS (HONOURS)

SEMESTER V

GP: 17 - DISASTER MANAGEMENT AND PLANNING-I

UNIT NO.	COURSE CONTENT	MARKS WEIGHTAGE	TEACHING PERIODS
I	Definition of Disaster, Natural Disasters: Earthquake, Flood, Landslide, Drought, Desertification, Snowfall, Hail Storms, Climatic disorders, Avalanches. Extreme climate disasters, Cloud Burst, Incessant rain, Cyclones, High Tides, Tsunamis, Hurricanes, Volcanic eruption,	20	10
II	Global warming, congestion, pollution, accidents, deforestation, Drug abuse, Moral degradation, ethical erosion. Insecurity, AIDS, HIV, Genetic diseases, Health disorders, and terrorism, Fanaticism.	20	10
III	Causes of the natural and human disasters, two examples of each of the devastating natural human calamities. (self assessment and reported causes).	20	10
IV	Consequences of the natural and human disasters, one case study of each of the disasters, disaster prone areas in the world, India and Goa. Disaster Mapping.	20	10
V	Field Trip / Case Study on natural disasters	20	10

Weightage: I.S.A: 20 + S.E.E: 80 Total= 100.

INSTRUCTIONS

- Maximum thrust may be given to local regional and national examples.
- Questions should be set with due weightage to all the units as specified
- Due weightage for maps, diagrams in teaching as well as in paper setting are mandatory.

Suggested Reading

- Natural Disasters - R.B. Singh, Ashis Publication, Delhi.
- Human Geography - Majid Hussain, Rawat Publication, Jaipur.
- Earthquake - Visaria
- Natural Disasters Mitigation Measures - IIRS, Dehradun.
- Human Resource Development - UNESCO Measures.

SEMESTER V
GP: 18 – DEVELOPMENT OF GEOGRAPHICAL THOUGHT

Objective: To have an elementary knowledge of evolution of Geography since its inception till date.

UNIT NO.	COURSE CONTENT	MARKS WEIGHTAGE	TEACHING PERIODS
I	Nature of Geography, Geography as a scientific discipline. Its relation to other sciences. Scientific explanations.	20	10
II	Evolution of Geography: Ancient period, Dark ages, Age of exploration, Consolidation period (1750-1950) and Modern Era (1950- till date).	20	10
III	Modern Geographical thought-Alexander Von Humboldt, Carl Ritter, Charles Darwin	20	10
IV	Schools of Geographical thought-French, German, British, Possibilism, Determinism, Neo Determinism.	20	10
V	Geography as a study of man-Environment relationship, Areal differentiation and spatial organization. Dualism and dichotomies and Quantitative Revolution.	20	10

Weightage: I.S.A: 20 + S.E.E: 80 Total= 100.

Reference:

1. Abler, Ronald: Adams, John S. Gould, Peter: Spatial Organization : The Geographer's View of the World, Prentice Hall, N.J., 1971.
2. Ali S.M. : The Geography of Puranas, Peoples Publishing House, Delhi, 1966.
3. Amedeo, Douglas: An Introduction to Scientific Reasoning in Geography, John Wiley, U.S.A. 1971.
4. Dikshit, R.D.(ed.): The Art & Science of Geography integrated Readings, Prentice Hall of India, New Delhi, 1994.
5. Hartshorne, R.: Perspectives on nature of Geography, Rand McNally & Co.,1959.
6. Hussain, M. : Evolution of Geographic Thought, Rawat Pub. Jaipur, 1984.
7. Johnston, R.J.: Philosophy and Human Geography, Edward Arnold, London, 1983.
8. Johnston, R.J. : The Future of Geography, Methuen, London, 1988.
9. Minshull, R. : The Changing Nature of Geography, Hutchinson University Library, London,1970.

SEMESTER VI
GP: 19 - DISASTER MANAGEMENT AND PLANNING-II

UNIT NO.	COURSE CONTENT	MARKS WEIGHTAGE	TEACHING PERIODS
I	Meaning and Definition of Disaster Management, Importance of past data, scientific study of potential zones through traditional and modern techniques. (Introduction to Social mapping U.S., Remote Sensing, GIS, GPS, Radar, Satellite etc). Role of media.	25	10
II	Precautionary measures, formation of groups, forecasting measures, Role of the Government, People's Participation, Rescue and relief operations, Agencies to be contacted and concerned.	25	10
III	Disaster Mitigation: Meaning and Definitions, Mitigation measures, What to do and what not to do, Rehabilitation programmes, Review and Redressal of Rescue and Rehabilitation, Corrective Measures.	30	15
IV	Local Field Trip* / Report: A Case Study –Human disasters	20	10

Weightage: I.S.A: 20 + S.E.A: 80 Total= 100.

INSTRUCTIONS

1. Maximum thrust may be given to local regional and national examples.
2. Questions should be set with due weightage to all the units as specified
3. Due weightage for maps, diagrams in teaching as well as in paper setting are mandatory.

Suggested Reading

1. Natural Disasters - R.B. Singh, Ashis Publication, Delhi.
2. Human Geography - Majid Hussain, Rawat Publication, Jaipur.
3. Earthquake - Visaria
4. Natural Disasters Mitigation Measures - IIRS, Dehradun.
5. Human Resource Development - UNESCO Measures.

SEMESTER VI

GP: 20 - COMPUTER APPLICATIONS IN GEOGRAPHY

UNIT NO.	COURSE CONTENT	MARKS WEIGHTAGE	TEACHING PERIODS
I	Introduction to Computers: Data input, data representation, instructing computer, disc and tape, Operating system/DOS, Introduction to software.	20	10
II	Computer and Geographic data: Scale of measurement, location data, data structure,	20	10
III	Computers in Cartography: Hardware for computer mapping, software for computer mapping.	20	10
IV	Application of Computer Cartography: simple exercises for representation of Geographic data.	20	10
V	Journal	20	10

Weightage: I.S.A: 20 + S.E.A: 80 Total= 100.

References:

- 1) Cole & King (1968): Quantitative Geography, Mathuen, London.
- 2) Haggett Peter (1990): Geography & Modern synthesis, Harper International, New York.
- 3) Hammond R. Mc. Cullagh P. (1974): Quantitative techniques in Geography Calrendon Press, Oxford.
- 4) Maguire David J. (1989): Computers in Geography, Longman scientific & Technical, London.
- 5) Mather Paul M. (1993): Computer application in Geography John Willy & Sons, New York, USA.