SARDAR PATEL UNIVERSITY
BACHELOR OF ARTS GEOGRAPHY
BA GEOGRAPHY Semester 03
Implementing from 2024-25

Course Code	Major	Title of the Course	Elements of Climatology	
Total Credits of the Course	04	Hours per Week	04	UA03MAGEO01

Course Objectives:	1. The aim of the course is to provide an understanding of weather phenomena, dynamics of global climates and generation of climate information and their application.

Course Content

Unit	Description	Weight age %
1.	Nature and scope of climatology and its relationship with meteorology. Composition. Mass and structure of the atmosphere. Insolation heat balance of the earth, greenhouse effect; vertical and horizontal distribution of temperature. Atmospheric motion: Forces controlling motion of air vertical motion and vortices, local winds, jet stream, general circulation in the atmosphere; Atmospheric moisture: Humidity, evaporation, condensation, precipitation: formation, types, acid rain, world pattern of precipitation	25%
2.	Tropical, temperate and high latitude weather systems - concept of air masses and atmospheric disturbances, ocean atmospheric interaction El Nino, southern oscillation (ENSO) and La Nina, monsoon winds, norwesters, and cyclones Tropical Temperate phenomena, climate of India and its controls: Western disturbances	25%
3.	Climatic classification of Koppen, and Thornthwaite. Major climates of the world tropical, temperate, desert and mountain climate. Climatic changes Evidences, possible causes; global warming, environmental impacts and society's response.	25%
4.	Applied climatology : Data collection, archiving, accessing, interpretation and generation of climatic information specially for water balance studies, soils, agriculture activities, house types and health.	25%

Teaching-Learning Methodology	ICT, Group Discussion Lecture method, Class room Seminar, quiz

Evaluation Pattern

Sr. No.	Details of the Evaluation	Weight age
1.	Internal Written / Practical Examination (As per CBCS R.6.8.3)	15%
2.	Internal Continuous Assessment in the form of Practical, Viva-voce,	15%

	Quizzes, Seminars, Assignments, Attendance (As per CBCS R.6.8.3)	
3.	University Examination	70%

Course Outcomes: Having completed this course, the learner will be able to	
1.	Understand the elements of weather and climate and its impacts at different scales.
2.	Comprehend the climatic aspects and its bearing on planet earth
3.	

Suggested References:	
Sr.	References
1.	M. R. Shah and K.N. Jasani (2016) - Physical Geography, Uni. Granth Nirman Board, Ahmedabad (Gujarati)
2.	Alan Strahler - Physical Geography, John Wiley and Sons
3.	Savindra Singh (2018): Physical Geography, Pravalika Pub. Allahabad (Hindi, English)
4.	Bryant, H. Richard (2001): Physical Geography Made Simple, Rupa and Company. New Delhi
5	Das, P.K : Monsoons National Book Trust, new Delhi,1987
On-line resources to be used if available as reference material	
On-line Resources: https://en.m.wikipedia.org/wiki/Structure_of_Earth	
https://en.m.wikipedia.org/wiki/mountain_formation https://en.m.wikipedia.org/wiki/volcanoes_and_earthquakes	

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Course Code	Major	Title of the Course	Physical Geography of India	
Total Credits of the Course	04	Hours per Week	04	UA03MAGEO02

Course Objectives:	1. The course is aimed at presenting a comprehensive, integrated and Empirically based profile of India. Besides, 2. The objective is to highlight the linkages of systematic geography of India with the regional personality of the country

Course Content

Unit	Description	Weight age %
1.	Location, Area, Size ,Political setup - India in the context of the world – Relationship of India with neighboring countries – Physical and Cultural diversity of India.	25%
2.	Main Physiographical Division of India – structure, relief and its Significance, Drainage pattern - Major river systems of India and its significance, Multipurpose and hydro power projects in India.	25%
3.	Mechanism of Indian monsoons and rainfall pattern – Factors affecting the Indian climate – Climatic regions- Impact of Indian climate on economic activities - Floods and droughts in India.	25%
4.	Major soil types, Classification and their regional distribution – soil erosion and degradation in India – Conservation of soil resource in India. Natural vegetation – types – distribution - Major forest products and its economic significance. Wild life resources and their conservation. Problems of deforestation and conservation of Natural vegetation – Social forestry – agro forestry.	25%

Teaching-Learning Methodology	ICT, Group Discussion Lecture method, Class room Seminar, quiz

Evaluation Pattern

Sr. No.	Details of the Evaluation	Weight age
1.	Internal Written / Practical Examination (As per CBCS R.6.8.3)	15%
2.	Internal Continuous Assessment in the form of Practical, Viva-voce, Quizzes, Seminars, Assignments, Attendance (As per CBCS R.6.8.3)	15%
3.	University Examination	70%

Course Outcomes: Having completed this course, the learner will be able to	
1.	Understand the physical profile of the country.
2.	Study the resource endowment and its spatial distribution and utilization for sustainable development.
3.	Synthesize and develop the idea of regional dimensions.

Suggested References:	
Sr.	References
1.	Pathak, Y.P. & Rangiya , J .(2018): Bharat Ni Bhugol (In Gujarati), University Granth Nirman Board, Ahmedabad (Gujarati)
2.	Singh, Jagdish 2003: India - A Comprehensive & Systematic Geography, Gyanodaya Prakashan, Gorakhpur.
3.	R. C. Chandra (1986): Regional Geography of India, Kalyani pub. Delhi.
4.	Deshpande C. D., 1992: India: A Regional Interpretation, ICSSR, and New Delhi
5	Das, P.K : Monsoons National Book Trust, new Delhi,1987
On-line resources to be used if available as reference material	
On-line Resources: https://en.wikipedia.org/wiki/Geography_of_India	
https://en.wikipedia.org/wiki/Geography_of_India https://en.wikipedia.org/wiki/Climate_of_India https://www.thrillophilia.com/wildlife-india	

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Course Code	Major	Title of the Course	Cartographic Techniques (Theory)	
Total Credits of the Course	04	Hours per Week	04	UA03MAGEO03

Course Objectives:	1. Geography is an amalgam of physical as well as social sciences and as Such, it is necessary for the students to go through laboratory exercises. 2. Particularly the techniques of drawing cartograms Showing physical, Climatic and socio-economic attributes of a region.

Course Content

Unit	Description	Weight age %
1.	Historical Development of Cartography till modern period, Artistic and Scientific bases of Cartography. Cartography as a Science of human communication – Branches of Cartography, Recent trends in Cartography, Use of Computer and GIS in Cartography.	25%
2.	History of Maps - Types of maps - Classification of maps Based scale and purpose. Use of maps, Components of Map: Scale, Map Projection, Conversational Sign, Map making in India, Brief History of Survey of India. Various Methods of showing relief: Hachure's, Shading, layer tints, contours, bench, mark, spot height and trig point, Their Merits and Demerits.	25%
3.	Weather instruments, uses and the data collected from them. Significance of weather maps, Weather Symbols, Major Activities of Indian Meteorological Department. Forecasting of weather, Recent Trends in weather forecasting use of satellites, remote sensing data, and use of computer in weather measurement and forecasting.	25%
4.	Importance of Fieldwork and laboratory work in Geography, The Different Approaches to Fieldwork. Design and Methodology of Field Work, Advantages of fieldwork, Collection of Information and data.	25%

Teaching-Learning Methodology	ICT, Group Discussion Lecture method, Class room Seminar, quiz

Evaluation Pattern

Sr. No.	Details of the Evaluation	Weight age
1.	Internal Written / Practical Examination (As per CBCS R.6.8.3)	15%
2.	Internal Continuous Assessment in the form of Practical, Viva-voce, Quizzes, Seminars, Assignments, Attendance (As per CBCS R.6.8.3)	15%

3.	University Examination	70%

Course Outcomes: Having completed this course, the learner will be able to	
1.	Read and prepare maps.
2.	Comprehend locational and spatial aspects of the earth surface.
3.	Use and importance of maps for regional development and decision making.

Suggested References:	
Sr.	References
1.	Dixit, N.G. (2016) „NAKSHA VIGYAN -1" (IN GUJARATI) University Granth Nirman Bhavan, Ahmedabad.
2.	Singh, R.L. and Dutt, P.K. (1968) Elements of Practical Geography, Students Friends, Allahabad.
3.	Gopal Singh, (1996) Map Work and Practical Geography, Vikas Publishing House, New Delhi
4.	Misra, R.P. and Ramesh, A (1999) Fundamental of Cartography, McMillan, New Delhi.
5	R.N.Mishra (2023) Practical Geography method and techniques, Jaipur
On-line resources to be used if available as reference material	
On-line Resources: https://en.wikipedia.org/wiki/Geography_of_India	
https://en.wikipedia.org/wiki/Geography_of_India https://en.wikipedia.org/wiki/Climate_of_India https://www.thrillophilia.com/wildlife-india	

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Course Code	Multi-Disciplinary	Title of the Course	Geography of Health	
Total Credits of the Course	04	Hours per Week	04	UA03IDGEO01

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

Course Content

Unit	Description	Weight age %
1.	Nature, scope and significance of geography of health. Development of this area of specialization; its distinction from medical science	25%
2.	Geographical factors affecting human health and diseases arising from them, viz (i)Physical factors- relief, climate, soils and vegetation. (ii) Social factors- population density, literacy, social customs and poverty. (iii) Economic factors-food and nutrition occupation and standard of living (iv) Environmental factors- urbanization and congestion, water, air and noise pollution and solid waste	25%
3.	Classification of diseases: genetic, communicable and non-communicable: occupational and deficiency diseases. WHO classification of diseases, Pattern of World distribution of major diseases. Ecology, etiology and transmission of major diseases. cholera, malaria, tuberculosis, hepatitis, leprosy, cardiovascular, cancer, AIDS and STDS. Diffusion of diseases and causes for the same. Deficiency disorders and problems of mal-nutrition in India	25%
4.	Health-care planning (i)international level-WHO, UNICEF, Red Cross (ii) National level-Government and NGOs. Health Care Planning and Policies, availability, accessibility and utilization of health care services; Primary health care, Inequalities in health care services in India; family welfare, immunization, national disease eradication, and Health for All programmes	25%

Teaching-Learning Methodology	ICT, Group Discussion Lecture method, Class room Seminar, quiz

Evaluation Pattern		
Sr. No.	Details of the Evaluation	Weight age
1.	Internal Written / Practical Examination (As per CBCS R.6.8.3)	15%
2.	Internal Continuous Assessment in the form of Practical, Viva-voce, Quizzes, Seminars, Assignments, Attendance (As per CBCS R.6.8.3)	15%
3.	University Examination	70%

Course Outcomes: Having completed this course, the learner will be able to	
1.	Understand the key concepts related to health and its d.ving forces
2.	Identify the linkages between the health, environment, exposure and risk.
3.	Explain the relationships among health and disease pattern in environniental context

Suggested References:	
Sr.	References
1.	Harishkumar Khatri,2019, Geographiy of Helth. kailash pustak sadan.bhopal
2.	Banerjee, B. and Hazra J Geo-Ecology of Cholera in West Bengal. University of Calcutta, Calcutta 1980
3.	Cliff, A. and Haggett, P.: Atlas of Disease Distribution Basil Blackwell, Oxford, 1989
4.	Digby, A. and Stewart, L. (eds.) Gender, Health and Welfare. Routledge, New York, 1996
5	Hazra, J. (ed): Health Care Planning in Developing Countries. University of Calcutta, Calcutta, 1997

On-line resources to be used if available as reference material

On-line Resources: https://en.wikipedia.org/wiki/Geography_of_India

https://en.wikipedia.org/wiki/Geography_of_India
https://en.wikipedia.org/wiki/Climate_of_India
https://www.thrillophilia.com/wildlife-india

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Course Code	Skill-Enhancement	Title of the Course	Remote Sensing Techniques	
Total Credits of the Course	02	Hours per Week	02	UA03SEGEO01

Course Objectives:	After the completion of course, the students will have ability to: 1.To introduce to the students the basic principles of Remote Sensing. 2.To indicate the methods of visual and digital interpretations of satellite imageries. 3.To outline the application value of remote sensing.

Course Content

Unit	Description	Weight age%
1.	**Historical Development of Remote Sensing** Relevance of Remote Sensing in Geography, Concepts & Basic Requirements of Satellite Remote Sensing Platforms & Sensors, Orbital Characteristics, Whiskbroom Scanners, Push broom Scanners, & Data Products. **Image Processing** Visual & Digital, Significance of Secondary / in-situ data, Ground Truth, Verification; Preprocessing / Rectification and Restoration. Data Enhancement, Spectral Pattern Recognition; Microwave Sensing. SLAR Imageries; Elements of Passive. Microwave Sensing; Remote Sensing Applications & Mapping in India: Case Studies (Landaus Planning, Forest Management, Wasteland Management etc.)	50%
2.	**Concept of GIS Maps & Spatial Information** Dynamics and Selection of Spatial Information, Concept of Spatial & Non-Spatial Data; Computer Environment, for GIS (Hardware & Software Requirement) Spatial Data: Raster-Vector Structure- Conversion & Comparison; Elements of GIS: Data Capture, Verification & Processing; Storage &Maintenance Data Manipulation, Analysis, Overlay Analysis. **Integration of GIS; Remote Sensing & GPS Data Application.** Use of Satellite Imagery & other Categories of Maps for GIS(Landaus Planning, Forest Management, Wasteland Management etc)	50%

Teaching-Learning Methodology	ICT, Group Discussion Lecture method, Class room Seminar, quiz

Evaluation Pattern

Sr. No.	Details of the Evaluation	Weight age
1.	Internal Written / Practical Examination (As per CBCS R.6.8.3)	15%
2.	Internal Continuous Assessment in the form of Practical, Viva-voce,	15%

	Quizzes, Seminars, Assignments, Attendance (As per CBCS R.6.8.3)	
3.	University Examination	70%

Course Outcomes: Having completed this course, the learner will be able to	
1.	Appreciate the strength and application of remote sensing.
2.	Prepare the maps based with satellite data to compare with the ground realities.
3.	Classify digital data for the land use/land cover and urban studies
Sr.	References
1.	Campell, J. B. (2003): Introduction to Remote Sensing. 4th edition. Taylor and Francis, London.
2.	Chaunial, D. D. (2004): Remote Sensing and Geographical Information System(in Hindi), ShardaPustakBhawan, Allahabad
3.	Cracknell, A. and Ladson, H. (1990): Remote Sensing Year Book. Taylor and Francis, London.
4.	Curran, P.1. (1985): Principles of Remote Sensing. Longman, London.
5.	Dr. N. G. Dixit (2012) Man and Environment, Arunoday Publication, Ahmadabad (Gujarati).
On-line resources to be used if available as reference material	
On-line Resources: https://en.m.wikipedia.org/wiki/Ecosystem_ecology https://en.m.wikipedia.org/wiki/Biodiversity https://en.m.wikipedia.org/wiki/Physical_impacts_of_climate_change	