

Course Objectives:

1. To study the basic concepts and theories of Geomorphology.
2. To learn the utility and applications of Geomorphology in different areas and environment.
3. To understand the dynamic nature of the Earth's surface, various processes, and landforms.

	Semester – III	Lectures
Unit 1	Introduction to Geomorphology	07
	A. Definition, Nature and Scope B. Geological time scale and Evolution of Earth C. Applied Geomorphology	
Unit 2	Interior of the Earth	06
	A. Interior of the Earth: Composition & Structure B. Wegener's Continental Drift Theory C. Crustal movements: Folding and faulting and types	
Unit 3	Diastrophic Movement	07
	A. Theory of Plate tectonics (Plate boundaries and associated landforms) B. Earthquakes and Volcanism : types, causes and effects	
Unit 4	Geomorphic Processes	10
	A. Rocks: origin and classification of rocks B. Weathering: Definition and types C. Mass movement: Meaning and types D. Erosional and depositional landforms: River and Sea waves	

Course Outcomes:

Students will be able to:

1. Learn the fundamental concepts, processes, theories, and changing nature of the subject.
2. Acquaint with geological time scale and applicability of geomorphologic knowledge.
3. Understand the structure and composition of interior of the earth.
4. learn the mechanisms of plate movement and landforms associated with it.
5. Classify the rocks on the basis of origin and classification.
6. Relate the weathering process and their types.

References:

1. Conserva, H. T. (2004). *Illustrated Dictionary of Physical Geography*, AuthorHouse, USA.

2. Gabler, R.E., Petersen, J.F. & Trapasso, L.M. (2006). *Essentials of Physical Geography* (8th Edition), Brooks/Cole Pub. Co., USA.
3. Husain, M. (2001). *Fundamentals of Physical Geography*, Rawat Publication, Jaipur.
4. Kale, V. S., & Gupta, A. (2010). *Introduction to Geomorphology*. Universities Press. Hyderabad.
5. Monkhouse, F.J. (1996). *Principles of Physical Geography*, Hodder and Stoughton, London.
6. Robinson, H. (1969). *Morphology and Landscape*, University Tutorial Press Ltd, London.
7. Siddhartha, K. (2001). *The Earth's Dynamic Surface*, Kishore Publications Pvt. Ltd, New Delhi.
8. Singh, S. (2002). *Geomorphology*, Prayag Pustak Bhawan. Allahabad.
9. Strahler, A. H., & Strahler, A. N. (1992). *Modern Physical Geography*, John Wiley and Sons. New Jersey.

Credits: 02

Exam scheme: CIE-20 Marks

Total Practical: 15

ESE-30marks

Course objectives:

1. Develop practical skills in measuring and converting geographical areas using different methods.
2. Provide an understanding of gradient representation and profiling techniques for landforms.
3. Introduce students to drainage basin analysis, watershed delineation, and drainage network parameters.
4. Equip students with the ability to analyze stream networks and hydrological characteristics using Strahler's method.
5. Enhance fieldwork experience through excursions and hands-on training in GPS-based location mapping.

	Semester III	No. of practical
Unit 1	Measurement and Conversion of area	2
	A. Example on measurement of area (Circle, Square, Rectangle, Triangle, Uneven shape: area by Grid Square Method) B. Conversion of area (hector into Acer, Square km into square meter)	
Unit 2	Gradient and Profile	5
	A. Introduction to Gradient, Methods of representing gradient (By fraction, percentage and degrees) B. Introduction to Profile i. Cross Profile: Drawing and description of a regional cross profile with proper vertical exaggeration ii. Longitudinal Profile: Drawing and description of longitudinal profile of a river	
Unit 3	Drainage Basin and Drainage network analysis	6
	A. Introduction to watershed/ drainage basin, types of drainage pattern B. Delineation of Watershed/Drainage basin i. 3rd to 5th order basin delineation from Toposheet C. Measurement of basin perimeter, shape and area D. Linear aspects of profile analysis i. Stream ordering and Numbering using Strahler's	

	method ii. Calculation of drainage density, stream frequency and bifurcation ratio iii. Measurement and calculation of Stream length, Stream length ratio	
Unit 4	Excursion/ Field visit-report writing	2
	A. Visit to any geographically significant location anywhere in the country for all the students together B. Location Mapping using GPS	

Course outcome:

Students will be able to:

1. Accurately measure and convert different land areas using standard geographical techniques.
2. Represent gradients and construct cross and longitudinal profiles for terrain analysis.
3. Delineate watersheds and analyze drainage networks using topographical maps.
4. Perform hydrological calculations such as drainage density, stream frequency, and bifurcation ratio.
5. Gain practical exposure to field mapping, GPS usage, and report writing through excursions.

References:

1. Dhruvanarayana, V. V., Sastry, G., & Patnik, U. S. (2006). *Watershed management*.
2. Kakde, B. K. (2004). *Watershed manual – A guide for watershed development practitioners and trainers*. BAIF Development Research Foundation, Pune.
3. King, C. A. M. (1966). *Techniques in geomorphology*. Edward Arnold, London.
4. Miller, A. (1953). *The skin of the Earth*. Methuen & Co. Ltd., London.
5. Monkhouse, F. J., & Wilkinson, H. R. (1976). *Maps and diagrams*. Methuen & Co.
6. Rajvir, S. (2008). *Watershed planning and management* (2nd ed.). Yash Publishing House, Bikaner, India.
7. Savindra, S. (2002). *Geomorphology*. Prayag Pustak Bhawan, Allahabad.
8. Strahler, A. N. *Physical geography*.
9. Suresh, R. (2006). *Soil and watershed conservation engineering* (2nd ed.). Standard Publication Distributors, Delhi.
10. Wilson, J., & Gallant, J. (2000). *Terrain analysis: Principles and applications*. John Wiley and Sons, New York.

Progressive Education Society's
Modern College of Arts, Science and Commerce (Autonomous), Shivajinagar, Pune 05
S. Y. B. Sc. Geography (Open Elective)
(2024 Course under NEP 2020)
Course Code: 24ScGeoU3401

Title of the Course: Geography of Tourism-I

Credits: 02

Total Lectures: 30

Examination Scheme: CIA: 20 Marks

End-Sem: 30 Marks

Course Objectives:

1. To introduce students to the fundamental concepts of tourism geography, including its nature, scope, and importance.
2. Develop an understanding of the relationship between tourism and various geographical, cultural, and environmental factors.
3. Familiarize students with different types of tourism, including Geo-Tourism, Agro-Tourism, Eco-Tourism, and Heritage Tourism.
4. Classify tourism based on nationality, travel time, travel distance, number of tourists, and purpose.
5. Provide insights into the interdisciplinary nature of tourism geography and its role in global and regional economies.

	Semester – III	Lectures
Unit 1	Introduction to Tourism Geography	10
	A. Definition of Tourism Geography, Tourists and Tourism B. Nature of Tourism Geography: Uniqueness, Diversity, Recreational, Dynamic, Interdisciplinary, Non-Productive, Seasonal C. Scope of Tourism Geography i. Tourism as a Basic Need of Mankind ii. Tourism and Transportation iii. Natural environment and Tourism iv. Culture and Tourism v. Religion and Tourism D. Importance of Tourism	
Unit 2	Types of Tourism	10
	A. Types of Tourism: Geo-Tourism, Agro- Tourism, Heritage Tourism, Adventure Tourism, Religious Tourism, Health Tourism, Sport Tourism, Eco-tourism	
Unit 3	Classification of Tourism	10
	Classification based on: A. Nationality: International and National B. Travel Time: Long Haul and Short Haul C. Travel Distance: Global, National, Regional and Local D. Number of Tourists: Groups, Family Members and Individual	

	E. Purpose: Religious, Recreation, Heritage, Adventure, Nature, Health, Sports	
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Course Outcomes:

Students will be able to:

1. Define and explain the key concepts of tourism geography, including tourists and tourism.
2. Analyze the nature and scope of tourism geography and its impact on the environment, culture, and economy.
3. Differentiate between various types of tourism and their significance in different geographical contexts.
4. Classify tourism based on different criteria such as nationality, travel distance, and purpose.
5. Understand the importance of tourism as a global phenomenon and its role in economic and social development.

References:

1. Bhatia, A. K. (Ed.). (2002). *Tourism Development: Principles and Practices*. Sterling Publisher Ltd.
2. Das, M. (1983). *India: A Tourist Paradise*, Facet Books International
3. Dixit, N. K. (2010). *Tourism Geography*. Vista International Publication Delhi.
4. Gitanjali, & Chaudhary, G. P. R. (2010). *Tourism Geography*. Centurian Press.
5. Gupta, V. K. (2013). *Tourism of India*.
6. Hudman, L. E. (2003). *Geography of Travel and Tourism*.
7. Kaul, R. N. (Ed.). (1985). *Dynamics of Tourism*. Sterling Publisher Ltd.
8. Kumar, M. (1952). *Tourism Today: An Indian Perspective*.
9. Mathieson, A., & Wall, C. (1982). *Tourism: Economic, Physical, and Social Impact*. Logman.
10. Pearce, D. (1987). *Tourism Today: A Geographical Analysis*.
11. Robinson, H. (1996). *A Geography of Tourism*.
12. Seth, P. N. (1985). *Successful Tourism Management*. Sterling Publisher Ltd.
13. Sharma, A. (2008). *Tourism Development*. RBSA Publishers.
14. Singh, S. N. (1985). *Geography of Tourism and Recreation*.
15. Smith, S. L. J. (1989). *Tourism Analysis*, Longman and New York.
16. Suryawanshi, R. (2012). *Assessment of Potentials for Eco-tourism*. Lambart Publication.
17. Thakur, M. T. (2008). *Ecotourism and Sustainable Tourism*. Omega Publications.

Course Objectives:

1. To Study the basic concepts in Climatology.
2. To learn the applications of Climatology in different areas and environment.
3. To understand the dynamic nature of the Earth's atmosphere, various processes, and associated phenomena.

	Semester – IV	Lectures
Unit 1	Introduction to Climatology	05
	A. Definition, Nature and Scope B. Weather and Climate, elements of weather and climate C. Applied Climatology	
Unit 2	Earth's Atmosphere	08
	A. Origin of the atmosphere B. Structure and Chemical Composition C. Ionosphere and Ozone depletion	
Unit 3	Insolation	08
	A. Definition and process of heat transfer: conduction, convection and radiation B. Heat budget of the Earth C. Factors affecting of distribution of temperature D. Lapse rate and inversion of temperature	
Unit 4	Atmospheric Pressure and Wind System	09
	A. Atmospheric Pressure and measurement B. Vertical and horizontal distribution of pressure C. Wind and measurement D. Formation and Factors affecting wind system E. Types of Winds: Planetary, Seasonal and Local Winds F. Formation of pressure system belts and their relation with winds	

Course Outcomes:

Students will be able to:

1. Define the field of Climatology and its essential principles.
2. Distinguish between weather and climate also familiarize themselves with the applicability of climatological knowledge.
3. Understand the functioning of atmospheric systems in real time and analyze the mechanisms that control these processes.
4. Critically analyze the role of ionosphere and ozonosphere for the survival of life on earth.
5. Perceive the mechanism of heat transfer and factors affecting horizontal and vertical distribution of temperature.
6. Analyze the role of atmospheric pressure belts in the pattern of wind movement.

7. Distinguish between different types of winds.

References:

1. Conserva, H. T. (2004). *Illustrated Dictionary of Physical Geography*, Author House, USA.
2. Critchfield, H.J. (1997). *General Climatology*, Prentice Hall of India Pvt. Ltd, New Delhi.
3. Lal, D. S. (1998). *Climatology*. Chaitanya Publishing House. Allahabad.
4. Lutgens, F.K. & Tarbuck, E.J. (2007). *The Atmosphere: An Introduction to Meteorology*. Pearson Prentice Hall, New Jersey.
5. Oliver, John E. & Hidore, John J. (2003). *Climatology: An Atmospheric Science*. Pearson Education. Delhi.
6. Singh, S. (2005). *Climatology*, Prayag Pustak Bhawan, Allahabad.
7. Strahler, A.A. & Strahler, A. N. (2002). *Physical Geography: Science and Systems of the Human Environment*, John Wiley and Sons, New Jersey.
8. Trewartha, G. T. (1980). *An Introduction to Climate*, McGraw Hill Company, New York.

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S.Y.B.Sc. Geography (Minor)
(2024 Course under NEP 2020)
Course Code: 24ScGeoU4302
Title of the Course: Lab Course on 24ScGeoU4301 (Fundamentals of Climatology)

Credits: 02

Examination Scheme: CIA: 20 Marks

Total Practicals: 15

End-Sem : 30 Marks

Course objectives:

1. To provide hands-on experience in measuring and analyzing weather elements using scientific notation and metric units.
2. To Develop skills in temperature conversion, humidity calculation, and temperature lapse rate plotting.
3. To Enable students to construct and interpret various climatic diagrams, including climatographs, wind roses, and water budget charts.
4. To Familiarize students with meteorological symbols, isobaric patterns, and the interpretation of weather maps.
5. To Enhance practical knowledge through field visits to weather stations and develop report-writing skills.

	Semester IV	No. of practical
Unit 1	Measurements of Weather Elements	5
	A. Scientific notation & the metric system of unit B. Calculation of temperature conversions in Fahrenheit, Celsius, and Kelvin scales C. Calculation of relative humidity. D. Calculation and plotting of temperature lapse rate	
Unit 2	Climatic Diagrams	2
	Preparation of climatic diagrams A. Climatograph B. Simple wind rose	
Unit 3	Weather Map	6
	A. Introduction to weather maps and IMD. B. Meteorological Department (IMD) weather sign and symbols C. Drawing of isobaric patterns and associated weather- cyclone, anticyclone, ridge, trough, wedge, secondary depression, col. D. Reading of weather map :- summer, rainy and winter	
Unit 4	Excursion/ Field visit-report writing	2
	A. Visit to One day visit to nearby weather station of IMD and preparation of report	

Course outcome:

Students will be able to:

1. Accurately measure and analyze weather elements using standard meteorological methods.
2. Convert temperature units across different scales and calculate essential climatic parameters like relative humidity and temperature lapse rates.
3. Construct and interpret various climatic diagrams, aiding in the understanding of regional and global climate patterns.
4. Read and analyze weather maps, identify meteorological symbols, and interpret synoptic weather conditions.
5. Gain practical exposure to meteorological instruments and data collection through field visits, improving observational and reporting skills.

References:

1. Bygott, J. (1955). *Map work and practical geography* (5th ed.). University Tutorial Press, London.
2. Mishra, R. P., & Ramesh, A. (2000). *Fundamentals of cartography*. Concept Publishing Company, New Delhi.
3. Monkhouse, F. J., & Wilkinson, H. R. (1971). *Maps and diagrams*. Methuen and Co. Ltd., London, UK.
4. Monkhouse, F. X. J., & Wilkinson, H. R. (1989). *Maps & diagrams*. B.I. Publications, Bombay.
5. Robinson, A. H., & Sleep, R. D. (1969). *Elements of practical geography*. John Wiley Publications, New York.
6. Singh, G. (1996). *Map work and practical geography*. Vikas Publishing House Pvt. Ltd., New Delhi.
7. Singh, G. (2005). *Map work and practical geography*. Vikas Publishing House Pvt. Ltd., New Delhi.
8. Singh, L. R., & Singh, R. (1973). *Map work and practical geography*. Central Book Depot, Allahabad.
9. Singh, R. C., & Dutta. (1993). *Elements of practical geography*. Kalyani Publications, New Delhi.

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S. Y. B. Sc. Geography (Open Elective)
(2024 Course under NEP 2020)
Course Code: 24ScGeoU4401

Title of the Course: Geography of Tourism-II

No. of Credits: 02

Total Lectures: 30

Examination Scheme: CIA: 20 Marks

End-Sem: 30 Marks

Course Objectives:

- 1) To familiarize the students with those aspects of tourism which have a relation with the subject matter of Geography
- 2) To introduce the students with the principles of Tourism development
- 3) To acquaint the students with the role of infrastructure and accommodations in tourism development
- 4) To orient the students to the logistics of tourism industry and the role of tourism in regional development.
- 5) To aware the students with the utility and application of Tourism

	Semester – IV	Lectures
Unit 1	Determinants of Tourism Development	10
	A. Physical: Relief, Climate and Forest B. Socio-Cultural: Religious, Historical and Sports C. Political: Policies, Safety of Tourists and Accessibility	
Unit 2	Role of Infrastructure in Tourism Development	10
	A. Mode of Transportation: Road, Railways, Waterways and Airways B. Communication: i. Role of Guide in tourism development ii. Internet/Telephone/Mobile/TV iii. Electronic and Printing Media C. Travel and Tourism Agencies	
Unit 3	Accommodation	10
	Types of Accommodation A. Private: Hotels, motels, Inn B. Govt. accommodation: Tourist home, Guest House, Rest house, Youth Hostel, Tents, Caravans and Bed & Breakfast C. Rail Yatri bhavan D. House boats E. Dharmashala	

Course Outcomes:

Students will able to

1. Identify the various factors affecting the Tourism development.
2. Understand the significance of various mode of transportation in the growth of tourism.

3. Analyze the role of guide, travel and tourism agencies in tourism development
4. Explain the various types and characteristics of accommodation in tourism sector
5. Evaluate the role of communication and marketing strategies in tourism promotions at local, regional and national level.

References:

1. Bhatia, A. K. (Ed.). (2002). *Tourism Development: Principles and Practices*. Sterling Publisher Ltd.
2. Das, M. (1983). *India: A Tourist Paradise*, Facet Books International
3. Dixit, N. K. (2010). *Tourism Geography*. Vista International Publication Delhi.
4. Gitanjali, & Chaudhary, G. P. R. (2010). *Tourism Geography*. Centurian Press.
5. Gupta, V. K. (2013). *Tourism of India*.
6. Hudman, L. E. (2003). *Geography of Travel and Tourism*.
7. Kaul, R. N. (Ed.). (1985). *Dynamics of Tourism*. Sterling Publisher Ltd.
8. Kumar, M. (1952). *Tourism Today: An Indian Perspective*.
9. Mathieson, A., & Wall, C. (1982). *Tourism: Economic, Physical, and Social Impact*. Logman.
10. Pearce, D. (1987). *Tourism Today: A Geographical Analysis*.
11. Robinson, H. (1996). *A Geography of Tourism*.
12. Seth, P. N. (1985). *Successful Tourism Management*. Sterling Publisher Ltd.
13. Sharma, A. (2008). *Tourism Development*. RBSA Publishers.
14. Singh, S. N. (1985). *Geography of Tourism and Recreation*.
15. Smith, S. L. J. (1989). *Tourism Analysis*, Longman and New York.
16. Suryawanshi, R. (2012). *Assessment of Potentials for Eco-tourism*. Lambart Publication.
17. Thakur, M. T. (2008). *Ecotourism and Sustainable Tourism*. Omega Publications.