

# **THM-103    PHYSICAL GEOGRAPHY (THEORY)    (02 Credit Hrs)**

## **GENERAL COURSE DESCRIPTION:**

This course examines the concepts and processes of physical geography that govern the function of the atmosphere, lithosphere, hydrosphere, and biosphere using an earth-systems approach

## **LEARNING OUTCOMES:**

Upon the successful completion of this course, students will be able to

- Explain physical geography processes and concepts in all four major spheres of the Earth using an earth-systems approach;
- Demonstrate foundational knowledge in physical geography in preparation for upper level and advanced topics in Geography and other subjects;
- Evaluate the impact of human activities on the physical environment and how physical geography can be applied to address real world issues;

## **CONTENTS**

### **Unit 1. INTRODUCTION TO PHYSICAL GEOGRAPHY**

- 1.1. Introductory Concepts of Physical Geography
- 1.2. Spheres, Scales, Systems, And Cycles
- 1.3. Weather and Climate System
- 1.4. The Earth as Rotating Planet
- 1.5. The Global Energy System

### **Unit 2. THE EARTH-ATMOSPHERE INTERFACE**

- 2.1 Earth History
- 2.2 Earth Materials and Cycle of Rock Change
- 2.3 The Structure of the Earth
- 2.4 The Lithosphere and Tectonic Systems
- 2.5 Volcanic Activity and Earth Quakes
- 2.6 Landforms of Tectonic Activity (Folds and Faults)
- 2.7 Weathering and Mass Movement
- 2.8 Earthquakes, And Volcanism

### **UNIT 3. GLOBAL CLIMATE AND WEATHER**

- 3.1 The Global Scope of Climate
- 3.2 Weather Systems
- 3.3 Formation of climate and Classification of Climatic Regions
- 3.4 Climate Change
- 3.5 Global Warming and Green House Effect

### **UNIT 4. SYSTEMS OF LANDFORM EVOLUTION**

- 4.1 Weathering and Mass Wasting
- 4.2 Rivers Systems and Fluvial Landscapes
- 4.3 Aeolian Landforms
- 4.4 Karst Topography
- 4.5 Glacier Systems and Ice Age

### **UNIT 5. Hydrosphere**

- 5.1 Configuration of ocean floor, deposits, composition, temperature
- 5.2 Salinity of oceanic water
- 5.3 Movement of the oceanic water, waves, currents and tides.

## UNIT 6. CYCLES OF SOIL AND BIOSPHERE

- 6.1 Soil Development and Global Scope of Soil
- 6.2 Energy Flow in Ecosystems and Biochemical Cycles in The Biosphere
- 6.3 Biogeographic Processes
- 6.4 Global Ecosystems and Biomes

### TEACHING – LEARNING STRATEGIES

- Lecture based examination
- Presentation/seminars
- Class discussion
- Quizzes

### ASSIGNMENTS – TYPE AND NUMBER WITH CALENDAR

It is continuous assessment. The weightage of Assignments will be 25% before and after midterm assessment. It includes:

- classroom participation,
- attendance, assignments and presentation,
- homework
- attitude and behavior,
- hands-on-activities,
- short tests, quizzes etc.

### ASSESSMENT AND EXAMINATIONS:

Sr. No.	Elements	Weightage	Details
1.	Mid Term Assessment	35%	It takes place at the mid-point of the semester
2.	Formative Assessment	25%	It is continuous assessment. It includes: classroom participation, attendance, assignments and presentation, homework, attitude and behavior, hands-on-activities, short tests, quizzes etc.
3.	Final Assessment	40%	It takes place at the end of the semester. It is mostly in the form of a test, but owing to the nature of the course the teacher may assess their students based on term paper, research proposal development, field work and report writing etc.

### RECOMMENDED TEXT BOOKS / SUGGESTED READINGS

1. Strahler, A. (2013) Introduction to Physical Geography, John Wiley & Sons, New Jersey.
2. Strahlar, A. N., Strahlar, A. H. (2004) Physical Environment, John Wiley, New York.
3. Stringer, E. T. (2004) Modern Physical Geography, John Wiley, New York.
4. Thornbury, W. D. (2004) Principles of Geomorphology, John Willy & Sons, New York.
5. Thurman, H. V. & Trujillo, A. P. (2013) Essentials of Oceanography, Prentice-Hall, Inc, New York

## **THM-103 PHYSICAL GEOGRAPHY (PRACTICAL) (01 Credit Hrs)**

### **GENERAL COURSE DESCRIPTION:**

This course examines the concepts and processes of physical geography that govern the function of the atmosphere, lithosphere, hydrosphere, and biosphere using an earth-systems approach

### **LEARNING OUTCOMES:**

Upon the successful completion of this course, students will be able to

- Explain physical geography processes and concepts in all four major spheres of the Earth using an earth-systems approach;
- Demonstrate foundational knowledge in physical geography in preparation for upper level and advanced topics in Geography and other subjects;
- Evaluate the impact of human activities on the physical environment and how physical geography can be applied to address real world issues;

## **CONTENTS**

### **Unit 1. Introduction to Physical Geography**

- 1.1 Comprehension of Atlases, Map Reading Skills, Location Of Places and Features
- 1.2 Methods of Finding Direction
- 1.3 Types of Scale
- 1.4 Distance Calculation of Area on the Map; Symbolization Process
- 1.5 Work on the Contour Line, Drawing of Valley Profiles, Calculation of Gradient.

### **Unit 2. THE EARTH-ATMOSPHERE INTERFACE**

- 2.1 Identification of Soil, Rocks and Minerals and their types
- 2.2 Geomorphic Profiles
- 2.3 Use of Remote Sensing Techniques for the interpretation of landforms and geomorphic features
- 2.4 Study and identification of landforms using Satellite imageries and Topographic Sheets

### **UNIT 3. GLOBAL CLIMATE AND WEATHER**

- 3.1 Weather map interpretation and analysis.
- 3.2 Observation of weather elements
- 3.3 Methods of Showing Relief
- 3.4 Observation and recording of weather data from a mini weather station.

### **UNIT 4. Hydrosphere**

- 4.1 Drawing features of the Ocean floor
- 4.2 Mapping of the ocean currents, tides and associated phenomena.

### **TEACHING – LEARNING STRATEGIES**

- Lecture based examination
- Presentation/seminars
- Class discussion
- Quizzes

### **ASSIGNMENTS – TYPE AND NUMBER WITH CALENDAR**

It is continuous assessment. The weightage of Assignments will be 25% before and after midterm assessment. It includes:

- classroom participation,
- attendance, assignments and presentation,
- homework
- attitude and behavior,
- hands-on-activities,
- short tests, quizzes etc.

#### **ASSESSMENT AND EXAMINATIONS:**

<b>Sr. No.</b>	<b>Elements</b>	<b>Weightage</b>	<b>Details</b>
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3.	Final Assessment	40%	It takes place at the end of the semester. It is mostly in the form of a test, but owing to the nature of the course the teacher may assess their students based on term paper, research proposal development, field work and report writing etc.

#### **RECOMMENDED TEXT BOOKS / SUGGESTED READINGS**

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