**Physical Geography**

**Course Code: GIS-121**

Credit Hours: 3 (2+1)

Prerequisites: Nil

**Learning Objectives:**

* To create an understanding about the characteristics of four spheres of the earth, and the processes which are bringing changes in these spheres.

**Learning Outcomes**

After studying this course, the students will be able to: -

1. Define and describe the four spheres of the earth

2. Understand and apprehend the physical processes occurring on the earth.

3. Evaluate the importance of physical Geography in natural resource management

**Course outline:**

* Introduction: Definition, scope, and major branches

**Lithosphere**

* Plate tectonics, mountain building forces
* Internal structure of earth
* Rocks–origin, formation and types: Igneous, Sedimentary and Metamorphic Rocks
* Geomorphic processes: Terrestrial and extra-terrestrial processes
* An overview of the Geomorphic agents and their Landforms

**Atmosphere**

* Composition and structure of Atmosphere
* Atmospheric temperature and pressure,
* Global circulation and wind systems
* Cyclones and other Atmospheric disturbances
* Atmospheric moisture and precipitation
* Air masses and fronts

**Hydrosphere**

* Hydrological cycle
* Ocean composition, morphology
* Temperature, salinity and other characteristics of ocean water
* Movements of the ocean water; waves, currents and tides

**Biosphere**

* Eco-systems
* Formation and types of soils

**Lab. Work:**

* Study and identification of landforms using Satellite imageries and Topographic Sheets.
* Observation and recording of weather data from a weather station.
* Isotherms, isobars, climographs, meteorological instruments, study of weather maps.
* Construction of maps and diagrams, identification of rocks and minerals, methods of showing relief: contours (pattern, cross section).

**Field visits:**

* Visit to national park/biosphere reserves, Soil Survey of Pakistan, Geological Survey of Pakistan, (any one of them)

**Teaching Methodology**

* Lecturing
* Written Assignments
* Field Visits

**Assessment**

Mid Term (40%)

* Written (Long Questions, Short Questions, MCQs) 50%
* Presentation 20%
* Assignments 20%
* Report Writing 10%

**Final Term (60%)**

* Written (Long Questions, Short Questions, MCQs) 50%
* Presentation 20%
* Assignments 20%
* Report Writing 10%

**Books Recommended:**

1. King, C. A. M. (1980). Physical Geography, Basil Blackwell, Oxford.

2. Mcliveen, J. F. R. (1992). Fundamentals of Weather and climate, Prentice Hall, New Jersey.

3. Monkhouse, F. J. (1996). Principles of Physical Geography, Hodder & Stoughton, London.

4. Peterson, J. F., Sack, D. & Gabler, R. E. (2011). Physical Geography, Brooks Cole.

5. Scott, R. C. (1996). Introduction to Physical Geography, West Publishing Co, New York.

6. Small, R. J. (1989). Geomorphology and Hydrology, Longman, London.

7. Strahler, A. (2013). Introduction to Physical Geography, John Wiley & Sons, New Jersey.

8. Strahlar, A. N., Strahlar, A. H. (2004). Physical Environment, John Wiley, New York.

9. Stringer, E. T. (2004). Modern Physical Geography, John Wiley, New York.

10. Thornbury, W. D. (2004). Principles of Geomorphology, John Willy & Sons, New York.

11. Thurman, H. V. & Trujillo, A. P. (2013). Essentials of Oceanography, Prentice-Hall, Inc, New York.

12. Tarbuck, J.E and Lutgens, K.F. 2000. Earth Science, 9 Editions, Prentice Hall: New Jersey.

13. Christopherson, W.R. 1997. Geosystems: An Introduction to the physical Geography, 3 Edition, Prentice Hall: New Jersey.

14. De Blij, H.J. 1995. The Earth: An Introduction to its Physical and Human Geography, 4 Edition, John Wiley: New York.

15. Lutgens, K.F and Tarbuck, J.E. 1995. The Atmosphere, 6 Editions, Prentice Hall: New Jersey.

16. Scott, C.R. 1989. Physical Geography, West Publication Company: St. Paul.

17. Strahler, N. Arthur and Strahler, H. Alan, 1987. Modern Physical Geography, 3 Edition John Wiley: New York.

18. McKnight, L.T. 1987. Physical Geography: Landscape Appreciation, 2 th rd th th rd nd Edition, Prentice-Hall: New Jersey.

19. Hamblin, K. W. 1985. The Earth’s Dynamic Systems, 5 edition, Macmillan Publishing Company & Collier Macmillan Publishers: New York.