Course title: **Physical Geography**  Full Marks: 100

Course No: Geo. Ed. 416 Pass Marks: 35

Nature of the course: Theory Periods per week: 6

Level: B.Ed. Total Periods: 150

Year: First Time per period: 55 minutes

**1. Course Description**

This is a specialization course designed for the students of Four Year B. Ed. Program. This course is designed to orient the students to the various aspects of physical geography. It aims to provide them mainly with a comprehensive knowledge of our universe, planet earth and its landforms and atmosphere.

**2. General Objectives**

After the completion of this course the students will be able to:

* acquire knowledge on our solar systems and planet earth
* describe the nature, scope and importance of physical geography
* identify the sub-surface and surface forces of the earth and their processes of operating system
* explain major landforms and process of their formation and distribution
* describe the atmosphere, weather and climates, climatic components and global distribution of climate
* identify natural vegetation and soils of the world and their distribution
* develop general idea on oceanic landforms and water circulation systems
* acquaint with teaching materials and methods use in physical geogrpahy

**3. Specific Objectives and Contents**

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| **Specific Objectives** | **Contents** |
| * Clarify the meaning and definitions of physical geography. * Describe the nature and scope of physical geography. * Explain the importance of physical geography. | **Unit I: Introduction to Physical Geography (4)**   * 1. Meaning and definitions   2. Nature and scope   3. Importance |
| * Explain the origin of the universe, planets and satellites with the support of major hypotheses * Discuss about the earth, its shape and size, graticules, time zone, location and rotation and revolution * Identify the determinants and methods of calculation of the latitude, longitude, antipode, and local and standard time * Discuss about the interior structure of the earth and their layers * Provide knowledge about the rocks, its formation, types and major characteristics | **Unit II: Understanding Our Universe and Earth (30)**   * 1. Our Universe      1. Origin of solar system, planets and satellite   Monistic hypotheses (Kant and Laplace), Dualistic hypotheses (Jeans, Jeffrey and H. N Russel), Modern hypotheses ( Hoyle, Lyttleton and C. V. Weitzsaker ) and Big Bang Model   * 1. Our Planet Earth   2.2.1 Shape and size;  2.2.2 Concept of graticules and time  2.2.3 Determination of latitude, longitude, time and antipode  2.2.3 Location (absolute and relative)  2.2.4 Rotation and Revolution (day, night, seasons and year)   * 1. Interior of the earth, its structure and layers   2. Rocks   2.4.1 Types of rocks and mode of formation  2.4.2 Characteristics of major rocks |
| * Discuss about the endogenetic forces of the earth * Provide the concept of diastrophism, its process of operation and major landforms associated with it * Describe major theories related with orogenesis * Explain the rapid forces and their types and associated landforms | **Unit III: Endogenetice Forces of the Earth (27)**   * 1. Diastrophism      1. Epeirogenetice forces (Continent and ocean building) and associated features      2. Orogenetic (Mountain building)      3. Folding and faulting and associated landforms   2. Theories of orogenesis      1. Convectional current theory of A. Holmes      2. Geosyncline theory of Kober      3. Continental drift theory of A. Wegner      4. Plate-tectonics of Herry H. Hess and others   3. Rapid forces and associated landforms      1. Volcano      2. Earthquake |
| * Explain the exogenetic forces and associated landforms * Discuss genetic (agent related) landforms associated with the exogenetic forces with reference to the process of erosion, transportation and deposition | **Unit IV: Exogenetic Forces and Associated Landforms (36)**     * 1. Gravity and landforms (Weathering, Mass movement)   2. Glacial, peri-glacial and glacio-fluvial   3. Fluvial   4. Wind (Aeolian)   5. Karst (Underground Water)   6. Coastal wave/Marine landforms |
| * Explain the composition of atmosphere. * Describe the process of heating of the earth through solar insolation. * Illustrate the pattern of vertical and horizontal distribution of temperature. * Describe the pattern of general circulation of atmosphere. * Explain air masses and fronts * Describe atmospheric humidity and condensation with examples * Discuss major types of clouds and their characteristics. * Explain the classification of world climate by Koppen and Thornthwaite. | **Unit V: Atmosphere (30)**   * 1. Composition of atmosphere   2. Solar insolation and atmospheric temperature      1. Vertical and horizontal distribution of temperature   3. General circulation of atmosphere      1. Temperature and pressure belt      2. Air masses and fronts   4. Atmospheric humidity and condensation      1. Forms of precipitation      2. Clouds, major types and their characteristics   5. Weather and climate      1. General classification of world climate      2. Classification of climate proposed by Koppen and Thornthwaite |
| * Discuss the process of soil formation. * Explain soil profiles. * Classify soil into major types and show their distribution on the world map. | **Unit VI: Soil (7)**   * 1. Process of soil formation   2. Soil profile   3. Major soil types and their world distribution |
| * Introduce the concept of plant communities * Describe the major factors controlling natural vegetation * Explain the major types of natural vegetation and show their distribution on the world map | **Unit VII: Natural Vegetation (6)**   * 1. Plant communities   2. Factors controlling natural vegetation   3. Major types of natural vegetation and their world distribution |
| * State the concept of ocean floor * Describe the salinity and temperature of ocean water * Explain general circulation of ocean water | **Unit VIII: Ocean (6)**   * 1. Introduction to ocean floor   2. Salinity and temperature of ocean water   3. Circulation of ocean water and ocean current |
| * Identify methods for teaching geomorphology for school and college level * Collect and prepare materials for teaching geomorphology * Develop skills for mapping local landforms and their presentation | **Unit IX: Physical Geography in Classroom Teaching (4)**  9.1 Methods of teaching physical geography at school and college level  9.2 Collection of resources  9.3 Preparation of materials/aids (visual/audiovisual)  9.4 Mapping of local landforms and their presentation |

*Note: The figures in the parentheses indicate the approximate periods for the respective units.*

**4. Instructional Techniques**

Two types of instructional techniques have been recommended. The first group comprises common techniques applicable to most of the unit. The second group includes instructional techniques to be applied to teach specific unit.

**4.1 General Instructional Techniques**

* Lecture, discussion, question-answer, student interaction, paper preparation and presentation by the students in selected topics
* Group work on geographical issues published in the journals and magazines and present reports in class room.
* Preparation of charts and diagrams associated with various landforms.

**4.1 Specific Instructional Techniques**

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| Unit | Instruction methods |
| I | Description with the help of chart showing branches of geography and place of physical geography |
| II | Discussion with the help of map of Solar System or Solar Family and the Google Earth maps and picture, online sources of materials about the Universe, planet earth and interior of the earth.  Presentation of examples of rocks available in the local area and ask students with their characteristics. Carrying students outdoor for collection of rocks and understanding their characteristics |
| III | Discussion with the help of charts and maps of earth, major landforms i.e. Continents, ocean, mountain, plateau and plain. Use of online materials about the volcanic eruptions and land features. Sharing experience of earthquake shaking 2072 Baishak 12 Nepal earthquake and providing examples of building and land cracks. |
| IV | Discussion with the process and forms of major agents i.e. gravity, glacier, running water, wind, karst, coastal wave etc with local examples wherever available with the help of maps, charts and photographs |
| V | Describe with the help of maps and charts including local examples |
| VI | Describing vegetation with pictures and maps and use of online sources of materials |
| VII | Discussion with the help of maps and pictures, use online sources of materials |
| VIII | Discussion with the help of maps and pictures, use online sources of materials |
| IX | Collections of teaching materials from the nearby location and follow practical-cum presentation of the physical geography. Open source google earth maps and physical maps of the world can be used. Atlas, wall-map, topo sheet map and drawings can be used. |

**5. Evaluation**

The students will be evaluated on the basis of the written test, classroom participation, presentation of reports and other classroom activities. But the score obtained will be used only for the feedback purposes. The performance of the students will be evaluated by the annual examination to be held by the Office of the Controller of Examinations. The types and number of questions to be asked in the annual examination are mentioned below:

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| **Types of questions** | **Total questions**  **to be asked** | **Number of questions**  **to be answered and marks allocated** | **Total marks** |
| Group A: Multiple choice items | 20 questions | 20 x 1 mark | 20 |
| Group B: Short answer questions | 8 with 3 'or' questions | 8 x 7 marks | 56 |
| Group C: Long answer questions | 2 with 1 'or' question | 2 x 12 marks | 24 |

**6. Recommended Books and References**

**Recommended Books**

Gupta, A. D. & Kapoor, A. N. (2004). *Principles of physical geography.,* New Delhi: S. Chand and Company Ltd. (For unit VIII)

Huggett, R. J. (2007). *Fundamentals of geomorphology (Second Edition).* New York: Taylor and Francis Group (for Unit IV).

Kaushik, S.D., (1984). *Geographic thought and methodology.* Merath: Rastogi Publication. (For unit V)

Poudel, P. C. (2008). *Bhautik bhoogol ra vyavaharik bhooakriti evam jalavayu Vigya.* Kathmandu: Ratna Pustak Bhandar. (For Units I, II, III &VII)

Shakya, A. M. (1994). *Bhautik bhoogol.* Kathmandu: Curriculum Development Centre, T.U. (For units I-IV, V, VIII-XI & XIII-XVI)

Singh, Savindra, (1992). *Bhautik bhoogol.* Allahabad: Basundhara Prakashan. (For units II-IV, VI, VII, IX, X, XII, XIII, XV and XVI)

**References**

Enayat, A. (1990). *Physical geography.* New Delhi: Kalyani Publishers.

Gautam, D. R. (1991). *Bhautik bhoogol.*  Kathmandu : Ratna Pustak Bhandar.

Khaniya, P. R. (1997). *Bhautik bhoogol*. Kathmandu: Vidyarthi Pustak Bhandar.

Mamoriya, C. B. Nyati, J. L. (1991). *Bhautik Bhoogol ke Tatva*. Agra: Shivalal Agrawal and Company.

Monkhouse, F. J. (1990). *Principles of physical geography*. London: Hodder and Shoughton.

Strahler, A.N. (1975). *Physical geography. New* Delhi: Wiley Eastern Pvt. Ltd.

Dictionary of physical geography, http://www.physicalgeography.net/physgeoglos/z.html