Course Outline for Geography 1

INTRODUCTION TO PHYSICAL GEOGRAPHY

Catalog Description:

GEO 1 - Introduction to Physical Geography
3.00 units
Earth's natural environments, with emphasis on spatial characteristics, change over time, interactions between environmental components, and human-environment interactions. Physical processes, techniques, and tools by which Earth's climates, soils, vegetation, water resources, and land forms are linked into integrated global patterns. Effect of natural environments on human activities and how humans modify environments. Field trips may be included.

Requisites: none

Grading Option: Optional

Discipline:

<table>
<thead>
<tr>
<th>Units</th>
<th>Contact Hours</th>
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<tbody>
<tr>
<td></td>
<td>Week</td>
</tr>
<tr>
<td>Lecture</td>
<td>3.00</td>
</tr>
<tr>
<td>Laboratory</td>
<td>0.00</td>
</tr>
<tr>
<td>Clinical</td>
<td>0.00</td>
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<tr>
<td>Total</td>
<td>3.00</td>
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Prerequisite Skills:
None

Measurable Objectives:

Upon completion of this course, the student should be able to:

1. apply the techniques and tools of geography (e.g., locational reference systems, geographic information systems, maps, remotely-sensed imagery) to the interpretation of spatial information;
2. apply the great circle concept and longitudinal space-time relationships to the solution of practical distance and time problems;
3. describe how cartographic representations of spatial information are affected by relationships between map scale, detail, and coverage area and by the basic map properties and distortions inherent in map projections;
4. apply knowledge of atmospheric processes, air/sea interactions, weather elements/events, and climate controls to the classification, properties, and distribution of world climate types;
5. identify the major types of environmental evidence observed in monitoring climate change, as well as the causes and consequences of global warming;
6. observe, describe, and explain the origins, characteristics, spatial distributions, interactions, and integrated patterns of climate, soils, vegetation, water resources and landforms;
7. explain how landforms are the result of the interaction of internal tectonic forces and external geomorphic processes and apply that knowledge to an appreciation and understanding of specific landform origins, processes and types;
8. apply knowledge of the distribution of resources, environmental hazards, and human-environmental interactions to rational decision-making processes and activities which affect the habitability of Planet Earth.

Course Content:

1. Earth age, shape, size, and great circles
2. Geographic grid and coordinate system
3. Earth-Sun relationships
4. Longitudinal space-time relationships
5. Maps, geographic information systems, and remote sensing
6. Atmospheric elements/processes/events, atmosphere-ocean interactions, climate controls, and climate change issues
7. Geomorphology, including:
   A. tectonic forces: volcanism, folding, faulting, earthquakes, and plate tectonics
   B. gradational processes: fluvial, colluvial, glacial, coastal, mass wasting
8. Hydrological cycle
9. Biogeographic processes
10. Interactions: hydrosphere, lithosphere, atmosphere, biosphere

Methods of Presentation

1. Lecture/Discussion
2. Hands-on Applications
3. Interactive discussions and exercises

Assignments and Methods of Evaluating Student Progress

1. Typical Assignments
   A. Locate, identify, and label important meridians and parallels on the provided world map of the geographic grid.
   B. Take notes on all videos and occasional class animated demonstrations which will be submitted to the instructor for evaluation.
   C. Identify climate types using the Koppen classification system from selected weather station monthly data of temperatures and precipitation.
D. View online animation, video, or GIS/GPS application and answer accompanying questions.
E. Prepare and present a group presentation on the effects of climate change on ecosystems or the equilibrium of natural processes in the environment.

2. Methods of Evaluating Student Progress
   A. Exams/Tests
   B. Quizzes
   C. Hands-on applications exercises
   D. Final Examination or Project

3. Student Learning Outcomes
   Upon the completion of this course, the student should be able to:
   A. Assess the usefulness of the technologies of Geographic Information Systems and Remote Sensing in observing and modeling physical processes
   B. Critically differentiate regional similarities and contrasts in climate types, landform styles, biomes
   C. Describe the individuals’ role in his/her natural environment
   D. Identify techniques in observation that could be used to recognize and/or classify a roadside landform and rocktype

Textbooks (Typical):

Special Student Materials

Abbreviated Class Schedule Description:

This course is a spatial study of the Earth's dynamic physical system and processes. Topics include: Earth-sun geometry, weather, climate, water, landforms, soil, and the biosphere with emphasis on spatial characteristics, change over time, interactions between environmental components, and human-environment interactions. Tools of geographic inquiry are also briefly covered; they include maps, remote sensing, Geographic Information Systems (GIS) and Global Positioning Systems (GPS)

Requisites: none