GEOG 1005

Division: Natural Science and Mathematics
Department: Geology
Course: GEOG 1005
Title: Physical Geography Lab
Catalog Description:

This course is a practical application of the principles of physical geography such as identification of geographic processes and their results using maps and aerial photographs and quantitative techniques such as measuring humidity, sun angle, etc.

General Education Requirements: N/A
Semesters Offered: Fall, Spring
Credit/Time Requirement: Credit: 1; Lecture: 0; Lab: 2
Clock/Hour Requirements: 0
Offered for Non-Credit: No
Prerequisites: Math 1010 competency

Corequisites: GEOG 1000

Justification:

This course is offered to reinforce and apply concepts learned in Physical Geography. It provides students with laboratory credit in the Physical Science GE at Snow College.

Student Learning Outcomes:

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

- determine sun angle and solar intensity based on latitude at any given day of the year
- understand the earth s relationship to the sun depending on season
- predict latitudes of greatest and least solar intensity depending on season
- graph and interpret temperature and precipitation data for any given location on the earth (climagraphs)
- calculate relative humidity given the actual vapor pressure of and temperature
- determine relative humidity using a dry bulb/wet bulb thermometer or temperature and dry bulb/ wet bulb table
- construct and interpret isoline maps for pressure, temperature, and elevation
- identify climates of hypothetical locations based on topography, latitude, continental position
- calculate changes in temperature, humidity and actual vapor pressure of both stable and unstable air masses
- calculate lifting condensation level
- read and interpret a weather maps
- know the symbols used for the four types of fronts, low pressure, high pressure, precipitation

- interpret a simple station synopsis on a weather map
- read and interpret climate maps
- determine Koppen system climate classification and general climate title given temperature and precipitation data
- read and interpret topographic maps and symbols
- successfully attain a 3-D image on a stereo pair and interpret the image with regards to climate and geomorphology
- identify landforms on maps and aerial photographs and the process responsible for them
- determine soil texture
- identify soil horizons and soil orders of real or hypothetical soil profiles

Content:

This course includes:

- Radiation and Temperature and the Seasons
- Construction and Interpretation of Isotherms
- Atmospheric Humidity
- Adiabatic Cooling and Heating of the Atmosphere
- Precipitation and Seasons
- Effect of Continental Position on Climate
- Biomes
- Soils
- Weather, Weather Maps, Clouds, Maps, Fronts and Atmospheric Pressure
- Classifying Climate
- Topographic Maps and Aerial Photographs
- Landforms Reflecting Geologic Structure
- Landforms Created by Igneous Activity
- Fluvial Landforms
- Karst Topography
- Glacial Landforms
- Coastal Processes, Landforms and Tidesides
- Arid Landscapes

General Education Outcomes:

6) Apply computational skills to a variety of contexts.
Students are required to make calculations throughout the semester of such things as humidity, distance, conversion of scale, average temperatures, and precipitation. Each lab is graded and returned as feedback. Quizzes are given each week to evaluate abilities.

7) Apply scientific reasoning to a variety of contexts.
Students are asked to identify landforms and processes responsible for them. They are asked to interpret data in tabular form in terms of climate, sun angles, etc. Each lab is graded and returned as feedback. Quizzes are given each week to evaluate abilities.

Key Performance Indicators: **GEOG 1005**

- 13-14 weekly labs consisting of exercises from Laboratory Manual or Instructor designed activities: 40 - 50%
- weekly quizzes: 10 - 20%
- comprehensive practical exam: 30 - 40%

Representative Text and/or Supplies:

- John Hidore and Michael Roberts, *Physical Geography A Laboratory Manual*, current edition.

Optimum Class Size: 24
Maximum Class Size: 30

Signatures:

I hereby submit this course syllabus:

Renee Faatz, , Associate Professor

I hereby find this course consistent with the goals and resources of the Geology Department:

Renee Faatz, , Associate Professor, Chair

I hereby find this course consistent with the goals and resources of the Natural Science and Mathematics Division:

Dan Black, EdD, Associate Professor, Dean

I have discussed the need for library resources related to this class with the person submitting the syllabus:

Lynn Anderson, MLIS, Technical Services Librarian (Main Campus)

Michelle Olsen, MLS, Campus Librarian (Richfield Campus)