

I. CATALOG DESCRIPTION

A. Department Information

Division: Science
Department: Geography
Course ID: GEOG 111
Course Title: Physical Geography Laboratory
Laboratory: 3 hours
Units: 1
Corequisite: GEOG 110 (May be taken previously)

B. Catalog Description:

Laboratory companion for various lecture classes in geography. May be taken during the same semester as the lecture courses or be taken after completing the lecture course.

Schedule Description:

Laboratory companion for various lecture classes in geography. May be taken during the same semester as the lecture courses or be taken after completing the lecture course.

II. NUMBER OF TIMES COURSE MAY BE TAKEN FOR CREDIT: One

III. EXPECTED OUTCOMES FOR STUDENTS

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

- A. Use the tools of geography.
- B. Read and interpret the different types of maps.
- C. Explain how the geographic global grid is derived.
- D. Find locations given in latitude and longitude.
- E. Determine latitude and longitude.
- F. Read and use the atlas to obtain information.
- G. Interpret and manipulate weather data.
- H. Determine climatic types from climatic data.
- I. Determine the origin and destructive history of representative rock specimens.
- J. Describe, tectonic, fluvial and glacial environments.

IV. CONTENT

Geography 111 is a laboratory class. Each class session may involve activities centered on map analysis, data collection, data analysis, environmental evaluation and/or field work.

A. The map in physical geography

1. Relative location
2. Latitude and longitude

B. Longitude and time

1. Sun time and local time
2. Using time to determine longitude

C. Weather elements: temperature

1. Temperature systems and temperature conversion
2. Analysis of land/water contrasts
3. Temperature changes with elevation

- D. Weather elements: atmospheric wind
 - 1. Mercurial and aneroid barometers
 - 2. Pressure change and elevation
 - 3. Continental and marine wind systems: land/sea breezes and monsoonal circulations
- E. Weather elements: moisture
 - 1. Creation and the use of graphs
 - 2. Dew point temperature, relative humidity and absolute humidity determination
- F. Storm systems
 - 1. The weather map
 - 2. Air masses
 - 3. Frontal systems
- G. Climate Classification
 - 1. Empirical vs genetic classification systems
 - 2. The Koppen classification system
- H. The use of the atlas in physical geography
 - 1. Thematic maps
 - 2. Information collection from maps and tables
- I. The topographic map
 - 1. Map symbolization
 - 2. Isolines and the use of the contour
- J. Introduction to remote sensing
 - 1. Plate tectonics
 - 2. Landforms associated with plate boundaries
- K. Analysis of tectonic activity
 - 1. Plate tectonics
 - 2. Landforms associated with plate boundaries
- L. The landforms of fluvial geomorphology
 - 1. The great river systems of the world
 - 2. Lacustrine environments
- M. Environmental Analysis: Field observation of fluvial dynamics and tectonics
- N. Environments and the work of ice
 - 1. The environment during the Pleistocene
 - 2. The landforms of continental glaciation
 - 3. The landforms of Alpine glaciation
- V. **METHODS OF INSTRUCTION:**
 - A. Lecture and demonstration
 - B. Audio visual aids
 - C. Computer programs
 - D. Laboratory work
 - E. Laboratory reports
 - F. Field acquisition of data

VI. TYPICAL ASSIGNMENTS:

- A. Using your atlas, determine the latitude and longitude of San Bernardino, California
- B. Using the graph you have plotted from the temperature and water vapor capacity data you have been given, determine the dew point temperature of air with an absolute humidity of 4 grams per cubic meter.

VII. EVALUATION(S):

- A. Methods of evaluation:
 - 1. Laboratory reports
Using the tables showing dry bulb and wet bulb temperatures provided to you, compute the relative humidities of the following parcels of air.
 - 2. Field trip reports
Using the questions on the road log of the Cajon Pass field trip as a basis (guide), write a narrative of the trip.
 - 3. Laboratory notebooks
Record the data for the analysis of each sample of earth collected. Data should include the mass of each portion as divided by the size filters and a visual description of each of those portions.
- B. Frequency of evaluation:
 - 1. Laboratory reports: weekly
 - 2. Projects: once
 - 3. Notebooks: twice

VIII. TYPICAL TEXT(S):

- A. Lab Pack to accompany Essentials of Geography, Saunders, 1999
- B. Duckson, Exercises in Physical Geography, 3rd ed, McGraw Hill, 1999
- C. Christopherson and Hobbs, Applied Geography: Geosystems in the Laboratory, 2nd ed, Prentice Hall, 1998
- D. Strahler and Strahler, Introducing Physical Geography Exercise Manual, 2nd ed, John Wiley and Sons, 1999

IX. OTHER SUPPLIES REQUIRED OF STUDENTS:

None