Mt. San Jacinto College
Integrated Course Outline of Record

Form B

Submitted by: Cindy Nance **Date:** 12/17/2019

Department	Subject	Course Number	Title
Geography	Geography GEOG	104	Physical Geography Lab

Units/Hours

Each lecture unit requires 1 hour per week of class time, and 2 hours per week of study outside of class.
Each laboratory unit requires 3 hours per week of class time.
Each activity unit requires 2 hours per week of class time and 1 hour per week of study outside of class.

Lab Units	Total Units
1.00	1.00

Lab Contact Hours	Total Contact Hours
48.00 - 54.00	48.00 - 54.00

Lab Homework Hours
0

Stand Alone:

Program Applicable

AA/AS Degree General Ed Breadth Area(s):

A NATURAL AND PHYSICAL SCIENCES

General Education Justification:

This course involves Physical Geography practical exercises that examine the physical universe, its life forms, and its natural phenomena. Objectives for this course involve examination of the complex issues to discover connections and correlations for independent conclusions about physical geography processes â€“ such as plate tectonics (earthquakes and volcanism), land formation, and the biosphere (GELO1). Students apply their knowledge and skills to new and varied environmental situations to analyze soils, vegetation and climate at various latitudes (GELO5). And, apply technology to select tasks for demonstrating dependent relationships in physical geography, such as severe weather phenomenon (GELO6).

Maximum Enrollment: 32

Maximum Enrollment Justification: Justification:

Grading Method: Letter Grade or P/NP

TOP code: 2206.00

Can be Taken 1 **time(s) for credit** (max 4)

- [ ] - Visual or Performing Arts course that is required to meet major requirements for UC/CSU
- [ ] - Intercollegiate athletics course
- [ ] - Academic/vocational competition course

Catalog Description:

(Please do not refer to transferability or degree, certificate, or employment concentration applicability. Please only describe the course).
(**75 words** or less in gray box below).

This laboratory course focuses on application of the principles of physical geography. Laboratory exercises include basic map skills, weather and climate, earth materials, geomorphology, fluid agents and erosion.

Schedule Description:

(Please do not refer to transferability or degree, certificate, or employment concentration applicability. Please only describe the course).
(**25 words** or less in gray box below).

This course focuses on application of the principles of physical geography.

Need for the course:

A laboratory course is required for transfer of Physical Geography (4 units) at some academic institutions. This course reinforces concepts presented in an Introduction to Physical Geography, offering students an opportunity to increase their understanding of physical processes evident on the earth's surface through practical application of the concepts and principals of Physical Geography. This course is both a core optional and List A elective course for the ADT in Geography (CID is GEOG 111). This course is an elective for AS degrees in Biology and Environmental Studies, AA in Liberal Arts: Mathematics and Science, and an AS in Science. Offering this course online will allow more students to enroll and successfully complete it.

Prerequisite(s):

Prerequisites go through a separate approval process. See Forms E1-E6 for details.
(For further clarification, contact the Prerequisite Subcommittee)

- GEOG 101 with a Grade of C or better. or

Corequisite(s):

Corequisites go through a separate approval process. See Forms E1-E6 for details.

- GEOG 101

Recommend Preparation:

Recommended Preparation goes through a separate approval process. See Forms E1-E6 for details.

-none-

Other Enrollment Criteria:

-none-

Learning Objectives:

(please number each objective and express in behavioral terms)

Upon the completion of the course the student will be able to do the following:

1. Interpret map projections and coordinate systems, time zones, seasonal and hemispheric weather patterns, contour lines, topographic profiles, stereo aerial photographs, land survey systems and United States Geological Survey topographic maps.
2. Differentiate between latent heat and sensible heat, specific and relative humidity, environmental lapse rate and adiabatic processes and assess the interrelationship of net radiation and the energy balance.
3. Compare and contrast annual and daily cycles of air temperature incorporating earth-sun relationships, the effects of incoming solar radiation, the earthâ€™s access and seasonal variation between northern and southern hemispheres, coastal and interior climates.
4. Integrate the hydrological cycle, atmospheric patterns, plate tectonics and land formation in an analysis of the thermohaline circulation pattern and its impact to ecosystems and global warming.
5. Analyze cyclones and anticyclones, intertropical convergence zone shifts, and tropical and equatorial seasonal patterns and understand the role of atmospheric pressure and pressure gradients to unstable weather conditions, such as storms.
6. Evaluate climate, soil and vegetation types in relation to latitude and longitude, altitude, coastal/interior locations, atmospheric circulation patterns and land formations.
7. Differentiate between igneous, metamorphic and sedimentary rocks, recognize diagnostic minerals and identify land formations from tectonic, volcanic, desert, fluvial and glacial land formation processes.
8. Diagram three-dimensional block profiles of lithosphere composition, surface relief features and processes of plate tectonics, earthquake faults and volcanic eruptions.

Course Content:

(please number the outline of main topics and subtopics)

Lab units only

Lab Content:

(please number the outline of main topics and subtopics)

1. Map Reading Skills
    1. Metric Conversions
    2. Location
    3. Time
    4. Map Scale
    5. Map Projections
    6. Isolines
    7. Contour Lines
    8. U.S. Geological Survey Topographic Maps
    9. Topographic Profiles
    10. U.S. Public Land Survey System
    11. Stereo Aerial Photographs
2. Earth-Sun Relations
3. Global Energy Balance
    1. Solar Angle
    2. Insolation
4. Air Temperature and Moisture
    1. Air Pressure
    2. Wind
    3. Humidity
    4. Adiabatic Processes
    5. Stability
5. Weather Patterns and Pressure Systems
    1. Midlatitude Cyclones
    2. Weather Maps
    3. Weather Satellite Images
    4. Hurricanes

6. Climate Classification
7. Plate Tectonics
    1. Volcanoes
    2. Volcanic Calderas
    3. Faulting
    4. The San Andreas Fault
8. Landforms by Mass Wasting
9. Water Landforms
    1. Drainage Basins
    2. Floodplains
    3. Stream Drainage Patterns
    4. Karst Topography
10. Desert Landforms
    1. Sand Dunes
11. Coastal Landforms
12. Glacial Landforms
    1. Continental Glaciation
    2. Alpine Glaciation

Methods of Instruction:

Methods of instruction may include, but are not limited to the following:

- **Method:** Lecture
  Integration: A brief lecture at the beginning of each lab session will review concepts presented in the Physical Geography (GEOG 101) text that are relevant to the lab assignment.
- **Method:** Observation and Demonstration
  Integration: Demonstration by instructor of lab techniques, such as creation and interpretation of contour lines to identify surface land formations, will provide students with a model to follow for completion of weekly assignments.
- **Method:** Discussion
  Integration: Discussion of current events related to physical geography and the week's lab application will be discussed and examined from the perspective of media, statistics and online digital maps, such as USGS portrayal of earthquake location, time and magnitude.

Methods of Evaluation:

A student's grade shall be determined by the instructor using multiple measures of performance related to the course objectives. Methods of evaluation may include but are not limited to the following:

- **Method:** Quizzes
  Integration: Quizzes and/or exams comprised of multiple-choice, true or false, matching of terms or short essays are designed to assess student comprehension of application of techniques and tools used to measure and map various processes that contribute to the physical geography of the earthâ€™s surface.
- **Method:** Class Performance
  Integration: Weekly assignments are worked on in groups in class and individually with instructor. Laboratory assignments are assessed for completion and comprehension of physical geography applications, diagrams that illustrate processes and descriptive references to techniques and tools.
- **Method:** Oral Presentation
  Integration: Student presentations on current event topics will demonstrate student comprehension of physical geography concepts, processes, mechanisms and/or terminology. Student presentations are assessed for content, organization and conveyance of information as relevant to physical geography.
- **Method:** Class Work
  Integration: Instructor provided worksheets and a physical geography lab manual provide students with activities that are graded based on completion and accuracy.

Examples of Assignments:

Students will be expected to understand and critique college level texts or the equivalent. Reading and writing, as well as out of class assignments are required. These assignments may include but are not limited to the following:

1. In geography we are interested in mapping particular characteristics of an area, such as elevation, rainfall or temperature. "Isolines" are a popular method for showing varying levels or concentration of phenomena. An isoline is a line on a map that connects points of equal value.
    1. Use diagram A to draw "isotherms" at points of equal value.
        1. Interpolate values in between isotherms, so that all isotherms represent 10 degree intervals.
        2. Identify peaks and valleys as shown by the isotherms and label them.
    2. Use diagram B to draw "contour lines" for elevation points of equal value.
        1. Interpolate values in between contour lines, so that all contours represent intervals of 100 feet.
        2. Identify peaks and valleys as shown by the contours and label them.
    3. Describe, define, compare, contrast and interpret the above application of isolines as isotherms and contour lines.
2. Use Google Earth, terrain and USGS topographic maps to complete your lab manual worksheet:
    1. Describe the differences between the geomorphology of the mountains on the north side and the south side of the San Jacinto Valley.
    2. Note the two major faults in the San Jacinto Valley and the formations they have caused.
    3. Explain any evidence of other fault activity that you observe in the valley.
    4. Describe the geomorphology of Park Hill.
    5. Explain the location of the San Jacinto River, the presence and/or absence of water, natural features and formations manmade features due to the river's presence and evident flora and fauna. Note any evidence of flooding or drought.
    6. Locate the tilt of the San Jacinto Valley floor and identify the reasons for that tilt.
    7. Explain some of the effects Mt. San Jacinto might have on the San Jacinto Valley from your Google Earth exploration.

Textbooks:

- Hess, D (2017). *Physical Geography Laboratory Manual* Pearson. ISBN: 9780134561011

Other Resources:

- Access Code from publisher for lab materials and lab manual etext option.

Minimum Qualification

- Geography (Masters Required)