



ANTELOPE VALLEY COLLEGE

**Academic Affairs  
Course Outline of Record**

**Academic Affairs Only**

<input type="checkbox"/>	New Course
<input type="checkbox"/>	Effective Date (for articulation)
<input checked="" type="checkbox"/>	COR Revision 5/22/2008
<input type="checkbox"/>	Pre Req/Advisories
<input type="checkbox"/>	Other Changes

**COURSE SUBJECT & NUMBER:** GEOG 102L

**COURSE NAME:** \*Physical Geography Laboratory: Earth's Weather and Climate

**COURSE UNITS:** 1 **COURSE HOURS:** 3

**COURSE REQUISITES:** *(Follow format of similar courses found in the college catalog.)*

Prerequisite: Completion of, or concurrent enrollment in, GEOG 102.

**COURSE DESCRIPTION:** *(Write a short paragraph providing an overview of topics covered. Be sure to identify target audience--transfer, major, GE, degree/certificate, etc. If repeatable, state the number of times at end of description.)*

This course provides hands on experience in understanding, defining and interpreting the basic principles of weather and climate topics presented in Geography 102. Emphasis is placed on understanding various elements and controls of weather and climate, making and interpreting weather maps and charts. Techniques and principles involved in interpreting weather data, weather charts and maps and weather forecasting will also be introduced. This course fulfills general education requirements for AVC degree or transfer to CSU/UC. (CSU, AVC)

**COURSE OBJECTIVES:** *(Use Bloom's taxonomy to formulate concise, performance-based measurable objectives common to all students. Objectives must be closely aligned with course content, assignments, and methods of evaluation.)*

**Upon completion of course, the successful student will be able to:**

1. Use geographic skills to describe locations and analyze weather phenomena.
2. Apply the Scientific Method to the collection of weather data.
3. Model the structure of the atmosphere and analyze impacts of Earth/sun energy relationships.
4. Diagram how moisture moves through the atmosphere and measure indicators of atmospheric stability.
5. Use geographic skills to categorize climates into climate regions.
6. Assemble weather data for locations and prepare weather maps.
7. Analyze the spatial characteristics of weather data and weather charts.
8. Prepare isoline maps and charts from weather and climate data bases.
9. Predict local weather.

**Course Subject & Number:** GEOG 102L

**Course Name:** \*Physical Geography Laboratory: Earth's Weather and Climate

**COURSE CONTENT:** *(Enter course content in terms of specific topics or a specific body of knowledge that each instructor must cover. Put topics in outline form with major and minor headings. Each instructor must cover all material listed below.)*

1. Geographic Fundamentals
  - a. Mapping basics
  - b. Methods used to identify and describe specific locations
  - c. Longitude and latitude grid coordinates
  - d. Symbolology used on weather maps and charts
  - e. Scientific Method
2. Structure of the Atmosphere
  - a. Graphing the vertical structure of atmosphere
  - b. Atmospheric temperature, pressure
  - c. Wind
3. Earth - Sun Relationships
  - a. Day length, sun angles and seasons
  - b. Earth's surface energy budget
  - c. Locational differences in distribution of solar energy
4. Atmospheric Moisture
  - a. Methods to measure atmospheric moisture
  - b. Energy transfer and phase change in the atmosphere
5. Atmospheric Stability
  - a. Diagramming atmospheric stability and instability
  - b. DAR and MAR
6. Cloud classification and formation processes
7. Classification of Climates
  - a. Koppen's classification for climate regions
  - b. Classify climates from around the world
8. Predicting Weather
  - a. Forecast weather for the following week

**Course Subject & Number:** GEOG 102L

**Course Name:** \*Physical Geography Laboratory: Earth's Weather and Climate

**TYPICAL HOMEWORK ASSIGNMENTS:** (Do not include in-class work, quizzes, or tests)

*This information is necessary for all credit courses. Assignments should be closely related to course objectives, content, and methods of evaluation. (See sample of a "Model Outline" in the AP&P Standards & Practices Handbook.) Include a range of assignments (minimum of three) from which faculty may choose when designing their syllabus.*

**1. Describe nature and frequency of typical reading assignments if applicable; note if any are required:**

Students will be required to read the lab manual weekly and may use other sources such as reference books, scientific journals, and websites to supplement assigned readings.

**2. Describe nature and frequency of typical writing assignments if applicable; note if any are required:**

none

**3. Describe nature and frequency of typical computational assignments if applicable; note if any are required:**

Roughly 1/3 of the labs require computations.

**4. Describe other types of homework assignments that students may be asked to complete (oral presentations; special projects; visual/performing arts; etc); note if any are required:**

none

**5. Describe those critical thinking skills that are derived from assignments listed above; be sure that they reflect course objectives.**

Students will make conclusions about causes and effects of changes in the weather and the climate from temperature, pressure and humidity data. Students will analyze and classify weather patterns into climate regions. Students will analyze weather predictions made by meteorologists and predict local weather.

**6. For categories 1-4 above, describe the estimated time per week it would take a student to complete homework assignments. Title 5 requires a minimum 2:1 ratio as follows: 1 hr. lecture = 2 hrs. homework; 2 hrs. lecture = 4 hrs. homework; 3 hours lecture = 6 hours homework etc. For example: reading —2 hours; writing —3 hours; etc.**

**Reading Assignments:** 1 hour

**Writing Assignments:**

**Computational Assignments:**

**Other Assignments:**

**Course Subject & Number:** GEOG 102L

**Course Name:** \*Physical Geography Laboratory: Earth's Weather and Climate

**METHODS OF INSTRUCTION:** *(Methods must be consistent with content and appropriate to objectives; state in terms of what instructor will be doing in order to present course content to students: for example, lecture, demonstration, present audio/visual materials; facilitate group work, etc. Do not list specific instructional equipment.)*

Methods and procedures for each lab activity will be explained to the students at the beginning of each lab session. Computers may be provided for students to enter answers from the lab manual into Blackboard for grading or the instructor may chose to grade the lab answers off-line.

**METHODS OF EVALUATION:** *(These must be clearly related to course objectives and reflect course content and assignments in order to comply with Title 5 requirements. Describe what instructor will be looking for when evaluating various assignments and tests in order to determine whether students have met course objectives. Grades must be based on demonstrated proficiency in subject matter and determined, where appropriate, by essays, objective and essay tests, research papers or projects, problem solving exercises, or skills' demonstrations.)*

Correct replies to lab manual questions and accurate diagrams and sketches associated with weekly labs.

**Suggested Texts or Other Instructional Materials**

*(list several when possible; include title, author, publisher, date, and latest edition.)*

Weather Studies Investigations Manual, American Meteorological Society, 2007-2008 edition.