Cerro Coso College

Course Outline of Record Report

10/11/2021

GEOGC111 : Physical Geography

General Information

Author:	-
Course Code (CB01) :	GEOGC111
Course Title (CB02) :	Physical Geography
Department:	Science
Proposal Start:	Fall 2013
TOP Code (CB03) :	(1930.00) Earth Science
SAM Code (CB09) :	Non-occupational
Distance Education Approved:	Yes
Course Control Number (CB00) :	CCC000309538
Curriculum Committee Approval Date:	03/08/2013
Board of Trustees Approval Date:	04/11/2013
External Review Approval Date:	04/11/2013
Course Description:	This lecture and laboratory course covers the study of the Earth as an integrated system. Lecture topics include Earth-Sun relationships and motions, weather, climatic types and regions, ecosystems, soils, natural hazards, resource management, landforms, and the ocean. An emphasis is placed on understanding human-land relationships and examining current world problems from a geographical perspective. Meanwhile, laboratory provides practical experience in field techniques and supplemental exercises that enhance and reinforce topics covered in lecture. Not open to students who have completed GEOG C101.
Submission Type:	New Course
Author:	No value

Faculty Minimum Qualifications

Master Discipline Preferred:	• Earth Science
Alternate Master Discipline Preferred:	• Geography • Physical Sciences • Earth Science
Bachelors or Associates Discipline Preferred:	No value
Additional Bachelors or Associates Discipline Preferred:	No value

Course Development Options

Basic Skills Status (CB08)

Course is not a basic skills course.

Course Special Class Status (CB13)

Course is not a special class.

Grade Options

- Letter Grade Methods
- Pass/No Pass

Allow Students to Gain Credit by Exam/Challenge

Allowed Number of Retakes
0

Course Prior To College Level (CB21)
Not applicable.

Rationale For Credit By Exam/Challenge
No value

Retake Policy Description
Type:|Non-Repeatable Credit

Allow Students To Audit Course

Course Support Course Status (CB26)
No value

Associated Programs

Course is part of a program (CB24)

Associated Program	Award Type	Active
CC Liberal Arts: Mathematics & Science	A.A. Degree Major	Summer 2018 to Fall 2020
CSU General Education (CSU GE Breadth)	Certificate of Achievement	Fall 2020
Intersegmental General Education Transfer Curriculum Certificate of Achievement	Certificate of Achievement	Fall 2020
Liberal Arts: Mathematics & Science Associate in Arts Degree	A.A. Degree Major	Fall 2020
CSU General Education (CSU GE Breadth) (In Development)	Certificate of Achievement	Fall 2021
Intersegmental General Education Transfer Curriculum Certificate of Achievement (In Development)	Certificate of Achievement	Fall 2021

Transferability & Gen. Ed. Options

Course General Education Status (CB25)

No value

Transferability

Transferable to both UC and CSU

Transferability Status

Approved

Cerro Coso General Education Requirements	Categories	Status	Approval Date	Comparable Course

Area 1.2	Natural Science Physical Sciences	Approved	No value	No Comparable Course defined.

CSU General Education Certification	Categories	Status	Approval Date	Comparable Course
Area B.1	Scientific Inquiry & Quantitative Reasoning Physical Sciences	Approved	No value	No Comparable Course defined.
Area B.3	Scientific Inquiry & Quantitative Reasoning Laboratory	Approved	No value	

Intersegmental General Education Transfer Curriculum	Categories	Status	Approval Date	Comparable Course
Area 5.A	Physical & Biological Sciences Physical Science	Approved	No value	No Comparable Course defined.

Units and Hours:

Summary

Minimum Credit Units (CB07)	4
Maximum Credit Units (CB06)	4
Total Course In-Class (Contact) Hours	108
Total Course Out-of-Class Hours	108
Total Student Learning Hours	216
Faculty Load	0

Credit / Non-Credit Options

Course Credit Status (CB04)

Credit - Degree Applicable

Course Non Credit Category (CB22)

Credit Course.

Non-Credit Characteristic

No Value

Course Classification Status (CB11)

Credit Course.

Funding Agency Category (CB23)

Not Applicable.

☐ Cooperative Work Experience Education Status (CB10)

☐ Variable Credit Course

Weekly Student Hours

In Class	Out of Classs

Course Student Hours

Course Duration (Weeks)	18

Lecture Hours	3	6
Laboratory Hours	3	0
Activity Hours	0	0

Hours per unit divisor	0
Course In-Class (Contact) Hours	
Lecture	0
Laboratory	0
Activity	0
Total	108
Course Out-of-Class Hours	
Lecture	0
Laboratory	0
Activity	0
Total	108

Time Commitment Notes for Students

No value

Faculty Load

Extra Duties: 0

Faculty Load: 0

Units and Hours: - Weekly Specialty Hours

Activity Name	Type	In Class	Out of Class
No Value	No Value	No Value	No Value

Pre-requisites, Co-requisites, Anti-requisites and Advisories

Advisory

ENGLC070 - Introductory Composition

Students in GEOG C111 must be able to read and comprehend a college-level scientific textbook and laboratory instructions. They are expected to identify central points, both explicit and implied, outline and summarize complex and technical scientific readings, interpret difficult and figurative language in academic discourse and scientific terminology. The reading advisory level provides the student with the requisite skills to meet these expectations.

Students in GEOG C111 must be able to write summaries of assigned readings from the course textbook and laboratory activities, answer homework questions using paragraph length responses, answer essay questions in clear and error free prose based on readings from various scientific texts, and write lab reports following a standard format. The writing advisory level provides the student with the requisite skills to meet these expectations.

Entrance Skills

Entrance Skills	Description
No value	No value

Limitations on Enrollment

Limitations on Enrollment	Description
No value	No value

Specifications

Methods of Instruction

Methods of Instruction	Written work
Rationale	No value
Methods of Instruction	Problem Solving
Rationale	No value
Methods of Instruction	Peer analysis, critique & feedback
Rationale	No value
Methods of Instruction	Lecture
Rationale	No value
Methods of Instruction	Outside reading
Rationale	No value
Methods of Instruction	Laboratory
Rationale	No value

Methods of Instruction	Instruction through examination or quizzing
Rationale	No value
Methods of Instruction	Group Work
Rationale	No value
Methods of Instruction	Discussion
Rationale	No value
Methods of Instruction	Demonstration
Rationale	No value
Methods of Instruction	Computational Work
Rationale	No value
Methods of Instruction	Audiovisual
Rationale	No value

Assignments

- A. Homework assignments from the relevant textbook chapters. Example: The student is expected to answer instructor assigned questions from the relevant textbook chapters. B. Readings from the assigned textbook, laboratory manual, and/or other sources. Example: The student is expected to read the textbook chapter and lab manual chapter that is covered in each week's lecture and lab. C. Research paper and presentation. Example: The student is required to select a local geophysical landform, research its origin using the concepts learned in class, write a paper summarizing that research, and present a research summary to the class. D. Written laboratory reports. Example: The student is required to write a lab report that summarizes the experimental methods performed, data collected, and data analysis for each week's lab activity. E. Data analysis. Example: The student is required to analyze the data collected in a lab activity in order to reach conclusions regarding the lab's physical concepts.

Methods of Evaluation	Rationale
Tests	A. Exams and quizzes evaluate the students' ability to apply concepts and material taught in class. Example: The midterm exam requires the student to diagram the rock cycle and describe the physical characteristics of the rocks formed at each step of the cycle. F. Laboratory quizzes evaluate the students' ability to apply the concepts and laboratory techniques learned in lab. Example: The student analyzes a seismology data set to determine the epicenter and magnitude of an earthquake
Homework	B. Regular homework assignments reinforce concepts and material taught in class. Example: The student is expected to answer instructor assigned questions from the relevant textbook chapters.
Participation	C. Reports and presentations evaluate the students' ability to apply concepts taught in class and combine them with new concepts that they research on their own. Example: The student is required to select a local geophysical landform, research its origin using the concepts learned in class, write a paper summarizing that research, and present a research summary to the class.

D. Laboratory exercises reinforce concepts and material taught in class.
Example: The student determines the infiltration rate of water through various regolith and soil compositions and then analyzes their impact on flooding.
E. Laboratory reports and presentations measure the student's ability to perform techniques and assess accuracy and precision where appropriate.
Example: The student discusses the identification of rock and mineral samples based on their measurable characteristics.

Equipment

No Value

Textbooks

Author	Title	Publisher	Date	ISBN
	Christopherson, R. W.. (2010) Geosystems: An Introduction to Physical Geography, 8th,	Prentice Hall		

Other Instructional Materials

Description	Manuals: Christopherson, R. W., & Thomsen, C. E.. (2012-01-01 00:00:00.0) Applied Physical Geography: Geosystems in the Laboratory, Prentice Hall
Author	
Citation	Physical Geography

Materials Fee

No

Learning Outcomes and Objectives

Course Objectives

No value

CSLOs

Explain how hydrologic, tectonic, erosional, and atmospheric processes shape the physical environment. Expected SLO Performance: 70.0

Summarize the conditions that cause such natural hazards as floods, storms, earthquakes, landslides, volcanoes, and coastal erosion, and explain their impact on humans. Expected SLO Performance: 70.0

Analyze the impact of humans on the natural environment by researching such local environmental issues as earthquake hazards, flash flooding, air pollution, groundwater pollution, and environmental planning. Expected SLO Performance: 70.0

Reach valid conclusions by analyzing graphs, geographic diagrams, statistics, and maps. Expected SLO Performance: 70.0

Construct diagrams that accurately explain and demonstrate such processes as the hydrologic cycle, the rock cycle, and the plate tectonic cycle. Expected SLO Performance: 70.0

Science Liberal Arts: Mathematics & Science AA Degree	Apply algebraic, graphical, numerical, and other methods to solve applied problems in the areas of mathematics, natural sciences, computer graphics, and computer animation.

Apply the scientific method in problem solving. Expected SLO Performance: 70.0

Social Science PLOs for CSU GE COA	Communicate scientific results by applying the appropriate scientific method, including experimental and empirical methodologies characteristic of science and modern methods and tools used in scientific inquiry through the use of graphs, oral communications, and writings.
Science Liberal Arts: Mathematics & Science AA Degree	Describe the nature of science, the methods applied in scientific investigations, and the value of those methods in developing a rigorous understanding of the physical world.
Social Science IGETC PLOs	Communicate scientific results by applying the appropriate scientific method, including experimental and empirical methodologies characteristic of science and modern methods and tools used in scientific inquiry through the use of graphs, oral communications, and writings.

Outline

Course Outline

A. Introduction to Physical Geography
1. What Is Physical Geography?
2. Physical Geography; People; and the Environment
3. The Nature of Scientific Inquiry
4. Scales of Space and Time in Physical Geography
5. Early Evolution of Earth&rsquo:s Spheres
6. A Closer Look at the Geosphere
7. Earth as a System

B. Minerals: Building Blocks of Rocks
1. Minerals: The Building Blocks of Rocks
2. Elements: The Building Blocks of Minerals
3. Why Atoms Bond
4. Properties of Minerals
5. Mineral Groups
6. Mineral Resources

C. Rocks: Materials of the Solid Earth
1. Earth as a System: The Rock Cycle
2. Igneous Rocks: 'Formed by Fire'
3. Sedimentary Rocks: Compacted and Cemented Sediment
4. Metamorphic Rocks: New Rock from Old
5. Resources from Rocks and Minerals

D. Weathering; Soil; and Mass Wasting
1. Mechanical Weathering
2. Chemical Weathering
3. Rates of Weathering
4. Soil
5. Controls of Soil Formation
6. The Soil Profile
7. Classifying Soils
8. Soil Erosion

9. Weathering Creates Ore Deposits
10. Mass Wasting: The Work of Gravity
11. Mass Wasting and Landform Development
12. Controls and Triggers of Mass Wasting
13. Classifying Mass-Wasting Processes
14. Slump
15. Rockslide
16. Debris Flow
17. Earth flow
18. Slow Movements

E. Running Water and Groundwater
1. Earth as a System: The Hydrologic Cycle
2. Running Water
3. Stream flow
4. The Work of Running Water
5. Stream Channels
6. Base Level and Stream Erosion
7. Shaping Stream Valleys
8. Depositional Landforms
9. Drainage Patterns
10. Floods and Flood Control
11. Groundwater: Water Beneath the Surface
12. Distribution and Movement of Groundwater
13. Groundwater
14. Springs
15. Wells
16. Artesian Wells
17. Environmental Problems Associated with Groundwater
18. The Geologic Work of Groundwater

F. Glaciers; Deserts; and Wind
1. How Glaciers Move
2. Glacial Erosion
3. Glacial Deposits
4. Glaciers of the Ice Age
5. Some Indirect Effects of Ice Age Glaciers
6. Causes of Glaciations
7. Deserts
8. Geologic Processes in Arid Climates
9. Basin and Range: The Evolution of a Desert Landscape
10. Wind Erosion
11. Wind Deposits

G. Earthquakes and Earth's Interior
1. What Is an Earthquake?
2. San Andreas Fault: An Active Earthquake Zone
3. Seismology: The Study of Earthquake Waves
4. Locating an Earthquake
5. Measuring the Size of Earthquakes
6. Destruction from Earthquakes
7. Can Earthquakes Be Predicted?
8. Earth's Layered Structure

H. Plate Tectonics: A Scientific Theory Unfolds
1. Continental Drift: An Idea Before Its Time
2. The Great Debate
3. Plate Tectonics: The New Paradigm
4. Divergent Boundaries
5. Convergent Boundaries
6. Transform Fault Boundaries
7. Testing the Plate Tectonics Model
8. Measuring Plate Motion
9. What Drives Plate Motion?
10. Plate Tectonics into the Future

I. Volcanoes and Other Igneous Activity

1. The Nature of Volcanic Eruptions
2. What Is Extruded During Eruptions?
3. Volcanic Structures and Eruptive Styles
4. Living in the Shadow of a Composite Cone
5. Other Volcanic Landforms
6. Intrusive Igneous Activity
7. Origin of Magma
8. Plate Tectonics and Igneous Activity

J. Mountain Building
1. Rock Deformation
2. Folds
3. Faults
4. Joints
5. Mountain Building
6. Mountain Building at Subduction Zones
7. Collisional Mountain Ranges
8. Fault-Block Mountains
9. Vertical Movements of the Crust

K. Geologic Time
1. Geology Needs a Time Scale
2. A Brief History of Geology
3. Relative Dating-Key Principles
4. Correlation of Rock Layers
5. Fossils: Evidence of Past Life
6. Dating with Radioactivity
7. The Geologic Time Scale
8. Difficulties in Dating the Geologic Time Scale

L. Earth's History: A Brief Summary
1. Precambrian Time: Vast and Enigmatic
2. Paleozoic Era: Life Explodes
3. Mesozoic Era: Age of the Dinosaurs
4. Cenozoic Era: Age of Mammals
5. Quaternary Epoch: Ice Ages and the Time of Now

M. The Atmosphere: Composition; Structure; and Temperature
1. Composition of the Atmosphere
2. Height and Structure of the Atmosphere
3. Earth-Sun Relationships
4. Energy; Heat and Temperature
5. Mechanisms of Heat Transfer
6. The Fate of Incoming Solar Radiation
7. Heating the Atmosphere: The Greenhouse Effect
8. For the Record: Air Temperature Data
9. Why Temperatures Vary: The Controls of Temperature
10. World Distribution of Temperature

N. Moisture; Clouds; and Precipitation
1. Water's Changes of State
2. Humidity: Water Vapor in the Atmosphere
3. The Basis of Cloud Formation: Adiabatic Cooling
4. Processes that Lift Air
5. The Weather maker: Atmospheric Stability
6. Condensation and Cloud Formation
7. Fog
8. How Precipitation Forms
9. Coalescence Process
10. Forms of Precipitation
11. Measuring Precipitation

O. Air Pressure and Wind
1. Understanding Air Pressure
2. Measuring Air Pressure
3. Factors Affecting Wind
4. Highs and Lows

5. General Circulation of the Atmosphere
6. The Westerlies
7. Local Winds
8. How Wind Is Measured
9. El Nino and La Nina
10. Global Distribution of Precipitation

P. Weather Patterns and Severe Storms
1. Air Masses
2. Fronts
3. The Middle-Latitude Cyclone
4. Thunderstorms
5. Tornadoes
6. Hurricanes

Q. Climate
1. The Climate System
2. World Climates
3. Climate Classification
4. Humid Tropical Climates
5. Dry Climates
6. Humid Middle-Latitude Climates with Mild Winters
7. Humid Middle-Latitude Climates with Severe Winters
8. Polar Climates
9. Highland Climates
10. Human Impact on Global Climate
11. Carbon Dioxide; Trace Gases; and Global Warming
12. Climate-Feedback Mechanisms
13. How Aerosols Influence Climate
14. Some Possible Consequences of Global Warming

Lab Outline

The laboratory component of this course provides practical experience in field methods and enhancement of topics covered in lecture.

Lab Examples:
A. Map Reading and Cartography:
1. Latitude; Longitude; and Time
2. Map Reading and Interpretation
3. Directions and Compass Readings
4. Map Projections
5. Contours and Topographic Maps
6. Geographic Information Systems (GIS)

B. Topographic Analysis:
1. Fluvial Geomorphology
2. Glacial Geomorphology
3. Coastal Geomorphology
4. Arid Geomorphology
5. Karst Landscapes

C. Weather:
1. Earth-Sun Relationships
2. Insolation
3. Seasons
4. Temperature Patterns
5. Weather Maps

D. Earth's Atmosphere:
1. Adiabatic Processes
2. Pressure Profiles
3. Pressure Patterns
4. Atmospheric Humidity
5. Atmospheric Stability

E. Earth's Geosphere:

1. Rocks
2. Minerals
3. Plate Tectonics
4. Volcanism

F. Earth's Hydrosphere:
1. Water Balance
2. Water Resources

G. Earth's Biosphere:
1. Global Climate Systems
2. Soils
3. Biomes

Delivery Methods and Distance Education

Delivery Method: Please list all that apply -Face to face -Online (purely online no face-to-face contact) -Online with some required face-to-face meetings ("Hybrid") -Online course with on ground testing -iTV – Interactive video = Face to face course with significant required activities in a distance modality -Other

Face 2 Face

Rigor Statement: Assignments and evaluations should be of the same rigor as those used in the on-ground course. If they are not the same as those noted in the COR on the Methods of Evaluation and out-of-class assignments pages, indicate what the differences are and why they are being used. For instance, if labs, field trips, or site visits are required in the face to face section of this course, how will these requirements be met with the same rigor in the Distance Education section?

No Value

Effective Student-Instructor Contact: Good practice requires both asynchronous and synchronous contact for effective contact. List the methods expected of all instructors teaching the course. -Learning Management System -Discussion Forums -Moodle Message -Other Contact -Chat/Instant Messaging -E-mail -Face-to-face meeting(s) -Newsgroup/Discussion Board -Proctored Exam -Telephone -iTV -Interactive Video -Other (specify)

No Value

Software and Equipment: What additional software or hardware, if any, is required for this course purely because of its delivery mode? How is technical support to be provided?

No Value

Accessibility: Section 508 of the Rehabilitation Act requires access to the Federal government's electronic and information technology. The law covers all types of electronic and information technology in the Federal sector and is not limited to assistive technologies used by people with disabilities. It applies to all Federal agencies when they develop, procure, maintain, or use such technology. Federal agencies must ensure that this technology is accessible to employees and the public to the extent it does not pose an "undue burden". I am using -iTV—Interactive Video only -Learning management system -Publisher course with learning management system interface.

itv
LMS
publisher

Class Size: Good practice is that section size should be no greater in distance ed modes than in regular face-to-face versions of the course. Will the recommended section size be lower than in on-ground sections? If so, explain why.

No Value