

GEOG R101: ELEMENTS OF PHYSICAL GEOGRAPHY

Originator

jdanza

College

Oxnard College

Discipline (CB01A)

GEOG - Geography

Course Number (CB01B)

R101

Course Title (CB02)

Elements of Physical Geography

Banner/Short Title

Elements of Physical Geography

Credit Type

Credit

Start Term

Fall 2021

Catalog Course Description

This course is an introduction to physical geography as a spatial study which investigates global themes on the interaction of human and physical environmental impacts incorporating the elements of the atmosphere, lithosphere, hydrosphere, and biosphere. Topics include: Climate change; the ozone layer; ecosystem/deforestation; fire, water resources, and environmental hazards; weather events such as tornadoes, hurricanes, and El Niño; geological events such as earthquakes, volcanism, and landslides. C-ID: GEOG 110.

Taxonomy of Programs (TOP) Code (CB03)

2206.00 - Geography

Course Credit Status (CB04)

D (Credit - Degree Applicable)

Course Transfer Status (CB05) (select one only)

A (Transferable to both UC and CSU)

Course Basic Skills Status (CB08)

N - The Course is Not a Basic Skills Course

SAM Priority Code (CB09)

E - Non-Occupational

Course Cooperative Work Experience Education Status (CB10)

N - Is Not Part of a Cooperative Work Experience Education Program

Course Classification Status (CB11)

Y - Credit Course

Educational Assistance Class Instruction (Approved Special Class) (CB13)

N - The Course is Not an Approved Special Class

Course Prior to Transfer Level (CB21)

Y - Not Applicable

Course Noncredit Category (CB22)

Y - Credit Course

Funding Agency Category (CB23)

Y - Not Applicable (Funding Not Used)

Course Program Status (CB24)

1 - Program Applicable

General Education Status (CB25)

Y - Not Applicable

Support Course Status (CB26)

N - Course is not a support course

Field trips

May be required

Faculty notes on field trips; include possible destinations or other pertinent information

Field trips may include local mountains and coastal areas.

Grading method

Letter Graded

Does this course require an instructional materials fee?

No

Repeatable for Credit

No

Is this course part of a family?

No

Units and Hours**Carnegie Unit Override**

No

In-Class**Lecture****Minimum Contact/In-Class Lecture Hours**

52.5

Maximum Contact/In-Class Lecture Hours

52.5

Activity**Laboratory****Total in-Class****Total in-Class****Total Minimum Contact/In-Class Hours**

52.5

Total Maximum Contact/In-Class Hours

52.5

Outside-of-Class**Internship/Cooperative Work Experience**

Paid**Unpaid****Total Outside-of-Class****Total Outside-of-Class****Minimum Outside-of-Class Hours**

105

Maximum Outside-of-Class Hours

105

Total Student Learning**Total Student Learning****Total Minimum Student Learning Hours**

157.5

Total Maximum Student Learning Hours

157.5

Minimum Units (CB07)

3

Maximum Units (CB06)

3

Student Learning Outcomes (CSLOs)**Upon satisfactory completion of the course, students will be able to:**

- | | |
|---|--|
| 1 | Identify, define or describe global pressure systems, precipitation patterns, and global wind systems. |
| 2 | Diagram cyclogenesis including air masses, fronts, wind direction for all four stages. |
| 3 | Identify, define or locate the three types of plate tectonic boundaries and the geomorphologic (surface) elements related to each of the three boundaries. |
| 4 | Describe the rock cycle including the major rock types and typical environments of their origin. |
| 5 | Formulate the steps of how the Earth is heated including the types of radiant energy. |

Course Objectives**Upon satisfactory completion of the course, students will be able to:**

- | | |
|---|---|
| 1 | Demonstrate an understanding of the four major physical components of the natural environment: atmosphere, lithosphere, hydrosphere, and biosphere. |
| 2 | Analyze and interpret the global distribution of climate types following the Köppen climate classification system, including the general location, characteristics and controls of each major climate type. |
| 3 | Utilize the methods of scientific investigation in analyzing spatial relationships of physical landscapes and how they relate to human environments. |
| 4 | Recognize that all landforms are the result of the interaction of internal tectonic forces and external geomorphic processes. |
| 5 | Describe and explain world distribution patterns of principal environmental components including air temperature, air pressure, wind, precipitation, climate, soil, vegetation, animals and landforms. |
| 6 | Identify the characteristics and distribution of ecosystems. |
| 7 | Utilize maps to illustrate how environmental hazards such as earthquakes and hurricanes can alter landscapes. |
| 8 | Describe and explain El Niño and how it affects the weather patterns and marine ecosystems off the California coast. |
| 9 | Calculate the adiabatic rate of cooling in examples of air lifting processes in the atmosphere. |

Course Content

Lecture/Course Content

1. Planet Earth in Space
 - a. The Scientific Method
2. Geographic and Human Environments
 - a. The geographic grid
 - b. Earth's rotation and revolution
 - c. Earth/Sun relationship
3. Earth's Energy Balance
 - a. Composition and structure of atmosphere
 - b. Heat flows into atmosphere and on Earth's surface
4. Air Pressure and the Cause of Winds
 - a. Vertical and horizontal pressure differences
 - b. Forces that affect the velocity of winds: pressure gradient force, friction
 - c. Force that affects the direction of winds: Coriolis Force
5. Circulation of Winds in the Atmosphere
 - a. Regional and local winds systems: sea breeze/land breeze cycle, mountain/valley breeze cycle, Santa Anas
 - b. Global scale of air pressure and wind belts: Doldrums, Subtropical High Pressure, Trade Winds, Westerlies, El Niño weather patterns
 - c. Monsoon process
6. Global Pattern of Moisture and Precipitation
 - a. Measurement of humidity in the atmosphere
 - b. Measurement of adiabatic process
 - c. Forms of precipitation
 - d. Observation of cloud types
 - e. Characteristics of atmospheric instability and stability
 - f. Behavior of air masses
 - g. Violent thunderstorm characteristics
 - h. Weather conditions for tornadoes, hurricanes
7. Köppen Global Climate System: Analysis of Climate Controls and Geographical Distribution of Climates
8. Structure and Composition of Lithosphere
 - a. Rock cycle: igneous, sedimentary, metamorphic
 - b. Earth's structure: composition and internal energy
 - c. Plate tectonics and continental drift
 - d. Orogenesis
9. Lithosphere
 - a. Tectonic processes: folding, faulting, volcanism, map distribution
 - b. Denudational processes: weathering, mass wasting, running water, wind, waves, moving ice
10. Desert landscape
11. Marine processes and coastline landforms
12. Landforms shaped by fluvial processes
13. Formation of Soils
 - a. Composition
 - b. Texture
 - c. Structure
 - d. Soil profile
 - e. Soil classification
14. Biogeography and the Water Cycle
15. Global Themes Dealing with Human Impact on the Physical Environment
 - a. Global warming
 - b. Hole in the ozone layer
 - c. Deforestation of rain forest ecosystem
 - d. Desertification process
 - e. Fire ecology
16. Impact of Environmental Hazards on the Physical Landscape
 - a. Tornadoes
 - b. Hurricanes
 - c. El Niño

- d. Earthquakes
- e. Volcanism
- f. Mass Wasting

Laboratory or Activity Content

None.

Methods of Evaluation

Which of these methods will students use to demonstrate proficiency in the subject matter of this course? (Check all that apply):

Problem solving exercises
Written expression

Methods of Evaluation may include, but are not limited to, the following typical classroom assessment techniques/required assignments (check as many as are deemed appropriate):

Essay exams
Essays
Group projects
Individual projects
Objective exams
Oral presentations
Problem-Solving Assignments
Problem-solving exams
Quizzes
Reports/papers
Research papers

Instructional Methodology

Specify the methods of instruction that may be employed in this course

Audio-visual presentations
Computer-aided presentations
Collaborative group work
Class activities
Class discussions
Distance Education
Demonstrations
Field experience/internship
Field trips
Group discussions
Instructor-guided interpretation and analysis
Internet research
Lecture
Small group activities

Describe specific examples of the methods the instructor will use:

1. Hands-on demonstration and illustration of the rock cycle. Students are given samples of the three rock types: to identify the characteristics of igneous, sedimentary and metamorphic rock.
2. In-class discussion on how humans through their activities have contributed to increasing greenhouse gases and enhancing global warming.
3. In-class problem solving where students work together on word problems, such as how to calculate the adiabatic rate of cooling in the atmosphere.
4. Critical thinking exercise on the spatial distribution of physical landscapes and how they relate to available natural resources, human activities, and cultural activities of regions, such as California.
5. In-class viewing of PowerPoint, videos and Google Earth to analyze the scale of significant geological events, such as tectonics and volcanism, and their impact on natural and human landscapes.
6. Instructor-led discussion on the complexity of the wildlands/urban interface relating natural and human induced disasters in southern California and solicit student opinions on how to resolve such issues.

Representative Course Assignments

Writing Assignments

1. Essay assignment such as describing the local scale wind system. Explain how the development of the sea breeze over the Oxnard Plain affects local temperatures and provides an ocean air circulation for the Oxnard area
2. Write a resource report on data collected and/or library research, using the scientific method, to prepare to present results to class or in a report format
3. Summarize the pertinent information from videos on key areas of study.

Critical Thinking Assignments

1. Propose how to reduce the severe impacts of climate change while considering the responsibility of government, private industry, and the individual while maintaining or improving quality of life and economic sustainability.
2. Consider earth systems in their daily life and future decisions such as where to live, actions to protect the earth, and implications of governmental decisions.
3. Coalesce multiple, and seemingly opposing processes, such as sun-heating and condensation, into a single phenomena, such a snow storm.
4. Visit a location or review maps/photos and recognize landforms and interpret the process shaping the landscape.

Reading Assignments

1. Students may be assigned reading of selected articles on physical environment topics using such journals/periodicals as: *Discovery*, *Scientific American*, *National Geographic* and *Nature*.
2. Students may be assigned a review of the Earth-atmosphere energy budget: to be able to sketch and summarize the elements that make up this solar energy driven system in preparation for a quiz.

Other assignments (if applicable)

1. Visit a nearby natural area and observe natural phenomena to note spatial distribution, recognize landforms, and interpret processes.
2. Join a group for a field activity or service learning project that protects or restores a natural landscape, or relates to natural resources used by people; then recognize the geographic processes or principles impacting people.

Outside Assignments

Representative Outside Assignments

1. Write notes from provided information or textbook to prepare for exams
2. Answer essay questions describing earth's systems or provide an analysis of a given phenomenon
3. Write a summary of instructor-made videos and other video resources
4. Participate in on-line discussion boards on course material and present relevant questions and answers
5. Use on-line learning systems/tools and practice quizzes to prepare for exam
6. Conduct data collection and/or library research, using the scientific method, to prepare to present results to class or in a report format
7. Visit a nearby natural area and interpret natural phenomena discussed in class
8. Join a group for a field activity or service learning project that protects or restores a natural landscape, or relates to natural resources used by people and identify and analyze natural processes.

Articulation

C-ID Descriptor Number

GEOG 110

Status

Approved

Comparable Courses within the VCCCD

GEOG M01 - Physical Geography

District General Education**A. Natural Sciences****B. Social and Behavioral Sciences****C. Humanities****D. Language and Rationality****E. Health and Physical Education/Kinesiology****F. Ethnic Studies/Gender Studies****CSU GE-Breadth****Area A: English Language Communication and Critical Thinking****Area B: Scientific Inquiry and Quantitative Reasoning****Area C: Arts and Humanities****Area D: Social Sciences****Area E: Lifelong Learning and Self-Development****CSU Graduation Requirement in U.S. History, Constitution and American Ideals:****IGETC****Area 1: English Communication****Area 2A: Mathematical Concepts & Quantitative Reasoning****Area 3: Arts and Humanities****Area 4: Social and Behavioral Sciences****Area 5: Physical and Biological Sciences****Area 6: Languages Other than English (LOTE)****Textbooks and Lab Manuals****Resource Type**

Textbook

DescriptionChristopherson, Robert (2018). *Elemental Geosystems* (9th). New York, Pearson.**Resource Type**

Other Instructional Materials

Description

1. Wall maps.

Resource Type

Other Instructional Materials

Description

5. Overhead projections.

Resource Type

Other Instructional Materials

Description

4. PowerPoint presentations.

Resource Type

Other Instructional Materials

Description

3. Videotape and DVD presentations.

Resource Type

Other Instructional Materials

Description

2. Digital slide presentations.

Distance Education Addendum**Definitions****Distance Education Modalities**

Hybrid (51%–99% online)

Hybrid (1%–50% online)

100% online

Faculty Certifications

Faculty assigned to teach Hybrid or Fully Online sections of this course will receive training in how to satisfy the Federal and state regulations governing regular effective/substantive contact for distance education. The training will include common elements in the district-supported learning management system (LMS), online teaching methods, regular effective/substantive contact, and best practices.

Yes

Faculty assigned to teach Hybrid or Fully Online sections of this course will meet with the EAC Alternate Media Specialist to ensure that the course content meets the required Federal and state accessibility standards for access by students with disabilities. Common areas for discussion include accessibility of PDF files, images, captioning of videos, Power Point presentations, math and scientific notation, and ensuring the use of style mark-up in Word documents.

Yes

Regular Effective/Substantive Contact**Hybrid (1%–50% online) Modality:**

Method of Instruction	Document typical activities or assignments for each method of instruction
Asynchronous Dialog (e.g., discussion board)	After viewing a video, propose on discussion board how to reduce the severe impacts of climate change while considering the responsibility of government, private industry, and the individual while maintaining or improving quality of life and economic sustainability. Students will interact with each other on suggested solutions and actions needed.
Synchronous Dialog (e.g., online chat)	Live video discussion with instructor to consider earth systems in their daily life and future decisions such as where to live, actions to protect the earth, and implications of governmental decisions.

Other DE (e.g., recorded lectures)

PowerPoint, videos and Google Earth to analyze the scale of significant geological events, such as tectonics and volcanism, and their impact on natural and human landscapes. Students will reflect and discuss application to their lives.

Hybrid (51%–99% online) Modality:

Method of Instruction

Document typical activities or assignments for each method of instruction

Asynchronous Dialog (e.g., discussion board)

After viewing a video, propose on discussion board how to reduce the severe impacts of climate change while considering the responsibility of government, private industry, and the individual while maintaining or improving quality of life and economic sustainability. Students will interact with each other on suggested solutions and actions needed.

Synchronous Dialog (e.g., online chat)

Live video discussion with instructor to consider earth systems in their daily life and future decisions such as where to live, actions to protect the earth, and implications of governmental decisions.

Other DE (e.g., recorded lectures)

PowerPoint, videos and Google Earth to analyze the scale of significant geological events, such as tectonics and volcanism, and their impact on natural and human landscapes.

100% online Modality:

Method of Instruction

Document typical activities or assignments for each method of instruction

Other DE (e.g., recorded lectures)

PowerPoint, videos and Google Earth to analyze the scale of significant geological events, such as tectonics and volcanism, and their impact on natural and human landscapes. Students will reflect and discuss application to their lives.

Asynchronous Dialog (e.g., discussion board)

After viewing a video, propose on discussion board how to reduce the severe impacts of climate change while considering the responsibility of government, private industry, and the individual while maintaining or improving quality of life and economic sustainability. Students will interact with each other on suggested solutions and actions needed.

Synchronous Dialog (e.g., online chat)

Live video discussion with instructor will be recorded to consider earth systems in their daily life and future decisions such as where to live, actions to protect the earth, and implications of governmental decisions.

Examinations

Hybrid (1%–50% online) Modality

Online
On campus

Hybrid (51%–99% online) Modality

Online
On campus

Primary Minimum Qualification

GEOGRAPHY

Review and Approval Dates

Department Chair

09/02/2020

Dean

09/02/2020

Technical Review

09/09/2020

Curriculum Committee

09/09/2020

Curriculum Committee

11/25/2020

CCCCO

MM/DD/YYYY

Control Number

CCC000273794

DOE/accreditation approval date

MM/DD/YYYY