GEOG R101L: PHYSICAL GEOGRAPHY LABORATORY

Originator
jdanza

College
Oxnard College

Discipline (CB01A)
GEOG - Geography

Course Number (CB01B)
R101L

Course Title (CB02)
Physical Geography Laboratory

Banner/Short Title
Physical Geography Lab

Credit Type
Credit

Start Term
Fall 2021

Catalog Course Description
This laboratory is designed to accompany GEOG R101. It introduces the global physical world, its dynamics and spatial relationships. This lab features observation, measurement and analysis of basic principles and concepts pertaining to Earth's physical systems, including the atmosphere, hydrosphere, lithosphere and biosphere. C-ID: GEOG 111.

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
Will be required

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

Activity

Laboratory
Minimum Contact/In-Class Laboratory Hours
52.5
Maximum Contact/In-Class Laboratory Hours
52.5

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

Total Student Learning

Total Student Learning
Total Minimum Student Learning Hours
52.5
Total Maximum Student Learning Hours
52.5

Minimum Units (CB07)
1
Maximum Units (CB06)
1

Prerequisites
GEOG R101 or concurrent enrollment

Entrance Skills

Entrance Skills
Ability to apply geographic concepts such as patterns on maps.

Prerequisite Course Objectives
GEOG R101-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.
GEOG R101-Describe and explain world distribution patterns of principal environmental components including air temperature, air pressure, wind, precipitation, climate, soil, vegetation, animals and landforms.

Entrance Skills
Able to apply the scientific method in lab reports.

Prerequisite Course Objectives
GEOG R101-Utilize the methods of scientific investigation in analyzing spatial relationships of physical landscapes and how they relate to human environments.

Entrance Skills
Able to read and understand orientation and patterns on maps.

Prerequisite Course Objectives
GEOG R101-Describe and explain world distribution patterns of principal environmental components including air temperature, air pressure, wind, precipitation, climate, soil, vegetation, animals and landforms.
GEOG R101-Utilize maps to illustrate how environmental hazards such as earthquakes and hurricanes can alter landscapes.

Entrance Skills
Apply physical processes to interpret lab results and observations.

Prerequisite Course Objectives
GEOG R101-Utilize maps to illustrate how environmental hazards such as earthquakes and hurricanes can alter landscapes.
GEOG R101-Calculate the adiabatic rate of cooling in examples of air lifting processes in the atmosphere.

Requisite Justification

Requisite Type
Prerequisite

Requisite
GEOG R101

Requisite Description
Course in a sequence

Level of Scrutiny/Justification
Closely related lecture/laboratory course

Requisite Type
Concurrent

Requisite
GEOG R101

Requisite Description
Course in a sequence

Level of Scrutiny/Justification
Closely related lecture/laboratory course

Student Learning Outcomes (CSLOs)

	Upon satisfactory completion of the course, students will be able to:
1	Identify the three rock types by visual examination and/or data provided, and determine the general environments in which the rocks were formed.
2	Graph a hydrograph of an urban and non-urban (undeveloped) watershed and schematically indicate storm flow time-lag, relative flood height and flow rate.
3	Calculate the rate of seafloor spreading using data provided.
4	Identify and locate the three types of plate tectonic boundaries and the geomorphologic (surface) features of each of the three boundaries. These items will be tested either by locating the various elements on maps and/or by interpreting information /data from exercises.
5	Formulate wind direction from a weather map with air pressure and front locations.

Course Objectives

	Upon satisfactory completion of the course, students will be able to:
1	Apply with understanding a geographic or spatial perspective by utilizing the geographic grid system.
2	Describe and explain the relationship between the Earth and Sun and its effect on seasons and the differential heating of the Earth's surface.
3	Identify global temperature controls and how they affect the world distribution of temperature patterns.
4	Analyze the locations of the world's major climate regions and the environmental factors that control them.
5	Read and interpret landscapes from a topographic map.
6	Decode weather data from station models plotted on a weather map and interpret weather patterns they may exhibit.
7	Identify the major characteristics and properties of common minerals and rocks found within the Earth's crust.
8	Identify the major cloud formations and the weather associated with each.
9	Recognize the major tectonic plates and their boundaries on a world map.
10	Read and interpret aerial photographs that identify topographical features that are part of the natural environment.

Course Content

Lecture/Course Content

This course is lab-only; please see the Lab Content section of this outline for content information.

Laboratory or Activity Content

A. Geographic Grid: Interpret Latitude and Longitude
B. Earth-Sun Relationships and Seasons: Review the Radiation Heat Balance
C. Earth's Atmosphere: Temperature and Pressure Profiles, and Pressure Patterns
D. Air Temperature Patterns and Controls
E. Air Pressure Readings and Wind Rose Construction
F. Atmospheric Humidity, Stability and Adiabatic Processes
G. Measurement of Relative Humidity and Specific Humidity Under Atmospheric Conditions
H. Interpreting Air Mass and Weather Maps
I. Analysis of Hydrologic Cycle: Input and Output Factors
J. Review Köppen Global Climate System
K. Topographic Maps and Map Interpretation: Fluvial, Coastal, Volcanic and Arid Landscapes
L. Plate Tectonics: Mechanisms and Global Patterns

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
Skills demonstrations
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
Journals
Laboratory activities
Laboratory reports
Objective exams
Oral presentations
Problem-Solving Assignments
Problem-solving exams
Quizzes
Reports/papers
Research papers
Skills demonstrations
Skill tests
Simulations

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
Case studies
Distance Education
Demonstrations
Field experience/internship
Field trips
Group discussions
Guest speakers
Instructor-guided interpretation and analysis
Instructor-guided use of technology
Internet research
Laboratory activities
Lecture

Practica
Small group activities

Describe specific examples of the methods the instructor will use:

1. Students will complete lab exercises during lab session, such as: the interpretation of weather maps and their use in weather forecasting. Students will be evaluated for problem solving in lab activities.
2. Instructor will guide students to draw relationships between the observed physical environment, using maps and photos, and geographical processes.
3. Small groups of students, using lab equipment and materials, will learn to interpret natural processes being observed and report on the results, such as how water infiltration changes with soil type.
4. Field trip reports will be used following the scientific method to interpret natural phenomena, such as the distribution of native plant sites the geographic factors influencing plant types and growth.
5. Instructor lead group discussion on lab results with critical thinking of how and why the scientific process yeilded experimental results.
6. Written and interpretive exercises will draw from laboratory activities involving soils and water.

Representative Course Assignments

Writing Assignments

1. Completion of lab workbook maps, tables, and answer blanks for fluvial processes involving the hydrograph of an urban and non-urban (undeveloped) watershed and schematically indicate storm flow time-lag, relative flood height and flow rate.
2. Graphical display of scientifically collected data and tables, to formulate wind direction from a weather map with air pressure and front locations.
3. Completion of a full lab experiment following the steps of the scientific method. Experiments will measure geographic processes observed by students.
4. Identify and describe the environment of where the major rock types formed.
5. Describe the process, plate boundaries and interpret provided data on seafloor spreading, including the rate of movement per year.

Critical Thinking Assignments

1. Participate in class and small group discussions to explain laboratory results, such as latent heat absorbed in the phase changes of water and how it applies to weather.
2. Analyze and explain which physical processes learned in lecture apply to situations described on maps and photos of landscapes.
3. Critique experimental lab setup of equipment and processes to ascertain why lab results may differ among other students.

Reading Assignments

1. Lab workbook readings.
2. Scientific journals and publications
3. Selective readings from physical geography text.

Skills Demonstrations

1. Students will interpret topographic maps and provide an analysis of the landscape.
2. Students will demonstrate competence in laboratory equipment setup and measurement of surface temperature heating while controlling for variables.
3. Students will demonstrate how to read results from various instruments, record data, and provide a visual analysis or graphic display of data.

Other assignments (if applicable)

NONE

Outside Assignments

Articulation

C-ID Descriptor Number

GEOG 111

Status

Approved

Comparable Courses within the VCCCD
GEOG V01L - Physical Geography Laboratory

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

Description
Danza, James (2020). *Physical Geography Laboratory Manual*. Oxnard College, Xanedu, Oxnard, CA

Resource Type
Textbook

Description
Tarbuck, Edward J. (2018) Applications and Investigations in Earth Science (9th) Pearson, Boston, MA

Resource Type
Other Instructional Materials

Description
1. Wall maps.

Resource Type
Other Instructional Materials

Description
9. Class set of raised relief maps at various scales.

Resource Type
Other Instructional Materials

Description
7. Class set of world atlases.

Resource Type
Other Instructional Materials

Description
6. Use of Internet.

Resource Type
Other Instructional Materials

Description
5. Class set of USGS topographic maps.

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.

Resource Type
Other Instructional Materials

Description
Document camera projection.

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)	Students post their results on a discussion board regarding their activity in the workbook for comparison and further discussion with other students.
Other DE (e.g., recorded lectures)	Students will watch a video recorded by the instructor showing the lab experiment and students complete the lab written report.
Video Conferencing	Students will observe a laboratory experiment performed by the instructor and complete the steps of the scientific method.

Hybrid (51%–99% online) Modality:

Method of Instruction	Document typical activities or assignments for each method of instruction
Video Conferencing	Students will observe a laboratory experiment performed by the instructor and complete the steps of the scientific method.
Other DE (e.g., recorded lectures)	Students will watch a video recorded by the instructor showing the lab experiment and students complete the lab written report.
Asynchronous Dialog (e.g., discussion board)	Students post their results on a discussion board regarding their activity in the workbook for comparison and further discussion with other students.

100% online Modality:

Method of Instruction	Document typical activities or assignments for each method of instruction
Asynchronous Dialog (e.g., discussion board)	Students post their results on a discussion board regarding their activity in the workbook for comparison and further discussion with other students.
Other DE (e.g., recorded lectures)	Students will watch a video recorded by the instructor showing the lab experiment and students complete the lab written report.
Video Conferencing	Students will observe a laboratory experiment performed by the instructor and complete the steps of the scientific method.

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
CCC000202728

DOE/accreditation approval date
MM/DD/YYYY