

GEOG 160: GEOGRAPHY OF NATURAL RESOURCES

In Workflow

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Approval Path

1. Wed, 19 Feb 2025 06:25:43 GMT
Matt Schmidtlein (schmidmc): Rollback to Initiator
2. Wed, 19 Feb 2025 18:50:32 GMT
Matt Schmidtlein (schmidmc): Approved for GEOG Chair
3. Wed, 19 Feb 2025 23:28:03 GMT
Mikkel Jensen (mikkel.jensen): Approved for NSM College Committee Chair
4. Thu, 20 Feb 2025 17:11:02 GMT
Chris Taylor (ctaylor): Approved for NSM Dean

Date Submitted: Wed, 19 Feb 2025 18:47:42 GMT

Viewing: GEOG 160 : Geography Of Natural Resources

Last edit: Wed, 19 Feb 2025 23:25:49 GMT

Changes proposed by: Erica Orcutt (217793265)

Contact(s):

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Catalog Title:

Geography Of Natural Resources

Class Schedule Title:

Natural Resources

Academic Group: (College)

NSM - Natural Sciences & Mathematics

Academic Organization: (Department)

Geography

Will this course be offered through the College of Continuing Education (CCE)?

No

Catalog Year Effective:

Fall 2025 (2025/2026 Catalog)

Subject Area: (prefix)

GEOG - Geography

Catalog Number: (course number)

160

Course ID: (For administrative use only.)

134781

Units:

3

Is the ONLY purpose of this change to update the term typically offered or the enforcement of existing requisites at registration?

No

In what term(s) will this course typically be offered?

Spring term only - even years

Does this course require a room for its final exam?

Yes, final exam requires a room

This course complies with the credit hour policy:

Yes

Justification for course proposal:

Matches with current faculty's expertise, since the primary faculty who taught a similar course retired. This proposal is replacing GEOG 196N, which was an experimental offering in Spring 2024, and we are re-activating this pre-existing course number. Course provides students with an interdisciplinary understanding of natural resources, which impacts their daily lives in multiple ways. Course will be both a GE area B5 and an elective option for majors in the BA in Geography (Physical Geography) concentration.

Course Description: (Not to exceed 90 words and language should conform to catalog copy.)

Study of the physical aspects of natural resources including how those aspects influence the spatial distribution, methods of detecting and analyzing, and challenges to human use. Emphasis on the inherent tradeoffs in land use decisions when humans utilize resources.

Are one or more field trips required with this course?

No

Fee Course?

No

Is this course designated as Service Learning?

No

Is this course designated as Curricular Community Engaged Learning?

No

Does this course require safety training?

No

Does this course require personal protective equipment (PPE)?

No

Does this course have prerequisites?

No

Does this course have corequisites?

No

Graded:

Letter

Approval required for enrollment?

No Approval Required

Course Component(s) and Classification(s):

Lecture

Lecture Classification

CS#02 - Lecture/Discussion (K-factor=1WTU per unit)

Lecture Units

3

Is this a paired course?

No

Is this course crosslisted?

No

Can this course be repeated for credit?

No

Can the course be taken for credit more than once during the same term?

No

Description of the Expected Learning Outcomes and Assessment Strategies:

List the Expected Learning Outcomes and their accompanying Assessment Strategies (e.g., portfolios, examinations, performances, pre-and post-tests, conferences with students, student papers). Click the plus sign to add a new row.

	Expected Learning Outcome	Assessment Strategies
1	Identify the basic categories of natural resources including energy, water, biological, and metals & minerals, and the variability within each category	Exams, assignments
2	Describe different ecosystem types and the services that can be provided by different ecosystems	Exams, assignments
3	Analyze the different physical properties of natural resources and how that impacts their spatial distribution and methods of locating and harvesting that resource	Exams, assignments, final project
4	Evaluate the potential tradeoffs involved in using land for different natural resource purposes, including overlooked tradeoffs such as potential hazards	Assignments, final project
5	Apply what they have learned to understand how natural resource use and management impacts their lives	Assignments, final project

Attach a list of the required/recommended course readings and activities:

Syllabus_GEOG160_Spring2026.pdf

Is this course required in a degree program (major, minor, graduate degree, certificate?)

No

Does the proposed change or addition cause a significant increase in the use of College or University resources (lab room, computer)?

No

Will there be any departments affected by this proposed course?

No

I/we as the author(s) of this course proposal agree to provide a new or updated accessibility checklist to the Dean's office prior to the semester when this course is taught utilizing the changes proposed here.

I/we agree

University Learning Goals

Undergraduate Learning Goals:

Competence in the disciplines
 Knowledge of human cultures and the physical and natural world
 Intellectual and practical skills
 Personal and social responsibility
 Integrative learning

Is this course required as part of a teaching credential program, a single subject, or multiple subject waiver program (e.g., Liberal Studies, Biology) or other school personnel preparation program (e.g., School of Nursing)?

No

GE Course and GE Goal(s)

Is this a General Education (GE) course or is it being considered for GE?

Yes

In which GE area(s) does this apply?

B5. Further Studies in Physical Science, Life Forms and Quantitative Reasoning/Upper Division Area 5 or Area 2

Which GE objective(s) does this course satisfy?

Read, write, and understand relatively complex and sophisticated English prose.

Find and use common information resources, engage in specialized library research, use computers and seek out appropriate expert opinion and advice.

Gain a general understanding of current theory, concepts, knowledge, and scientific methods pertaining to the nature of the physical universe, ecosystems, and life on this planet.

Attach Course Syllabus with Detailed Outline of Weekly Topics:

Syllabus_GEOG160_Spring2026.pdf

Syllabi must include: GE area outcomes listed verbatim; catalog description of the course; prerequisites, if any; student learning objectives; assignments; texts; reading lists; materials; grading system; exams and other methods of evaluation.

Will more than one section of this course be offered?

No

General Education - Upper Division Area 5 or Area 2

Section 1.

Indicate in written statements how the course meets the following criteria for Upper Division Area 5 or Area 2. Relate the statements to the course syllabus and outline. Be as succinct as possible.

Course type:

Area 5: Physical and Biological Sciences

For courses in Physical Science or Biological Science:

Develops an understanding of the principles underlying and interrelating natural phenomena including the foundations of our knowledge of living systems.

1) Students discuss trade offs in natural resource management and use, including land use trade offs. s natural resource can have unintended consequences on other parts of the planet, e.g. fossil fuels and climate change, mining and land loss/water contamination, etc. Many other examples are used including water and food production, ecosystem services, and biodiversity, that show the connections between different components of the Earth system.

Introduces students to one or more of the disciplines whose purpose is to acquire knowledge of the physical universe and/or living systems and life forms.

Students use the interdisciplinary field of geography to study the physical world and its processes, but also how those processes influence the distribution of natural resources, and shape how humans access and utilize those resources. Physical geography is used as a way to understand the Earth system and how natural resources are fundamentally interconnected with that system and with human activities.

Develops an appreciation of the methodologies of science and the limitations of scientific inquiry.

Students learn about geographic tools and methods, such as remote sensing and Geographic Information Systems, which allow for the detection, mapping, and monitoring of natural resources. Students explore how scientists apply the scientific method to multiple natural resource management challenges in the field, and how that differs from traditional laboratory experiments regarding the ability to provide control versus realistic scenarios for scientific inquiry. Students discuss how the science of natural resources has real impact on their daily lives.

Please Note: Courses listed in this category:

1) **Need not be introductory courses and need not be as broad in scope as courses included in Areas 2 and 5 i.e.; they may deal with a specialized topic.**

2) **These courses may have prerequisites or build on or apply concepts and knowledge covered in Areas 2, 5A and 5B. For math courses, there must be an intermediate algebra prerequisite.**

Addresses the specific GE student learning outcomes for area B5. A student should be able to do one or more of the following:

Cite critical observations, underlying assumptions and limitations to explain and apply important ideas and models in one or more of the following: physical science, life science, mathematics, or computer science.

Throughout the course, students are asked to research and write about or present information about a variety of natural resources from different places on Earth. Students learn how resource managers model the physical world, such as modeling water resource availability from annual snowpack, and underlying assumptions made in using reflectance spectra for estimating vegetation productivity and the potential limitations of using remote sensing data to scale up from ground-truth observations, to name a few examples. Issues of scaling ground-based observations with remotely sensed data or using models to interpolate data across space are discussed throughout the semester.

Recognize evidence-based conclusions and form reasoned opinions about science-related matters of personal, public and ethical concern.

Students conduct in-class debates on contentious issues in natural resource management, such as the pros and cons of nuclear energy. They are given the underlying physical science of the natural resource, such as what it is, how we extract it, how do we use and it what are the consequences of doing so, and then they can do their own research and form arguments about why society should or should not use a resource a certain way. Students learn how to critically evaluate the sources they use and assess them for potential bias or poorly researched claims.

Discuss historical or philosophical perspectives pertaining to the practice of science or mathematics.

Students learn about deductive vs. inductive reasoning when it comes to the scientific method, and the difference between questions the scientific method is designed to answer, versus questions it cannot, such as opinion and value-based judgements. Students learn to separate the information we can glean from data from the values systems that might be used to assess if the information is "good" or "bad", or implies that some natural resource use choices are "good" or "bad". Additionally, we discuss if we collectively think something is "bad" then there are different choices for how to address that issue as a society, and how science can potentially contribute to technological solutions.

Includes a writing component described on course syllabus

1) If course is lower division, formal and/or informal writing assignments encouraging students to think through course concepts using at least one of the following: periodic lab reports, exams which include essay questions, periodic formal writing assignments, periodic journals, reading logs, other. Writing in lower division courses need not be graded, but must, at a minimum, be evaluated for clarity and proper handling of terms, phrases, and concepts related to the course.

2) If course is upper division, a minimum of 1500 words of formal, graded writing. [Preferably there should be more than one formal writing assignment and each writing assignment (e.g. periodic lab reports, exams which include essay questions, a research/term paper etc.) should be due in stages throughout the semester to allow the writer to revise after receiving feedback from the instructor. Include an indication of how writing is to be evaluated and entered into course grade determination.]

Multiple written assignments are included in the course including, written homework assignments (~1000 words), written short-answer questions on exams (~500 words), and a final project where students write a white paper addressing a chosen stake-holder group for a natural resource of their choosing (~1500 words). Students also have to write a paper about the origins of certain ingredients in recipes.

Section 2.

If you would like, you may provide further information that might help the G.E. Course Review Committee understand how this course meets these criteria and/or the G.E. Program Objectives found in the CSUS Policy Manual, General Education Program, Section I.B.

The interdisciplinary nature of this course makes it ideal as a GE because helps students to interrogate their world from multiple perspectives. Students also benefit because they cannot avoid using natural resources in their daily lives, and much of what they will learn is often hidden in plain sight. However, understanding how natural resources work can help them to make informed opinions and decisions as members of society.

Reviewer Comments:

Matt Schmidlein (schmidmc) (Wed, 19 Feb 2025 06:25:43 GMT): Rollback: Please make changes as described in email from dept. committee chair.

Key: 9158