

ENVS 250: SOILS AND GLOBAL CHANGE

In Workflow

1. ENVS Committee Chair (wayne.linklater@csus.edu)
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9. Catalog Editor (catalog@csus.edu)
10. Registrar's Office (k.mcfarland@csus.edu)
11. PeopleSoft (PeopleSoft@csus.edu)

Approval Path

1. Wed, 28 Sep 2022 23:37:49 GMT
Wayne Linklater (wayne.linklater): Approved for ENVS Committee Chair
2. Wed, 28 Sep 2022 23:44:38 GMT
Wayne Linklater (wayne.linklater): Approved for ENVS Chair
3. Fri, 18 Nov 2022 13:35:46 GMT
Emily Wickelgren (wickelgr): Rollback to Initiator
4. Thu, 29 Jun 2023 18:02:18 GMT
Wayne Linklater (wayne.linklater): Approved for ENVS Committee Chair
5. Tue, 12 Sep 2023 20:15:27 GMT
Wayne Linklater (wayne.linklater): Approved for ENVS Chair
6. Thu, 21 Sep 2023 01:03:46 GMT
Rachel Flamenbaum (flamenbaum): Approved for SSIS College Committee Chair
7. Thu, 28 Sep 2023 21:51:47 GMT
Marya Endriga (mendriga): Approved for SSIS Dean
8. Mon, 30 Oct 2023 20:21:19 GMT
Katie Hawke (katedickson): Approved for Academic Services

New Course Proposal

Date Submitted: Tue, 28 Mar 2023 21:48:07 GMT

Viewing: ENVS 250 : Soils and Global Change

Last edit: Thu, 29 Jun 2023 17:53:42 GMT

Changes proposed by: Si Gao (223019017)

Contact(s):

| Name (First Last) | Email | Phone 999-999-9999 |
|-------------------|----------------|--------------------|
| Si Gao | s.gao@csus.edu | 916-278-7338 |

Catalog Title:

Soils and Global Change

Class Schedule Title:

Soils and Global Change

Academic Group: (College)

SSIS - Social Sciences & Interdisciplinary Studies

Academic Organization: (Department)

Environmental Studies

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

No

Catalog Year Effective:

Fall 2024 (2024/2025 Catalog)

Subject Area: (prefix)

ENVS - Environmental Studies

Catalog Number: (course number)

250

Course ID: (For administrative use only.)

TBD

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?

Fall, Spring, Summer

Does this course require a room for its final exam?

No, final exam does not require a room

This course complies with the credit hour policy:

Yes

Justification for course proposal:

The Department of Environmental Studies (ENVS) is constructing a state-side MS, and this proposed course will serve as one of the electives and contribute to the 18 units of ENVS courses taken by students.

Soil is a non-renewable resource that provides essential ecosystem services such as food production, carbon sequestration, and climate regulation. Since 2021, the California Department of Food & Agriculture's Healthy Soils Program has made public financial incentives to encourage farmer adoption of sustainable soil management practices such as soil organic amendments to improve soil health and help fight climate change. This proposed course will introduce students to the fundamentals of soil science and climate-smart soil management practices. To my knowledge, the topics covered in this proposed class are not covered by any other Geology, Geography, or Biology courses.

Course Description: (Not to exceed 80 words and language should conform to catalog copy.)

This course is designed for students interested in learning basic soil processes as they relate to the larger ecosystem and global processes. The course will cover the soil food web and trophic dynamics, fundamentals of soil biogeochemical cycles, global carbon and nitrogen cycles, greenhouse gas emissions, soil health management practices, the role of soil in providing stability to the terrestrial ecosystems in a changing climate, carbon sequestration and nature-based climate change mitigation strategies.

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?

Yes

Prerequisite:

Graduate standing or instructor permission.

Prerequisites Enforced at Registration?

Yes

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 | Summarize the biogeochemical interactions between the soil system and global climate change | Reading assignments and writing critiques; midterm exam; in-class discussion. |
| 2 | Construct a conceptual model demonstrating the global carbon and nitrogen cycle | Reading assignments and writing critiques; midterm exam; in-class discussion; meta-analysis project on soils and global change. |
| 3 | Design a soil- or land-based experiment adopting at least one climate mitigation strategy | In-class discussion; meta-analysis project on soils and global change. |
| 4 | Synthesize and analyze soil/earth system data across spatial and temporal scales | In-class discussion; meta-analysis project on soils and global change; final oral presentation |
| 5 | Critically assess the efficiencies of nature-based climate solutions across different ecosystems | Reading assignments and writing critiques; in-class discussion; meta-analysis project on soils and global change; final oral presentation |

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

ENVS 250 Soils and Global Change.docx

For whom is this course being developed?

Majors in the Dept

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

Graduate (Masters) Learning Goals:

Critical thinking/analysis
Communication
Information literacy
Disciplinary knowledge
Intercultural/Global perspectives
Professionalism
Research (optional)

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

Is this a Graduate Writing Intensive (GWI) course?

No

Reviewer Comments:

Emily Wickelgren (wickelgr) (Fri, 18 Nov 2022 13:35:46 GMT): Rollback: see email on 11/17/22

Key: 14821