# ENVS 150: SOIL SCIENCE AND SUSTAINABILITY

## In Workflow

1. ENVS Committee Chair (wayne.linklater@csus.edu)
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3. SSIS College Committee Chair (flamenbaum@csus.edu)
4. SSIS Dean (dhyson@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. Mon, 26 Feb 2024 22:58:52 GMT
   Wayne Linklater (wayne.linklater): Rollback to Initiator
2. Thu, 29 Feb 2024 01:09:31 GMT
   Wayne Linklater (wayne.linklater): Approved for ENVS Committee Chair
3. Thu, 29 Feb 2024 20:40:58 GMT
   Wayne Linklater (wayne.linklater): Approved for ENVS Chair
4. Sun, 12 May 2024 02:51:36 GMT
   Rachel Flamenbaum (flamenbaum): Rollback to Initiator
5. Mon, 13 May 2024 22:49:25 GMT
   Wayne Linklater (wayne.linklater): Approved for ENVS Committee Chair
6. Mon, 13 May 2024 22:54:17 GMT
   Wayne Linklater (wayne.linklater): Approved for ENVS Chair
7. Tue, 14 May 2024 17:46:49 GMT
   Rachel Flamenbaum (flamenbaum): Approved for SSIS College Committee Chair
8. Fri, 17 May 2024 21:37:34 GMT
   Marya Endriga (mendriga): Approved for SSIS Dean

### New Course Proposal

Date Submitted: Mon, 13 May 2024 20:38:44 GMT

### Viewing: ENVS 150 : Soil Science and Sustainability

### Last edit: Tue, 14 May 2024 17:46:39 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:**
Soil Science and Sustainability

**Class Schedule Title:**
Soil Science & Sustainability

**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 2025 (2025/2026 Catalog)

**Subject Area: (prefix)**
ENVS - Environmental Studies

**Catalog Number: (course number)**
150

**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

**Does this course replace an existing experimental course?**
No

**This course complies with the credit hour policy:**
Yes

**Justification for course proposal:**
This course is designed to fill a critical gap in our ENVS major/minor curriculum by addressing the pressing issues of soil degradation caused by industrial practices, pollution, and climate change. Soil plays a fundamental role in sustaining life on Earth, and understanding its dynamics is essential for students pursuing careers in environmental science. By offering this course as an elective for our major/minor, we aim to provide students with a comprehensive understanding of soil functions and formation, emphasizing its foundational role in ecological processes, land use planning, and sustainable practices.

The development of this course stems from our department's commitment to holistic environmental education and our recognition of the growing importance of soil science in addressing contemporary environmental challenges. This course is not only reflective of the research expertise within a newly hired tenure-track faculty, but also responds to established student interest in exploring soil science and obtaining field investigation skills as part of their academic journey. Moreover, it aligns with our department's broader goal of preparing students for impactful contributions to sustainable practices, equipping them with the knowledge and skills needed to address agriculture, biodiversity, and climate resilience challenges.

In summary, this new course will fill the need by offering students the opportunity to delve deeper into the specific science of soils while providing them with practical insights into preserving soil health and promoting environmental sustainability. Through an interdisciplinary approach, students will be empowered to tackle complex environmental issues and make meaningful contributions to the field of environmental science.

**Course Description: (Not to exceed 90 words and language should conform to catalog copy.)**
Soil is the Earth’s fragile skin that anchors all life. This course will cover the chemical, physical, and biological properties of soils, the formation and distribution of soils, and the functions of soils in participating major ecological processes. The course also explores issues and societal challenges underlying soil degradation, discusses exemplary sustainable soil health management and conservation practices, and addresses the interrelatedness of responsible soil use and climate mitigation.

**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 | Summarize the ecological roles of soils. | Practical homework assignments; midterm exam; in-class discussion |
| 2 | Evaluate major soil chemical, physical, and biological properties. | Practical homework assignments; midterm exam; in-class discussion; student-led group presentation; literature review paper |
| 3 | Propose management techniques used to care for water, fertility, and biodiversity of soils. | Practical homework assignments; midterm exam; in-class discussion; student-led group presentation |
| 4 | Synthesize effective soil conservation practices and solutions to improve soil health and sustainability. | Practical homework assignments; in-class discussion; student-led group presentation; literature review paper |
| 5 | Relate the role of soils to climate at various spatial and temporal scales. | Midterm exam; in-class discussion; student-led group presentation; literature review paper |

**Attach a list of the required/recommended course readings and activities:**
ENVS 150 Soil Science and Sustainability Gao Feb 2024_rev 0513 SG.docx

**For whom is this course being developed?**

Majors in the Dept
Minors 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

**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?**

No

**Reviewer Comments:**

**Wayne Linklater (wayne.linklater) (Mon, 26 Feb 2024 22:58:52 GMT):** Rollback: for review

**Rachel Flamenbaum (flamenbaum) (Sun, 12 May 2024 02:51:36 GMT):** Rollback: pls see email feedback

Key: 15081