San José State University
College of Social Science/ Environmental Studies Department
ENVS 187 (50188), Introduction to Environmental Restoration
Fall 2024

Course and Contact Information

Instructor:	Cristina Siegel
Office Location:	WSQ 115E
Telephone:	ENVS main office 408-924-2772 (please leave message)
Email:	cristina.siegel@sjsu.edu
Office Hours:	In person Wed 12:00pm - 1:15pm, or by appointment (Zoom/In person: M/W)
Class Days/Time:	Lecture, Activities & Field Trips: T 1:30-4:15 & T 4:30-6:30
	+ 1 Saturday Field Trip (TBA)
Classroom:	Boccardo Business Center (BBC) 126
Prerequisites:	ENVS 01, GE B2, 100W
Finals Day:	Monday 12/16/24 12:15pm to 2:30pm

Course Format

This course has classroom lectures, fieldwork, activities, assignments, quizzes, and exams. This course requires the use of a computer with Internet connectivity. Course materials such as syllabus, assignment instructions, quizzes, and exams are on the Canvas Learning Management System (Canvas) course website at http://sjsu.instructure.com. You are responsible for regularly checking Canvas for announcements and emails from your instructor. Off-campus field trips and independent research are integral to this course.

Course Description

Interdisciplinary art and science of restoring destroyed or degraded habitats. Emphasis on the interplay of ecological principles, planning, implementation and monitoring of restoration plans. ***Fieldwork and independent research required.***

This course is designed to introduce you to the interdisciplinary field of environmental restoration. Scientific restoration efforts date back to the prairie restorations in the 1930s at the University of Wisconsin Arboretum. Only recently has restoration been recognized as an important scientific, political, and public endeavor. Although the physical restoration of a site is based on our technical knowledge of ecological systems, successful restoration efforts often include biologic, economic, political, regulatory, and public participation elements.

Interest in restoration has been spurred by at least two developments:

1. Government regulations have required that project proponents compensate ("mitigate") for damage they cause to the environment, and

2. The public has recognized that in order to preserve endangered species, protect ecosystem services, and improve our living environment, we need to restore habitats that have been degraded or destroyed.

This course is taught in three parts and will cover the following overarching themes:

- **Ecology**: the ecological principles that form the basis of the field of restoration
- **Theory**: the theoretical underpinnings of restoration and methods of practice
- **Implementation**: the process of restoration (design, implementation, and monitoring) using field methods and techniques

Course Learning Outcomes (CLO):

Upon successful completion of this course, students will be able to:

- Understand and apply the ecological principles that are central to the field of restoration
- Understand the history of restoration science and how it has helped develop the body of ecological knowledge and influenced current restoration techniques
- Understand restoration theory and apply restoration practices to a range of habitats and restoration projects
- Understand the stages of successful restoration projects and evaluate the quality of projects from the perspective of planning and design, implementation, monitoring and adaptive management
- Learn methods and techniques for baseline assessment and monitoring progress of a project toward restoration goals

Program Learning Outcomes:

Upon successful completion of this course, students will be able to:

PLO 1 (Qualitative Environmental Literacy): Write a logical analytical paper using good writing style and construction supported by appropriate research

PLO 2 (Quantitative Environmental Literacy): Determine, apply and interpret appropriate basic statistical or other quantitative analyses to environmental data

PLO 3 (Content Environmental Literacy): Develop proficiency in the interdisciplinary sustainability principles that are the foundation of environmental studies; they will know the key environmental challenges facing the planet, know relevant interdisciplinary information about these challenges, and be able to develop/identify feasible solutions

PLO 4 (Professional Skills: 4A): Productively conduct group/team work to deliver professional quality presentations and reports

PLO 5 (BS Competency): Demonstrate in-depth knowledge and skills in a science or technical field

Required Texts/Readings

Textbook:

Required: Holl, Karen D. 2020. Primer of Ecological Restoration. Island Press, Washington DC. ISBN 1610919726. Text is available at the SJSU bookstore and from online retailers.

Optional: Greipsson, Sigurdur. 2011. Restoration Ecology. Jones & Bartlett Learning, LLC. Sudbury, MA. ISBN: 978-0-7637-4219-5. Text is available at the SJSU bookstore and from online retailers.

Other Readings:

Additional readings available on Canvas.

Other Technology Requirements:

This course requires access to a computer with Internet connectivity, word processing (Microsoft Word and Google Documents are required for peer-reviewed assignments), presentation, and spreadsheet software.

Library Liaison:

Peggy Cabrera (peggy.cabrera@sjsu.edu) is the Library Liaison for the Department of Environmental Studies. She is a great resource, available for helping with research projects and scientific reference searches.

Course Requirements and Assignments

SJSU classes are designed such that in order to be successful, it is expected that students will spend a minimum of forty-five hours for each unit of credit (normally three hours per unit per week), including but not limited to preparing for class, participating in course activities, and completing assignments. More details about student workload can be found in University Policy S12-3 at http://www.sjsu.edu/senate/docs/S12-3.pdf.

This is a lecture and field course that requires extensive writing, reading, and research outside of the classroom. **This is a four-unit course, which means you are expected to devote 12 hours of work per week to this class through participation in the classroom, field trips, homework, and independent study**. You must prepare for each class session by completing the appropriate readings or work before the lecture. You will be working within the body of knowledge of the fields of ecology and restoration and will conduct independent research as well as work in a group to present a case study of a local restoration project. A group presentation and a final report is the culmination of this work. Finally, exams and quizzes will allow you to demonstrate your knowledge of the materials covered in class and during field trips.

Consent for Recording of Class and Public Sharing of Instructor Material

Common courtesy and professional behavior dictate that you notify someone when you are recording him/her. You must obtain the instructor's permission to make audio or video recordings in this class. Such permission allows the recordings to be used for your private study purposes only.

Additionally, course material developed by the instructor is the intellectual property of the instructor and cannot be shared publicly without his/her approval. You may not publicly share, or upload instructor generated material for this course such as exam questions, lecture notes, homework solutions, in-class audio/video recordings, etc. without instructor consent.

See University Policy S12-7 at http://www.sjsu.edu/senate/docs/S12-7.pdf.

Academic Integrity

Your commitment, as a student, to learning is evidenced by your enrollment at San Jose State University. The University Academic Integrity Policy F15-7 at http://www.sjsu.edu/senate/docs/F15-

7.pdf requires you to be honest in all your academic course work. Faculty members are required to report all infractions to the office of Student Conduct and Ethical Development. The Student Conduct and Ethical Development website is available at http://www.sjsu.edu/studentconduct/. Instances of academic dishonesty will not be tolerated. **Cheating on exams or plagiarism (presenting the work of another as your own, or the use of another person's ideas without giving proper credit) will result in a failing grade and sanctions by the University**. For this class, all assignments are to be completed by the individual student unless otherwise specified. If you would like to include in your assignment any material you have submitted, or plan to submit for another class, please note that University Academic Integrity Policy F15-7 requires approval of both instructors.

Plagiarism, intentional or not, will not be tolerated in this course. This course is designed to provoke critical thought and writing, and plagiarism will not help you to become a better thinker or writer. For an extensive read of the University guidelines for dealing with plagiarism, see the University Academic Integrity Policy F15-7 at sjsu.edu/senate/docs/F15-7.pdf. *The first incidence of plagiarism will result in a zero (0) for the assignment and a report filed with the Office of Student Conduct and Ethical Development as required by SJSU. A second incidence of plagiarism may result in a failing grade for the course and a second report filed.* **Cite the source for any fact not understood to be common knowledge.**

Here is an idea of what plagiarism looks like – this does not replace the definition of plagiarism found at the above link to the Academic Integrity Policy:

You are plagiarizing or cheating if you:

- ✓ For written work, copy anything from a book, article, or website and add or paste it into your paper without using quotation marks and/or without providing the full reference for the quotation, including page number.
- ✓ For written work, summarize/paraphrase in your own words ideas you got from a book, article, or the web without providing the full reference for the source (including page number in the humanities).
- ✓ For an oral presentation, copy anything from a book, article, or website and present it orally as if it were your own words. You must summarize and paraphrase in your own words and bring a list of references in case the professor asks to see it.
- ✓ Use visuals or graphs you got from a book, article, or website without providing the full reference for the picture or table.
- ✓ Recycle a paper you wrote for another class.
- ✓ Copy from a classmate or use someone else's work as if it were your own.
- ✓ Use technology or smuggle in documents to obtain or check information in an exam situation.

In writing a paper, it is always better to include too many references than not enough. When in doubt, always err on the side of caution. If you have any questions or uncertainty about what is or is not cheating, it is your responsibility to ask your instructor.

AI (Artificial Intelligence) in the Classroom

The proliferation of AI programs means that we are on the cusp of potentially great changes to our academic world. The following information was put together by our ENVS department technology in education expert, Mary Poffenroth, and is a beginning to engaging with these unfolding technologies.

From Mary Poffenroth, ENVS Department:

"The crux of the problem with AI in education is threefold:

1. Submitting work as your own that you did not create is defined as academic dishonesty under our current university guidelines and has a sliding scale of consequences, from failing the assignment to failing a class to being removed permanently from the university, depending on the severity and number of occurrences.
2. AI content creation engines, like OpenAI, are not always correct, and for general education classes like ours, you don't always have the content area expertise to know when things are wrong.
3. The act and practice of writing are official requirements of our class, as set forth by the university. If you have an external source – whether another person or tech – complete your writing requirement, then you can't be said to have mastery over the writing requirements of our class.

So, you may ask yourself where the line is drawn between an assistive tool that uses AI machine learning and NLP-Natural Language Processing like Grammarly or Packback (which is 100% approved for usage) and an AI content creation engine like OpenAI (which is not approved for use in our class). The best way I can describe the difference would be to use the analogy of building a house. Whether you have the best hammer or the cheapest, if you are hammering the nails into the wood itself, you can say to have built the house yourself. However, if you just gave a work crew the address and some general guidelines and then left, you can't claim to be a house builder. Grammarly is a tool, like having a really nice hammer. OpenAI (Jasper, ChatGPT, GPT-3, GPT-4, etc) leaves a work crew with just some basic guidelines and an address while you're on the other side of town having lunch.

In our class, the process is part of the point. The process of researching and writing with low stakes now will better equip you to navigate higher-stakes, more complex problems in the future.

Whether a paid ghostwriter or an AI, using any person or service to create work for you that you submit for credit as if it were your own goes against our academic integrity policy. Additionally, ensure you feel confident in understanding the SJSU Academic Integrity Policy, and please let me know if any questions come up!

Like the calculator, AI is here to stay. It will just be up to us as ethical members of the academic community to discern how, when, and where it's appropriate to use."

Resources for Students

There are many resources on campus available to you. Some examples include: SJSU Peer Connections Center, the College of Social Science Access Center, SJSU Writing Center, SJSU Computing Services, SJSU Counseling and Psychological Service, SJSU Student Health Center, the Academic Success Center, and many places to use or get help with technology. See the Syllabus Information web page at http://www.sjsu.edu/gup/syllabusinfo/ for more info or come see me.

Classroom Protocol

Participation:

This is a lecture and activity course with a strong participation component. Students are expected to review all assigned lecture slides and videos, complete the assigned readings before class, take good notes, attend question and discussion sessions, turn assignments in on time, read book chapter assignments and class handouts, and participate in class discussions and group activities. You will receive participation points for contributing to discussions and participating in activities. A thoughtful solid question shows that you not only understand the material but are thinking about it on a deeper level; as such, credit will be given for thoughtful questions. **You must be present and prepared to receive participation points; there are no make-up points for a missed class**.

Technology:

Cell phones and laptops are not allowed during lectures or field trips for personal use; however, laptops may be used to take notes, or be used during class discussions and group work. Cell phones and cameras can be used on field trips to assist in learning.

Formatting of Assignments:

- Single spaced with 1" margin, 12pt font

Field Trips and Activities:

This is a field course with field trips and activities on Tuesdays. All field trips are to local restoration sites that may be within San Mateo, Santa Clara, Santa Cruz, and Alameda Counties. Some field trips are case studies, which may be presented by student groups and will require students to be familiar with their sites prior to their field trip in order to conduct a successful field presentation. It is the student's responsibility to find time in their schedule to visit their case study site outside of school hours. Carpooling is critical for restricted parking at field sites. Other field trips are more active in order to give students hands-on experience with restoration techniques.

Field trips and technique activities are an essential part of this course and where you learn practical restoration techniques. Students who miss three field trips and activities will not pass this course.

Field trips pose potential risks, including but not limited to:

- Driving to and from field site
- Uneven terrain, unpaved surfaces
- Extreme weather (wind, rain, temperature fluctuations)
- Insects, animals, plants

Proper clothing and closed-toe shoes for walking and hiking must be worn for all field trips. It is also important to bring water and stay hydrated, bring snacks, and wear sun protection.

Activities are hands-on learning sessions held on campus during our Tuesday activity time.

University Policies

Per University Policy S16-9, university-wide policy information relevant to all courses, such as academic integrity, accommodations, etc. will be available on **Office of Graduate and Undergraduate Programs'**

Final Examination:

The final group project report and presentation will be the culminating activity for the course, in lieu of an exam. More details can be found in University policy S17-1 (http://www.sjsu.edu/senate/docs/S17-1.pdf) which states that "Faculty members are required to have a culminating activity for their courses, which can include a final examination, a final research paper or project, a final creative work or performance, a final portfolio of work, or other appropriate assignment."

Grading Information:

Individual grades are assigned based on the student's ability to demonstrate their knowledge of the material, provide evidence to support their work, and follow assignment instructions. Group grades are assigned based on the overall assessment of the group work and the peer-reviews. Final grades consider assignment and exam scores, and class participation.

Grading Criteria:

All writing assignments will be graded according to the following standards for assessing the quality of the content and the clarity of expressing concepts.

Grade	Criteria
A	Extremely effective organization of paragraphs and paper; interesting, varied sentences; good grammar (usage, punctuation); no spelling mistakes; excellent response with superior supporting evidence; logical analysis, reasoning, and explanation; clear mastery of concept; excellent citation form and use.
A-, B+	Very effective organization of paragraphs and paper; interesting, good sentence structure and variation; good grammar (usage, punctuation, etc.); few spelling mistakes; does not read like a first draft; good, solid response that uses strong supporting evidence; very good reasoning and explanations; great citation form and use.
B	Reasonably effective organization of paragraphs and paper; serviceable prose; numerous errors of grammar or spelling; reads like a first draft; solid response that meets minimum required by assignment; reasoning and explanations are adequate; okay citation form and use.
C	Structurally disorganized; paragraphs lack topic sentences or are not developed effectively; awkward sentence structure; poor grammar; poor spelling; response is accurate but cursory, and does not meet the minimum required for completeness; some inaccuracies or reasoning flaws; response is too general, lacks specific evidence; all sources cited but form is incorrect.
D	Structurally disorganized; paragraphs lack topic sentences or are not developed effectively;

	awkward sentence structure; poor grammar; poor spelling; response does not effectively address the question; response fails to support assertions evidence; major flaws in reasoning; explanations are unclear; displays inadequate understanding of content; lack of citation.
F	Response is missing or not submitted or does not address the question.

All presentations, discussions, and field trips will be graded according to the following standards for assessing the level of participation and ability to conduct good science.

Grade	**Criteria**
A	Presentation is of appropriate length; content is of excellent quality and goes beyond the basics; facts are accurate and well explained; flow of presentation is logical and well planned with clear practice and rehearsal between group members; pictures and text are well displayed and easy to read; presenter has a good speaking voice (volume and speed) and makes frequent eye contact with audience; does not use note cards; presenter is dressed in appropriate attire. Contributes freely to discussion; speaks clearly; ideas are presented in a thoughtful and logical manner; uses strong evidence to support reasoning; clear mastery of content and material being discussed; scientific language is used when speaking; asks questions and proposes reasonable solutions. Fieldwork is technically accurate; attire is appropriate for weather and terrain conditions; demonstrates enthusiasm for field experience and working collaboratively; asks questions and is helpful to others; clear mastery of scientific method and collection techniques.
A-, B+	Presentation is of appropriate length and good content; facts are accurate and very well explained; flow of presentation is logical and well planned with clear practice and rehearsal between group members; pictures and text are well displayed and easy to read; presenter has a good speaking voice (volume and speed) and makes eye contact with audience; does not use note cards; presenter is dressed in appropriate attire. Contributes often to discussion; ideas are presented in a thoughtful and logical manner; uses evidence to support reasoning; scientific language is used when speaking; asks questions and proposes reasonable solutions. Fieldwork is technically accurate; attire is appropriate for weather and terrain conditions; displays real interest in field experience and working collaboratively; asks questions and is helpful to others.
B	Presentation is of appropriate length and content; facts are accurate; flow of presentation is logical; pictures and text are easy to read; presenter has a good speaking voice (volume and speed) and makes eye contact with audience; presenter is dressed in appropriate attire. Contributes to discussion with good ideas; supports reasoning with evidence; some scientific vocabulary is used; asks some questions. Fieldwork is technically accurate; attire is appropriate for weather and terrain conditions; shows interest in field experience and working collaboratively; asks questions.
C	Presentation is of minimal length; content is adequate; facts are somewhat accurate; presentation is organized; pictures and text are readable; presenter uses notes and is

	challenging to hear; presenter is dressed in appropriate attire. Needs to be prompted to contribute to discussion; supports reasoning with evidence; some scientific vocabulary is used. Approaches field experience with adequate interest; some collaboration; depends on some direction and instruction from others; does not take initiative in a group setting; demonstrates an adequate understanding of the field methods.
D	Presentation is too short; content is lacking basic information; facts are not all accurate; presentation requires organization; pictures and text are challenging to read; presenter uses notes; presenter is not dressed in appropriate attire. Needs to be prompted to contribute to discussion; does not supply evidence or more than a basic answer. Demonstrates little enthusiasm as if "just going through the motions"; little interest in collaboration; dependent on instruction; does not understand the field techniques or methods.
F	Clear lack of group participation in presentation. Missing or lack of any participation in discussions. Missing or unable to complete field methods.

Penalty for Late or Missed Work
Assignments are due on the date given on your course schedule and in Canvas. Assignments turned in later than the due date/time will have 10% subtracted from the score per day for each day late. *Exceptions may be considered for legitimate and documented circumstances only (i.e. medical emergency, death in the family).* ***There will be no make-up quizzes or exams. Please plan accordingly and consider submitting extra credit activities to make-up for missing a quiz (see extra credit policy).***

Extra Credit

Life happens (illness, family emergencies, car issues, etc) and missing a class or deadline may happen too. To help students make up points from a missed quiz or assignment, extra credit may be offered periodically. Students are responsible for recording the details of any offered extra credit assignments that may be offered.

Assignments:

The table below is a ***tentative*** list of assignments for the class. Assignments may be changed, added, or deleted as needed. This class is fast-paced, time consuming, and difficult because it covers significant material in preparation for more advanced work in Advanced Restoration (ENVS 191 or 291) and your professional career. Your effort in this course and understanding of the material will be evaluated in quizzes, group assignments, case studies, and participation in the activities, discussions, and at field trips.

Assignment	**Point Value**	**Learning Objectives**
Individual Assignments:		
Individual Project	100	PLO 1, PLO 3, PLO 5
Field Trips/Activities	120	PLO 3
Field Notebook	50	PLO 4
Case Studies	50	PLO 4, PLO 5
Restoration Connection	30	PLO 5
Participation, discussions, other assignments	100	PLO 2, PLO 3, PLO 5
Exams & Quizzes:		
Field Practical Examination	75	PLO 2, PLO 3, PLO 5
Quizzes (3)	75	PLO 2, PLO 3, PLO 5
Group Assignments:		
Group Research Project	150	PLO1, PLO 2, PLO3, PLO 4, PLO5
Estimated Total	**750**	**points**

Determination of Grades:

100% = A+	93-99% = A	90-92% = A-
88-89% = B+	83-87% = B	80-82% = B-
78-79% = C+	73-77% = C	70-72% = C-
60-69% = D	59 and below = F	