

San José State University
College of Social Science/ Environmental Studies Department
Envs 187, Introduction to Environmental Restoration
Section 1, Spring, 2016

Course and Contact Information

Instructor:	Miranda Melen
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Office Hours:	Tuesday/Thursday 9:45am – 10:15am, or by appointment
Class Days/Time:	Tuesday/Thursday 10:30am – 11:45am, Saturday Field Trips 9am - 12pm
Classroom:	Duncan Hall 415
Prerequisites:	ENVS 001, GE B2, 100W

Course Format

This course has classroom lectures, fieldwork, and online assignments, quizzes, and exams. This course requires the use of a computer with Internet connectivity daily. Course materials such as syllabus, assignment instructions, quizzes, and exams are on the [Canvas Learning Management System \(Canvas\)](http://sjsu.instructure.com) course website at <http://sjsu.instructure.com>. You are responsible for regularly checking Canvas for announcements and emails from your instructor.

Course Description

Interdisciplinary art and science of restoring destroyed or degraded habitats. Emphasis on the interplay of ecological principles, policy, public involvement and economics in the 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 and implement methods and techniques for baseline assessment and monitoring project progress toward restoration goals.

Program Learning Outcomes:

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

- Write a logical analytical paper using good writing style and construction supported by appropriate research (PLO 1 - Qualitative Environmental Literacy)
- Determine, apply and interpret appropriate basic statistical or other quantitative analyses to environmental data (PLO 2 - Quantitative 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 3 - Content Environmental Literacy)
- Productively conduct group/team work to deliver professional quality presentations and reports (PLO 4 - Professional Skills: 4A)
- Demonstrate in-depth knowledge and skills in a science or technical field (PLO 5 - BS Competency)

Required Texts/Readings

Textbook:

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 are on Canvas in the folder labeled Readings.

Library Liaison:

Peggy Cabrera is our liaison for Environmental Studies. Reach her at: peggy.cabrera@sjsu.edu

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 preparing for class, participating in course activities, completing assignments, and so on. More details about student workload can be found in [University Policy S12-3](http://www.sjsu.edu/senate/docs/S12-3.pdf) 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 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 in the field 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.

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 so much material in preparation for more advanced work in Advanced Restoration (Envs 191) and your professional career. Your effort in this course and understanding of the material will be evaluated in weekly quizzes, a series of group assignments, exams, case studies, class participation, and attendance at field trips.

Assignment	Point Value	Learning Objectives
<i>Individual Assignments:</i>		
Ecosystem Summary, draft	100	PLO 1, PLO 3, PLO 5
Ecosystem Summary, final	100	PLO 1, PLO 3, PLO 5
Case Study 1	50	PLO 3
Case Study 2	50	PLO 3
Case Study 3	50	PLO 3
Field Trips	100	PLO 3
Class Assignments	10	PLO 3
<i>Exams:</i>		
Quizzes	410	PLO 3
Midterm 1	150	PLO 2, PLO 3, PLO 5
Midterm 2	150	PLO 2, PLO 3, PLO 5
Field Exam	100	PLO 5
<i>Group Assignments:</i>		
Outline with References	10	PLO 4
Draft Report	200	PLO 1, PLO 4, PLO 5
Final Report	300	PLO 1, PLO 4, PLO 5
Performance Review 1	10	
Performance Review 2	10	
Case Study and Field Trip - Restoration Presentation	500	PLO 4, PLO 5
Estimated Total	2,300 points	

[University policy F69-24](http://www.sjsu.edu/senate/docs/F69-24.pdf) at <http://www.sjsu.edu/senate/docs/F69-24.pdf> states, “Students should attend all meetings of their classes, not only because they are responsible for material discussed therein, but because active participation is frequently essential to insure maximum benefit for all members of the class. Attendance per se shall not be used as a criterion for grading.”

Grading Policy:

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 take into account assignment and exam scores, and class participation.

Grades are determined according to this scale:

98-100% = A+	88-89% = B+	78-79% = C+	60-69% = D
92-97% = A	82-87% = B	72-77% = C	59 and below = F
90-91% = A-	80-81% = B-	70-71% = C-	

Your grade will be accessible via Canvas or in office hours.

Grading Criteria:

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

Grade	Content 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.

Passage of the Writing Skills Test (WST) or ENGL/LLD 100A with a C or better (C- not accepted), and completion of Core General Education are prerequisite to all SJSU Studies courses. Completion of, or co-registration in, 100W is strongly recommended. A minimum aggregate GPA of 2.0 in GE Areas R, S, & V shall be required of all students."

Note that "All students have the right, within a reasonable time, to know their academic scores, to review their grade-dependent work, and to be provided with explanations for the determination of their course grades." See [University Policy F13-1](http://www.sjsu.edu/senate/docs/F13-1.pdf) at <http://www.sjsu.edu/senate/docs/F13-1.pdf> for more details.

Classroom Protocol

Participation:

Students are expected to arrive on time and be seated for the start of the class period. If a student is sick or knows they will be late to class or need to leave early, email the instructor prior to class as a courtesy.

Participation is an important element to learning. Questions and comments about the lecture are welcome during the presentation. Please use office hours for questions about grades or personal concerns.

Inappropriate behavior or disrespect towards other students and the instructor will not be tolerated and be reported to the University. Expulsion from the class can occur after the first warning.

Technology use:

Cell phones and laptops are not allowed during lecture or field trips for personal use, however laptops may be used to take notes, or be used during class discussions and group work.

Late Assignments:

All assignments are due on the day that they are listed. Late assignments are accepted up to one week after the assignment was initially due. The first late assignment will be penalized 15% from the total score earned. The second assignment will be penalized 30%, and the third late assignment will be penalized 60%. If 4 or more assignments are turned in late you will not pass this class. There are no late quiz allowances.

Exams:

The first two midterms for this course are lengthy written exams that require extensive research and studying. They are take-home, open-note, and you can discuss with other students in the class. The third midterm is a field exam that tests your ability to take accurate measurements and demonstrate your use of restoration methods learned in this course. The final exam is similar to the first two midterms and requires extensive research and studying. It is take-home, open-note, and you can discuss with other students in the class.

Main goals for written exams:

- Test students on using concepts learned in lecture and critically thinking about a situation and applying their knowledge to a new experience
- Test students on their ability to completely answer a question and justify their reasoning with supportive evidence
- Test students on their ability to complete scientific searches online and research new topics
- Test students on their ability to cite sources and create a reference list

Field Trips:

There are six (6) mandatory field trips for this course. All will be to local ecosystems within Santa Clara, San Mateo, Santa Cruz, and Alameda Counties. Field trips are on Saturdays and you must be onsite from 9am to 12pm (travel time not included). Field trips are presented by student groups and will require students to visit their sites prior to their field trip in order to become acquainted with the location and organize their field presentation. Carpooling is also critical for restricted parking at field sites.

Field trips are an essential part of this course. *You may miss one field trip without penalty by emailing the instructor for permission before the class period prior to your absence.* If you miss a field trip without instructor knowledge, your grade will go down a full letter grade. Students who miss three field trips 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 stay hydrated.

University Policies

General Expectations, Rights and Responsibilities of the Student

As members of the academic community, students accept both the rights and responsibilities incumbent upon all members of the institution. Students are encouraged to familiarize themselves with SJSU's policies and practices pertaining to the procedures to follow if and when questions or concerns about a class arises. To learn important campus information, view [University Policy S90-5](http://www.sjsu.edu/senate/docs/S90-5.pdf) at <http://www.sjsu.edu/senate/docs/S90-5.pdf> and SJSU current semester's Policies and Procedures, at <http://info.sjsu.edu/static/catalog/policies.html>. In general, it is recommended that students begin by seeking clarification or discussing concerns with their instructor. If such conversation is not possible, or if it does not address the issue, it is recommended that the student contact the Department Chair as the next step.

Dropping and Adding

Students are responsible for understanding the policies and procedures about add/drop, grade forgiveness, etc. Add/drop deadlines can be found on the current academic year calendars document on the [Academic Calendars webpage](http://www.sjsu.edu/provost/services/academic_calendars/) at http://www.sjsu.edu/provost/services/academic_calendars/. The [Late Drop Policy](http://www.sjsu.edu/aars/policies/latedrops/policy/) is available at <http://www.sjsu.edu/aars/policies/latedrops/policy/>. Students should be aware of the current deadlines and penalties for dropping classes.

Information about the latest changes and news is available at the [Advising Hub](http://www.sjsu.edu/advising/) at <http://www.sjsu.edu/advising/>.

Consent for Recording of Class and Public Sharing of Instructor Material

[University Policy S12-7](http://www.sjsu.edu/senate/docs/S12-7.pdf), <http://www.sjsu.edu/senate/docs/S12-7.pdf>, requires students to obtain instructor's permission to record the course and the following items to be included in the syllabus:

- “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. The recordings are the intellectual property of the instructor; you have not been given any rights to reproduce or distribute the material.”
 - It is suggested that the greensheet include the instructor's process for granting permission, whether in writing or orally and whether for the whole semester or on a class by class basis.
 - In classes where active participation of students or guests may be on the recording, permission of those students or guests should be obtained as well.
- “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, or homework solutions without instructor consent.”

Academic integrity

Your commitment, as a student, to learning is evidenced by your enrollment at San Jose State University. The [University Academic Integrity Policy S07-2](http://www.sjsu.edu/senate/docs/S07-2.pdf) at <http://www.sjsu.edu/senate/docs/S07-2.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](http://www.sjsu.edu/studentconduct/) is available at <http://www.sjsu.edu/studentconduct/>.

Campus Policy in Compliance with the American Disabilities Act

If you need course adaptations or accommodations because of a disability, or if you need to make special arrangements in case the building must be evacuated, please make an appointment with me as soon as possible, or see me during office hours. [Presidential Directive 97-03](http://www.sjsu.edu/president/docs/directives/PD_1997-03.pdf) at http://www.sjsu.edu/president/docs/directives/PD_1997-03.pdf requires that students with disabilities requesting accommodations must register with the [Accessible Education Center](http://www.sjsu.edu/aec) (AEC) at <http://www.sjsu.edu/aec> to establish a record of their disability.

Student Technology Resources

Computer labs for student use are available in the [Academic Success Center](http://www.sjsu.edu/at/asc/) at <http://www.sjsu.edu/at/asc/> located on the 1st floor of Clark Hall and in the Associated Students Lab on the 2nd floor of the Student Union. Additional computer labs may be available in your department/college. Computers are also available in the Martin Luther King Library. A wide variety of audio-visual equipment is available for student checkout from Media Services located in IRC 112. These items include DV and HD digital camcorders; digital still cameras; video, slide and overhead projectors; DVD, CD, and audiotape players; sound systems, wireless microphones, projection screens and monitors.

SJSU Peer Connections

Peer Connections' free tutoring and mentoring is designed to assist students in the development of their full academic potential and to inspire them to become independent learners. Peer Connections tutors are trained to provide content-based tutoring in many lower division courses (some upper division) as well as writing and study skills assistance. Small group and individual tutoring are available. Peer Connections mentors are trained to provide support and resources in navigating the college experience. This support includes assistance in learning strategies and techniques on how to be a successful student. Peer Connections has a learning commons, desktop computers, and success workshops on a wide variety of topics. For more information on services, hours, locations, or a list of current workshops, please visit [Peer Connections website](http://peerconnections.sjsu.edu) at <http://peerconnections.sjsu.edu> for more information.

SJSU Writing Center

The SJSU Writing Center is located in Clark Hall, Suite 126. All Writing Specialists have gone through a rigorous hiring process, and they are well trained to assist all students at all levels within all disciplines to become better writers. In addition to one-on-one tutoring services, the Writing Center also offers workshops every semester on a variety of writing topics. To make an appointment or to refer to the numerous online resources offered through the Writing Center, visit the [Writing Center website](http://www.sjsu.edu/writingcenter) at <http://www.sjsu.edu/writingcenter>. For additional resources and updated information, follow the Writing Center on Twitter and become a fan of the SJSU Writing Center on Facebook.

SJSU Counseling and Psychological Services

The SJSU Counseling and Psychological Services is located on the corner of 7th Street and San Carlos in the new Student Wellness Center, Room 300B. Professional psychologists, social workers, and counselors are available to provide confidential consultations on issues of student mental health, campus climate or psychological and academic issues on an individual, couple, or group basis. To schedule an appointment or learn more information, visit Counseling and Psychological Services website at <http://www.sjsu.edu/counseling>.

**Envs 187 / Introduction to Environmental Restoration
Spring, 2016, Course Schedule**

All lectures are on Tuesdays and Thursdays with field trips on Saturdays. In-class assignments are not listed, but are included in each class. Topics, readings, assignment due dates are subject to change, depending on the needs of the course and will be announced in class. It is the student's responsibility to keep up to date with changes in this tentative schedule. Readings and online quizzes are due at 8am on the assigned date. Assignments are due by 11:59pm on the assigned date.

Course Schedule

Week	Date	Topics	Readings	Quizzes	Assignments
1	Th 1/28	L1: Intro to Restoration Ecology			Canvas profile photo
2	T 2/2	L2: Ecosystem Structure; L2.1: How to Write Scientifically	Chapter 1	Quiz Chapter 1	Start: Ecosystem Summary
2	Th 2/4	L3: Ecosystem Function	Chapter 2	Quiz Chapter 2	
3	T 2/9	L4: Biodiversity	Chapter 3	Quiz Chapter 3	
3	Th 2/11	L5: Succession Theory	Chapter 4	Quiz Chapter 4	Due: Ecosystem Summary, final draft
4	T 2/16	L6: Assembly Theory	Chapter 5	Quiz Chapter 5	
4	Th 2/18	L7: Landscape Ecology	Chapter 6	Quiz Chapter 6	Start: Case Study 1, Midterm 1
5	T 2/23	Case Study 1	Case Study 1		Due: Case Study 1
5	Th 2/25	FT Lecture: Zayante Sandhills			Due: Midterm 1, Start: Group Report
5	S 2/27	Field Trip – Zayante sandhills			
6	T 3/1	L8: Soil	Chapter 8	Quiz Chapter 8	
6	Th 3/3	L8.5: Soil Erosion			Due: Ecosystem Group Outline
7	T 3/8	L9: Hydrology	Chapter 13	Quiz Chapter 13	
7	Th 3/10	Field Trip presentation			
7	S 3/12	Field Trip - Tidal marsh/baylands			
8	T 3/15	<i>Lecture</i>			Due: Ecosystem Summary, final paper
8	Th 3/17	Field Trip presentation			

Week	Date	Topics	Readings	Quizzes	Assignments
8	S 3/19	Field Trip - Riparian corridor			
9	T 3/22	L10: Forests	Chapter 11	Quiz Chapter 11	Start: Case Study 2
9	Th 3/24	Case Study 2	Case Study 2		Due: Case Study 2
Spring Break 3/28 - 4/2					
10	T 4/5	L11: Keystone and Indicator Species	Chapter 12	Quiz Chapter 12	
10	Th 4/7	Field Trip presentation			Due: Ecosystem Group Paper, final draft
10	S 4/9	Field Trip - Redwood forest			
11	T 4/12	L12: Invasive Species	Chapter 7	Quiz Chapter 7	Start: Midterm 2
11	Th 4/14	L13: Restoration Planning	Chapter 14.1, 14.2	Quiz Chapter 14.1, 14.2	
12	T 4/19	Guest Speaker: River Restoration Project, Kevin MacKay			Due: Midterm 2
12	Th 4/21	Field Trip presentation			Start: Case Study 3
12	S 4/23	Field Trip - Oak woodlands			
13	T 4/26	Case Study 3	Case Study 3		Due: Case Study 3
13	Th 4/28	L14: Restoration Implementation	Chapter 14.3, 14.4	Quiz Chapter 14.3, 14.4	
14	T 5/3	Guest Speaker: South Bay Salt Pond Restoration Project, John Bourgeois		Quiz South Bay Salt Pond Restoration - Guest Speaker	
14	Th 5/5	<i>Lecture</i>			
14	S 5/7	Field Trip – Field Exam			In-Class: Field Exam
15	T 5/10	L15: Restoration Monitoring	Chapter 14.5, 14.6	Quiz Chapter 14.5, 14.6	Due: Ecosystem Group Paper, final paper, Start: Final Exam
15	Th 5/12	L16: Regulatory Context	Chapter 14.7	Quiz Chapter 14.7	
16	W 5/18	<i>Final Examination</i>			Due: Final Exam