

FIELD STUDIES IN WATER RESOURCE MANAGEMENT

COURSE OVERVIEW AND OBJECTIVES

Catalog Description: A field investigation of water resource agencies and projects to acquaint resource managers, environmental quality specialists and other interested students with projects and philosophies unique to particular geographic areas. Prerequisite: Upper division standing and ENVS 128 or ENVS 129, or instructor consent.

This course is an intensive field investigation of water resource agencies and projects with a focus on urban water use. It has three major themes: 1) drinking water quality and management; 2) surface water quality and management (with a focus on streams); and 3) emerging issues in today's water resource management field, particularly water reuse. This course fulfills the field requirement for Environmental Studies majors. Using important concepts from both the natural and social sciences, you will collect both quantitative and qualitative data related to water resources management, analyze it, and reflect on how your findings are relate to current issues facing water resource management agencies. This class is excellent preparation for those interested working in the area of water or natural resources management. The field component of the course will expose you to the wide variety of agencies and techniques used to manage California's complicated system of waterworks.

By the end of this course, you should be able to: 1) understand the role agencies and individual human behavior plays in influencing water quality, use, and availability at a regional level; 2) be able to conduct a document review and design and conduct a semi-structured interview; and 3) have basic proficiency in explaining major water issues of the day to others in a professional manner.

The field of water resources is enormous and we will not be able to cover all aspects of the topic in depth in class. Rather, we will cover many topics in brief to provide an overview of the field. Individual research, writing, and presentation assignments will allow you to develop expertise on a topic of that is of particular interest to you.

REQUIRED COURSE MATERIALS

Freeman, Catherine B. "California Water: An LAO Primer." 2008. California Legislative Analyst's Office. Sacramento, California.

This document is available online at the following URL:

http://www.lao.ca.gov/2008/rsrc/water_primer/water_primer_102208.pdf

Allen, L. 2015. *The Water-Wise Home*. North Adams, MA: Story Publishing.

This book is available for \$25 through the following online booksellers: Amazon, Barnes & Noble, Powell's, and IndieBound

Additional readings will be assigned in class.

CLASS FORMAT

This class is a social science-oriented field course, so you will be visiting agencies and projects, as well as making observations during public meetings. We will be spending considerable time outside collecting and analyzing qualitative data. In addition, this is a graduate-level course and you will be expected to do graduate quality work. This means doing all assigned readings *before* class, being proactive in helping the class plan and execute field assignments, being able to work and conduct a literature review independently, and producing high quality written assignments and presentations without substantial assistance from course instructors. We will take several trips off campus to visit several different organizations involved in regional water resources management (e.g., the Santa Clara Valley Water District). Additionally, we will be making use of teleconferencing technology to have virtual classroom guest lectures from experts located in Sacramento and other counties in the Bay Area. You will also enjoy the use of the class smart board to make class lectures and student presentations more dynamic and interactive.

STUDENT RESPONSIBILITIES

The best way to learn is to be an active participant. Be sure to attend every class because many important materials are distributed in class. In addition, part of your grade is based on in-class participation, which cannot be made up. Be sure to take good notes, ask questions, turn in assignments on time, pick up class handouts, and participate in class discussions. Another important responsibility is helping create a classroom atmosphere for learning in the classroom. This means treating the class instructor, teaching assistant, fellow students, and guest lecturers with respect. Rude behavior toward others will not be tolerated and is grounds for dismissal.

Participation is a critical part of this course. You will get as much out of the class as you put into it. Students are welcome and expected to participate actively in daily discussions so that we may all benefit from group interaction. Some days you may be asked to organize a car pool for a field trip or prepare a written summary of a field experience. Be ready to volunteer—engaging with the class makes for a good learning atmosphere.

LATE ASSIGNMENTS

Assignments, unless announced otherwise in class, are due at the *beginning* of class on the due date specified in the Class Schedule. Late papers will be assessed a 10% penalty per each late day. Illness and extenuating family or personal circumstances are the only allowable excuses for late work. Assignments submitted or exams taken more than one week late will not be graded.

ACADEMIC INTEGRITY

Every student who takes a class at SJSU, including this one, agrees to abide by the University's policies on plagiarism and academic dishonesty. (See the SJSU Course Catalog for details.) Any student found to be in violation of these policies will receive zero credit for the exam or assignment in question.

OFFICE VISITS AND COMMUNICATION

I encourage all students to come visit me at least twice during office hours to talk about the course, related environmental studies courses, and any other topic related to the field. It is especially important that you communicate with me, preferably in person, if you are experiencing a problem that is preventing you from performing well in the course.

COURSE GRADING

Over the semester, you will have a variety of labs and written and oral assignments. They are designed to help you learn the course material and to acquire the requisite field skills for the course. You will receive written instructions for each assignment in advance. General information on course assignments is below.

Quizzes and In-class Assignments (15 points)

Through regular pre-class and in-class quizzes and in class assignments, you will demonstrate your knowledge of class reading material and field methods. Quizzes will be administered at the beginning of class or online before class based on readings for that day. In-class participation grading will be based on the successful completion of the assignment by the end of the class period. In-class assignments cannot be made up. This part of the course includes participating in Earth Day activities.

Homework and Field Trips (15 points)

Homework includes completing observation forms for attending District Board meetings, preparing materials for student-led discussions, and researching and preparing material for the SJSU Campus Standards project. There are three class field trips. To earn full credit for attending field trips, you need to ask at least one question to our hosts during the tour. Students who miss more than two field trips or guest lectures will not be eligible to receive an A or A- for the course.

Individual Field Exercise #1 (15 points): Regional Water Agencies

For this exercise, you will learn about the functions, budgets, and organizational structure of the three biggest water agencies in the region: SCVWD, the SFPUC and EBMUD. You will also focus in an important planning project for the SCVWD and learn more about its implementation by conducting a semi-structured interview of a District staff member or a stakeholder participant. You will write a paper that summarizes the results of your findings. This exercise requires one face-to-face interview and the inclusion of 5-10 references. Paper length—7-10 pages. (Key concepts: organizational structure, participatory planning, integrated water resource management)

Individual Field Exercise #2 (15 points): Residential Greywater (and Rainwater) System Design

For this exercise, you will put together a conceptual plan for a single family residential system using resources provided in the Water-wise Home text. Basic information will be provided to you about the site characteristics and design parameters. Your plan will include the following elements: Baseline water use estimate (including calculations); bubble diagram; greywater production estimate; ribbon test results; outdoor irrigation needs assessment; and basic landscape plan (including plant recommendations). (Key concepts: residential water use, greywater production, residential greywater system planning, rainwater harvesting).

Individual Field Exercise #3 (10 points): Water Sensitive Cities

For this exercise, you will learn about the various water-related responsibilities of the California Water Services Company and the City of San Jose's Environmental Services Department. As part of your assignment, you will interview organizational staff to find out about the policies that drive their work and how these policies are implemented on a day-to-day basis. To the extent that you are able, use this paper as an opportunity to help you learn how public and private organizations work together to form urban water delivery systems and how San Jose measures up as a "water sensitive city," as defined by Brown et al., 2008. You will write a paper that summarizes the results of your findings. This exercise requires one face-to-face interview and the inclusion of 5 references. Paper length—5-7 pages. (Key concepts: policy implementation, water sensitive cities, Green Vision, Master Plan).

Class Project (20 points): SJSU

For this exercise, you will assist SJSU’s Facilities Development & Operations division in incorporating important ideas about sustainable urban water use and reuse into the Campus Standards. Your work will include documenting the various water-related responsibilities of SJSU as a public water system and a recycled water user. This exercise requires demonstrating knowledge of the University’s standards and best practices used by other organizations. Your completed project will be presented to SJSU staff and members of the Sustainability Board. Project Report length—20-30 pages including 10-5 references; presentation length—15-20 minutes (Key concepts: CSU directives; project development and planning).

Student Presentations (2 presentations, 5 points each, 10 points total)

For these exercises, you will share the results of your investigative work-in-progress with the class in two interactive 10-minute presentations using a presentation software and the interactive Smartboard. Each presentation will be followed by a 2-3-minute question and answer period. Student presentations will take place on the following dates. You will present on two of those dates

2/23, 3/25, 4/5, 4/14

Accumulated points determine your semester grade as follows:

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

COURSE SCHEDULE AND CRITICAL MEETINGS

You MUST be physically present in the classroom for the real time lectures/interviews with virtual guest lecturers. If you miss more than two lectures, you are ineligible for an A or A- in the class.

Details on Board meetings:

The Board of Directors holds regular meetings twice monthly - every second and fourth Tuesday at 6:00 p.m. When necessary, the Board will meet in Closed Session prior to a 6:00 p.m. Board Meeting. All meetings are held in the [District Headquarters](#) - Board Room, at 5700 Almaden Expressway, San Jose, unless otherwise noted on the meeting agenda.

Course Schedule

This schedule will likely be modified with fair notice so we can adapt to student needs and interests, as well as speaker availability. You are responsible for making sure you are informed of schedule revisions. Attend class regularly for updates. Please note that readings for the class date should be completed before attending class on the scheduled day. For example, by February 2ndth, you should come to class having already read up through chapter 1 of the LAO Primer.

No.	Date	Topic(s)	Readings & Assignments
1	Jan-29	Welcome to EnvS 270 Water 101: Getting our feet wet	<ul style="list-style-type: none"> ▪ Course overview; student introductions ▪ In class discussion—What do you think are the state’s and region’s most pressing water issues?
2	Feb-2	Understanding Regional Water Management Document , Web, and Literature Review	<ul style="list-style-type: none"> • Reading: LAO Primer, Introduction & Chapters 1 and 2; Dietz & Stern, 2008, Chapters 1 ▪ Field Exercise #1a assigned: Understanding Bay Area Water Agencies, Pt. 1 (use select links and documents on Canvas module “Regional Water Management” to guide your work)
2L	Feb-5		NO IN-CLASS MEETING
3	Feb-9	Integrated Water Resources Planning and the SCVWD Understanding Organizational Context: Student WIP check in on exercise #1a Support for Field Exercise #1b conduct face-to-face semi-structured interviews	<ul style="list-style-type: none"> ▪ Reading: LAO Primer, Chapter 3; WEF’s Layperson’s Guide to IRWM (link on Canvas) ▪ Other links and documents on Canvas module “Integrated Water Resources Management Planning” ▪ Field exercise #1b assigned: Understanding Bay Area Water Agencies, Pt. 2—request interviews
3L	Feb-12	Tour California Water Service Company	<ul style="list-style-type: none"> ▪ Reading: Baerenklau & Schwabe, 2013 ▪ Review websites— https://www.calwater.com/about/corporate-information/ ▪ https://www.calwater.com/about/behind-scenes/ ▪ CalWater mailer on Canvas site (drought surcharges) ▪ Meet at 1221 S Bascom Ave, San Jose, CA 95128 at 10:20, Kurt Elvert, Conservation Manager
4	Feb-16		NO IN-CLASS MEETING Conduct face-to-face interview for Field Exercise #1b
4L	Feb-19		No in-class meeting Transcribe interview

No.	Date	Topic(s)	Readings & Assignments
5	Feb-23	Residential Water Conservation and Reuse Student Presentations	<ul style="list-style-type: none"> Reading: CA LAO, Chapters 4 and 5; The Water-wise Home, Chapters 1 and 2 Write-up for Field Exercises #1a and #1b due organizational analysis and interview transcript
5L	Feb-26	Guest Lecture and Lab, Nicole Catalano	<ul style="list-style-type: none"> Analyzing interview data—Inductive and Deductive Coding; group coding in class
6	Mar-1	Residential Water Conservation and Reuse Possible field trip to Bay Maples with founder Alan Hackler 1231 N. 1st St San Jose, CA 95112	<ul style="list-style-type: none"> Reading: The Water-wise Home, Chapters 3 and 4 Field Exercise #2 assigned: Draft residential greywater and rainwater system design
6L	Mar-4		NO IN-CLASS MEETING
7	Mar-8	Potable Reuse & Recycled Water	<ul style="list-style-type: none"> Reading: NWRI, 2012; excerpts from Watts to Water, 2011 Check in for Field Exercise #2 Attend Water District Board Meeting 6:00PM 5700 Almaden Expy, Board Room, San Jose, CA 95118; upload observations to Google Form
7L	Mar-11	Tour SVAWPC	<ul style="list-style-type: none"> Meet at 4190 Zanker Road, San Jose, CA 95134 at 10:20.
8	Mar-15	City of San Jose Environmental Services Guest Lecture, Deputy Director Jeff Provenzano	<ul style="list-style-type: none"> Reading: Brown et al., 2008; Weaver 2010. Check in for Field Exercise #2
8L	Mar-18	SJSU Walking Water Tour	<ul style="list-style-type: none"> Review links in SJSU module on Canvas Meet in WSQ 115 at 12:30
9	Mar-22 Wed	Climate Change & Bay Restoration Ed Lewis, Executive Director, Save the Bay Virtual Guest Lecture (or staff)	<ul style="list-style-type: none"> Reading: Excerpts from CA St. Coastal Conservancy, 2015. Check in for Field Exercise #2 Homework assigned: Student-led reading and discussion preparation for 4/5 and 4/15 Water District Board Meeting 6:00PM 5700 Almaden Expy, Board Room, San Jose, CA 95118; upload observations to Google Form
9L	Mar-25	Student presentations	<ul style="list-style-type: none"> Field Exercise #2 due: Draft residential greywater and rainwater system design Field Exercise #3 assigned: Water Sensitive Cities Analysis Post student-identified readings to Canvas

No.	Date	Topic(s)	Readings & Assignments
	Mar-29	SPRING BREAK	NO CLASS MEETINGS THIS WEEK
10	Apr-5	Student-led discussions on current water issues Guest Lecture on Campus Standards by Adam Bayer, Director, Plan Design, and Construction	<ul style="list-style-type: none"> TBD by students Check in on Field Exercise #3 Excerpts of Campus Master Plan
10L	Apr-8	Current Legislative Issues	<ul style="list-style-type: none"> Virtual guest lecture, Rachel Ehlers, CA LAO, Sacramento Follow up on issues raised by Rachel Post student-identified readings to Canvas
11	Apr-12	City of San Jose, Environmental Services, Stormwater Management and Green Infrastructure, Matt Lambert	<ul style="list-style-type: none"> Reading: SWRCB, 2013; Green Infrastructure (Watershed Management Group, 2012)
11L	Apr-15	Student-led discussions on current water issues Guest Lecture, Raji Lukkoor, Environmental Consultant	<ul style="list-style-type: none"> Reading TBD by students Field Exercise #3 due Group Project Assigned: Campus Standard Revisions Homework: Attend and reflect on SJSU Earth Day through the lens of water (4/21)
12	Apr-19	SJSU Design and Construction Standards	<ul style="list-style-type: none"> Check in on Field Exercise #3 Master plan documents debrief How to integrate water sustainability into design and construction standards Criteria for good standards
12L	Apr-22	Comparison design and construction standards at other organizations	<ul style="list-style-type: none"> Work with Raji on standards development Campus design parameters, e.g., elevation, grade, climate, soil
13	Apr-26	Comparison design and construction standards at other organizations	<ul style="list-style-type: none"> Continuation of SJSU project Work with Raji on standards development
13L	Apr-29	Comparing design and construction standards at other organizations	<ul style="list-style-type: none"> Continuation of SJSU project Work with Raji on standards development
14	May-3	Student Dry Run Presentations	<ul style="list-style-type: none"> Continuation of SJSU project Work with Raji on standards development
14L	May-5		NO IN-CLASS MEETING
15	May-10	Public Class Presentation to FD&O and Sustainability Board	
15L	May-13	Group course reflection	

UNIVERSITY AND CLASSROOM POLICIES

IN CLASS ELECTRONICS

Electronic device includes cell phones (including smartphones), computers (laptops, notebooks, netbooks, and handhelds), mp3 and other digital audio and video players (including DVD players), and analog and digital audio and video recording devices (still and movie cameras).

1. A student may not use an electronic device during class time without the express permission of the instructor. Use of cell/smartphones during class time is always prohibited, as is leaving the room to answer or make a call.
2. A student with a diagnosed disability must present to the course instructor the appropriate paperwork from the SJSU DRC in order to work out an accommodation for the use of otherwise prohibited electronic devices.
3. In all cases, when permission has been granted by an instructor for the use of an electronic device in the classroom, the student shall employ such device solely in a manner appropriate to the course work and avoiding distractions or interruptions to fellow students or the instructor, including leaving the room to use such device.
4. The course instructor reserves the right to withdraw previously granted approval for the use of an electronic device, on an individual or blanket basis, if in the instructor's best judgment continued use of such device detracts from the effectiveness of the classroom learning environment.
5. A student violating an instructor's classroom policy or individual instructions on the use of electronic devices in the classroom shall be subject to any or all of the following actions:
 - Confiscation of the device by the instructor for the remainder of the class period
 - Dismissal from the class for the day on which the offense occurs
 - Referral of the student to University administration for further disciplinary action

DROPPING AND ADDING

It is VERY important that you pay attention to these dates. As an SJSU student, you are responsible for understanding the policies and procedures about add and drops, as well as what level of work qualifies for an incomplete. Refer to the current semester's [Catalog Policies](http://info.sjsu.edu/static/catalog/policies.html) section at <http://info.sjsu.edu/static/catalog/policies.html>. The drop deadline for this course is February 4th and the add deadline is February 11. If you need to drop the course, you cannot miss the February 4th cut off without running the risk of an F appearing on your transcript.

The [Late Drop Policy](http://www.sjsu.edu/aars/policies/latedrops/policy/) is available at <http://www.sjsu.edu/aars/policies/latedrops/policy/>. It is very strict. Further support about general academic advising is available at the SJSU [Advising Hub](http://www.sjsu.edu/advising/), which you can find at <http://www.sjsu.edu/advising/>.

ACADEMIC INTEGRITY POLICY

Academic integrity requires that students do not cheat or steal the ideas or works of others. Please familiarize yourself with the information on this website describing the SJSU Academic Integrity Policy, which can be viewed at <http://info.sjsu.edu/static/catalog/integrity.html>. One serious form of cheating is plagiarism. According to SJSU's Academic Integrity Policy, "Plagiarism is the use of

someone else's language, images, data, or ideas without proper attribution. It is a very serious offense in both academic and professional environments. In essence, plagiarism is both theft and lying: you have stolen someone else's ideas, and then lied by implying that they are your own." In this class, we discuss how to avoid plagiarism and give clear requirements for each assignment. Plagiarism in written assignments will result in NO CREDIT for the assignment. I encourage you to go through the simple plagiarism tutorial, developed by the library staff, found at this link: <http://tutorials.sjlibrary.org/tutorial/plagiarism/selector.htm> . If you are unsure what constitutes plagiarism, it is your responsibility to educate yourself, or to ask for clarification, before handing in written work.

DISABILITY POLICY

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 to speak with me as soon as possible. I will make my best effort to help accommodate you. Presidential Directive 97-03 requires that students with disabilities requesting accommodations register with the AEC (Accessible Education Center, 408-924-6000 aec-info@sjsu.edu and <http://www.sjsu.edu/aec/>) to establish a record of their disability.

LEARNING ASSISTANCE RESOURCE CENTER

Peer Connections is located in SSC 600 (the 10th Street Garage on the corner of 10th and San Fernando St.), at the 1st floor entrance of Clark Hall, and in the Living Learning Center (LLC) in Campus Village Housing Building B. It is designed to assist students in the development of their full academic potential and to inspire them to become independent learners. The Center's tutors are trained and nationally certified by the College Reading and Learning Association (CRLA). They provide content-based tutoring in many lower division courses (some upper division) as well as writing and study skills assistance. Small group, individual, and drop-in tutoring are available. More information on support services that are available to you can be found on their website: <http://peerconnections.sjsu.edu/>

SJSU WRITING CENTER

The SJSU Writing Center is located in Clark Hall. It is staffed by professional instructors and upper-division or graduate-level writing specialists from each of the seven SJSU colleges. Their writing specialists have met a rigorous GPA requirement, and they are well trained to assist all students at all levels within all disciplines to become better writers and you can use them to help you improve your writing on specific assignments. If I send you a note and ask you to make a tutoring appointment, please take my advice! I am confident it will be useful to you. Their website is <http://www.sjsu.edu/writingcenter/tutoring/> .

CANVAS COURSE ADDENDUM

Please know that I cannot directly help you with any technical questions or problems relating to this course or the use of Canvas, our learning management system. For technical assistance, use the Help Desk contact information for students on the main Canvas website. You may also call the San Jose State University's Help Desk at 408-924-2377. It is your responsibility to get the system up and running on your end so take the steps necessary to make sure you can access the website and perform all the required actions (e.g., participate in online discussions, review Powerpoint lectures).

Course Access

Some very basic login and navigation information is below, along with instructions on how to contact eCampus for technical assistance.

Logging in:

Login URL: <https://sjsu.instructure.com>

Please note that it should NOT have the “www” at the start of the URL like many other websites.

Username: SJSU 9-digit ID number.

Password: Self-generated password for your SJSUOne account

Courses:

Once logged into Canvas, you will see your course or courses listed in the Courses Heading on the top of the page. From the dropdown menu, click on the course name, and you will be entered into the course.

Help:

I strongly recommend that you visit the eCampus Canvas website at <http://www.sjsu.edu/at/ec/canvas/>. This website offers a number of Quick Start Learning Guides to help you navigate Canvas tools. Detailed guides can be found at <http://guides.instructure.com/>.

For questions regarding assignments and course materials, please contact me, the instructor.

For technical issues related to Canvas, please contact the eCampus Help Desk. The Help Desk can give technical support for issues encountered in Canvas Courses.

- Phone: [\(408\) 924-2337](tel:4089242337)
- Submit a help ticket using the following URL: <https://isupport.sjsu.edu/ecampus/ContentPages/Incident.aspx>.

While logged into Canvas, click on the word **Help** on the upper right corner of the screen.

Proficiency Expectations and Technical Support

Students are expected to have basic computer skills including basic proficiency with the operating system of their computer, software used in the course, use and access of the web and SJSU’s Canvas site. You should also know how to use Microsoft Word or a similar word processing software program, as well as be able to properly upload documents to the course website and attach documents to emails. This course does not teach computer and software skills. All questions regarding Canvas or related SJSU web or computer issues should be directed to the SJSU help desk.