

Instructor: Dr. Katherine Cushing Office: WSQ 216G
Office Hours: Wed 2:30-4:30 or by appt. Phone: 408-924-5450 (main) -6951 (office)
Class Meets: WSQ 115, W 6:00-8:45PM e-mail: katherine.cushing@sjsu.edu

ENVIRONMENTAL METHODS FOR GRADUATE STUDENTS

Course Objective

The main focus of this course is to help you develop and write the methods section of your proposal. You should have completed or be in the process of completing EnvS 297, Thesis Proposal Writing, in which you refine a thesis topic and produce the research questions or hypotheses that you will test. In this course, you will explore the literature in your field to determine the types of methods available for collecting and analyzing data to address your research questions. Ultimately, with the help of your thesis committee, you will determine the specific methods you will use for your research.

The methods that environmental scientists use to conduct their research are as varied as the research questions themselves. Research topics among M.S. students in this department range from those in the social sciences to topics in natural science and engineering fields. Each discipline has typical research methods, but all fields are united by the following principles of good research design:

- Data/information must be collected by methods that meet the standards of the field;
- Methods must be repeatable;
- Limitations of the methods must be clear;
- Confidence levels of the data/information must be clear; and
- Data and analysis must withstand peer review.

The research questions/hypothesis and the methods used to address them are the most essential parts of your thesis; these are the elements that are often critical in obtaining funding. Many government agencies, non-profits, and businesses provide grants for projects. A competitive grant proposal has clearly defined research questions that address important gaps in current knowledge with methods designed to address those questions. By completing your methods section, you will be positioned to seek funding, develop or complete your thesis committee, and begin your research.

Required Texts and Materials

Montello, D. R., and P.C. Sutton. 2013. *An Introduction to Scientific Research Methods in Geography and Environmental Studies*. Sage Publications. Thousand Oaks, CA.

(Available from the SJSU Spartan Bookstore and online outlets such as Amazon.com)

Additional readings and other content (e.g., films) will be assigned throughout the course. You should have be prepared to use iTunes, Netflix, or equivalent means to view online content on your own (e.g., the documentary film *Freakonomics*). You will need a valid SJSU library account to access SJSU databases, ebooks, and other materials needed for your research.

Course Format

This course is a seminar. You must complete literature research and reading for each class. All students will present their research to the class. Always be prepared to discuss your current work. Be prepared to spend time in the library and at your computer. Assignments must be presented in **hardcopy at the beginning of class** on the day they are due.

You will produce several important ‘deliverables’ for this course. First, you will conduct and write a **literature review** of methods used to conduct research in your thesis topic field. This review will provide you and the class with an understanding of the range of methods available. Based on your research, you will develop a **draft and final methods plan** that details the methods you would most likely use to address your research questions/hypotheses.. You will make two **formal presentations** on your work. At the end of the semester, you can put your methods section into your proposal from ES 297, so that you will have a complete draft thesis proposal.

There will be two mandatory class meetings that will take place outside of normal class meeting times. One is from 1-4 on 2/14 (Audubon Society Training) and the other is during Earth Day from 10AM to 3PM on 4/22 (you will need to help collect data for two hours during this timeframe).

Communication

I encourage you to come and see me at least once over the course of the semester to discuss your research. If office hours are not convenient, you may also see me by special appointment. I am also available by e-mail if you have questions I can answer briefly. Please note: you will receive the best feedback from me in a 30-minute face-to-face appointment.

Late Assignments

Due to the high level of instructor-student feedback provided in this course and the progressive nature of class assignments, it is crucial that you complete your assignments on time. Late work throws everyone off schedule. All assignments, unless otherwise noted, are due at the *beginning* of class on the date specified in the Class Schedule. Illness and extenuating family or personal circumstances with third party documentation are the only allowable excuses for late work, and you are responsible for notifying me to request an extension prior to the assignment due date. The penalty for submitting late assignments is 10% per 24 hour period, for example, if a 10-point assignment is due on 2/6 and you cannot turn it in until 2/8 (48 hours after the due date), the maximum number of course points that you can receive for that assignment is eight. Graded assignments received by the instructor more than one week late are not eligible for course points. Points for in-class assignments cannot be made up.

Performance Evaluation

Grades for ENV S 200 are based on the following point system:

Homework, in-class assignments, quizzes, & discussion	15 points
Literature review	10 points
Draft methods oral presentation	10 points
Draft methods paper	20 points

Final methods oral presentation	10 points
Final methods paper	20 points
Natural and social science field experiences	15 points

TOTAL **100 points**

Grading

Students who miss more than two class meetings are ineligible to receive an A or A- in the course.

98-up = A+	88-89 = B+	78-79 = C+	58-69 = D
93-96 = A	86-83 = B	73-76 = C	57-below = F
90-92 = A-	80-82 = B-	70-72 = C-	

CLASS SCHEDULE

This plan is subject to change. Attend class regularly and check your Canvas mailbox daily to stay current. Readings for class meetings are to be completed *before* you come to class. Important assignment due dates are denoted with bold and italics.

Week	Date	Topic	Reading/Assignment
1	1/28	Introduction to Methods	Reading: Montello and Sutton, Chapter 1 In-class writing exercise Assignment: Locate and write critique of a methods article Assistant Professor Applicant Visit
2	2/4	Fundamental Research Concepts	Reading: Montello and Sutton, Chapter 2 Assignment: Initial Literature Citations annotated bibliography and analysis table Assistant Professor Applicant Visit <i>Article critique due</i>
3	2/11	Data collection overview and sampling Social Surveys (close-ended questions) Field Experience Assignment explanation and student liaison recruitment Near Peer Presentations (tentative)	Reading: Montello and Sutton, Chapters 4 and 9 <i>Initial Literature Citations due</i>
4	Feb 14 (Sat) (note: no class meeting on 2/18)	Santa Clara Valley Audubon Society's Cavity Nesters Recovery Program http://www.scvas.org/index.php?page=text&id=cbrp	<i>Mandatory Cavity Nesters Recovery Program Training 1-4 PM McClellan Ranch Reserve, Cupertino</i> <i>22221 McClellan Road, Cupertino, CA 95014</i> <i>(408) 777-3149</i>
5	Feb 25	Methods for Natural Scientists I (behavioral observation sampling strategies, basic study designs)	Reading: Montello and Sutton, Chapter 6, pp. 140-154
6	Mar 4	Methods for Social Scientists I (interviews and inductive coding)	Reading: Montello and Sutton, Chapter 7 Assignment: Begin preparing presentation <i>Literature Review due</i>
7	3/11	Methods for Natural Scientists II (experiments)	Reading: Montello and Sutton, Chapter 5

Week	Date	Topic	Reading/Assignment
8	3/18	Methods for Social Scientists II (case study)	Baxter, P. & Jack, S. (2008). Qualitative Case Study Methodology: Study Design and Implementation for the Novice Researcher. <i>The Qualitative Report</i> 13 (4), 544-559. http://www.nova.edu/ssss/QR/QR13-4/baxter.pdf
9	4/1	Student Presentations, Group A	Draft Methods Presentations
10	4/8	Student Presentations, Group B	Draft Methods Presentations Group A Draft Methods due
11	4/15	Social Science Data Collection Preparation 1:1 in-class consultations	Group B Draft Methods due
12	4/22	Earth Day Data Collection and Debrief	Note: you will need to be available to collect data for ERC at least two hours on Earth Day (4/22 from 10-3 on Tower Lawn)
13	4/29	Natural Science Field Experience	If not already completed, finish your service hours for the Santa Clara Valley Audubon Society; optional 1:1 in class check in.
14	5/6	Natural Science Field Experience Debrief	<i>Final Methods Paper due</i>
15	5/13	Student Presentations, Group B	<i>Final Methods Presentation</i>
16	5/20 (note meeting time)	Student Presentations, Group A	<i>Final Methods Presentation 5:15-7:15PM</i>

UNIVERSITY AND CLASSROOM POLICIES

CREDIT HOURS

At SJSU, students are expected to spend at least two hours outside of class for every one hour of in-person class time. Because this is a three-unit course, you can expect to spend a minimum of **6 hours per week** completing class-related assignments in addition to the in-person class meetings. Assignments include a research methods article critique, a initial and final literature review, a draft and final research methods paper, and two formal presentations. The six hours will also include time you spend fulfilling the natural science and social science field experience

requirements (approximately 12-15 hours outside of class meeting time depending on your role). These assignments may require work beyond the minimum 6 hours of work outside the classroom. Careful time management will help you keep up with readings and assignments and enable you to perform well in this class.

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>. 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) 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](tel: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:408-924-2337)
- 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.

Course Check Ins

To stay up to date on course assignments, activities, and readings, check for Canvas mail from me daily. This is especially important for field experiences and outside of class meeting logistics.