

ENSTU 350: Research Methods in Environmental Studies

California State University Monterey Bay, Spring 2020

Monday, 10-11:50 a.m. Chapman Science Rm S119, Section 01, 3 units lecture

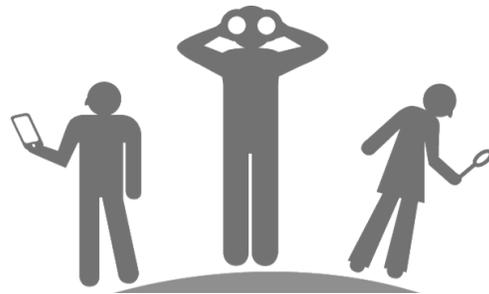
Friday, 9:00-11:50 a.m. Chapman Science Rm S119, Section 51, 1 unit lab

"We cannot solve our problems with the same thinking we used when we created them."
- Albert Einstein

. . . therefore, we need. . .

rē_sərCH
verb

1. A careful or diligent search
2. To look again



Instructor Office Hours

Dr. Tori Derr, Assistant Professor, Environmental Studies

Office Hours: Wednesdays 1:30-2:30 p.m. or Thursdays 12-1 p.m. OR BY APPOINTMENT

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Course Description

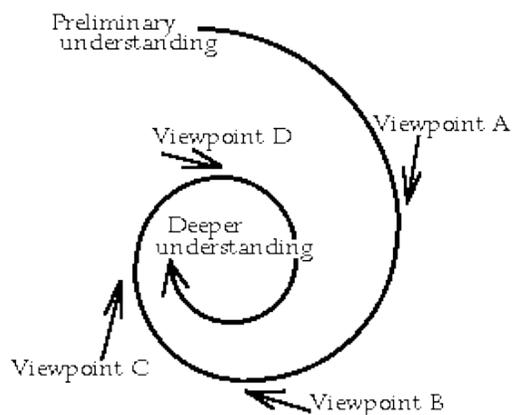
Students of environmental studies will go on to work in a wide range of disciplines but with a shared goal of seeking to understand, communicate about, and/or solve complex problems. This requires a diverse set of tools found in *applied* or *action research*, which seeks to understand and solve a practical problem. There are many reasons for conducting research in the applied environmental professions, including to:

Gain new understandings and insights	Gather community input and foster inclusion	Test an idea	Evaluate or assess a program or project
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So where do we start? In the field of environmental studies, we rely on many kinds of methods, from interviews and surveys, to participant observation, focus groups, and community mapping. We frame problems, investigate solutions, engage stakeholders, and visualize complex ideas. The long term success or failure of our efforts is in part rooted in the methods we use to identify, define, and understand problems and to evaluate success.

In this class we will explore the theory and practice of applied research that can be used in a wide range of contexts. We will focus on tools that can be used *by people* and *with people* to assess both physical and social aspects of the environment. We will ask questions, such as:

- What are our project goals and expected outcomes?
- How do we know we've gotten there?
- Are we asking the right questions?
- Are we using the right methods?
- How will this approach or this data help solve a problem?
- Who is included? And who is excluded?
- What can we conclude from this data?
- What else do we need to know?
- What else could strengthen our understanding?
- How can we communicate these findings to someone else?
- What are the ethical implications of our work?



Many environmental problems are “wicked” problems – in that they are complex, multi-faceted, inter-connected with other problems, and therefore, hard to solve. Applied research thus seeks to create deeper understandings, through multiple methods, multiple types of data, and sometimes, multiple modes of analysis. This course will expose you to a wide range of approaches to thinking about your work and its effectiveness.

Course Catalog Description

Overview of qualitative and quantitative research methods that environmental professionals use in understanding complex problems, drafting research proposals, and analyzing and presenting rigorous, reliable information. Students will engage in comprehensive explorations of social aspects of environmental topics and will understand the central role that information and research play in enacting appropriate change in natural and built environments with diverse populations. [(Prereq: ENVS 201 and BIO 230 and (STAT 100 or STAT 250) with a C- or better)]

Learning Outcomes

Successful completion of this course will lead to the ability for students to:

1. Explain the philosophical assumptions and ethical issues of applied research
2. Examine diverse research methods including primary source research (surveys, interviews, visual methods) and secondary source research (databases, precedents, case studies)
3. Distinguish research goals and outcomes within qualitative and quantitative approaches to research
4. Select and apply appropriate methodologies for a particular context and set of questions
5. Represent, interpret, and analyze evidence using visual, numerical, and verbal forms
6. Represent, interpret, and analyze evidence within a particular context

Course Organization

The course is organized with complementary lecture and lab material. Readings on lecture days will correspond to a method of application in the lab. Because research needs to be *about* something, we will explore a range of topics that relate to sustainable communities and environmental education concentrations.

Part 1 – Biophilic Design – Weeks 1-7: We will use the concept of biophilic design to explore and practice a range of research methods. Beginning with the foundational work of Stephen R. Kellert, we will learn the principles of biophilic design and then utilize photovoice, behavioral observations and behavior mapping, focus groups, and interviews as a way to examine how CSUMB's campus integrates (or could better integrate) aspects of biophilic design on campus. Each week will result in a single lab report, followed by a synthesis report that develops skills in reporting diverse methods and shares what we have learned about research methods and biophilic design on CSUMB's campus.

Part 2 – Survey Design and Analysis – Weeks 8-12: In partnership with the Elkhorn Slough Foundation and Hall District Elementary School, students will learn the goals for survey use, what constitutes good survey design, how to analyze both qualitative and quantitative survey data, and how to produce a written report. Students will work with data from Hall District's environmental literacy survey and will analyze both qualitative and quantitative data.

Review and Cumulative Exam – Week 13: A cumulative exam will include readings from lecture and lab, theoretical basis and ethics of research, and specific language and details related to research methods. Students will not be asked to analyze data as a part of the exam but may be asked to critique or improve upon research protocols or data analysis as related to course content.

Part 4 – Individual Research Protocol Development – Weeks 13-16: Students will develop an independent research protocol for a community partner or individual interest. This project may support capstone work, a service-learning partnership, a deepening of research with partners in this course, or other interest. It should directly respond to an identified need and address an environmental and/or social justice issue and **must** draw from research methods that have been taught in **this** course. Students will develop a protocol in its entirety, and depending on the stage of research, may also conduct analysis. Emphasis will be on the methods of data collection, analysis, and interpretation for the protocol.

Course Materials

- *Required Text:* D. MacCallum, C. Babb, and C. Curtis. (2019). *Doing Research in Urban and Regional Planning*. Routledge Press. ISBN: [9780415735575](#)
- Journal articles and select additional readings will be assigned via iLearn

Course Expectations

- Come to class prepared and ready to actively participate: this includes bringing all required materials as well as completing all readings and assignments **prior to** class
- Support a distraction-free environment. Technology can lead to many distractions and detract from your own learning environment and that of your peers. Therefore, I ask that computers be used only for designated purposes and cell phones be silenced or off during class time. Because this is important in creating a positive learning environment for all, students using technology for non-learning purposes (texting, social media, other assignments, etc.) may be marked absent.
- Navigate the iLearn website to access assignments, resources, and monitor grades. Any updates or changes to the course syllabus will be posted on iLearn.
- Follow course and university policies (as noted in the syllabus)
- Proactively communicate with the instructor about any difficulties or challenges. Life happens, every day and in many ways. My request is to communicate so that we can arrive at the best strategies to help you success in times of challenge.

An average student expecting a B or B- in ENSTU 350 should plan to spend at least 12 hours per week on this course: 5 hours in class, and 7 hours outside of class working independently (e.g. doing readings, conducting research, preparing reports.). Some weeks will require more effort than others, so work steadily and plan ahead.

Late or incomplete work: This is a fast-paced course that builds on itself. If you are having difficulty meeting deadlines, please schedule an appointment with me so that we can strategize how to best be accountable to yourself and your peers. Late assignments and incomplete work will be penalized by 3% per day late. No late work will be accepted more than two weeks after the due date unless there is a verifiable, excused emergency. No late work will be accepted during finals week. The last day to submit any work is May 7th.

Attendance: Attendance is an essential aspect of course success. As such, attendance is 15% of the final grade. Arriving or leaving 5-19 minutes late/early will be marked as Late, for partial credit. Arriving or leaving 20 or more minutes late/early will be marked as Absent, for no credit.

Absences: Excused absences are for a family death, illness or medical event documented with a doctor's note, or other extreme events. Communicate with me via email if you will miss a class *for any reason*, or if other extenuating circumstances are interfering with your attendance and/or performance.

Assignment Overviews

Assignments will be issued on iLearn and via paper handouts. The overviews below serve to introduce you to the assignments, not to elaborate details and requirements. Detailed instructions

for each assignment will be provided throughout the semester, with assignments and rubrics posted on iLearn.

Reading Summaries: Using the [template provided](#), students will summarize eight reading articles that exemplify how research methods are applied in practice. Reading summaries also serve as study guides for the exam.

Lab Reports: Students will generate lab reports for each of the following research methods. These will document understanding of the method's purpose, implementation, and analysis.

- Photovoice
- Behavior mapping
- Focus Groups
- Interviews
- Surveys (quantitative and qualitative)

Comprehensive Research Reports: Students will prepare two written/visual research reports. They should be professional, quality submissions.

Cumulative Exam: Students will take a comprehensive in-class exam that covers reading, lecture, and lab materials. The exam will include multiple choice, short answer, and essay questions.

Research Protocol: Students will develop a research protocol that identifies a research topic, details data collection and data analysis, and expected outcomes for a capstone or independent project.

Course Grading

1. Attendance	15%
2. Formative Research Assignments	31%
Reading summaries (8 @ 2% each, 16%)	
Lab reports (5 @ 3% each, 15%)	
3. Summative Research Assignments	39%
Comprehensive research reports (1 @ 15%, 1 @ 13%, 28%)	
Research Protocol (11%)	
4. Cumulative exam	15%

Late assignments and incomplete work will be penalized by 3% per day late. No late work will be accepted more than two weeks after the due date unless there is a verifiable, excused emergency. Grades will be posted as they are assigned throughout the semester and will be based on the following scale:

A	95-100%	C	73-76.99%
A-	90-94.99%	C-	70-72.99%
B+	87-89.99%	D+	67-69.99%
B	83-86.99%	D	63-66.99%
B-	80-82.99%	D-	60-62.99%
C+	77-79.99%	F	59.99% or lower

Students should check grades in iLearn as they accrue. Missing or incorrect grades in iLearn must be reported no later than May 8th.

Detailed Schedule and Assignments: Monday Lecture Class

All assignments and due dates are reflected in the detailed schedule below. I make every attempt to adhere to this schedule so that you can plan your own workload. However, the instructor reserves the right to change this schedule if needed, in order to facilitate better learning (e.g., more time until an assignment deadline), or for unforeseen schedule changes academically. Any changes to the schedule will be announced in the following ways: i) the revised schedule will be announced via the course email list; ii) changes in the iLearn schedule and dropbox will be, and iii) announcement will be made in class.

Week/ Date	Lecture/Discussion Topic	Assignments and Readings (To be completed <u>before</u> the start of class)
1 M, 1.20	No Class - Martin Luther King, Jr. Day	Read Chapters 1-3 from <i>Doing Research</i>
2 M, 1.27	Photovoice	Read Wang and Burris, <i>Photovoice</i> article Reading Summary 1 Due
3 M, 2.3	Interviewing	Read Interlude 6, p. 145-148 Read Colinas, Bush, & Manaugh, <i>Urban Fruit Trees</i> Reading Summary 2 Due
4 M, 2.10	Behavior Mapping	Read: Sidenious et al., <i>A Year in the Therapy Forest</i> Reading Summary 3 Due
5 M, 2.17	Focus Group	Read: Power, Norman & Dupré, <i>The Fishery Went Away</i> Reading Summary 4 Due
6 M., 2.24	Program Evaluation	Read: Ruiz Mallen et al. <i>Evaluating EE Programs</i> Reading Summary 5 Due
7 M, 3.2	Survey Design	
8 M, 3.9	Sampling	Read Pp. 115-121 in <i>Doing Research</i> Read: Crook, <i>Perceptions of Mountain Lions</i> Reading Summary 6 Due
9 M, 3.16	Survey Analysis	Read Pp. XX-XX in <i>Doing Research</i>
10 M, 3.23	Participatory Research and Participatory GIS/Mapping	Read: Gubrium & Harper, <i>Participatory GIS</i> Read Chapter 14 in <i>Doing Research</i> Reading Summary 7 Due
11 M, 3.30	Spring Break: No Class	
12 M, 4.6	Citizen Science Exam Review	Read: McKinley et al. <i>Citizen Science</i> Reading Summary 8 Due

13 M, 4.13	Cumulative Exam	
14 M, 4.20	Protocol Development	Read Chapter 16, <i>Doing Research</i>
15 M, 4.27	Protocol Development	
16 M, 5.4	Anonymous Course Evaluations, Section 01	
17 M, 5.11		Final Research Protocol Due

Detailed Schedule and Assignments: Friday Labs

All assignments and due dates are reflected in the detailed schedule below. I make every attempt to adhere to this schedule so that you can plan your own workload. However, the instructor reserves the right to change this schedule if needed, in order to facilitate better learning (e.g., more time until an assignment deadline), or for unforeseen schedule changes academically. Any changes to the schedule will be announced in the following ways: i) the revised schedule will be announced via the course email list; ii) changes in the iLearn schedule and dropbox will be, and iii) announcement will be made in class.

Week/ Date	In Class Work	Assignments and Readings (To be completed <u>before</u> the start of class)
1 F. 1.24	Introduction to the course Establishing research: theory, questions. Case Studies and Introduction to Biophilic Design	Read Chapters 1-3 Read Chapters 4-5 from <i>Doing Research</i>
2 F, 1.31	Photovoice	Read Photo Methods sections (on iLearn)
3 F, 2.7	The Voice in Photovoice, and thematic analysis	Read Chapter 12 from <i>Doing Research</i> All photographs uploaded and labeled to shared google folder
4 F, 2.14	Interviews: Draft Interview Questions; Practice Interviewing and Notetaking	Photovoice Lab Report Due Read Chapter 11
5 F, 2.21	Behavior Mapping and Site Audits	Interview Lab Report Due Read Chapter 7 and Review Pp. 169-173 and in <i>Doing Research</i> Skim Gehl's Chapter 5 from <i>How to Study Public Life</i>
6 F, 2.28	Focus Groups	Behavior Mapping Lab Report Due Read Pp. 131-138 (focus groups only) in <i>Doing Research</i>
7 F, 3.6	Writing Reports: Structure and Design	Focus Group Lab Report Due Read Pp. 247-251 in <i>Doing Research</i>
8 F, 3.13	Elkhorn Slough Foundation: Project Goals and Survey Design, Cleaning and Coding Data	Report 1 Due: Biophilic Design on CSUMB's Campus

9 F, 3.20	Descriptive Statistics Constructs and Comparisons	Read Chapter 9 in <i>Doing Research</i> Read Interlude 5 in <i>Doing Research</i>
10 F, 3.27		Lab support: quantitative data analysis Survey Lab Due – Quantitative Analysis
11 F, 4.3	Spring Break – no class	
12 F, 4.10	NVivo Interpreting qualitative data: words, texts, and images	Read Interlude 6 in <i>Doing Research</i>
13 F, 4.17	NVivo, Qualitative Analysis Continued	
14 F, 4.24	Introduce Protocol Assignment Protocol Assignment	Report 2 Due Friday: NMCHS Environmental Literacy Assessment Read Chapter 16 in <i>Doing Research</i>
15 F, 5.1	Protocol Workshop	Statement of Purpose Due
16 F, 5.8	Protocol workshop Anonymous Course Evaluations, Section 51	Detailed Outline Due
17 M, 5.11	No course meeting	Final Research Protocol Due

University Services and Policies

CSUMB has a variety of programs designed to help students thrive in college and graduate in a timely manner. If you have the desire to get more out of your CSUMB course and community work, increase your foundational academic skills, and graduate on time, please take advantage of these programs. Many students avoid these programs because they view seeking such help as a sign of weakness. However, in reality, many motivated and successful students take advantage of these services. If you are thinking of these services as an indicator of weakness, try thinking about them as openness to learning and growing.

1. **Enrollment and Registration Policy.** The purpose of this policy is to provide students with the information they need to pro-actively manage and assess their academic career at California State University, Monterey Bay (CSUMB). This policy includes information about adding and dropping courses as well as other information related to enrollment and registration. Please go to: <https://csumb.edu/policy/enrollment-and-registration-policy>
2. **Academic Integrity.** Academic integrity is of central importance to an education at CSUMB. The core of this integrity resides in the scholastic honesty of the CSUMB community and, therefore, is the responsibility of all students and faculty to uphold and maintain. Forms of academic dishonesty include cheating, fabrication, plagiarism, and collusion in any of these activities. Students discovered to have engaged in academic dishonesty will be sanctioned. For more information

regarding the Academic Integrity Policy, please go to:
<http://policy.csumb.edu/site/x20830.xml>

To help you develop good writing skills, submit your assignments to Turnitin via iLearn for the draft and final policy papers. Turnitin.com is an electronic resource that compares your writing to internet sources and a comprehensive database of other papers (including other students' work). It creates an originality report identifying which parts of your work match other sources. If you submit your essays early, you can revise your work by adding appropriate sources or revise text to avoid using a different author's language. All work submitted to Turnitin.com will be retained as source documents in the Turnitin.com reference database and used solely for the purpose of detecting plagiarism in other papers.

3. **Students with Disabilities.** Students with disabilities who require accommodations such as time extensions or alternate media format must present verification from Student Disability Resources as soon as possible. **Please schedule an appointment to discuss your specific needs with me.** If you think a disability may impact your performance in this class, please meet with SDR professional staff in the Health and Counseling Centers Building (#80) or call 582-3672.
Email: StudentDisabilityResources@csumb.edu
Phone: (831) 582-3672 voice, or 582-4024 fax/TTY
Website: <http://sdr.csumb.edu/>
4. **Learning environment** – Students and faculty each have responsibility for maintaining an appropriate learning environment. Professional courtesy and sensitivity are especially important with respect to individuals and topics dealing with differences of race, color, culture, religion, creed, politics, veteran's status, sexual orientation, gender, gender identity and gender expression, age, disability, and nationalities. Class rosters are provided to the instructor with the student's legal name. I will gladly honor your request to address you by an alternate name or gender pronoun. Please advise me of this preference early in the semester so that I may make appropriate changes to my records.
5. **Communication.** CSUMB policy establishes email as the primary and official means of communication from California State University, Monterey Bay to students. This includes faculty communication to students and will be used for communication in this course. Students are therefore expected to check their email on a frequent basis.

6. [Integration of Technology](#). In keeping with the CSUMB vision statement, which says: “The University will invest in preparation for the future through integrated and experimental use of technologies,” this course will require the application of technology to solve problems and create material relevant to our discipline. It is the responsibility of each student to fully understand the required technology and how to use it to complete assignments for this course. There are a variety of campus resources provided to help students enhance their technology skills and you are encouraged to take advantage of these opportunities as needed. A summary of the required skills in this course is provided below:

Course Submission	Technology-Related Skills
Data analysis and report writing	Use of software (including word, excel, statistical programs, publisher, NVivo) to analyze and present data in table or visual forms

7. [Collection of Student Work](#). CSUMB is committed to providing excellent and innovative curricula and educational opportunities to its students. To help us maintain quality academic offerings and to conform to institutional and professional accreditation requirements, the University and its programs regularly examine the effectiveness of the curricula, teaching, services, and programs the University provides. As CSUMB sees appropriate, it may obtain, assess, and retain samples of student work from representative courses. This work might include papers, exams, creative works, recordings of oral presentations, or portfolios developed and submitted in courses or to satisfy the requirements for degree programs as well as surveys, focus group information, and reflective exercises. Instructor and student names will not appear in any assessment results and assessment results will have no impact on student grades, instructor evaluations, or instructor employment.
8. [Center for Student Success \(CSS\)](#). CSUMB works to make sure that all students are succeeding in their courses. To ensure that this takes place, if you are falling behind or are missing classes, I strongly encourage you to schedule an appointment with the Center for Student Success to create an Academic Success Plan and get back on track. The CSS offers services such as one-on-one support, peer mentoring, and study skills workshops. CSS is located in the Library, 2nd Floor, Suite 2163. Phone: (831) 582-3165.
9. [Cooperative Learning Center \(CLC\)](#). CLC is a campus-wide tutoring program that is free and open to all students. CLC seeks to provide high-quality learning assistance in computer technology, math, science, writing, languages, and study strategies aimed at enhancing learning needs at all ability levels. CLC works with students to expand their knowledge and abilities by empowering them to become independent learners. CLC tutors, staff, and faculty work together to design and offer effective collaborative, and active learning experiences. We provide tutors with the

opportunity to develop teaching, leadership, and communication skills. CLC is located in the Library, 2nd Floor. Phone: (831) 582-4104.

10. Wellness. CSUMB believes that wellness matters. As a college student, you may sometimes experience problems with your wellness that interfere with academic success and negatively impact daily life. An important part of college is learning how to respond to these problems and seek guidance. Departments within Health & Wellness Services can support you in achieving and maintaining physical, mental, emotional, and spiritual wellness. To learn more about these resources go to csumb.edu/hws.

11. Sexual Misconduct, Dating and Domestic Violence, and Stalking.

CSUMB is committed to creating and sustaining an environment free of sexual misconduct, dating and domestic violence, and stalking. If you experience any of these forms of misconduct, CSUMB encourages you to utilize the resources described below.

To report any type of misconduct: University Police Department Emergencies: 911

Title IX: Discrimination, Harassment, and Retaliation Office Non-emergencies: 831-655-0268
Call: 831-582-3510 Email: wensmith@csumb.edu Email is recommended for fastest response

For confidential support: Campus Advocate/Monterey County Rape Crisis Center Personal Growth and Counseling Center (PGCC) Call or text: 831-402-9477 Call: 831-582-3969 24 hour crisis line: 831-375-4357

Any CSUMB staff or faculty member other than the campus advocate or PGCC counselors who are told about student experiences of misconduct must report information to the Title IX office. Only PGCC and campus advocate staff can keep such information confidential.

12. Veterans and Active Duty Military Personnel.

“Veterans, active duty military personnel with special circumstances (e.g., upcoming deployments, drill requirements, disabilities) are welcome and encouraged to communicate these, in advance if possible, to the instructor.”