

ESM 206: Introduction to Statistics and Data Analysis in Environmental Science and Management (Fall 2024)
Bren School of Environmental Science & Management

Instructor: Dr. Christopher Jerde

Pronouns: he/him/his

Preference: Please call me Chris or Dr. Jerde

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Office hours: Friday 10 am - 2:00 pm and by appointment

Grader: Renae Marshall

Tutor: Elliott Finn (Contact information will be posted on Canvas)

Overview: In ESM 206, you will build conceptual, technical, and communication skills to investigate and answer environmental questions using data. Topics include data manipulation, exploratory data analysis, descriptive statistics, regression, hypothesis testing, uncertainty, and data visualization. Through the analysis of real-world datasets using R and RStudio, you will develop skills for data exploration, analysis, and project management.

COURSE COMPONENTS:

All course materials will be posted to Canvas. Enrolled students should refer to Canvas as the primary course resource. *Lectures will be in person and not recorded.*

Weekly learning is through:

- Lectures: 2 weekly; Tue. & Thur. 8-9:15 AM in Bren 1414)
- Computer labs: Tue. 12:30 - 2:20 PM OR Wed. 3-4:50 PM in Bren 1414)
- All lecture slides, lab materials, and keys will be posted on Canvas
- You may attend either computer lab as your schedule allows

How to succeed in this course:

1. Attend lectures.
2. Keep current in coding and assignments.
3. Work collaboratively and actively with your classmates.
4. Reach out to me if you have any concerns.
5. Seek online material (video, manuals, blogs, etc).

Before the first class, you must download and install R *and* RStudio. These programs are free.

<https://posit.co/download/rstudio-desktop/>

A calendar of activities will be posted on Canvas as modules.

The course textbook is available online: <https://r4ds.hadley.nz>
It is also available in hardcopy from many sellers. It is not mandatory.

GRADE BREAKDOWN:

Assignments (60%) are created to help you practice conceptual, computational, and critical thinking skills needed for environmental data science. Expect five assignments during the quarter. Due dates will be posted on Canvas.

Quiz 1 (20%): in-class quiz will be conducted mid-quarter. Largely data science concepts.

Quiz 2 (20%): in-class quiz will be conducted on the last day of instruction. Largely statistical concepts

Policies (Taken and slightly modified from UCSB suggested policies):

Schedule changes: The schedule is subject to change depending on the progress of the course.

Due dates: Late assignments will have a 25% point deduction. After seven days, the assignment will receive no credit. However, if an emergency arises, I will work with you. Yet, I will not grant extensions after the due date has come and gone.

Exam makeup policy: Any foreseeable reason for missing the exam must be reported to the instructor immediately. If you must miss the exam (or critical due date) for a legitimate and documented reason, I must be notified *at least a week in advance* and a make-up exam will be provided or accommodation for other evaluated deliverables.

Class participation: In this course, we will work and learn *together*. That means you need to be here in class for the learning to happen. I understand that you may encounter situations where you can't attend class. Work with your classmates or me to get copies of notes and the information presented.

Plagiarism and academic integrity: All students are expected to understand and comply with university policies regarding plagiarism and the originality of work. **Plagiarism** occurs when a writer deliberately passes off another's words or ideas without acknowledging their source. For example, turning another's work as your own is plagiarism. Plagiarized assignments will receive a grade of 0 and may result in additional disciplinary action. You can view the university's policy on student conduct at http://www.sa.ucsb.edu/Regulations/student_conduct.aspx.

Plagiarism differs from **misuse of sources** when a writer does not properly cite a source, misuses quotations, includes too much of an original source in a paraphrase or summary, or commits similar *unintentional* violations of academic protocol. If you

misuse sources, we will work together on appropriately incorporating and/or citing the sources. Note that some audiences/instructors will consider the misuse of sources to be plagiarism; for this reason, it is *extremely* important for you to identify the conventions associated with source use and citations in any class. ChatGPT or other AI software, is allowable for building code, but content explanations must be your own.

Grade appeals: If you dispute a grade you have received, you have the right to request a review by the instructor. Please remember that an appeal will invoke a review of the full assignment and could result in a lower grade.

Intellectual property and course materials: All course materials (class lectures and discussions, handouts, examinations, web materials) and the intellectual content of the course itself are protected by United States Federal Copyright Law and the California Civil Code. UC Policy 102.23 expressly prohibits students (and all other persons) from recording lectures or discussions and from distributing or selling course materials without the prior written permission of the instructor (See <http://policy.ucop.edu/doc/2710530/PACAOs-100>). Students are permitted to make notes solely for their own private educational use. Exceptions to accommodate students with disabilities may be granted with appropriate documentation.

Students with disabilities: If you are a student with a documented disability (registered with the DSP program: 893-2668, www.sa.ucsb.edu/dsp) and would like to arrange accommodations, please contact me after class, and I will be happy to discuss alternative arrangements.

General academic support: Campus Learning Assistance Services (CLAS) offers instructional groups, drop-in tutoring, writing and ESL services, skills workshops and one-on-one consultations. CLAS is located on the third floor of the Student Resource Building.

Mandatory Reporting As an instructor, one of my responsibilities is to help create a safe learning environment on our campus. I want to ensure that students feel they can speak to me, but I also want students to be informed that I have a mandatory reporting responsibility related to my role as a professor. I am **required** to share information regarding sexual misconduct or information about a crime that may have occurred on UCSB's campus or in the community. My mandated report will result in students receiving outreach and resources from the campus Title IX office. Students may speak to someone confidentially by contacting CARE, Campus Advocacy, Resources & Education at the 24/7 advocacy line at (805) 893-4613 or visit them in person at the Student Resource Building.