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Course Description: This course provides an introduction to statistics with an emphasis on instructive applications to the social and natural sciences. We will also study some elementary probability theory, and a certain amount of computation is inevitable, but in this course we will focus more on understanding the ideas that motivate the computations and interpreting the numbers that the computations produce, than on the technical details of the computations. For more details about the topics, please see the lecture schedule that follows.

Quizzes/Exams: There will be eight short quizzes in class, a midterm exam, and a comprehensive final exam. Make-up quizzes will not be given but your lowest three quiz scores will be dropped.

Homework and reading: Homework will be assigned regularly, but will not be collected or graded. All of the questions on the quizzes and many of the questions on the midterm and final will be very similar to homework problems. The assigned reading (on the lecture schedule that follows) is meant to be done before the lecture that covers that material. You should use the corresponding homework to test your understanding and prepare you for the lecture. After the lecture you should read the chapter(s) again and revisit the homework to reinforce your grasp of the material.

Sections are mandatory, and attendance contributes to your course grade. In sections, the TA’s will review the relevant homework assignments and answer your questions about the material.

Course grade: Your score in the class is a weighted average of your (i) five best quiz scores (25%), (ii) midterm score (25%), (iii) final exam score (40%) and section attendance (10%).

You will receive the full 10% of section-attendance credit if you miss no more than 1 of your scheduled and available sections. If you miss 2 sections, you will receive 8%, if you miss 3 sections, you will receive 5%, if you miss 4 or more sections, you will receive 0%.

Letter grades will correspond (approximately) to the following ranges:

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<thead>
<tr>
<th>Score</th>
<th>Grade</th>
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<tbody>
<tr>
<td>90% – 100%</td>
<td>A− to A+</td>
</tr>
<tr>
<td>78% – 89%</td>
<td>B− to B+</td>
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<tr>
<td>60% – 77%</td>
<td>C to C+</td>
</tr>
<tr>
<td>50% – 59%</td>
<td>D</td>
</tr>
<tr>
<td>0% – 49%</td>
<td>F</td>
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Students with disabilities: If you qualify for classroom/exam accommodations because of a disability, please submit your Accommodation Authorization Letter from the Disability Resource Center (DRC) to me as soon as possible, preferably within the first week of the quarter. Contact DRC by phone at 831-459-2089 or by email at drc@ucsc.edu for more information.
TIPS FOR SUCCESS

★ Come to all the lectures, and come prepared — read the assigned sections at least once before the lecture, so you have an idea of what we will be discussing in the lecture. You don’t have to read the material in depth the first time through.

★ Read the material again after the lecture, this time in more depth. Read actively: take notes, try to work through the examples on your own.

★ Work on relevant homework problems after the second reading. Make a note of the problems that you don’t understand so that you can ask about them.

★ Ask questions: the more specific your question, the better and more helpful the answer is likely to be. You can ask questions in class, in section and during office hours.

You can prepare for section by making a list of the homework problems you find most challenging/confusing.

★ Study with friends for a few hours a week. Technical skills can be practiced alone, but concepts need to be discussed.

★ The standard for a 5-unit course at UCSC is 15 hours of studying a week. The 15 hours include the time for lectures and sections, but this still leaves close to 10 hours a week you should be spending with the material outside of class.

★ If you feel that you are getting lost, take action. Don’t wait and hope ‘it goes away’. Come to office hours or ask questions in class (or section) to clear up any confusion.

CHEATING:
Cheating in any form (e.g., using notes on quizzes or exams, or copying from someone else) will not be tolerated. Any student caught cheating will be reported to the Math department and to his or her college provost. In most cases, students caught cheating will receive a failing grade. Students who help others cheat are also considered cheaters.

Cheating devalues everyone’s grades.
You should not tolerate it either.
Lecture Schedule with Quiz and Exam Dates.

**Friday, 9-23:** Introduction.  
*Reading:* Section 1.1 and Chapter 2.

**Monday, 9-26:** Describing data I: Tables and graphs.  
*Reading:* Chapter 3.

**Wednesday, 9-28:** Describing data II: Statistics.  
*Reading:* Chapter 4.

**Friday, 9-30:** The normal distribution I. **Quiz 1**  
*Reading:* Chapter 5.

**Monday, 10-3:** Describing paired data I.  
*Reading:* Chapter 8 (and chapter 7, if you need a refresher on the equations of lines).

**Wednesday, 10-5:** Describing paired data II.  
*Reading:* Chapter 9.

**Friday, 10-7:** Regression I. **Quiz 2**  
*Reading:* Chapter 10.

**Monday, 10-10:** Regression II.  
*Reading:* Chapter 11.

**Wednesday, 10-12:** Regression III.  
*Reading:* Chapter 12.

**Friday, 10-14:** Chance and bias. **Quiz 3**  
*Reading:* Chapters 6 and 19.

**Monday, 10-17:** Probability I.  
*Reading:* Chapter 13.

**Wednesday, 10-19:** Probability II.  
*Reading:* Chapter 13.

**Friday, 10-21:**  
*Reading:* Review  
**Midterm exam.**

**Monday, 10-24:** Probability III.  
*Reading:* Chapters 14 and 15.

**Wednesday, 10-26:** The law of averages.  
*Reading:* Chapter 16.
Friday, 10-28: Random variables I. Quiz 4
*Reading:* Supplementary Note #1.

**Monday, 10-31:** Random variables II.
*Reading:* Supplementary Note #1 and Chapter 17.

**Wednesday, 11-2:** Central limit theorem I.
*Reading:* Chapter 18.

**Friday, 11-4:** Central limit theorem II. Quiz 5
*Reading:* Chapter 18.

**Monday, 11-7:** Chance error in sampling.
*Reading:* Chapter 20.

**Wednesday, 11-9:** Confidence intervals I.
*Reading:* Chapter 21.

**Friday, 11-11:** Veteran's day — no class.

**Monday, 11-14:** Confidence intervals II. Quiz 6
*Reading:* Chapter 23.

**Wednesday, 11-16:** Confidence intervals III.
*Reading:* Chapter 24.

**Friday, 11-18:** Tests of significance I.
*Reading:* Chapter 26.

**Monday, 11-21:** Tests of significance II. Quiz 7
*Reading:* Chapter 26.

**Wednesday, 11-23:** t-tests.
*Reading:* Chapter 26.

**Friday, 11-25:** Thanksgiving — no class.

**Monday, 11-28:** Comparing two averages. Quiz 8
*Reading:* Chapter 27.

**Wednesday, 11-30:** Tests of significance III.
*Reading:* Chapter 29.

**Friday, 12-2:** Catch up and review.
*Reading:* Your notes — come to class with questions.

**Wednesday, 12-7:** Final Exam: 4 – 7 pm