OVERVIEW

This course will cover applications of data collection strategies, numerical methods, the actual mechanics of oceanographic data analyses, and interpretation of the results (i.e., hypothesis testing). The primary emphasis will be on common techniques and approaches used in the collection and analysis of oceanographic data. Although a textbook will be used for the course, much of the lecture material and examples will be obtained from the scientific literature and available data sets. Students will be required to perform analyses, interpret, and present the results of their analysis using selected oceanographic data sets provided by the instructor. Students will also be encouraged to contribute their own data for analysis by the class.

The major objective of the course will be to expose students in the major sub-disciplines of Marine Science (physics, chemistry, geology, and biology) to the various approaches used for data collection, analysis, hypothesis testing, interpretation, and summary presentations in their field of study. Exercises will be based on different types of oceanographic data that students are likely to encounter in their profession. Therefore, the course content will focus on the discipline-specific applications of analytical methods.

LEARNING OUTCOMES

By the end of the term, successful students will be able to:
1. Construct experimental designs for field experiments
2. Perform hypothesis testing using standard statistical procedures
3. Test the major assumptions of statistical procedures
4. Interpret data and present results in standard scientific journal formats

By the end of the term, successful graduate students will be able to:
5. Conduct a comprehensive statistical analysis of their research results
6. Critique statistical methods used in published journal articles

TEXTBOOK


GRADING

Grades will be based on performance on two written (take-home) exams, a data analysis project, and weekly homework assignments.

There will be separate exams for graduate and undergraduate students and the level of difficulty and expectations will be higher for the graduate students.

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<th>Component</th>
<th>Weight</th>
<th>Grade</th>
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<tbody>
<tr>
<td>Written Exams (2)</td>
<td>50%</td>
<td>A = 100 - 90</td>
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<tr>
<td>Homework Assignments</td>
<td>30%</td>
<td>C+ = 79 – 75</td>
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<tr>
<td>Data Analysis Project</td>
<td>20%</td>
<td>B+ = 89 – 85</td>
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<td>C = 74 - 70</td>
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<td>F = below 60%</td>
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CLASS ATTENDANCE: Absence from more than 10 percent of the scheduled class sessions, whether excused or unexcused, is excessive and the instructor may choose to exact a grade penalty for such absences.

ACADEMIC RESPONSIBILITY: Faculty and students at USC are obligated to follow the USC Code of Academic Responsibility. I expect all class members to demonstrate intellectual honesty and to respect the academic rights of their classmates. If you have forgotten your responsibilities under this Code, please re-read Student Affairs Policy STAF 6.25 on USC's web page.

COPYRIGHT: All materials generated for this class, which include but are not limited to syllabi, in-class materials, and exams, are copyrighted. You do not have the right to distribute these without written consent of the instructor.

PLAGIARISM: As commonly defined, consists of passing off as one's own idea, the ideas, words, writings, etc., which belong to another. In accordance with this definition, you are committing plagiarism if you copy the work of another person and turn it in as your own without citing the source in writing, even if you have verbal permission. Individuals guilty of plagiarism will be penalized.

DISABILITIES: The American with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring accommodation, please contact the instructor.