

Introduction to Biostatistics Syllabus

Course Title:	Introduction to Biostatistics
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Course Number:	BIOL-40049

Welcome!

Welcome to Introduction to Biostatistics! For those that have never taken a statistics/biostatistics course, this course is designed to lay the foundation for many of the data situations you might encounter in everyday life. For those that have taken a statistics course before, this course will serve as a refresher to key concepts as well as expose you to the programming language, R. Please do not hesitate to contact me if you have any questions or if something in the lectures/textbook is not clear!

Communication Policy

If you have any questions, the best way to reach me is with a Canvas message (Help article: [How to Contact Your Instructor through Canvas](#)). Please contact me via the inbox tool on Canvas. You can expect an answer within 48 hours at the most, usually within 24 hours.

Course Description

This course is intended for any individual interested in learning about elementary statistics and its application to biomedical sciences. While I will limit the amount of algebraic manipulation you might encounter, math is unavoidable. Experience with programming languages like R is a plus but not required. R will be used throughout the course, but feel free to use a calculator or other programs, if preferable. **You will not be tested on your proficiency with R.** This course will cover both how to describe, manipulate, and display data (Descriptive Statistics) as well as how to interpret your results and derive conclusions (Inferential Statistics).

Learning Outcomes

By the end of this course, you will:

- Understand how to take data and summarize the results in a coherent way.
- Be able to critically discuss the relationship between any two variables and learn how to make inferences around these results for the larger population.
- Apply probability to everyday situations.
- Critically assess the quality of the study design and statistics of research published in your field of interest.

Course Materials

Text: Fundamentals of Biostatistics, 8E, by Rosner.

Course Schedule

Lesson/Week	Topic	Readings	Assignments and Tasks	Grading
1	Introduction Descriptive Statistics	Chapter 1 Chapter 2	Introduction and Study Groups Quiz 1 Chapter 2 Problem Board	4 7
2	Probability	Chapter 3	Quiz 2 Chapter 3 Problem Board	7
3	Discrete Probability Distributions	Chapter 4	Quiz 3 Chapter 4 Problem Board	7
4	Continuous Probability Distributions	Chapter 5	Quiz 4 Chapter 5 Problem Board	7
5	Estimation	Chapter 6	Quiz 5 Chapter 6 Problem Board	7
6	Hypothesis Testing (One-Sample Inference)	Chapter 7	Quiz 6 Chapter 7 Problem Board	7
7	Hypothesis Testing (Two-Sample Inference)	Chapter 8	Quiz 7 Midterm Project Chapter 8 Problem Board	7 15
8	Hypothesis Testing (Nonparametric and Categorical Data)	Chapter 9 Chapter 10	Quiz 8 Chapter 9 Problem Board Chapter 10 Problem Board	7
9	Multisample Inference	Chapter 12	Quiz 9 Chapter 12 Problem Board	7
10	Regression and Correlation Methods	Chapter 11	Final Exam Chapter 11 Problem Board	20
9 Quizzes (Drop lowest scores) $8 \times 7 = 56$ 1 Midterm Project = 15 1 Final = 20 $56 + 15 + 20 + 4 = 95$ Points + 5 participation points = 100				

Students are expected to read the chapters and view the lectures before attempting the quizzes or assignments. Homework problems will not be graded, but I highly recommend attempting the problems in the back of the book and asking questions on the Canvas Problem board (hint, this is an excellent way to gain participation points) if something does not make sense. There are no make-up quizzes, tests, or projects and there are no extensions on the deadlines.

Grades

Letter grades are based on the UC San Diego Extension Grading Scale (<https://extendedstudies.ucsd.edu/student-services/academic-information>). Your final course grade is based on the accumulation of points obtained from the top 9 quizzes, 1 midterm project, and 1 final and the associated letter grades are as follows:

100 = A+

93-99 = A

90-92 = A-
87-89 = B+
83-86 = B
80-82 = B-
77-79% = C+
73-76% = C
70-72% = C-
69% = D+ (From here down, Not passing)
63-66% = D
60-62% = D-
59 and below = F

Quizzes, Midterm, and Final

The quizzes, midterm, and final must be completed by the due date by 11:59 PM PST. You may only attempt each quiz, as well as the midterm and final, once and there are no makeups if the deadline is missed.

Participation

Participation is worth 5/100 points. Participation points will be determined by students' activity on the Weekly Discussion or the R Problems/Issues Board. While you do not need to participate in every discussion board, I highly recommend using this resource to ask questions about concepts and problems, share helpful external learning resources related to the topic, or provide helpful tips that helped you master the material. Come across an article or research paper related to the topics discussed in the lecture? Feel free to share that as well!

Code of Conduct

All UC San Diego Extended Studies students must follow the [UC San Diego Extended Studies Academic Integrity Policy](#), which oversees all instances of academic misconduct, including but not limited to: plagiarizing, cheating on exams, allowing someone access to your online course, and improper or missing citations in coursework. PLEASE READ IT CAREFULLY

UC San Diego Extended Studies Policies and Resources

MyExtension

Your MyExtension account is your student records portal. Log into [MyExtension](#) to enroll in a course, drop a course, request verification of enrollment, request official transcripts and more.

Academic Policies and Procedures

Please refer to the [UC San Diego Extended Studies Website](#) ([Student Resources tab](#)) for specific details about academic policies and procedures. Navigate to the [Grades section](#) for grade information.

Conduct Code

All UC San Diego Extended Studies students are part of the UC San Diego community and are expected to follow University and UC-wide policies, including the Student Conduct Code and the [UC San Diego Principles of Community](#). Reports of alleged violations involving sex offenses, including sexual assault and sexual misconduct, will be handled under the policies and procedures set forth in the [University of California's Sexual Violence and Sexual Harassment Policy](#).

Emergencies on Campus

In the event of an emergency, information will be posted on the [UC San Diego Extended Studies Website](#). Extended Studies students must access the website to find out the status of the emergency situation. Email and or phone lines may not be accessible. Information will be updated online as the situation progresses and an ALL CLEAR will be posted on the website once the situation is resolved.

Services for Students with Disabilities

UC San Diego Extended Studies is committed to providing equal access and an exceptional learning environment for all students. If you have any problems accessing course material, or if you anticipate or experience physical or academic barriers based on disability, we encourage you to contact our [Services for Students with Disabilities Office](#) to apply for reasonable accommodations. You can reach this office by email at unex-ssd@ucsd.edu or by calling (858) 822-1366.