UC San Diego
EXTENDED STUDIES

Business, Science and Technology Department

Biostatistics Course Syllabus

Basic Information

Course Number: BIOL-40383
Instructor: Peter Sifferlen
E-Mail Address: Please use the In-box Tool in Canvas.

Communication Policy

Students will receive a reply to their messages within 48 hours unless otherwise stated; often much sooner. Students are encouraged to communicate with the instructor well in advance of assignment due dates if you are experiencing any difficulties understanding assignment directions/ requirements.

Course Purpose and Prerequisites

Biostatistics provides the basic framework for thinking about data in a rigorous fashion. This course is intended both as a refresher course and as a first course in the application of statistical thinking to biological problems. Descriptive and inferential statistics will be covered, with topics including confidence intervals, basic probability, discrete and continuous distributions, t-tests, correlation, regression, chi-square tests and analysis of variance (ANOVA).

Course Goal and Objectives

The primary goal of this course is to stimulate interest in statistics by providing students with an understanding of the concepts of elementary statistics.

Learning Objectives

By the end of this course, the student will be able to:

- Organize, summarize and present data.
- Describe the relation between two variables.
- Understand basic probability and probability distributions.
- Work with sample data to make inferences about a population.

Course Materials/Textbooks

Textbook: Statistics: Informed Decisions Using Data , 7th Edition
by: Sullivan, Michael, III
ISBN / ASIN: 9780138253332
Publisher: Pearson, Pub. Date: 2023

Course Overview

This is a ten week on-line course covering topics in elementary statistics. There are presentations and readings for each topic. Course Grades are based upon nine weekly quizzes, a course review test, a group project report and survey, and participation in discussion board activities.

A total of 100 points may be earned:

9 Quizzes @ 7.0 points each (best 8 quizzes count) = 56 points
Course Review Test = 10 points
Group Project = 22 points
Discussion Board (DB) Activities = 12 points

On-line Course Structure

The course is organized using the course menu (left side of your screen):

Home	Automatically transfers to Syllabus
Announcements	Your instructor will post announcements and reminders here and/or by email.
Syllabus	Contains the course syllabus with outline, learning objectives, weekly assignments and course details.
Modules	If it's a fully on-line course, this section will have the instructor's weekly lessons with audio/image lectures. The lectures are self-paced and can be replayed like a video movie (start, pause, rewind, etc.). Assignments, quizzes, and the final test are also available here.
Discussions	Questions pertaining to lessons are posted for you and your classmates to discuss and answer.
Grades	Students may see their assignment grades here.
People	Instructor, student services and on-line learning support contact information is listed here.

Course Schedule

Week	Topic (Reading)	Assignments Due	Points
1	Descriptive Statistics Data Collection (Chapter 1) Organizing and Summarizing Data (Chapter 2) Numerically Summarizing Data (Chapter 3)		
2	Two Variable Relationships Describing the Relation Between Two Variables (Chapter 4)	Quiz 1, Quiz 2, Student Intro	7 7 1
3	Probability Probability (Chapter 5)	Quiz 3	7
4	Probability Distributions Discrete Probability Distributions (Chapter 6) The Normal Probability Distribution (Chap. 7)	Quiz 4, Discussion Board Topic 1	7 4
5	Sampling Distributions and Confidence Intervals Sampling Distributions (Chapter 8) Estimating the Value of a Parameter Using Confidence Intervals (Chapter 9)	Quiz 5 Project Part 1	7 5
6	Hypothesis Testing (1 Sample) Hypothesis Tests Regarding a Parameter (Chapter 10)	Quiz 6, Discussion Board Topic 2	7 4
7	Hypothesis Testing (2 Samples) Inferences on Two Samples (Chapter 11)	Quiz 7	7
8	Categorical Data and Least-Squares Regression Inference Inference on Categorical Data (Chapter 12) Inference on the Least-Squares Regression Model (Chapter 14)	Quiz 8, Discussion Board Topic 3	7 3
9	Group Project, Project Survey, and Course Survey	Project Part 2 & Proj Survey	17
10	Comparing Three or More Means Analysis of Variance (ANOVA) (Chapter 13)	Quiz 9 Course Review Test	7 10
		Total Points (less lowest quiz score) =	**100**

Requirements

Students are expected to view and read the slide presentations and read the relevant sections in the textbook before attempting the assignments. Due dates for assignments will not be extended and there are no make-up tests. Quizzes will be completed on-line and scored immediately upon submission. Quizzes will not be accessible at their expiration date/time. Students should prepare for quizzes by completing the review exercises at the end of assigned chapters in the textbook (answers to the exercise questions are in the back of the book).

Every student will be assigned to a small group (approximately 3-4 students) for the group project. Each group will address questions of interest about some data provided by the instructor and answer the questions through the application of statistical concepts covered in the course. The group will prepare a report about the questions, solutions, and conclusions. More detail can be found in the Group Project Introduction file in the Group Project Assignment in the Modules Section.

The Discussion Board activities are designed to encourage interaction between students and stimulate interest and discussion in statistical topics.

In order to satisfy course requirements, students must participate in discussions, complete all course assignments on time (on or before the due date), and use graduate level writing/presentation for all written assignments. Grades are lowered for less-than-optimal (non-graduate level) grammar, spelling, and presentation. Make sure all references are correctly cited and follow APA or MLA guidelines.

In general, the performance criteria for an A grade for assignments is listed below: The assignment:

- Demonstrates a high level understanding of issues, including complexities.
- Is well focused and sequenced. Has a clear sense of purpose. Thoughts are clearly developed and easily understandable.
- Critically evaluates the topic beyond what is stated in readings, research, and discussions.
- Expresses views clearly, and provides specific examples, details, illustrations, anecdotes, etc. to support positions.
- Does more than repeat what the text says or what was said in class; it draws out additional important implications.
- Shows originality of thought.
- Uses proper citations for resources.
- Uses organizers: table of contents, topic headings, etc.
- Has no punctuation, grammar, spelling errors. Style, formatting, and appearance add to quality of final product.

Expect and plan for contingencies and technical problems (they WILL happen!). Written assignments MUST be sent as a PDF attachment. No exceptions.

Grades

No late assignments or quizzes are accepted.

Grades are based on points and the letter grades are given as follows:

A+	98-100
A	93-97
A-	90-92
B+	87-89
B	83-86
B-	80-82
C+	77-79
C	73-76
C-	70-72
D	60-69
F	0-60

You may check your grade anytime by entering the Grades Section. This will show you the points you have earned so far in this course.

About Discussion Board Participation

A regular presence is expected in discussions and substantial contribution about class topics and discussion questions. What this means, essentially, is coming into the Discussions section regularly and posting your thoughts about the topic. Here are the attributes of effective discussion board participation:

- start a discussion (add a thread)
- respond thoughtfully to a topic or another person's post
- provide links and resources related to the topic
- pose a thought-provoking question related to the topic
- provide pros and cons
- provide a respectful rebut to another person's comments
- make your postings in a timely manner
- take a leadership role for weekly postings, be the one to start the discussion and encourage others

Regular contributions that add to the knowledge base of other students, links to additional resources, and providing substantive thought are appreciated. If you don't know a lot about the topics, feel free to share some questions to others and/or search the Internet and share what you find with the class.

About Assignments/Quizzes

When you click on the assignment name in the menu you will see the assignment instructions. Follow the instructions to complete the assignment.

The quizzes must be completed by midnight (11:59 PM), Pacific Standard Time, on the due date. The quiz will no longer be available after the due date/time. Plan ahead and give yourself plenty of time to complete it. These quizzes are based upon the lesson and the readings so do both before completing the quiz. You may attempt (submit) the quiz only once.

The group project report assignment is to be delivered in a PDF file. Please name the file as "CourseName-Group#" and send it using the tools in Canvas. Click on ATTACH A FILE and BROWSE to locate your PDF file, click on the file to load it, then click on "Submit" to upload the file.

UC San Diego Extension Policies and Resources

Academic Policies and Procedures

Please refer to UC San Diego Extension's website (Student Resources tab) for specific details about academic policies and procedures: Student Resources.

MyExtension

Your MyExtension account is your student records portal. Log into MyExtension (https://myextension.ucsd.edu/) to enroll in a course, drop a course, request verification of enrollment, request official transcripts and more.

Campus Emergencies

In the event of an emergency, information will be posted at UC San Diego Extension (http://extension.ucsd.edu/). Extension 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 once the situation is resolved.

Code of Conduct

All participants in a course at UC San Diego Extension are bound by the University of California, Code of Conduct found at Student Conduct Code.

Academic Integrity Policy

The University is an institution of learning, research, and scholarship predicated on the existence of an environment of honesty and integrity. As members of the academic community, faculty, students, and administrative officials share responsibility for maintaining this environment. It is essential that all members of the academic community subscribe to the ideal of academic honesty and integrity and accept individual responsibility for their work. Academic dishonesty is unacceptable and will not be tolerated at the University of California. Cheating, forgery, dishonest conduct, plagiarism, and collusion in dishonest activities erode the University's educational, research, and social roles.

If students who knowingly or intentionally conduct or help another student perform dishonest conduct, acts of cheating, or plagiarism will be subject to disciplinary action at the discretion of UC San Diego Extension. Please refer to UC San Diego Extension website to view this policy: Student Conduct Policy.

Access and Accommodations

At UC San Diego Extension, we strive to make learning experiences as accessible as possible. If you anticipate or experience physical or academic barriers based on disability, we encourage you to contact the Extension Disability Coordinator to apply for reasonable accommodations. Visit our website: Services for Students with Disabilities. Please note that it is your responsibility to initiate contact with the Disability Coordinator.

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