

SYLLABUS

De Anza Community College
SYLLABUS FOR Introductory Statistics
Fall 2024
Math 10, Units: 5
M-Th 8:30a - 9:20a ROOM: MLC111

Instructor: John Jimenez

Office Hours: TBA

Office: S76h

Email: jimenez.john@fhda.edu

COURSE DESCRIPTION: This course introduces data analysis through graphical and numerical techniques to study patterns and deviations. Students will explore randomness, variation, hypothesis examining, and statistical modeling while applying these concepts across various fields like engineering, business, and medicine. R will be used as a computational tool for analyzing data, and technology usage is required for some applications.

COURSE REQUIREMENTS:

- **Textbook:** *Statistics Using Technology*, 3rd edition, Kathryn Kozak. This link will take you to the page to download the book <https://www.coconino.edu/open-source-textbooks>, and this link will take you to lulu.com where you can purchase a [hard copy \(not required\)](#).
- **Technology:** A laptop or computer will be required to complete assignments in this course. If you do not have a laptop, you can check one out in the library for the quarter or possibly get a refurbished one for free from the CompTechS office. We will be using a free software package called R Studio for this course. We will go over how to install this software on your computer in class but if you want to get a head start complete steps 1-2 on the following website: [R and RStudio download](#). Students are expected to use R Studio for all computations.

COURSE POLICIES:

Classroom Etiquette/Standards of Conduct:

As a student, you deserve the respect of your fellow students and me. However, respect is earned, not just given. To earn the respect of your fellow students and me, you need to come to class prepared, pay attention and participate in class, listen to other's comments or questions, make comments that are constructive or helpful, and refrain from activities that disrupt the learning of others. Activities that disrupt the learning of others include texting in class, not having your cell phone on vibrate, answering your cell phone in class, working on homework during class, talking to others in the class, and sleeping in class. This ensures that the classroom environment will be one in which everyone can

thrive. If you find yourself distracted or not able to adhere to these policies, please reach out and we can devise a plan so that you can be better equipped to make the most of each class session.

The format of many class days will be working on material in groups. Every group member needs to be actively involved in working on the projects. Groups should discuss the solution together prior to asking for help. If you ask for help, you will not be given the solution. You are to learn from this experience and you don't learn from just being given the solution. Thus to succeed in the class, be an active member of the learning community. This means participate, ask questions, answer questions, and be engaged.

This is a five credit hour course. That means for every hour in class, you can expect about 2 hours out of class learning course material to succeed in the course. You should budget at least 10 hours out of class to read the book, do the homework, review your notes, and ask for help. In order to succeed, it is suggested that you read the book, attend class every time, and complete the homework that I assign on time.

The lessons in this course are designed to provide for appropriate pace and progression in learning for the majority of students. However, some students will experience particular difficulties with aspects of the curriculum from time to time. If you have any trouble with material, it is your responsibility to get help. I am available in my office for help. See my office hours above. For information about tutoring at the Student Center visit <https://www.deanza.edu/studentsuccess/>.

Academic Dishonesty Procedure: If it is suspected that academic dishonesty is taking place on an assignment, the college will be notified and will result in a failing grade on the assignment or a failing grade in the class. For further information on academic integrity please see https://www.deanza.edu/policies/academic_integrity.html.

Attendance:

Attendance will be taken in class every day. This is to hold students accountable for coming to class and to help me learn names as well! If you fail to attend the first day of class, you will be counted as absent, and you will be counted as a “no-show,” and will be dropped from the class.

To protect students GPA, you may be dropped from the course if:

- You miss the first day of class.
- You have multiple missing assignments including the first week assignments.
- You do not interact with Canvas regularly to keep up with the course.
- Failure to communicate why you miss a class meeting or miss an assignment deadline.

Note that if for any reason you feel like you may need to drop the course, it is your responsibility to do so.

The deadlines to drop and withdraw are:

Drop deadline w/ no W on transcript: See your portal info.

Withdraw deadline W on transcript: Nov 15th

Homework:

Homework is turned in on Canvas at the end of a chapter the day after the chapter is completed. I grade only some of the problems. You will not be given credit if there is no work shown. Copying the answers from the back of the book is plagiarism and you will receive a 0 on the assignment if you just copy down the answers. Do not expect a grade for just completing the homework, problems will be graded on correctness. Homework assigned can be found on Canvas.

Group work and Participation:

There are group work assignments this quarter. The purpose of these is to get a better understanding of some of the concepts in the course.

EXAMS

Exam 1: Chapters 1, 2, and 3

Exam 2: Chapters 4, 5, and 6

Exam 3: Chapters 7, 8, and 9

Exam formats will be in class and/or take home. The final exam is comprehensive and the lowest exam score will be dropped out of Exams 1 - 3.

Exam Etiquette: Exams should be done by you and you should show work. If no work is shown, then there will be no credit given even if the answer is right. Note: work for this class consists of showing the commands you typed into R Studio. I expect to see what commands you used. In addition, you should have explanations for all problems. Though I believe that students learn from talking to each other, I do feel that you need to do your own work on an exam. If two exams are very similar then I will assume that you cheated and give both exams a 0. Please read the Academic Procedures section of the College Catalog,

Late Work Policy: There will be homework assigned for each chapter and due dates will be posted. I accept late homework with a 10% penalty for each day it is late. You cannot make up group works. If you are not in class on a day we do group work you will receive a 0 for that assignment. **There are no makeups for exams or the final exam.**

COURSE EVALUATION:**Basis for Evaluation:**

Homework	35%
Group Work	15%
Exams	30%
Project	10%
Final exam	10%

GRADING SCALE:

90-99.9% A	70-77.9% C
88-89.9 % B+	68-69.9 % D+
80-87.9% B	60-67.9% D
78-79.9% C+	≤ 59.9 F

FINAL EXAM:

Final Exam: Wednesday from 7:00 AM to 9:00 AM

SEMESTER CALENDAR:

(Please note that this is a tentative schedule and is subject to change- Canvas calendar will be updated as needed) There will be group work on most days. These are not all listed.

GOAL (COURSE OUTCOMES)	COURSE CONTENT
Week 1 1. use statistical methods to collect, organize, analyze and interpret numerical data;	<i>1. definitions:</i> <i>a. populations;</i> <i>b. sample;</i> <i>c. random variable;</i> <i>d. parameter;</i> <i>e. statistics;</i> <i>2. descriptive statistics:</i> <i>a. central tendency: mean, median, mode;</i> <i>b. variability: range, variance, standard deviation;</i> <i>c. graphs: bar, pie, frequency distribution, histogram, ogive;</i>

<p>Week 2</p> <p>2. create and interpret graphs of data;</p>	<p>2. <i>descriptive statistics:</i></p> <p>a. <i>central tendency: mean, median, mode;</i></p> <p>b. <i>variability: range, variance, standard deviation;</i></p> <p>c. <i>graphs: bar, pie, frequency distribution, histogram, ogive;</i></p>
<p>Week 3</p> <p>3. calculate and use measures of central tendency and variability;</p>	<p>2. <i>descriptive statistics:</i></p> <p>a. <i>central tendency: mean, median, mode;</i></p> <p>b. <i>variability: range, variance, standard deviation;</i></p> <p>c. <i>graphs: bar, pie, frequency distribution, histogram, ogive;</i></p>
<p>Week 4</p> <p>4. calculate probabilities for events or combinations of events;</p>	<p>3. <i>probability:</i></p> <p>a. <i>event probability;</i></p> <p>b. <i>conditional probability;</i></p> <p>c. <i>mutually exclusive;</i></p> <p>d. <i>independence;</i></p> <p>e. <i>distributions: binomial, normal;</i></p>
<p>Week 5</p> <p>5. predict the outcomes of an event;</p>	<p>3. <i>probability:</i></p> <p>a. <i>event probability;</i></p> <p>b. <i>conditional probability;</i></p> <p>c. <i>mutually exclusive;</i></p> <p>d. <i>independence;</i></p> <p>e. <i>distributions: binomial, normal;</i></p>
<p>Week 6</p> <p>6. explain and use the Central Limit Theorem;</p>	<p>e. <i>distributions: binomial, normal;</i></p>
<p>Week 7</p> <p>7. estimate population parameters;</p>	<p>4. <i>confidence interval estimate</i></p> <p>a. <i>one population mean;</i></p> <p>b. <i>the difference of two population means;</i></p> <p>c. <i>large and small samples;</i></p> <p>d. <i>proportions;</i></p> <p>8. <i>and applications of a variety of scientific disciplines.</i></p>
<p>Week 8</p>	<p>e. <i>distributions: binomial, normal;</i></p>

8. recognize a variety of probability distributions;	
Week 9 9. interpret confidence intervals;	<p><i>4. confidence interval estimate</i></p> <p><i>a. one population mean;</i></p> <p><i>b. the difference of two population means;</i></p> <p><i>c. large and small samples;</i></p> <p><i>d. proportions;</i></p> <p><i>8. and applications of a variety of scientific disciplines.</i></p>
Week 10 10. exam hypotheses;	<p><i>5. hypothesis examing:</i></p> <p><i>a. one population mean;</i></p> <p><i>b. two population means;</i></p> <p><i>c. chi-squared test for independence;</i></p> <p><i>d. large and small samples;</i></p> <p><i>e. proportions;</i></p> <p><i>8. and applications of a variety of scientific disciplines.</i></p>
Week 11 11. determine the linear regression equation;	<p><i>6. regression:</i></p> <p><i>a. scatter diagram;</i></p> <p><i>b. simple linear regression equation;</i></p> <p><i>c. prediction of response variable;</i></p> <p><i>7. correlation:</i></p> <p><i>a. correlation co-efficient;</i></p> <p><i>b. interpretation of correlation;</i></p> <p><i>8. and applications of a variety of scientific disciplines.</i></p>
Week 12 12. and calculate and interpret the correlation coefficient.	<p><i>6. regression:</i></p> <p><i>a. scatter diagram;</i></p> <p><i>b. simple linear regression equation;</i></p> <p><i>c. prediction of response variable;</i></p> <p><i>7. correlation:</i></p> <p><i>a. correlation co-efficient;</i></p> <p><i>b. interpretation of correlation;</i></p> <p><i>8. and applications of a variety of scientific disciplines.</i></p>

Student Learning Outcomes:

Organize, analyze, and utilize appropriate methods to draw conclusions based on sample data by constructing and/or evaluating tables, graphs, and numerical measures of characteristics of data.

Identify, evaluate, interpret and describe data distributions through the study of sampling distributions and probability theory.

Collect data, interpret, compose and evaluate conjectures, and communicate the results of random data using statistical analyses such as interval and point estimates, hypothesis tests, and regression analysis.

Student Learning Outcome(s):

- Organize, analyze, and utilize appropriate methods to draw conclusions based on sample data by constructing and/or evaluating tables, graphs, and numerical measures of characteristics of data.
- Identify, evaluate, interpret and describe data distributions through the study of sampling distributions and probability theory.
- Collect data, interpret, compose and evaluate conjectures, and communicate the results of random data using statistical analyses such as interval and point estimates, hypothesis tests, and regression analysis.

Office Hours:

T,W 01:30 PM 03:30 PM In-Person S76h