

MATH 10. 21Z -01223

Elementary Statistics

Spring 2022

On **Monday and Wednesday 1:30 PM-3:45 PM**

there will be live sessions which are recorded and posted to canvas

Instructor: Fatemeh Yarahmadi

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Office Hours: Monday-Thursday 10:00am-11:00am and Friday 11-11:55am

(Zoom link is available on Canvas)

My office hours are times for conversation about the course and your work in it. I am here to answer questions, offer feedback, discuss a course concept, or just listen as you explore a line of reasoning. I can also direct you to resources to help you meet challenges you face outside of class.

Questions outside of office hours? I will respond to your message or email within 24 hours, M-F. If you do not get a response after 24 hours, please resend.

Textbook & Required Materials:

Elementary Statistics: Picturing the World, Betsy Farber and Ron Larson (6th Edition)
(9780321901118)

Inferential Statistics and Probability by Geraghty (online). (The online text is free)

Graphing Calculator: TI-83/TI-83+/TI-84/TI-84+

Computer/smartphone to complete online homework assignments, submit projects on Canvas, and attend required live class meetings.

You should keep a **notebook** where you take notes and work the problems for reference.

Prerequisites:

- MATH 114 or equivalent.
- Not open to students with credit in MATH 10H.
- Advisory: EWRT 211 and READ 211 (or LART 211), or ESL 272 and 273.

Attendance:

Regular attendance and class participation is as vital in any Math. You are expected to attend all meetings. You will be considered present if there is evidence of your participation in required course activities including, but not limited to, submitting an assignment, participating in an online discussion, and working in a group. If you consistently miss Zoom meetings, you may be dropped from the course. However, it is your responsibility to drop yourself if you wish to drop the course.

Course Description:

Introduction to data analysis making use of graphical and numerical techniques to study patterns and departures from patterns. The student studies randomness with an emphasis on understanding variation, collects information in the face of uncertainty, checks distributional assumptions, tests hypotheses, uses probability as a tool for anticipating what the distribution of data may look like under a set of assumptions, and uses appropriate statistical models to draw conclusions from data. The course introduces the student to applications in engineering, business, economics, medicine, education, social sciences, psychology, the sciences, and those pertaining to issues of contemporary interest. The use of technology (computers or graphing calculators) will be required in certain applications. Where appropriate, the contributions to the development of statistics by men and women from diverse cultures will be introduced.

Instructor Communication:

I am looking forward to working closely with you this term, and you can expect me to play an active role in our course. I will hold live lectures, post announcements every week, check your Google document group work, join you in breakout rooms and class discussions to help you understand course concepts, and provide detailed feedback on assignments within one week of submission. I will also answer questions throughout the term in Piazza and in our weekly discussions. Please let me know when you need help—that's why I'm here!

Canvas:

All class content, assignments and announcements will be on Canvas, which you can access through MyPortal. The course will be divided into weekly modules in Canvas. Weeks will run from Monday to Sunday, and all work for the week (including Discussions and HW) will be due Sunday night at 11:59 pm. The only exception to this is exams which will be timed. Please refer to the calendar.

Reading and Writing:

Statistics is a concept-heavy subject. While we will do some computations and calculations by hand, we will mostly use technology. The essence of statistics lies in framing a problem in statistical language, collecting and processing data, and interpreting the meaning of results in the context of the original problem. This makes it very different from most math classes! You cannot hope to do well in statistics without a clear understanding of statistical concepts. You will need to keep your focus on both concepts and skills. On projects, quizzes and exams, in addition to correct numerical answers, you will also be graded on your explanations. Practice this carefully and deliberately on your homework and group work and ask questions whenever you don't understand something.

Participation in online class:

A major part of the class involves participation, discussing assignments and problems with your classmates. Thus, everyone needs to be doing the same work at approximately the same time. You are expected to meet all deadlines for homework, quizzes, and discussions. We are learning a lot of different concepts that build on one another and it is very difficult to catch up if you fall behind.

In-Class Group Activity:

There will be required group activities during our class meetings. Even though the problems will be discussed in group, write up your own solutions independently.

- Every member of the group will be taking a role.
- Online Groupwork are done in Google doc.
- Your name and your role should be written at the top of the first page.
- Work must be NEAT and ORGANIZED. Do problems IN ORDER.
- It is important for you to SHOW YOUR WORK! You are graded on the work you show to get the final answer, not just the final answer. Be sure to show your “scratch work” that goes with the problem.

Discussions:

There will be weekly discussion topics posted on Canvas. The deadline for responding to the topic is **Sunday 11:59 pm**. You may not respond to the discussion once the deadline has passed.

Homework:

Written sets for submission: During the term, I will send out homework sets to be written up and submitted on Canvas. Homework is essential in any math class. You cannot expect to pass the class without putting consistent effort into homework. The deadline for submit the homework is **Sunday 11:59 pm**.

HW Guidelines:

The process of solving homework problems reflected in step-by-step solutions. The following are some specific criteria:

Guidelines for homework:

- Your name, class, and section number should be written at the top of the first page.
- Work must be NEAT and ORGANIZED. Do problems IN ORDER.
- It is important for you to SHOW YOUR WORK! You are graded on the work you show to get the final answer, not just the final answer. Be sure to show your “scratch work” that goes with the problem.
- Do your work underneath the assigned problem then circle your final answer.
- At the end of each homework assignment, write a brief “**Chat**” paragraph
- Submit one single pdf file of your homework on Canvas

Collaborative Projects and Presentation:

Two collaborative projects will be assigned throughout the quarter and each will be worth 50 points. A Collaboration project is a project where you work together with your group to discuss (1) selection of a central idea and population of interest, (2) selecting and measuring the variables of interest, (3) sampling from the population, (4) collection of data, (5) data analysis, and (6) writing the results in a understandable form. Project due dates are indicated on the calendar and Canvas.

Group Quizzes:

There are **four group quizzes** will be available on Canvas and each will be worth 25 points. Quizzes will focus on the material covered during that week. Students are expected to discuss the questions with their groups.

Exam Reviews:

There will be **three exam reviews** each assigned before each midterm exam worth 10 points each. The purpose of the review is to aid the student in studying for the exams.

Midterm Exams:

There will be **three exams** to test your understanding of the concepts from lecture and the homework. They should be straightforward for those who complete and understand the homework. Each exam will be worth 90 points. A total of 270 points will be counted toward your final grade.

No make-up exams will be given. If you are forced to miss an exam, you need to contact me **before** the exam with a valid reason.

Final Exam:

The final exam will cover **all material** from throughout the term. You will have two hours to complete the final. More details on the final exam will be available on Canvas.

Grading Policy:

Homework	50 pts (6.25%)
Group Activities and Discussion	50 pts (6.25%)
Projects and Presentation	100 pts (12.5%)
Group Quizzes	100 pts (12.5%)
Midterm Reviews/ Midterms	300 pts (37.5%)
Final	200 pts (25%)
Total	800 pts

Quarter grade:			
≥ 100%	A+	78-79.9%	C+
93-99.9%	A	70-77.9%	C
90-92.9%	A-	68-69.9%	D+
88-89.9%	B+	63-67.9%	D
83-87.9%	B	60-62.9%	D-
80-82.9%	B-	0-59.9%	F

Important Dates and Deadlines: <http://www.deanza.edu/calendar/dates-and-deadlines.html>

De Anza Final exams schedule: <https://www.deanza.edu/calendar/final-exams.html>

For detailed information on Homework, Quizzes, Projects, Discussion please log into your Canvas course page.

Academic Integrity:

All students are expected to exercise high levels of academic integrity throughout the quarter. You are encouraged to work together but you are expected to write up your answers independently. Any instances of cheating or plagiarism will result in disciplinary action, including getting a '0' on the assignment and report to the PSME dean, which may lead to dismissal from the class or the college

Student Honesty Policy:

"Students are expected to exercise academic honesty and integrity. Violations such as cheating and plagiarism will result in disciplinary action which may include recommendation for dismissal."

Disabled Services:

Students who have been found to be eligible for accommodations by Disability Support Services (DSS), please follow up to ensure that your accommodations have been authorized for the current quarter. If you are not registered with DSS and need accommodations, please go to <http://www.deanza.edu/dss>.

This syllabus is subject to change at the instructor's discretion. Changes will be announced in class and on Canvas.

Recipe for Success:

- If you ever have any questions, Email me! You are welcome to send email to me whenever you need help!
- Visit the Online Tutoring Center.
- Form an online study group.
- Watch all lectures, participate in every discussion, and complete every homework assignment.
- Read the sections to be discussed in class prior to the lecture

WEEK	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	Friday	Sunday
1	4	5	6 Introduction to Statistics	7	8	HW 1 Due
2	11 Descriptive Statistics	12	13 Probability/ Quiz 1	14	15	HW 2 Due
3	18 Discrete Probability Distributions	19	20 Discrete Probability Distributions/ Quiz 2	21	22	HW 3 Due
4	25 Normal Probability Distributions	26	27 Exam 1	28	29	HW 4 Due
5	2 Normal Probability Distributions	3	4 Confidence Intervals Start Project 1/ Quiz 3	5	6	HW 5 Due
6	9 Confidence Intervals	10	11 Hypothesis Testing with One Sample	12	13	HW 6 Due
7	16 Hypothesis Testing with One Sample	17	18 Exam 2	19	20	HW 7 Due
8	23 Hypothesis Testing with Two Samples	24	25 Hypothesis Testing with Two Samples Start Project 2	26	27	HW 8 Due
9	30 Holiday	31	1 Correlation and Regression/ Quiz 4	2	3	HW 9 Due
10	6 Chi-Square Tests and the F -Distribution	7	8 Exam 3	9	10	HW 10 Due Project Submissions Due
11	13 Project Presentation	14	15 Final Review	16	17 Holiday	
12	20	21	22 1:45 PM to 3:45 PM	23	24	

Tentative Schedule

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