Math 10 Introductory Statistics and Math 210X Support for Statistics – Fall 2020 – Syllabus

Course Description:

This course is an 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. This Statistics course is a required lower-division course for students majoring or minoring in many disciplines such as data science, nursing, business, and others.

Course Content:

1. Displaying and Analyzing Data with Graphs
2. Descriptive Statistics
3. Populations and Sampling
4. Probability
5. Discrete Random Variables
6. Continuous Random Variables
7. The Central Limit Theorem
8. Point Estimation and Confidence Intervals
9. One Population Hypothesis Testing
10. Two Populations Inference
11. Chi-square Tests for Categorical Data
12. One Factor Analysis of Variance (ANOVA)
13. Correlation and Linear Regression

Textbook, Workbook, and Calculator:

Title: Inferential Statistics and Probability (download: TEXTBOOK-HolisticStatisticsRev200403.pdf)
Author: Maurice A. Geraghty

We will use a workbook to take notes in (download: HolisticStatisticsWorkbook-FirstEdition.pdf
). The workbook is essential to keep the course materials organized for yourself throughout
the quarter, You may either:

- Print this document out (double-sided, as it's long):
- Order a copy from the De Anza Bookstore (Links to an external site.).

No particular calculator is required for this class. However, we will use a variety of technology
sources on the Internet for statistical calculations throughout the quarter.

Office Hours:

- Mondays and Wednesdays 1:30-2:30pm
  - Zoom Meeting ID: 971 7860 7892; Link: https://fhda-edu.zoom.us/j/97178607892 (Links to an external site.)
- Tuesdays and Thursdays 11am-12noon
  - Zoom meeting ID: 969 4344 4357; Link: https://fhda-edu.zoom.us/j/96943444357 (Links to an external site.)
- By appointment: I am happy to find time to work with you one-on-one if you need help and can't make office hour or need to talk privately

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Important Note:

Since we are conducting the class online, I will look for your engagement primarily through the
submission of assignments. Be sure to submit all first and second week assignments to get into
the "rhythm" of the class. Please note that if you're not submitting any assignments, I will assume
that you are not interested in the taking the class and may drop you (so you can get your refund)!

Weekly Schedule:

- Mondays and Wednesdays (and other days): Read textbook, watch lecture videos, work on homework, respond to discussion boards, and study!
- Tuesdays and Thursdays: We will have synchronous Zoom meeting. The link can be found in the Zoom in left navigation. You're expected to attend these meetings. Be sure to watch appropriate lecture videos before attending these meetings. We will use these synchronous meeting times to go over additional examples, address your questions, do worksheets, and take quizzes and exams.

If, for any reason during the course of the quarter, you stop participating and intend to drop the class, please do an official drop in a timely manner. Please see the calendar ([Math10-calendar-fall2020-AM.pdf](#)) for important deadlines. If you fail to do so, you will receive an 'F' in the class. Follow the deadlines for this class in My Portal. I do not have the ability to make exceptions to these.

Weekly Discussions:

Each week, there will be a topic of discussion. The due date will be at the end of the week. These topics (except for Week 1) are designed to help you think critically about statistics and express your analysis, conclusions or opinions. They will often involve the history and practice of statistics, applications of statistics in the real world, etc.

Homework, Worksheets and Labs

The best way to succeed in any math class is doing all of the assigned work correctly and in a timely manner, making sure you really understand what you are doing! Focus on your understanding of the concept, how it relates to the course concepts and how it's applied outside of the class, not just on following a procedure or learning a skill! Time spent on the homework and worksheets will directly benefit you on quizzes and exams.

Online Homework: You will have online homework for each chapter we cover. The homework will be embedded within Canvas. The links and due dates are within the modules. You will have 3 late passes that give you a 24-hour extension.

Worksheets: You will have worksheets in almost every class. These worksheets will usually be posted as Google docs in the Canvas modules. We will work on them in groups, but you are to submit them individually by the deadline. They are designed to help you practice the concepts and skills you are learning. I will look for evidence of your understanding in your work.

Worksheets Submission Guidelines:

- Even though the problems will be discussed in groups, you must write up your own solutions independently.
- Worksheets will be due the day after you work on it in class. Worksheets that are turned in within 24 hours after the deadline will receive half credit. After that, they will receive no credit.

Labs: We will have three technology labs in this class. They will be done in groups. There will be one submission per group, with each member of the group receiving the same grade. Labs are due the day after they are done in class. Late labs will NOT be accepted.

Participation:

Even though this is an online class, you are expected to participate. Here are ways to participate:

- Ask questions during the synchronous portions of the class.
- Participate actively when we do worksheets during synchronous sessions.
- Participate in assigned discussion boards (it's part of your grade)
- Post and answer questions in chapter discussion boards (1 point extra credit for posting a question, 1 point extra credit for answering a question)

Quizzes:

We will have fifteen 15-minute quizzes (see the calendar) during the synchronous portions of our class. These will be similar to your online homework and worksheets. You will need to submit them on time to receive any points. IMPORTANT: There will be NO MAKEUPS for any of the quizzes. However, your lowest two quiz scores will be dropped.

Exams:

We will have two midterm exams. We will also have a cumulative final exam. See the calendar for the dates. There will be NO MAKEUPS for any of the exams, so be sure to not miss any of them.

IMPORTANT: The final exam cannot be rescheduled for any reason. In case of an unforeseen emergency or illness due to which you cannot take the final exam, you will be given an 'Incomplete' provided that you supply me with a sufficient proof.

Evaluation:

Your final grade will be computed as follows:

Category		Points
Weekly Discussions	10 @ 10 points each	100
Homework	13 @ 10 points each	130
Worksheets	Top 14 @ 5 points each	70

Labs	3 @ 10 points each	30
Quizzes	Top 13 @ 10 points each	130
Exams	2 @ 70 points each	140
Final Exam		100
TOTAL		700

Overall percentage	Your grade will be at least
97 % or greater	A+
93% to less than 97%	A
89% to less than 93%	A-
87% to less than 89%	B+
83% to less than 87%	B
79% to less than 83%	B-
75% to less than 79%	C+
70% to less than 75%	C
55% to less than 70%	D
less than 55%	F

Help:

1. Your classmates are a great resource. Ask for help and provide help to others either within your current groups or using Canvas discussion boards!
2. Visit me during office hours, or email (or Canvas message) me with questions or to make a Zoom appointment. On online homework, you can message me by using 'Ask My Instructor' button.
3. Ask questions during our synchronous meetings on Tuesdays and Thursdays.
4. Get help from De Anza's Math Student Success Center. See details at http://deanza.edu/studentsuccess/ (Links to an external site.). 5. Use NetTutor (available 24/7) for help through Canvas. You can also access SmartThinking through MyPortal.
5. If you need any technical help with MyPortal, Zoom, Canvas, etc., visit https://www.deanza.edu/online-fall/#Learning (Links to an external site.).
6. On the link in #5 above, under 'Student Services and Support', you will find lots of other links to services with some specific to this time, such as for help with tech equipment, food and financial assistance, health services, resources for undocumented students, etc.

Academic Integrity:

All students are expected to be academically honest throughout the term. Any instances of cheating or plagiarism will result in disciplinary action, which may include recommendation for dismissal. You are encouraged to work together, but submitting someone else's work as your own is never acceptable! Also, that activity will be of no help to you later. Cheating will result in getting a 0 on the assignment or assessment, an 'F' in the course, or dismissal from the class. Also, each incident of cheating will be reported to the Dean of the Physical Science, Mathematics and Engineering Division. Please see the De Anza College's page on Academic Integrity: https://www.deanza.edu/policies/academic_integrity.html (Links to an external site.). Also, please watch this video that's designed to help you understand what academic honesty means: https://www.youtube.com/watch?v=4unoOe-I0eY (Links to an external site.)

Disability Notice:

If you feel that you may need an accommodation based on the impact of a disability, please contact me privately to discuss your specific needs. Also, please contact Disability Support Programs & Services through https://www.deanza.edu/dsps/ (Links to an external site.) for information or questions about eligibility, services and accommodations for physical, psychological or learning disabilities.

Miscellaneous:

In any math class, your goal should be to get ownership of the material. This means that you understand the concepts, can demonstrate the skills, and explain the concepts and skills to someone that doesn't have them. Here are some tips to help you succeed.

1. While the video lectures can be watched any time, you should stick to the schedule I have recommended on the calendar. Don't fall behind! Be disciplined about this to stay on top of the class.
2. You must do the homework and the worksheeets diligently. There are many resources that can help you get the right answer, but never let them become a crutch! Your goal is to be able to do the work without help. Productive struggle is extremely important in learning mathematics. This means you need to sweat through the assignment problems on your own first, before seeking help from your resources.
3. Form a study group with at least 3 other people in the class with an understanding that you can reach out to each other for help when necessary. This will come in handy also in the unlikely event that you miss a class.
4. Read the textbook for fuller context! Simply watching the lectures may not be enough to give you a complete idea of the material in some cases.
5. Review your notes regularly and keep them complete! Ask questions about anything that's unclear in a timely manner to avoid losing points on quizzes and exams.

6. Ask questions! Whether it's to your classmates, me or a tutor, get your questions answered in a timely manner.
7. Make summary review sheets of important concepts for yourself throughout the term to make sure you have the key concepts, facts and skills organized in your head. This will help you prepare better for exams, but more importantly, synthesizing the material for this class will help you retain it for the future.
8. The quarter passes by faster than expected and it's almost impossible to catch up, so do not fall behind. If you do, catch up as soon as possible!

Course Calendar:

As we progress through the class, pay careful attention to the course calendar. This will give you an idea of exactly where we are in the class.

Math 10 Introductory Statistics (TTh 1:30 - 3:45 PM) - Fall 2020
Tentative Calendar

	Monday	Tuesday	Wednesday	Thursday
Week 1	21-Sep Ch 1: Video 1 Ch 1: Video 2 (half)	22-Sep Zoom meeting: Welcome/introduction WS 1	23-Sep Ch 1: Video 2 (finish) Ch 2: Video 1	24-Sep Zoom meeting: Questions **Quiz 1** WS 2
Week 2	28-Sep Ch 2: Video 2 Ch 2: Video 3	29-Sep Zoom meeting: Questions **Quiz 2** WS 3	30-Sep Ch 3: Video 1	1-Oct Zoom meeting: Questions **Lab 1 (on Ch 1, 2)**
Week 3	5-Oct Ch 3: Video 2 Ch 4: Video 1	6-Oct Zoom meeting: Questions **Quiz 3** WS 4	7-Oct Ch 4: Video 2	8-Oct Zoom meeting: Questions **Quiz 4** WS 5
Week 4	12-Oct Ch 5: Video 1 Ch 5: Video 2	13-Oct Zoom meeting: Questions **Quiz 5** WS 6	14-Oct Ch 6: Video 1 Ch 6: Video 2	15-Oct Zoom meeting: Questions **Quiz 6** WS 7
Week 5	19-Oct Review for Midterm Exam 1	20-Oct Zoom meeting: Questions **Midterm Exam 1** (on Ch 1-6)	21-Oct Ch 7: Video 1 Ch 7: Video 2	22-Oct Zoom meeting: Questions **Lab 2**

Week 6	26-Oct Ch 8: Video 1	27-Oct Zoom meeting: Questions **Quiz 7** WS 8	28-Oct Ch 8: Video 2 Ch 9: Video 1	29-Oct Zoom meeting: Questions **Quiz 8** WS 9
Week 7	2-Nov Ch 9: Video 2	3-Nov Zoom meeting: Questions **Quiz 9** WS 10	4-Nov Ch 9: Video 3 Ch 9: Video 4	5-Nov Zoom meeting: Questions **Quiz 10** WS 11
Week 8	9-Nov Ch 10: Video 1 Ch 10: Video 2 (finish by Wednesday)	10-Nov Zoom meeting: Questions **Quiz 11** WS 12	11-Nov HOLIDAY: Veterans Day	12-Nov Zoom meeting: Questions **Quiz 12** **Lab 3**
Week 9	16-Nov Review for Midterm Exam 2	17-Nov Zoom meeting: Questions **Midterm Exam 2** (on Ch 7-10)	18-Nov Ch 11: Video 1 Ch 11: Video 2	19-Nov Zoom meeting: Questions WS 13
Week 10	23-Nov Ch 12: Video 1	24-Nov Zoom meeting: Questions **Quiz 13** WS 14	25-Nov Ch 13: Video 1	26-Nov HOLIDAY: Thanksgiving
Week 11	30-Nov Ch 13: Video 2	1-Dec Zoom meeting: Questions **Quiz 14** WS 15	2-Dec Review for the final exam	3-Dec Zoom meeting: Questions **Quiz 15** Review for the final exam
Week 12	7-Dec	8-Dec **Final Exam:** **1:45 - 3:45 PM**	9-Dec	10-Dec

Other Important Dates from MyPortal

Last Day for Adds	3-Oct-20
Census Date	5-Oct-20
Last Day for Drops w/ Refund	4-Oct-20
Last Day for Drops w/o W	4-Oct-20
Last Day for Drops	13-Nov-20

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.