

Math 10

Instructor: Elizabeth Zapata

Office Hours: TBD

and by appointment

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The Best way to contact me is through email!

Required Text: Openstax

Also required: Internet access, reliable computer, TI-83 or TI-84

You are expected check our class website frequently as class assignments and announcements will be posted online.

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.

(See general education pages for the requirement this course meets.)

Requisites: (Not open to students with credit in MATH 10H.)

Prerequisite: MATH 114 or equivalent with a grade of C or better; or a qualifying score on the Intermediate Algebra Placement Test within the past calendar year.

Advisory: EWRT 211 and READ 211 (or LART 211), or ESL 272 and 273.

Hours: Five hours lecture (60 hours total per quarter).

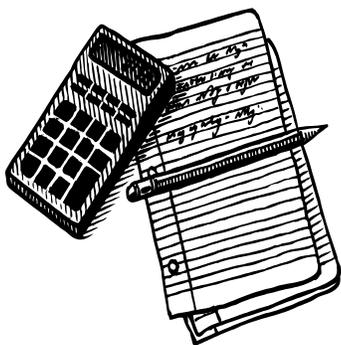
"Your saying so don't make it so," Tom Sawyer by
Mark Twain

MATH 10

Elementary Statistics

Student Learning Outcomes

- **Student Learning Outcome:** 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.
- **Student Learning Outcome:** Identify, evaluate, interpret and describe data distributions through the study of sampling distributions and probability theory.
- **Student Learning Outcome:** 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.

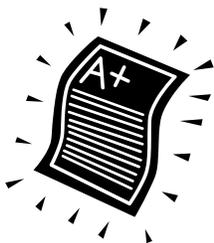


- "An approximate answer to the right problem is worth a good deal more than an exact answer to an approximate problem." John Tukey
- "Every third person in Israel saw 1.8 public theater shows last year." Newspaper headline posted on Maya Bar Hillel's board.
- "All life is an experiment. The more experiments you make, the better." Ralph Waldo Emerson
- "The most important questions of life are, for the most part, really only problems of probability." Pierre Simon, Marquis de Laplace

Grading:

Grades will be assigned as follows:

90 – 100 %	A
80 – 89 %	B
70 – 79 %	C
60 – 69 %	D
0 – 59 %	F



- 10%: Homework
- 10%: Quizzes
- 40%: Exams
- 40%: Final Exam/Project

Total Available Points will vary depending on assignments



Homework

Homework will be assigned for each section. Homework will be directly related to exam questions.

Examinations

The course will be organized into approximately four units. There will be an examination after each of the first three units, with a possible test after the fourth unit. The examination dates are designated in the course calendar. All students are expected to take these unit examinations when they are scheduled. No make-up examination will be given to any student without prior approval from the instructor or a documented excused absence. Each examination should be considered comprehensive since previously learned material will be used throughout this course to develop subsequent concepts.

As of the writing of this syllabus, I expect the exams will be multiple choice/short answer. This is subject to change.



Project

In addition to a comprehensive final exam, students will complete a research project. The purpose of the project is to enhance and expand the student's experience with the application of statistical methods. Students may work individually or form a group to collaborate with on this project. The group should consist of two to three students. Although the work submitted and the grade received will be as a group, each student will be accountable for all aspects of the project. The group is responsible for selecting the topic to investigate. The focus of the project can be anything of interest to the group. The only restriction is that this project must apply one of the inferential statistics procedures covered in class.

The group's findings will be documented in a written report. The group project report must contain a descriptive title, an alphabetical listing of each group member's name, and be organized into four sections labeled: (1) Introduction, (2) Methods, (3) Results, and (4) Conclusions. The first section, *Introduction*, gives some background and a brief summary of what the project is about. The primary question or issue that this project intends to address should be clearly stated somewhere in the introduction. The second section, *Methods*, describes in sufficient detail how the data was collected and the process utilized in analyzing it. Include any limitations or assumptions made for the procedure applied in this project. The third section, *Results*, contains the essential elements and supporting information relevant to the outcome of this project. This could include the collected data, results of calculations, constructed tables or graphs, and work generated as the result of the statistical procedure. The fourth section, *Conclusions*, summarizes the results and answers the specific question or addresses the particular issue proposed in the introduction. The project report should be clear, complete, and concise.

Alternatively, the group may choose to present orally in front of the class. The presentation shall follow the same format outlined above: *Introduction; Methods; Results; Conclusions*.

The group project report is due on the date designated in the course calendar. No late projects will be accepted.

Grading

Each section of the project will be evaluated according to the following rubric:

- | | |
|----|--|
| 50 | Excellent: Completely achieves all of the purposes of the task; demonstrates full understanding without any deficiencies |
| 40 | Good: Adequately achieves all of the purposes of the task; demonstrates understanding with some minor deficiencies |
| 30 | Satisfactory: Adequately achieves many of the purposes of the task; demonstrates some understanding with some deficiencies |
| 20 | Unsatisfactory: Inadequately achieves the purposes of the task; demonstrates partial understanding with fundamental deficiencies |
| 10 | Inadequate: Inadequately achieves the purposes of the task; demonstrates little understanding with major deficiencies |
| 0 | Unacceptable: Purposes of the task not accomplished; unable to demonstrate understanding |



Note on Cell

Phones and other electronic devices: Turn them off before class begins. You may not use the calculator feature on your cell phone during quizzes or tests. If one must be left on for an emergency reason, please exit the classroom quietly to take care of the emergency. Anyone caught texting during an exam will receive a zero on the exam.

PLEASE DO NOT TEXT, TWEET, ETC DURING CLASS!!!



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Attendance: In order to be a success in this class, you must have regular attendance from the very first class! We cover a lot of material in a short amount of time. Missing even one class can significantly impact your understanding for the rest of the semester. If you are absent, be sure to find out from a classmate exactly what was covered that day, get a copy of any handouts that were given, and find out whether any important announcements were made.

I strongly encourage you to get to know other students in the class. If you miss a class, you can call someone to find out what you missed. You can help each other with homework and study for tests.

Class Conduct: While I hope the atmosphere of the class is fairly relaxed, I take Statistics very seriously. Please show consideration and respect for others, and **do not engage in private conversations during class time, including txt msg/facebook conversations!!!** During my lecture, I often give problems for you to attempt at your desk. My expectation is that everyone will actively participate in working these problems. Attempting the problems in class gives you an opportunity to check your understanding, and allows you to ask questions before leaving class to work on the homework.



Tips for Success:

1. Keep Up. Attend class every day. **Check Canvas frequently.** Do each homework assignment promptly. Do not wait until the night before the test to attempt to learn the material. You will not be successful if you attempt to play "catch up".

2. Be Organized. Keep your notes, homework, tests, and class work organized in a binder.



3. Jot down questions as you study. You may be able to figure it out yourself later, or you could ask a classmate. But you will most likely forget the question altogether if you do not write it down.

4. Study with a group. Find a group of students who are working to do well in the class and would like to meet regularly. Helping other students and being helped by other students is often beneficial for everyone involved.



5. Ask for help. When there is something you simply don't understand take an active role in finding help. Take time to talk to someone who can help you such as a friend, a tutor, or others in the class. If there is not time to ask your questions in class, come to my office hours.



Important Contact Information And Resources

Important Contact Information

Class announcements and assignments will be posted online. I expect you to check your online account frequently. Class cancelation, assignment changes, and other important information will be posted on our class website.

Resources

Your textbook. Read it. It has many great examples and explanations. I highly recommend that you read the sections we will be covering before class. You may not understand all the information at that time, but after you hear the lecture on that section, you will understand it more easily than if you had not read it before.

Me. Feel to talk to me after class, email me, or visit my office. I am willing to discuss anything related to the course such as course content, grading, missed classes, learning disabilities, etc.

Other classmates. Exchange phone numbers or email addresses with others in the class and make plans to work together. I encourage you to form study groups.

Practice, practice, practice! A word on homework:

I expect you to complete the homework when assigned. The only way to attain mastery or expertise with anything is through practice! You will not succeed in this course without doing the homework.