

1070-003 INTRODUCTION TO STATISTICAL INFERENCE

Fall 2020

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| Instructor: | Eli Clark | Time: | MWF 2:00-2:50 PM |
| Email: | clark@math.utah.edu | Place: | Online |

Note that this syllabus is subject to change throughout the semester as I see fit, with or without notice. By not withdrawing/transferring from this class, you hereby agree to the following class policies and procedures outlined below.

Class Time: Monday/Wednesday/Friday 2:00-2:50 PM

Office Hours: Monday 3:00-4:00 PM or by appointment.

Main References:

- *The Basic Practice of Statistics*, 6th Edition. David S. Moore et al. **ISBN-13: 9781464102547**

Objectives: This course is a survey of the important topics used in making inferences from data. The course emphasizes material on descriptive statistics, estimation of the mean in one or two populations, simple linear regression, and one-way analysis of variance. After successful completion of this course, students will be able to:

- Summarize data using charts, graphs, histograms, and calculate basic descriptive statistics like the mean, standard deviation, median, and quartiles.
- Work with the normal distribution and use z-score tables to find probabilities.
- Understand the difference between correlation and causation.
- Perform rudimentary regression analysis and compute correlation.
- Understand the Central Limit Theorem and the normality assumption.
- Understand the basics of tests of significance and confidence intervals including z-tests, t-tests, proportion tests, χ^2 tests, ANOVA, and non-parametric tests.

Grade Distribution:

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| Weekly Homework | 10% |
| Weekly Quizzes | 15% |
| Project | 15% |
| Midterm Exam 1 | 20% |
| Midterm Exam 2 | 20% |
| Final Exam | 20% |

Letter Grade Distribution:

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|--------------|---|-------------|----|--------------|-----|
| ≥ 93.00 | A | 90.00-92.99 | A- | 87.00-89.99 | B+ |
| 83.00-86.99 | B | 80.00-82.99 | B- | 77.00-79.99 | C+ |
| 73.00-76.99 | C | 70.00-72.99 | C- | 67.00-69.99 | D+ |
| 63.00-66.99 | D | 60.00-62.99 | D- | ≤ 59.99 | E/F |

Course Policies:

- The class meetings and office hours will be held through Zoom. The Zoom meeting links and passwords will be available through the course's Canvas page. While attendance to every class period is not mandatory, it is highly recommended as many concepts and examples will be discussed during the class period time.
- While this course is held entirely online, if you test positive for COVID-19, you must self-report at coronavirus.utah.edu.
- Homework
 - **There will be regular homework assignments, due during the last class period of each week.** The problem sets will be taken from the 6th edition of the textbook.
 - Your solutions to a homework assignment should be submitted as a file upload to Canvas through the proper assignment listing. Please keep in mind the course grader is not required to award points on homework that is illegible due to poor formatting, poor handwriting, ruined paper, poor quality of uploaded file, etcetera. If you submit a photo of your assignment (rather than a scan or digital file), it must be legible, in good lighting, taken from directly above, and not blurry.
 - Homework will be graded on completion. However, you must make a concerted effort on every assigned problem; your work will be evidence of this effort. If, for some reason, a problem requires little work, please write 2-5 sentences explaining the concepts underlying the problem. This way, you can avoid losing points. A problem that is missing or perceptibly has no effort will receive zero (0) points. Examples of acceptable homework are on the course's Canvas page.
 - The two lowest homework grades will be dropped from your final total grade. Thus, late homework will not be accepted.
 - While students are allowed to work together and discuss homework problems, your solutions are expected to be your own; your work and explanations of it should be unique and each student must submit their own file. Any referenced work must be clearly documented, cited, and attributed, regardless of media or distribution. Even in the case of work licensed as public domain or Copyleft, (See: <http://creativecommons.org/>) you must provide attribution of that work in order to uphold the standards of intent and authorship. Please note that plagiarism will not be tolerated and will be dealt with in accordance to university policy.
- Quizzes and Exams
 - **Quizzes and Exams will be given through Canvas. When scheduled, quizzes will be held at the end of the class time and exams will be held during the regular class time.**
 - Like with the homework assignments, your work must be your own work. You are **not** permitted to work with other students on quizzes or exams, and you are **not** permitted to post quiz and exam questions online. To do so will put you in violation of the University of Utah's academic conduct policies.
 - The lowest two quiz grades will be dropped from your final total grade; thus, no makeup quizzes will be given. No exam grades will be dropped. An exam can be reassigned if and only if prior arrangements have been made between you and I. If extenuating circumstances arise, please contact me; however, to maintain fairness in the classroom, I will require official evidence: for instance, a letter from the dean of students, a doctor's note, official letters from the relevant academic administrators, or, perhaps, a police report.

- Grades
 - Grades will NOT be rounded.
 - Grades will be listed on the Canvas page. Students are required to track their progress throughout the semester and voice any concerns or questions with me through the appropriate channels of communication. While the Canvas listing can be a fairly accurate representation of your grade, the final grades may vary slightly.
- Contacting Me
 - My math department email address (clark@math.utah.edu) is the best way to reach me. During weekdays (Monday-Friday), I will try to respond within 24 hours. Concerning e-mails sent on weekends, do not expect a reply until Monday.
 - **Please do NOT e-mail me through the Canvas message system.** I cannot guarantee that I will respond to e-mails sent through Canvas or to other addresses that are not my math department address (given above).

Tentative Course Outline and Important Dates:

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| Midterm Exam 1 | Friday 9 October, 2:00-2:50 PM |
| Project Due | Friday 23 October, 11:59 PM |
| Midterm Exam 2 | Friday 6 November, 2:00-2:50 PM |
| Final Exam | Thursday 10 December, 1:00-3:00 PM |

ADA Statement: The University of Utah seeks to provide equal access to its programs, services and activities for people with disabilities. If you will need accommodations in the class, reasonable prior notice needs to be given to the Center for Disability & Access (CDA), 162 Olpin Union Building, 801-581-5020 (V/TDD). The CDA will work with you and me to make arrangements for accommodations. All information in this course can be made available in alternative format with prior notification to CDA. If you need accommodations, it is your responsibility to give me the paperwork and take initiative in telling me what you need. We can work something out; however, I will not know what you need, if you do not tell me.

Safety Statement: The University of Utah values the safety of all campus community members. To report suspicious activity or to request a courtesy escort, call campus police at 801-585-COPS (801-585-2677). You will receive important emergency alerts and safety messages regarding campus safety via text message. For more information regarding safety and to view available training resources, including helpful videos, visit safeu.utah.edu.

Academic Honesty: Lack of knowledge of the academic honesty policy is not a reasonable explanation for a violation. Basically, don't cheat. For questions about what constitutes academic misconduct, see University of Utah Policy 6-400, or ask me.