Math 3070: Applied Statistics I

section: 4  
lecture time: TH 7:15 pm - 8:45 pm  
lecture location: JTB 310

lab text: Using R for Introductory Statistics, by John Verzani (optional)  
pre-reqs: C or better in MATH 1220, MATH 1250, or MATH 1270; or, an AP Calculus BC score of at least 4

office: JWB 212  
office hours: TBD during the first week of class based on student reported availability  
email: tjohnson@math.utah.edu

Course Outline

This course is meant to be an introduction to mathematical/applied statistics. Roughly we will cover the following topics: basic probability theory, sampling from normal populations, large-sample problems, sampling from one or two populations, estimation of population parameters, and hypothesis testing. The laboratory portion of the course should teach students to do the following in the R statistical programming language: display and summarize low dimensional data sets, graphically and numerically, solve simple probability problems, perform basic formal statistical analysis and interpret the results, calculate and interpret confidence intervals, conduct hypothesis testing, calculate and interpret $P$-values, and suggest appropriate experimental design for practical problems.

Class Expectations

Your attendance is expected, though not required. You are all adults and can make informed decisions on the worthiness of attending lecture. Active participation in class is not a formal requirement, but it can only benefit you. N.B.: a student that actively attempts to better his or her learning during class time or office hours is much easier to squeeze within a grade cutoff than one does not attend or simply texts all class.

I will primarily communicate with you outside of class through Canvas; grades, reviews, quiz solutions, homework assignments, etc. will all be posted there, as well as any relevant corrections or updates. I periodically use the announcements feature on Canvas, and you are expected to check the course Canvas page at least a few times each week.

Grading

- 5% Homework  
- 10% Lab  
- 10% Quizzes  
- 10% Group Fun  
- 15% Your Worse Exam  
- 20% Your Better Exam  
- 30% Final

Although my grading will be flexible and possibly curved, the maximum numerical grade cutoffs will be as follows: A: 93, A: 90, B+: 87, B: 83, B-: 80, C+: 77, C: 73, C-: 70, D+: 67, D: 63, D-: 60.
Homework
A homework assignment will be due at the start of class most Tuesdays, and will be posted to Canvas at least by the day the previous homework assignment is due. It will consist primarily of problems from the text, with the possibility of additional problems written by me. You are welcome to work in groups on the homework, but you are expected to have a complete understanding of the solution you write down and turn in. Some or possibly all problems from each assignment will be graded for accuracy, and the rest will be graded for completion (requiring a certain minimum level of effort for credit). All work must be shown to achieve any credit. No late homework will be accepted, but turning in homework early can be arranged. No electronic submissions will be accepted, only hard copies. Your two lowest homework grades will be dropped.

Quizzes
There will be a 20 minute quiz most Thursdays; you cannot make up any quizzes, but I will drop your two lowest quiz grades. If you contact me at least 48 hours in advance and have a legitimate excuse, you may arrange to take the quiz early in my office. Solutions will be posted to Canvas.

Group Fun
During approximately half of the lectures this semester, there will be a handout consisting of some assigned problems you will work on in groups of two to three as a break from lecture. The “group” in group fun will be strictly enforced. Some of the group fun problems may reinforce computational skills we will see throughout the course; others may be more challenging than what you will be expected to complete in homework, quizzes, and exams. The handout will be due either at the end of class or perhaps the beginning of the following class if necessary. The problems will be graded for completion (requiring a certain minimum level of effort for credit). I will drop your three lowest group fun grades.

Why am I required to do group work?
- To encourage an atmosphere of discussion in the classroom
- To expose you to alternative problem solving strategies and better develop your mathematical intuition for the material
- To allow me to interact directly with you and identify content areas of concern
- To help you develop a support system of your peers for the course
- Because you will get bored if I lecture for 90 minutes straight

Lab
Registration for the lab is compulsory. In the lab, you will learn how to use the R statistical programming language. Although the lab only counts for 10% of your grade, if you fail the lab, you will fail the course. Any grade under 70% constitutes failure. The lab grade will not be curved. Your lab instructor will provide you with information about his or her lab policies and assignments.

Exams
There will be two in-class, mid-semester exams, on the following Thursdays: October 5 and November 16. In the absence of an emergency, no make up exams will be given. If you realize that you will not be present for the exam on one of these days, please tell me as soon as possible, preferably now.

The (cumulative) final exam will be taken on Tuesday, December 12 from 8:30 pm to 10:30 pm in the lecture classroom, JTB 310.
**Academic Dishonesty**

Cheating and plagiarism of any form, on exams or homework, will not be tolerated. The first instance of academic dishonesty will result in a zero on the assignment. The second instance will result in failure for the course. It makes no difference who is doing the cheating and who is enabling the cheating. Note that directly copying a classmates homework constitutes plagiarism, as does copying an answer from the web. All instances of academic dishonesty will be reported to the highest available university authority.

**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 Services, 162 Olpin Union Building, 581-5020 (V/TDD). CDS will work with you and the instructor to make arrangements for accommodations. All information in this course can be made available in alternative format with prior notification to the Center for Disability Services.

**Additional Student Resources**

The Rushing Math Center offers free drop-in tutoring, a computer lab, and study areas for undergraduates. The Rushing Student Center is adjacent to LCB and JWB. The hours for the semester are: 8 am to 8 pm on Monday through Thursday and 8 am to 6 pm on Friday. The tutoring center opens during the second week of classes.

In addition to free tutoring, low cost private tutoring is available through the ASUU (Student Services Building). The Math department front desk keeps a list of tutors that students can contact to set up tutoring (hourly charge is set by the individual tutor).

**One Final Note**

I reserve the right to change my policies stated in this syllabus at any point in the semester. If I do make a change to a policy, I will announce it in class and post the change in an announcement on Canvas.