



STANFORD UNIVERSITY
DEPARTMENT OF STATISTICS

STAT 110 * SUMMER TERM 2017 * M-F Fri 10:30 AM - 11:20 AM * Huang Engineering Center 18
4 lectures (M-Th) + 1 recitation (F) each week

INSTRUCTOR: Alex Stanoyevitch // Office: Sequoia 234 // Hours: Tu. & Thur. 11:30-12:30 // email: alex.stanoyevitch@gmail.com

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COURSE WEBSITE: www.stanoyevitch.net/courses.html

TEXT: 1. Required D. Wackerly, W. Mendenhall, and R. Scheaffer, *Mathematical Statistics with Applications*, Cengage Learning (2010).

2. Recommended: Schuam's Outline on Probability and Statistics, by Murray Spiegel, Latest Ed., McGraw-Hill

ADDITIONAL REFERENCE TEXTS: A helpful introductory book on R (also online, via the Libraries) is *Introductory Statistics with R*, by P. Dalgaard, Springer 2008, A well-written but slightly more advanced book than ours is: *Mathematical Statistics and Data Analysis*, by John Rice, Cengage, 2007. A more advanced and theoretical statistics book is: *Statistical Inference*, by G. Casella and R. L. Berger. A nice book on Probability is: *A First Course in Probability*, by Sheldon Ross, Prentice-Hall, 2002.

MATERIAL TO BE COVERED: The core probability topics closely follow (in order) the following chapters from the Wackerly book: An Overview of the Subject (Chap. 1), Probability (Chap. 2), Discrete Random Variables (Chap. 3), Continuous Random Variables (Chap. 4), Multivariate Probability Distributions (Chap. 5), Functions of Random Variables (Chap. 6), Sampling Distributions and the Central Limit Theorem (Chap. 7). Estimation (Chap. 8 and Chap 9.), Hypothesis Testing (Chap. 10), Least Squares Regression (Chap. 11), and ANOVA (Chap. 13).

SOFTWARE: Throughout the course, we will be integrating the R statistical software. It is free and available on just about any platform. Google it and download onto your computer; I would also recommend installing RStudio (after you install R), also free; it provides a great IDE for R. You will be able (and sometimes required) to use it on homework assignments.

GRADING:

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| (1) HOMEWORK ASSIGNMENTS [due on Mondays at the beginning of class, assigned the previous week] | = 40% |
| (2) 3 IN-CLASS [50 MIN.] CLOSED BOOK EXAMS [10% EACH] | = 20-30% |
| (3) FINAL EXAM | = 30-40% |

There will be **no make-up exams**. If you miss an in-class exam (for whatever reason) it will be dropped and not count against you. If you take all three in-class exams, I will allow you to either drop your lowest of the three or (if your final is lower) drop 10% the final (so it will count 30% rather than 40%). In the unlikely circumstance you need to miss a second exam you will have to clear it with me before the exam so that it will count as an excused missed exam. An excused missed exam changes the final exam's coverage by adding 10% to its weight.

Homework Assignments: Homework assignments will be given daily. **Conscientiously completing all of homework assignments is the number one recipe for success in this (or any math) class.** The formal collected homework assignments will be given on most weeks, they will be announced by Thursday, and will be due the following Monday at the beginning of class. Informal study groups are encouraged to help one another learn the topics, however, the homework you turn in must be your own work and write-up. Exam questions will not be very different from the examples given in the lecture and to homework problems. Actively participating in the lectures (listening, taking good notes and asking questions when you have them) should help prepare you to complete the homework assignments. Reading the books/notes is also helpful, either before the lecture (to give you a jump on the material) or after (to give you more guided practice before you start the homework). I will drop your lowest homework score.

Late Homework policy: You can be up to one day late for each homework (with a penalty of 10%) of the total score for that homework.

Exams: I will give you at least one full week's notice specifying the dates and material of the in-class exams; they will usually be on Wednesdays or Thursdays.

Final Exam: The final exam will be on Saturday, August 19th from 8:30-11:30; it will cover all of the material of the semester.

Technology: Scientific, graphing, or symbolic calculators may (and are sometimes needed to) be used on homework and exams.