Math 3225 Syllabus  
Honors Probability and Statistics, 3 Credits  
TTh, 9:30-11:45, Skiles 271

Instructor

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Office Hours: M 10-12, W 12-1, or stop by my office

1 General Information

Course Description

This one-semester course provides an introduction to probability and statistics. Data is everywhere. If you want to navigate the world intelligently, you need to understand statistics. The course text came about as answer to the question posed to the textbook author by computer science colleagues (at CMU) about where their students could turn for a quick understanding of modern statistics. I would still use this text even if the entire class were composed of math majors.

Probability and statistics can be viewed as inverse fields. Probability is the mathematical language of randomness with tools which enables you to make predictive statements about outcomes of systems or processes that have randomness or uncertainty. Statistics describes and summarizes characteristics of observed outcomes, or data, extracts patterns from it, and makes statements about underlaying mechanisms of the systems or processes. In other words, statistics is the science of learning from data.

The text brings together many of the main ideas in modern statistics in one place. Most books which combine probability and statistics begin with 200+ pages on probability and little time is left for statistics. Our text covers probability in only 86 pages.

Pre- and/or Co-Requisites

Prerequisite: You must have B or higher in MATH 2401, MATH 2411, or MATH 2605 or MATH 2551 or MATH 2561 to enroll.
Learning Objectives

1. Learn the language and core concepts of probability theory.
2. Understand basic principles of statistical inference (both frequentist and Bayesian).
3. Build a starter statistical toolbox with appreciation for both the utility and limitations of these techniques.
4. Use software and simulation to do statistics.
5. Become an informed consumer of statistical information.

2 Course Requirements and Grading

Bi-weekly problem sets (20%), 2 exams (40%), final exam (40%)
Exam 1: 9/21
Homework problems will be assigned bi-weekly and selected even numbered problems will be graded. Please only submit even numbered problems for grading. Please read the list of homework rules very carefully (http://hnweiss.weebly.com/homework3.html)

Grading Scale

Your final grade will be assigned as a letter grade according to the following scale:
A 90-100%
B 80-89%
C 70-79%
D 60-69%
F 0-59%

3 Course Materials

Course Text

All of Statistics: A Concise Course in Statistical Inference, Larry Wasserman (12/01/2010) (I plan to cover the first 14 chapters.)
How to Lie with Statistics, Huff

Please read all sections containing assigned homework problems.
Course Website

http://hnweiss.weebly.com/math-3225-f17.html

Please note that I do not use T-Square and can only periodically upload my Weebly site to my School of Math site.

4 Course Expectations and Guidelines

Academic Integrity

Georgia Tech aims to cultivate a community based on trust, academic integrity, and honor. Students are expected to act according to the highest ethical standards. For information on Georgia Tech’s Academic Honor Code, please visit http://www.catalog.gatech.edu/policies/honor-code/ or http://www.catalog.gatech.edu/rules/18/.

Any student suspected of cheating or plagiarizing on a quiz, exam, or assignment will be reported to the Office of Student Integrity, who will investigate the incident and identify the appropriate penalty for violations.

Accommodations for Students with Disabilities

If you are a student with learning needs that require special accommodation, contact the Office of Disability Services at (404) 894-2563 or http://disabilityservices.gatech.edu/, as soon as possible, to make an appointment to discuss your special needs and to obtain an accommodations letter. Please also e-mail me as soon as possible in order to set up a time to discuss your learning needs.

Attendance and/or Participation

It is essential that you come to class on time and ready to work. I strongly recommend class attendance and participation and I will use this activity in determining borderline grades.

Collaboration and Group Work

You may discuss homework problems with other students, but you must independently write up and submit your own solutions. Copying any part of a solution from a book, solutions guide, or website is cheating!
Extensions, Late Assignments, and Re-Scheduled/Missed Exams

Late homework assignments are not accepted without an official excuse from the Dean of Students or other university official. However, you may drop your two lowest homework grades. Emailed homeworks will only be accepted with prior agreement of the Instructor.

There will be no make-up exams for unexcused absences. In case that you are unable to attend an exam, you need to provide me with a University excused absence. Note that it is required to discuss any special arrangement prior to the absence. Make-ups for the exams will be given only in extraordinary cases.

Student-Faculty Expectations Agreement

At Georgia Tech we believe that it is important to strive for an atmosphere of mutual respect, acknowledgement, and responsibility between faculty members and the student body. See http://www.catalog.gatech.edu/rules/22/ for an articulation of some basic expectation that you can have of me and that I have of you. In the end, simple respect for knowledge, hard work, and cordial interactions will help build the environment we seek. Therefore, I encourage you to remain committed to the ideals of Georgia Tech while in this class.

Student Use of Mobile Devices in the Classroom

You may use laptops or tablets in this class to take notes. Place your phone on mute before class begins. It is extremely disruptive when a cell phone rings during class. If you must, you may use your cell phone silently during class as long as it is hidden from view.