

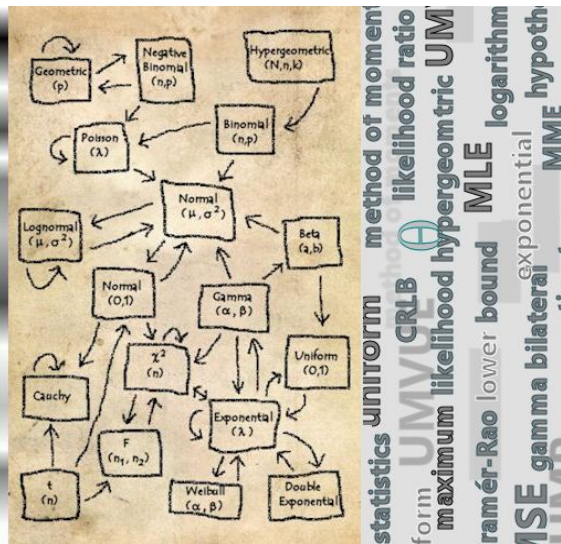
introduction to
mathematical statistics

APPM/MATH
4/5520

Fall 2017

SEC 002
MWF 1PM

Department
of
Applied
Mathematics
CU Boulder



What is Mathematical Statistics?

If you are going to flip a fair coin 10 times, you might talk about the **probability** that you will see, for example, at least 7 “Heads”. Note the terms “going” and “will”. If the coin has already been flipped 10 times and you observed the sequence of outcomes *HHTTHTTHT*, the question as to whether the coin was fair is a matter of analyzing this “data” using **statistics**. This time, note the terms “already” and “was”. Roughly speaking, in a slightly oversimplified way, probability is about the **future**, statistics is about the **past**, and “doing statistics” is a matter of reverse engineering a probability problem.

Mathematical statistics is a theoretical and mathematically rigorous approach to understanding the probability needed to do statistics. While this course is an introduction to the subject of “MathStat”, it assumes that you already have the basics of probability down just as most introductory physics courses assume you already know calculus. Already having a data-oriented statistics course in your background is a bonus because you will get to see some nice connections but is not necessary.

Textbook: Instructor notes will be used in lieu of a textbook and are available on the course website at www.colorado.edu/amath/course-pages/fall-2017/appm4520. Please see the notes table of contents for a course topic list.

SEE THE COURSE WEBSITE FOR A MORE DETAILED POLICY SYLLABUS

Instructor

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Phone: 303-492-0685

MathStat Office Hours:
M: 3-3:50, W: 11-11:50
F: 12-12:50

Important Dates

With a few exceptions surrounding exam weeks, homework will be assigned every **Wednesday and will be due the following Wednesday**. Please see the course website for specific dates.

There are two **evening midterm exams** which take place on **Thursdays**.

- October 5th, 7pm-9pm
- November 9th, 7pm-9pm

The final exam is scheduled for Monday, December 18th from 1:30pm to 4pm.

Ask lots of questions and get help when you need it— especially if you feel that you are falling behind!

Please visit the course website often for important announcements and useful topic tutorials.

Please see the course website for university policies on honor, discrimination, disability, and religious holidays.

Make sure to always show your work. Correct answers with no supporting work may not receive any credit!

Homework Policy: Homework is due on the listed dates at (or before) the beginning of class and will be accepted up until 5pm on these dates. Homework will no longer be accepted after 5pm on its due date. (Exceptions may be made in case of documented emergencies.) Your two lowest homework scores will be dropped.

Exam Policy: Midterm exams are in the evenings to allow for more time. Please notify your instructor as early as possible if you are unable to attend the scheduled exam times so that other arrangements can be made. Exams are closed book and closed notes. Practice problems will be provided.

Since you will be putting in this extra exam time, our normal class will be canceled on the Fridays immediately following each of the two Thursday evening exams.

The final exam is non-comprehensive.

Overall Grade: Your overall grade will be determined as 25% homework, 25% for each midterm, and 25% for the final.

Grad Credit: If you are registered for the graduate level of this course (APPM or MATH 5520), you will have extra homework problems on each assignment, additional take home parts for both midterms, and will generally be held to higher standards for grading.

Course “Sync”: For the first time ever, this course is being taught in two sections and by two different instructors. The sections will have the same homework assignments, the same midterms, the same graders, and comparable finals. However, they will not run in perfect “lock step” and will not have smoothly interchangeable lectures.