STAT/MATH 394, Probability I, covers the basic elements of probability theory. The goal is to provide a solid grounding in understanding and working with practical problems that involve some element of randomness. The topics covered include sample spaces, probabilistic experiments, probability axioms, cumulative distribution functions, and some common distributions.

**Prerequisites:** The official prerequisite is the calculus sequence, MATH 124, 125, and 126 (or equivalent). What you’ll need for this course is probably a subset of that, but known well. In particular, make sure you’re fluent in basic differentiation and integration. You also need to be comfortable working with common series (e.g. the geometric series), limits, and sets. If people request it or appear to have trouble on these topics, I’ll post links to review material on the website.

**Book:** The book for the course is *A First Course in Probability*, 7th edition, by Sheldon Ross. If you have another edition, it covers the same material and will likely work, but it’s your responsibility to get the homework problems from a copy of this edition.

**Exams:** There will be one midterm and one final. The final exam will be held on the last day of class, and I’ll decide when to have the midterm shortly. It will probably be either July 2 or July 7.

The exams will all be closed book, closed notes. I will, however, give out a one-page reference sheet that you can use. It will have a number of the important formulas and identities on it, and I’ll make sure you have it ahead of time for studying.

Also, at least half of the exam problems will come directly from the recommended problems (see below) with little or no modification.

You will need to bring a calculator to the exams.

**Homework:** Because this course moves very quickly – we have only about four weeks! – homework will be assigned in almost every class and then collected the next class. This translates into about 10 homework sets, and I’ll drop the lowest one in calculating the final grade. Having homeworks due this frequently makes sure you stay on top of the material. Generally, the assignments will be short, only 2-4 graded problems, to also make sure you can have a life.
The exercises in the book are divided into three types, regular problems, theoretical exercises, and self-assessment problems. The answers to all of the self-assessment problems and some of the regular problems are in the back of the book.

In addition to the graded problems, I’ll also recommend a few ungraded exercises with each homework. I’ll generally take half or more of the exam questions from these, so understanding and working these problems is a great way to prepare for the exams.

**Grading:** The grade distribution will be as follows:

- **25%** Homework.
- **30%** (or **20%**) Midterm.
- **40%** (or **50%**) Final Exam.
- **5%** Class Participation / Extra Credit (may give additional credit).

For the exams, if you do better on the final than the midterm, it will count as **50%** of your final grade and the midterm will count as **20%**.

The class participation / extra credit grade will be based on how much above the “minimum” you participate in the course and how much I see you try to engage probability theory.

- Asking questions in class / on the course discussion board.
- Answering and explaining questions other students ask on the discussion board.
- Sending me a link to a news article that deals with probabilities, along with a 2-5 sentence discussion/assessment of how the article handles them. You can talk about how well it is explained, whether they interpreted it correctly, if there’s room for people to hide something within their assessment, etc.
- Other things I haven’t thought of yet...

**Website:** The website for the course is [http://www.stat.washington.edu/~hoytak/teaching/current/stat394/](http://www.stat.washington.edu/~hoytak/teaching/current/stat394/). It contains the relevant information for the course including homework assignments, readings, recommended exercises, and more.

**Discussion Board:** The course discussion board is for discussion of homeworks, concepts, and pretty much anything related directly to the material of the course. It is online at [https://catalysttools.washington.edu/gopost/board/hoytak/17487/](https://catalysttools.washington.edu/gopost/board/hoytak/17487/) and requires a UW net ID to log on. It is restricted to the people in this course; if you have trouble, send me an email.

**Office Hours:** Office hours will be from 10:45 - 11:20 MWF (right after class), 10:00-11:20 on Tuesday, 12:30-2:00 on Thursday, and by appointment. My office is Padelford B-312 (Note that Padelford has 3 sections, A, B, and C; I’m in B).