

Syllabus for Math 3215, Probability and Statistics

August 22, 2011

Instructor: Ernie Croot

Office: 103 Skiles

Office Hours: 1-2 on Tuesday, 3-4 on Thursday.

Place and Date of Classroom: MWF, 1:05 - 1:55 in Skiles 256.

Email Address: ecroot@math.gatech.edu

Try not to email me unless it is absolutely necessary.

Book: Hogg and Tanis, *Probability and Statistical Inference*

Grade: You grade will be based on 20% for each of two midterms, 30% homework, and 30% for the final exam. Homeworks will be collected about once every two weeks.

I will curve all exams to 75 points out of 100 if necessary (I will not curve DOWN to 75 under any circumstances), and reserve the right to change the grading policy in your favor at the end of the course.

Letter grades correspond to the following percentages: 90-100=A; 80-90 = B; 70-80 = C; 60-70 = D; and below 60 is an F.

Material: In this course we will work through the foundations of probability theory, such as set theory, elementary measure theory, conditional probability, expectation, variance, distributions, law of large numbers, central limit theorem, and so on. You will be required to understand and develop proofs as part of your homework; however, the proofs and theory will all be fairly basic.

We will also work through some interesting, exciting applications of the theory, such as applications to number theory, Bayesian spam filtering, statistical sampling and inference, and perhaps Hidden Markov Models with applications to speech recognition.

M3215 : FALL 2011 SEMESTER

MICHAEL LACEY

Textbook. Hogg and Tanis, Probability and Statistical Inference, 8th edition. I will place a copy of the text and solutions manual on reserve in the library.

Syllabus. Chapters 1-6, and parts of Chapters 7 and 8.

Homework. Completing suggested homework problems is essential, but with a very well-established text like this one, solutions to most homework problems are easily available, from a variety of sources. I won't collect HW, but expect that problems in the text will form the basis of discussion in class. I am always available to review solutions that you prepare.

Exams. There are three midterms, and final exam. (More than enough to make up for the lack of Homework collected.)

Midterm 1 Sept 16 20%

Midterm 2 Oct 14 20%

Midterm 3 Nov 21 20%

Final Dec 16 40%

Attendance. You are expected to come prepared and actively participate in every lecture and recitation session. In the event of an absence, you are responsible for all missed materials, assignments, and any additional announcements or schedule changes given in class. Class disruptions of ANY kind will NOT be tolerated and may result in your removal from the classroom and loss of attendance/participation points for that day. Please show courtesy to your fellow classmates and instructor by adhering to the following class rules: turning off all laptops, cellular phones, i-pods and pagers (and other electronic devices, unless being used for note-taking) during class, coming to class on time and staying for the entire class period, refraining from conversing with your fellow students, and putting away any reading materials unrelated to the course.

Academic Honesty. All students are expected to comply with the [Georgia Tech Honor Code](#). Any evidence of cheating or other violations of the Georgia Tech Honor Code will be submitted directly to the Dean of Students. Cheating includes, but is not limited to: using a calculator, books, or any form of notes on tests or quizzes; copying directly from any source, including

friends, classmates, tutors, or a solutions manual; allowing another person to copy your work; signing another person's name or having another person sign your name on an attendance sheet; taking a test or quiz in someone else's name, or having someone else take a test or quiz in your name; or asking for a regrade of a paper that has been altered from its original form.

Makeup Exams. Possible, but strongly discouraged. Justifications will have to be at the level of a university-sponsored event or athletics, please provide me with the official documentation in advance.

Office Hours. MWF, 12-1pm, and always by appointment.

Suggested Problems

Chapter 1

1.2: 1, 2, 5, 6, 8, 11, 12, 15	1.3: 1, 3, 7, 8, 11, 17
1.4: 1, 4, 5, 9, 11, 17	1.5: 1, 6, 7, 9, 12, 15
1.6: 1, 2, 4, 10	

Chapter 2

2.1: 2, 3, 5, 10, 11	2.2: 1, 2, 4, 5, 7
2.3: 1, 2, 4, 7	2.4: 1, 2, 3, 6, 7, 11
2.5: 3, 4, 8, 10, 17, 18	2.5: 17
2.6: 1, 3, 7, 10	

Chapter 3

3.2: 1, 7, 8, 14, 15	3.3: 3, 5, 6, 8, 19
3.4: 1, 8, 11, 12, 14	3.5: 1, 2, 4, 13

Chapter 4

4.1: 1, 3, 6, 8, 10	4.2: 1, 7, 8, 11
4.3: 1, 3, 4, 14, 15	4.5: 1, 3, 6
4.6: 1, 2, 5, 7	4.7: 1, 3, 4, 6

Chapter 5

5.3: 1, 5, 6, 11, 12	5.4: 1, 2, 4, 7
5.5: 1, 8, 14, 16	

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