Math 4600/6600 Syllabus

1. Course Information

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Our classroom: Boyd 303
2:20-3:35 TR
The course webpage is linked here.

Book: **Grinstead and Snell, Introduction to Probability**, customized

2. Course Schedule

Topics	Sections	Course Meetings (planned)
Discrete Probability Distributions	1.1-1.2	8/19
Continuous Probability Distributions	2.1-2.2	8/24, 8/26
Introduction to Combinatorics	3.1-3.3	8/31, 9/2
Conditional Probability	4.1-4.3	9/7, 9/9, 9/14
Example Distributions and Densities	5.1-5.2	9/16
Expected Value and Variance	6.1-6.3	9/21, 9/23
Sums of Random Variables	7.1-7.2	9/28, 9/30
Law of Large Numbers	8.1-8.2	10/5, 10/7
Exam 1	Chapters 1-7	10/12
Discussion of Exam 1		10/14
Central Limit Theorem	9.1-9.3	10/19, 10/21, 10/26
Generating Functions	10.1-10.3	10/28, 11/2, 11/4
Markov Chains	11.1-11.5	11/9, 11/11, 11/16, 11/18
Random Walks	12.1-12.3	11/23, 11/30, 12/2
Final Exam (3:30-6:30pm), Boyd 303	Chapters 1-12	12/9 (Thursday)

3. Prerequisites

Students are expected to have a solid foundation in calculus, equivalent to that offered in the MATH 2270 or MATH 2500 course in order to enroll in the course. Computer skills in Mathematica or similar symbolic computation environment (Sage or Maple) will also be helpful.

4. Course Goals

Students will develop a basic understanding of mathematical probability and its applications. Students should understand random variables, distribution functions, expectation, variance, conditional probability, independence, Bayes' Theorem, the law of large numbers, the central limit theorem, and applications.

5. Disclaimer

The syllabus is a general course plan, but deviations may become necessary over the course of the semester.

6. Principal Course Assignments

The course will have a midterm and a final exam. Homework will be assigned using Gradescope, with course entry code WY44YE. Reading assignments will be an integral part of the course, with quizzes on the reading assignments given in class. These quizzes may be marked "excused", but cannot be made up.

Graduate students (those enrolled in MATH 6600) will have extra homework assignments to complete. These are marked "graduate" in Gradescope. Graduate students will also have different exam questions. Undergraduates (those enrolled in MATH 4600) can complete graduate homework assignments and/or exam problems for extra credit.

7. Grading and Policies

This course mixes reading, lecture, and active learning instructional styles. Each class will be preceded by a reading assignment (with a quiz at the start of class designed to assess what you've learned from the reading). Class will then alternate between "mini-lectures" and group and individual in-class exercises designed to help you develop intuition and understanding of the material. Out-of-class homework will complete the process, giving you harder problems to think and write about.

A potential pitfall of this model is that (in order to fit the material in the time allotted) some topics won't be discussed in the minilectures and in-class exercises, but will still appear on homework problems and exams. Students are responsible for learning "everything in the book chapters we cover", not just "everything discussed in class".

The overall course grade is computed from homework, exam, and final grades by the formula:

(1) 25% for the midterm.
(2) 35% for the final exam.
(3) 40% for the homework assignments and quizzes.

After grades are calculated for each student using these weights, the instructor will rank the students by average and determine thresholds for grades of A, B, C, D, and F. Generally, these are somewhat lower than 90 %, 80 %, 70 %, and 60 % of the total points in the course. Though improvement and other circumstances are taken into account in deciding thresholds for letter grades, students with a higher numerical average almost always receive higher letter grades than those with lower numerical averages.

In order to receive a grade of "WP", you must have attended class regularly and turned in homework assignments representing a good faith effort for all homework assignments due before the date of withdrawal.

8. Attendance Policy

Students are expected to attend class regularly. Students who miss more than 6 classes (two weeks of class) may be withdrawn from the course by the instructor.

9. Academic Honesty

As a University of Georgia student, you have agreed to abide by the University's academic honesty policy, "A Culture of Honesty," and the Student Honor Code. All academic work must meet the standards described in A Culture of Honesty found at: `www.uga.edu/honesty`. Lack of knowledge of the academic honesty policy is not a reasonable explanation for a violation. Questions related to course assignments and the academic honesty policy should be directed to the instructor.

It is perfectly acceptable to work on homework problems in groups in this course. However, the help you should get from your fellow students should enable you to complete the problem on your own. Recruiting another student to complete the homework for you, or to simply provide answers to the problems, is a violation of the honesty policy.

10. Make-up Examinations

No makeup examinations will be given in the course. You may be marked "excused" from an exam if you have an acceptable excuse for missing the exam (generally, these are medical or legal in nature). In this case, your grade on the other exam will count for 60% of the course grade. Students who are excused from both the midterm and the final will receive a course grade of "Incomplete".