

Math 4600/6600 Syllabus

1. COURSE INFORMATION

Dr. Jason Cantarella Office: Boyd 448 Office phone: 542-2595 jason.cantarella@gmail.com or jhc7447@uga.edu	Our classroom: Boyd 323 11:00-12:10 TR http://www.jasoncantarella.com/
--	--

Book: **Ward and Gundlach, Introduction to Probability.**

2. COURSE SCHEDULE

Topics	Sections	Reading Quiz
Outcomes, events, and sample spaces	1.1-1.3	(no quiz)
Axioms, Equally Likely Events	2.1-2.5	(see Google Calendar)
Independent Events	3.1	(see Google Calendar)
Facts about Independence, Good before Bad	3.2-3.3	(see Google Calendar)
Conditional Probability	4.1	(see Google Calendar)
Exam 1	Chap 1-3	(see Google Calendar)
Distributive Laws, Conditional Probabilities	4.2-4.3	(see Google Calendar)
Electrical Networks and the Ruin Problem	(paper)	(see Google Calendar)
Bayes' Theorem	5.1-5.2	(see Google Calendar)
Discrete and Continuous Random Variables	7.1-7.2	(see Google Calendar)
Probability Mass Function and CDF	8.1-8.3	(see Google Calendar)
Independence and Conditioning	9.1-9.4	(see Google Calendar)
Expected Value of Discrete Random Variables	10.1-10.2	(see Google Calendar)
Expected Value of Sums of Random Variables	11.1-11.2	(see Google Calendar)
Variance of Discrete Random Variables	12.1-12.3	(see Google Calendar)
Bernoulli Random Variables	14.1-14.2	(see Google Calendar)
Binomial Random Variables	15.1-15.2	(see Google Calendar)
Poisson Random Variables	18.1-18.3	(see Google Calendar)
Continuous Random Variables	24.1-24.2	(see Google Calendar)
Joint Densities and Independence	25.1-25.2, 26.1-26.2	(see Google Calendar)
Conditional Distributions	27.1-27.2	(see Google Calendar)
Expected Values	28.1-28.2	(see Google Calendar)
Variance of Continuous Random Variables	29.1-29.4	(see Google Calendar)
Uniform Continuous Random Variables	31.1-31.3	(see Google Calendar)
Normal Random Variables	35.1-35.3	(see Google Calendar)
Sums of Independent Normal Random Variables	36.1-36.2	(see Google Calendar)
Central Limit Theorem	37.1-37.5	(see Google Calendar)
Approximations of Binomial and Poisson Random Variables	37.6-37.7	(see Google Calendar)
Applications of the Central Limit Theorem	(notes)	(see Google Calendar)
Final Exam (12-3pm), Boyd 323		5/2 (Thursday)

3. PREREQUISITES

Students are expected to have a solid foundation in multivariable 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 due on Thursdays.

7. GRADING AND POLICIES

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

- (1) 25% for midterm 1.
- (2) 25% for midterm 2.
- (3) 30% for the final exam.
- (4) 20% for the homework assignments and in-class reading 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. In this case, your grade on the other exam will count for 80% of the course grade (instead of 40%). Students who are excused from both the midterm and the final will receive a course grade of "Incomplete".