STAT/MA 519 - INTRODUCTION TO PROBABILITY
Fall 2013
Sec 005: MWF 10:30-11:20, REC 114

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Office Hours: Monday 2:00-4:00, Wednesday 3:00-4:00


Course websites:
The main online forum for this course will be at piazza.com. On Piazza you can ask and answer questions, find study partners, and view course announcements and documents. To enroll in our course in Piazza go to https://piazza.com/purdue/fall2013/mastat519

The online gradebook for this course will be kept on Blackboard Learn. https://mycourses.purdue.edu

Course content: MA/STAT 519 is an introduction to the basic concepts of probability theory, the mathematical discipline for analyzing and modelling uncertain outcomes. We will cover chapters 1–8 of the text which include the following topics:

1. **Basics of Probability** (Chapters 1–3)
   - Methods of counting (combinatorics)
   - Axioms of probability
   - Conditional probability and independence

2. **Random variables** (Chapters 4–6)
   - Discrete (integer valued) random variable
     - Bernoulli, binomial, poisson, geometric and negative binomial distributions
   - Continuous (real valued) random variables
     - Uniform, normal (Gaussian), and exponential distributions
   - Jointly distributed random variables

3. **Properties of Expectations** (Chapter 7)
   - Expectations of sums of random variables
   - Covariance, variance of sums, and correlations
   - Conditional expectations
   - Moment generating functions

4. **Limit Theorems** (Chapter 8)
   - Weak law of large numbers
   - Central limit theorem
Grading and Assignments:

Homework (30%)
Weekly homework assignments will be due every Wednesday, and will cover the lectures through the previous Friday. The lowest two homework scores will be dropped at the end of the semester. Collaboration on homework assignments is allowed and in fact encouraged, but each student is expected to write up his/her own solution.

Tests (40%)
There will be two tests during the semester, each accounting for 20% of the final grade for the course. The exams will take place during the regular class sessions.

Final Exam (30%)
The final exam will be cover the entire course. The date for the final exam is not yet determined.

Homework instructions: The homework problems are graded mainly on your reasoning. Part of doing good mathematics is showing your work in a way that is easy to understand. It is not the graders job to work hard to follow your work. It is your responsibility to make your work easy to understand and follow.

In addition, please follow these rules when handing in homework:
- Be neat. Recopy problems if necessary.
- Put in problems in the correct order.
- Staple your pages together, and don’t use paper torn out of a notebook.

Disclaimers:
- Cheating/plagiarization will not be tolerated. Any instances of suspected academic misconduct will be reported directly to the Dean of students.
- If you have a conflict with the test date, please let me know early enough so that I can schedule a make-up test or change the date of the test to a date that works for the class.