Introduction to Probability Theory
Math 4710 Fall 2012
MWF 2:30pm-3:20pm in Baker Laboratory 135

Instructor Information

Tasia Raymer
Email: araymer@math.cornell.edu
Webpage: www.math.cornell.edu/~araymer
Office: Malott Hall 587
Office Hours: Monday 10-11:30am & Friday 12-1pm

TA Information

Yue Zhao
Email: yz453@cornell.edu
Office: Malott Hall 218
Office Hours: Tuesday 3-5pm & Thursday 4-5pm

Webpage and Textbook

Class Website: http://blackboard.cornell.edu
(If you are registered, you should be enrolled on blackboard.)
There is a copy of the text on reserve at the Math Library.

Course Description and Objectives

This course is an introduction to the mathematical structure and basic concepts of probability. Students will master the basic principles of probability and use these to interpret and solve problems involving uncertainty. Topics to be covered include:
Basics- axiomatic structure, equally likely outcomes & counting, independent events and conditional probability
Discrete & Continuous Random Variables- common distributions, expected value and variance, joint distributions and sums of random variables
Limit Theorems- law of large numbers, central limit theorem

While exploring the specific content mentioned above, students will strengthen several transferable skills.

• As in any mathematics course, students will sharpen their problem solving skills.

• In this class you will learn to clearly justify your methods by thoroughly writing up the steps and logic used to solve problems.

• You will improve your ability to verbally articulate yourself to a group during in-class discussion: students are encouraged to ask their peers for clarification, as well as answer questions posed by their peers.
Classroom Etiquette

- We will strive to create an atmosphere in which all students are comfortable asking and answering questions. Thus, students will behave in a respectful manner toward the instructor and their peers.

- Students are required to switch off their cell phones and any other electronic devices that may cause a disturbance.

- Text messaging and laptop use for anything other than note taking are not permitted, (even if sitting in the back row).

Student Expectations

- Students are responsible for reading the sections of the text book corresponding to each lecture. Exams and assignments will cover material from lectures, as well as all content from the book whether or not it is stressed in lecture.

- It is the students’ responsibility to check for new announcements posted on the webpage or sent via email daily.

- Students should seek help when having difficulty understanding the material conceptually and/or how to apply concepts to solve problems.
  - Talking to either the instructor or TA during office hours in a more one-on-one environment is a great way to clear things up, so don’t hesitate to stop by! If there is something you prefer to discuss privately, feel free to email me to schedule a meeting.
  - Setting up a study group with fellow students is also highly recommended.

Assessment

Homework (21%)

The best way to learn is by doing. Homework will be due each week (usually on Wednesdays) and is to be submitted by the start of class before lecture begins. Assignments will be posted on Blackboard.
* See the note on write-ups below.

Daily Assignments (15%)

This category consists of two types of assignments:
1) Short in-class activities done in pairs or groups.
These will mainly be assessed based on effort and participation. If you miss few days worth of participation points due to absence over the course of the semester you will not penalized.

2) Take-home questions which are meant to reinforce and utilize material covered and discussed that day in lecture.

This type of daily will be announced in class, as well as on the Blackboard announcements page, and posted in the Daily Assignments folder under the Content tab. These will be due the NEXT class meeting at the start of class whether or not you were present in class the day it was assigned.

* Some of the take-home dailies will be reviewed by a fellow student in-class the day it is due using a rubric provided by the instructor. This activity will help students learn to develop criteria with which to assess oneself as well as ones colleagues while providing an opportunity to discuss problems and concepts with classmates.

**Midterm Exams (34 %)**

There will be two in-class midterm exams, each with a weight of 17%. The first midterm exam will be held on Wednesday, September 26, and the second exam will be held on Wednesday, November 7. Details about exam content will be given as the date approaches.

**Final Exam (30 %)**

The final exam will be on Thursday December 13, 2012 at 9am. The final is a 2.5 hour exam and will be cumulative.

**Homework and Exam Policy**

- Late homework will not be accepted by either the instructor or the TA.

- If you miss an assignment due to a doctors visit, a written note from the doctor needs to be provided and you must email the instructor the day you missed class to inform her that your absence is excused. Only then will you be permitted to submit the assignment at the following class meeting.

- **A Note on Proper Write-ups:** In mathematics, the final numerical answer isn’t as important as how you get to that answer. Solutions to homework exercises, daily assignments and exam problems must be logical, organized, concise and neatly written. You are permitted to work on homework in groups, but solutions should be written up individually in your own words.

- There will be no make-up or rescheduling of midterms or the final exam.
Add/Drop

September 14th is the last day to add and October 12th is the last day to drop. For all add/drop inquiries please see Heather Peterson (hko1@cornell.edu) in the math department office on the third floor.