Math 3160

- Classes: Tue Thu; 11:00-12:15. Classes start Mon Aug 31st.
- Location: Mathematical Sciences Building, M-211.
- Office Hours: Tue, Thu; 12:15--1:15.
- **Exams:**
  - **The first midterm exam will be on Tuesday the 6th of October. Practice Questions are here.**
  - **The second modterm exam will be on Thursday the 19th of November. Practice Questions are here.**
  - **The final exam will be on Tuesday the 15th of December from 10:30 AM until 12:30 PM in MSB 211. Practice Questions are here.**
- Homework: Will be set once a week on Thursday -- to be handed in the following Thursday.
- Syllabus:
  - Textbook: A First Course in Probability, seventh edition, by Sheldon Ross.
  - Outline: This course will cover basic aspects of probability including how to perform standard calculations and introducing the student to common types of problems. The topics that I intend to cover are:
    - 1.2 The Basic Principle of Counting
    - 1.3 Permutations
    - 1.4 Combinations
    - 1.5 Multinomial Coefficients
    - 2.2 Sample Space and Events
    - 2.3 Axioms of Probability
    - 2.4 Some Simple Propositions
    - 2.5 Sample Spaces Having Equally Likely Outcomes
    - 3.2 Conditional Probabilities
    - 3.3 Bayes Formula
    - 3.4 Independent Events
    - 4.1 Random Variables
    - 4.2 Discrete Random Variables
    - 4.3 Expected Value
    - 4.4 Expectation of a Function of a Random Variable
    - 4.5 Variance
    - 4.6 Bernoulli and Binomial Random Variables
    - 4.7 The Poisson Random Variable
    - 4.9 Properties of the Cumulative Distribution Function
    - 5.2 Expectation and Variance of Continuous Random Variables
    - 5.3 The Uniform Random Variable
    - 5.4 Normal Random Variables
    - 5.5 Exponential Random Variables
    - 6.1 Joint Distribution Functions
    - 6.2 Independent Random Variables
    - 6.3 Sums of Independent Random Variables
    - 6.4 Conditional Distributions: Discrete Case
    - 6.5 Conditional Distributions: Continuous Case
    - 7.2 Expectation of Sums of Random Variables
    - 7.4 Covariance, Variance of Sums, and Correlations
    - 7.5 Conditional Expectation
    - 7.7 Moment Generating Functions
    - 8.2 Chebyshev's Inequality and the Weak Law of Large Numbers
    - 8.3 The Central Limit Theorem

- **Note:** This syllabus may be subject to modest alterations in content as the semester progresses.

- Assessment:
  - Homework assignments will contribute to 10% of your grade. It is important that you hand them in **on time**.
  - There will be two mid-sessional exams. The first will be worth 20% of your grade and the second 30%.
  - There will be a final exam, which will be worth 40%.

Homework

Questions set	**Due**
Ch 1: Q1b, 3, 10b, 13, 15, 18, 25, 27.	Thu 10th Sep.
Ch 2: Q1, 3, 6, 10, 16, 20, 28.	Thu 17th Sep.
Ch 3: Q1, 4, 9, 10, 22, 47.	Thu 24th Sep.
Ch 3: Q35, 49, 53, 55, 62.	Thu 1st Oct.
Ch 4: Q1, 2, 9, 21, 23, 28, 35.	Thu 22nd Oct.
Ch 4: Q38, 39, 40, 41, 44, 51, 55.	Thu 29th Oct.
Ch 4: Q54, 63, 64, 66, 72.	Thu Nov 5th.
Ch 5: Q1, 2, 4, 5, 6, 8, 10, 12, 15, 16, 17, 19.	Thu Nov 12th.

Back to homepage

3160 Probability, Fall 2009

Arend Bayer

August 31, 2009

This is the syllabus for 3160 section 3, meeting MWF 11:00–11.50 in MSB 303.

How to find me

office: MSB 206
phone: 486-237
e-mail: bayer@math.uconn.edu
Office hours: Mondays 1.30 pm and Wednesdays 1.30 pm
Course homepage: http://www.math.uconn.edu/~bayer/math3160f09/

"Office hour" only means that I will always (try to) be there – you are welcome to come by whenever I am in my office.

Course description

This course will be an introduction to the theory of probability, and will contain many actual probablity problems encountered in science or business.

Textbook: A First Course in Probability (7th Ed.) by Ross, Prentice Hall; Chapters 1–8.

Exams, homework, grading

Homework You will get weekly homework, due on Fridays before class. The assignments will be posted on the course homepage. I will grade selected problems of each homework. Most problems on the quizzes will be very similar to one of the homework problems.

Quizzes Usually on Fridays, roughly bi-weekly, there will be a short quiz (15-20 min) on the material of the homework (and possibly the previous homework). Your worst quiz won't count towards your credit; if you miss a quiz, you will get 0 points. *After you have missed one quiz, you will get 0 points in your credits towards the final grade for every further quiz you miss.*

(I currently plan to have quizzes on 9/11, 9/25, 10/2, 10/16, 10/30, 11/13, 12/4 —this might change.)

Midterms There will be two midterms:

- 1st midterm is Friday, October 9
- 2nd midterm is Friday, November 20

All exams are closed-book exams.

Final According to the preliminary exam schedule, the final will be Wednesday December 16, 1-3 pm. It will cover the entire semester.

Grading You will obtain 5 grades, which will count as follows towards your final grade: 15% homework, 25% quizzes, 15% each midterm, 30% the final. I will give precise letter grades for the midterms, and you can always ask me about your current grade for homeworks and quizzes. Your current homework and quiz scores will be available via HuskyCT–look for a link on the course homepage once it is relevant.

Calculators Calculators are allowed in the exams and quizzes (but no symbolic calculators).