

Mathematics 4250 - Mathematical Theory of Probability.
Spring 2007

Instructor: Hakima Bessaih, Ross Hall 210, bessaih@uwyo.edu

Office Hours: TWR 2:00-3:00 pm and by appointment.

Class time & room: TR 8:10-9:25 am in BU 108.

Textbook. (required) S. Ross, *A first Course in Probability*, 6th edition. Prentice Hall.

Course Description. The goal of this course is to give an introduction to the theory of probability. Properties of random variables including discrete and continuous probabilities will be introduced. Includes, independence and conditional probabilities, mathematical expectation, multivariate distributions and properties of normal probability. The law of large numbers and the central limit theorem will be discussed if time allows. Moreover, some applications to statistics will be given.

Prerequisites. Mathematics 2210 or 2355.

Tentative list of topics

- Chapter 1: Combinatorial Analysis.
- Chapter 2: The Axioms of Probability.
- Chapter 3: Conditional probability and independence.
- Chapter 4: Random variables.
- Chapter 5: Continuous random variables.
- Chapter 6: Jointly distributed random variables.
- Chapter 7: Properties of expectation.
- Chapter 8: Limit theorems.

Grading Policy.

- **Final exam:** The final exam takes place on **Thursday, 03-May-2007, 8:00-10:00 am**. The final exam counts for 30% of the final grade.
- **Midterms:** There will be two midterms exams tentatively scheduled for the **15-February-2007** and **29-March-2007**. Each midterm will count for 20% of the final grade.
- **Homework:** There will approximately weekly homework assignments to be downloaded from the course homepage: <http://www.uwyo.edu/bessaih/>. Homework problems are due on the assigned days prior to the lecture. No late homework will be graded. Homework counts for **30%** of the final grade.
- **Attendance/Participation:** I strongly recommend class attendance and participation and I will use this activity in determining borderline grades.
- **Make-up exams:** There will be **No** make-up exams for unexcused absences. In case that you are unable to attend an exam, you need to provide me with a University excused absence. Note that it is required to discuss any special arrangement prior to the absence. Make-ups for the exams will be given only in extraordinary cases.
- **Grading scheme for the final grades:** Grade A: 90-100, Grade B: 80-89, Grade C: 70-79, Grade D: 60-69, Grade F:<60.
- **Disability statement:** If you have a physical, learning, or psychological disability and require accommodations, please let me know as soon as possible. You will need to register with, and provide documentation of your disability to, University Disability Support Services (UDSS) in SEO, room 330 Knight Hall, 766-6189, TTY: 766-3073.

The information in this syllabus is subject to change. If there are changes, they will be announced repeatedly in class.