MATH 340: Introductory Probability, Spring 2014

Spring 2014 Class number 15377 MW 12:30–1:45pm Room CR 5117

Prof. Vladislav Panferov

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Office hours: (tentative: check webpage for updates) Tue, Thu 12:00-2:00pm, or by appointment (email).

Course description: The course covers the basic principles of the theory of probability and its applications. Topics include combinatorial analysis used in computing probabilities, the axioms of probability, conditional probability and independence of events; discrete and continuous random variables; joint, marginal, and conditional densities; moment generating functions; limit theorems of probability; binomial, Poisson, gamma, and normal distributions. Prerequisite: Math 150B (Calc II); Math 250 (Calc III) is desirable for the material on multiple integration – if you have not taken that class contact the instructor.

MATH 340 WEBPAGE `www.csun.edu/~panferov/math340/`

Text: (required) A First Course in Probability, by Sheldon Ross, 9^{th}, 8^{th} or 7^{th} ed, Prentice Hall 2014, 2010, 2006.

We plan to cover most of Chapters 1–8 (times in parentheses are guidelines)

Chapter 1	Combinatorial Analysis (1 week)
Chapter 2	Axioms of Probability ($1\frac{1}{2}$ weeks)
Chapter 3	Conditional Probability and Independence (1–$1\frac{1}{2}$ weeks)
Chapter 4	Random Variables ($2\frac{1}{2}$ weeks)
Chapter 5	Continuous Random Variables ($2\frac{1}{2}$ weeks)
Chapter 6	Jointly Distributed Random Variables (2–$2\frac{1}{2}$ weeks)
Chapter 7	Properties of Expectation (1–$1\frac{1}{2}$ weeks)
Chapter 8	Limit Theorems (1 week)

Other textbooks: (optional)

- Probability, by C. M. Grinstead and J. L. Snell, AMS 1997.
- Fundamentals of Probability, by Saeed Ghahramani, Pearson; 3^{rd} ed, 2004.
- An Introduction to Probability Theory and Its Applications, by W. Feller, vols. 1 and 2, Wiley and Sons, 1968, 1971 (reference).

Homework/Quizzes: Homework will be assigned weekly in the form of a list of problems from the textbook, or problems posted on Moodle/WebWork (more information on that to follow). For each problem I expect you to find *a solution* consisting of a sequence of logical steps and/or computations. Guessing a correct answer does not constitute a solution. Homework assigned from the textbook will not be collected or graded; however selected problems from each assignment will be included in quizzes (15 minutes, held in the beginning of class and announced in advance).

Exams: There will be two in-class midterms, tentatively scheduled for **March 5**, and **April 16** (both Wednesdays). There will be a comprehensive final on **Monday, May 12**, 12:45–2:45pm (location is same as class meetings). All tests/exams will be closed books/notes.

Make-up policy: Make-up quizzes/exams are not normally given.

Electronic devices: Only a basic scientific calculator (example: TI-30XIIS) is allowed (in fact, strongly recommended) on all quizzes, tests and exams. Graphing calculators and other electronic devices, including cell phones, are not permitted. Cell phones must be **off** (not on silent or airplane mode!) during class time.

Grading: I will use +/- grading system, and will compute the grades as follows:

2 in-class exams	20% each
quizzes and/or online homework	25%
final exam	35%

The following is a guideline scale for translating percentages into grades: 90-100% A; 80-89% B, 70-79% C, 60-69% D, 0-59% F ('plus' and 'minus' grades are included in each range). In practice the cutoff numbers for the grades may be lowered, typically by a few percentage points, depending on the overall performance of the class. This is not to be confused with "grading on a curve", (you may consult `http://en.wikipedia.org/wiki/Grading_on_a_curve` on that topic, however that procedure will not be used for assigning grades).