Syllabus for Math 411
Mathematical Probability
Summer 2016

Section 100

Instructor: Volodymyr Nekrashevych
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Office hours: Office hours: Tuesday, Wednesday, Thursday from 2 to 3 pm or by appointment.
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Class hours:
10:00–11:35 BLOC 164

MATH 411 web page: The web page of the course is
http://www.math.tamu.edu/~nekrash/teaching/16E/M411.html

Text. *Introduction to Probability*, 2nd - Bertsekas, Tsitsiklis. Athena Scientific, ISBN 978–1–886529–23–6.

Topics covered. Probability spaces, discrete and continuous random variables, special distributions, joint distributions, expectations, law of large numbers, the central limit theorem. Prerequisite: MATH 221 or equivalent.

Grading. Your grade will be determined by homework, two midterm exams and a *cumulative* final exam. The weights of each of these are as follows.

Homework	Exam I	Exam II	Final Exam	Total
20 pt	25 pt	25 pt	30 pt	100
weekly	June 9	June 21	July 5, 10:30–12:30	

I may curve any grade and will then compute the course grade by the following rule: A for at least 90 points, B for at least 80 points, C for at least 70 points, D for at least 60 points and F for less than 60 points.

Plan of lectures.

5/31 1.1–1.2. Sets and Probabilistic Models.

6/1 1.3 Conditional Probability.

6/2 1.4. Total Probability and Bayes' Rule.

6/3 1.5. Independence.

6/6 2.1-2.2. Discrete Random Variables. PMF.

6/7 2.3. Functions of Random Variables.

6/8 2.4. Expectation, Mean, and Variance.

6/9 Exam I

6/10 2.5–2.6. Conditioning and Independence.

6/13 3.1. Continuous Random Variables and PDFs.

6/14 3.2. Cumulative Distribution Functions.

6/15 3.3. Normal Random Variables.

6/16 3.4. Joint PDFs of Multiple Random Variables.

6/17 3.5. Conditioning

6/20 3.6. The Continuous Bayes' Rule.

6/21 Exam II

6/22 4.1. Derived Distributions.

6/23 4.2. Covariance and Correlation.

6/24 5.1.-5.2. Markov and Chebyshev Inequalities. The Weak Law of Large Numberse.

6/27 5.3. Convergence in Probability.

6/28 5.4. The Central Limit Theorem.

6/29 5.5. The Strong Law of Large Numbers.

6/30 Chapter 9. Statistical Inference.

7/1 Overview.

Make-up policy: Make-ups for missed quizzes and exams will only be allowed for a university approved excuse in writing. Wherever possible, students should inform the instructor before an exam or quiz is missed. Consistent with University Student Rules , students are required to notify an instructor by the end of the next working day after missing an exam or quiz. Otherwise, they forfeit their rights to a make-up.

Scholastic dishonesty: Copying work done by others, either in-class or out of class, is an act of scholastic dishonesty and will be prosecuted to the full extent allowed by University policy. Collaboration on assignments, either in-class or out-of-class, is forbidden unless permission to do so is granted by your instructor. For more information on university policies regarding scholastic dishonesty, see University Student Rules.

Remember the Aggie Code of Honor: *"An Aggie does not lie, cheat, or steal or tolerate those who do."*

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