

Math 5651

Basic Theory of Probability and Statistics, Fall 2015, Section 1 (11197)

SYLLABUS

Time and Place: 10:10 am - 12:05 pm TTh (09/08 - 12/15) – Rapson Hall 54
Text: M.H. DeGroot, M.J. Schervish. Probability and Statistics.
2012 Addison-Wesley, Fourth Edition.
Instructor: Sergey G. Bobkov
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Office hours: 1:25 pm - 2:15 pm TTh

5651. Basic Theory of Probability and Statistics.

Elementary Probability: Basic concepts, classical probability, combinatorial methods, conditional probability, independent events, Bayes' theorem. Random variables: distribution, expectation, moments, variance, moment generating function. Random vectors: marginal distribution, functions of random variables. Special distributions. Poisson approximation. The law of large numbers. The central limit theorem.

WEEK	DATES	MATERIAL (preliminary distribution)
1	09-08 to 09-10	Introductory remarks, sections 1.4, 1.5
2	09-15 to 09-17	1.6, 1.7, 1.8
3	09-22 to 09-24	1.9, 1.10, 2.1
4	09-29 to 10-01	2.2, 2.3, 3.1
5	10-06 to 10-08	3.2, 3.3, 3.4
6	10-13 to 10-15	Tuesday: 3.5; Thursday: 1st Test
7	10-20 to 10-22	3.6, 3.7, 3.8
8	10-27 to 10-29	3.9, 4.1, 4.2, 4.3
9	11-03 to 11-05	4.4, 4.5, 4.6
10	11-10 to 11-12	4.7, 5.2, 5.3
11	11-17 to 11-19	Tuesday: 5.4, 5.5; Thursday: 2nd Test
12	11-24 to 11-26	Tuesday: 5.6, 5.7; Thursday: Thanksgiving
13	12-01 to 12-03	5.8, 5.9, 5.10, 6.2
14	12-08 to 12-10	6.3; Thursday: Review
15	12-15	Tuesday: 3rd Test

Midterm exams: Thursday, October 15, 2015
Thursday, November 19, 2015
Tuesday, December 15, 2015

Composition of grade: Midterm exams – 75%
Homeworks – 25% (counting 5 best out of 6)

Homeworks: You will have 6 homeworks due on September 29,
October 13, 27, November 10, 24, and December 8, 2015.
Every homework and every midterm exam is graded in
the range of 25 points.

Fall 2015, Homework Assignments

1	Due on September 29	Section 1.4 Section 1.5 Section 1.6 Section 1.7 Section 1.8 Section 1.9 Section 1.10	7 3, 4, 9 1, 6 5, 7, 8 2, 4 2, 7 1, 5
2	Due on October 13	Section 2.1 Section 2.2 Section 2.3 Section 2.5 Section 3.1 Section 3.2 Section 3.3	4, 6 9, 12 3, 9 2, 3 2, 4 4, 5 4, 6
3	Due on October 27	Section 3.4 Section 3.5 Section 3.6 Section 3.7 Section 3.8	4, 5 2, 3, 10 3, 6 1 4, 8
4	Due on November 10	Section 3.9 Section 4.1 Section 4.2 Section 4.3 Section 4.4	4, 6 3, 8 3 7 3, 8
5	Due on November 24	Section 4.5 Section 4.6 Section 4.7 Section 4.9 Section 5.2 Section 5.3 Section 5.4	2, 3 12, 13 2, 7, 8 4 6, 8 4 8, 14
6	Due on December 8	Section 5.5 Section 5.6 Section 5.7 Section 5.8 Section 5.9 Section 6.2 Section 6.3	2, 6 1, 2, 11 2, 3, 4 5 6 6 2