Math 5651
Basic Theory of Probability and Statistics, Fall 2023 (Section 3)

SYLLABUS

Time and Place:	2:30 am - 4:25 pm TTh (02/17/23 - 04/27/23) Nicholson Hall 110
Text:	M. H. DeGroot, M. J. Schervish. Probability and Statistics.
	2012 Addison-Wesley, Fourth Edition.
Instructor:	Sergey G. Bobkov
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Office hour:	1:10 pm - 2:00 pm Th

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	01-17 to 02-19	Introductory remarks, sections 1.4, 1.5
2	01-24 to 01-26	1.6, 1.7, 1.8
3	01-31 to 02-02	1.9, 1.10, 2.1
4	02-07 to 02-09	2.2, 2.3, 3.1
5	02-14 to 02-16	3.2, 3.3, 3.4, 3.5
6	02-21 to 03-23	3.6, 3.7, 3.8, 3.9
7	02-28 to 02-30	Tuesday: Test 1; 4.1, 4.2
8	03-07 to 03-09	Spring break
9	03-14 to 03-16	4.3, 4.4, 4.5
10	03-21 to 03-23	4.6, 4.7, 5.2
11	03-28 to 03-30	5.3, 5.4, 5.5
12	04-04 to 04-06	Tuesday: Test 2; 5.6, 5.7
13	04-11 to 04-13	5.8, 5.9, 5.10
14	04-18 to 04-20	6.2, 6.3
15	04-25 to 04-27	Review; Thursday: Test 3

Tests:	Tuesday, February 28, 2023
	Tuesday, April 4, 2023
	Thursday, April 27, 2023
Homeworks:	You will have 5 homeworks due on February 2, 21,
	March 16, 30, and April 20, 2023
Composition of grade:	Tests – 60%, homeworks – 40% (counting 4 best out of 5).
	Every test is graded in the range of 20 points.
	Every homework is graded in the range of 10 points.

Homework Assignments Spring 2023

1	Due on February 2	Section 1.4	7
		Section 1.5	3, 4
		Section 1.6	1, 6
		Section 1.7	5, 7
		Section 1.8	4
		Section 1.9	7
		Section 1.10	1, 5
2	Due on February 21	Section 2.1	6
		Section 2.2	9, 12
		Section 2.3	5
		Section 2.5	3
		Section 3.1	2, 4
		Section 3.2	4
		Section 3.3	4, 6
		Section 3.4	4
3	Due on March 16	Section 3.5	3, 10
		Section 3.6	3, 6
		Section 3.7	1
		Section 3.8	4, 8
		Section 3.9	4
		Section 4.1	3, 8
		Section 4.2	3
		Section 4.3	7
		Section 4.4	3, 8
4	Due on March 30	Section 4.5	2, 3
		Section 4.6	12, 13
		Section 4.7	2, 7
		Section 4.9	4
		Section 5.2	6, 8
		Section 5.3	4
		Section 5.4	8, 14
5	Due on April 20	Section 5.5	2, 6
		Section 5.6	2, 11
		Section 5.7	2, 3, 4
		Section 5.8	5
		Section 5.9	6
		Section 6.2	6
		Section 6.3	2