

**Probability, MA 485/585-1E**      Fall 2001

Class meets on Mondays, Wednesdays, and Fridays 12:20-1:10pm in Room 102 CB15

**Instructor:** Dr. Nikolai Chernov

**Office:** 492 A Campbell Hall, ph. 934-2154 or 934-8613

**Office hours:** Monday 10:30am-noon, Friday 11am-noon, and by appointment

**E-mail:** chernov@math.uab.edu

**Text:** S. Ghahramani, *Fundamentals of Probability*, 2nd Ed.

**Class notes** are available on my web page (see back of this flyer).

**Grading policy:** (One of two schedules that yields a better grade for you)

Homework	15 %	or	0 %
Midterm I (Sep 28)	25 %		30 %
Midterm II (Nov 2)	25 %		30 %
Final (Dec 12, 10:45-1:15)	35 %		40 %

**Homework:** Problems will be assigned weekly on Mondays, unless announced otherwise. HW will be due the next Monday after assignment. Corrected and graded HW will be returned on Wednesday the same week. If you turn the HW in and the schedule #1 above gives you a better grade, it will be automatically applied. Otherwise, your HW scores (if any) will be dropped and the schedule #2 will be applied. One (lowest) HW score will be dropped in any case. Half credit is given for late homework.

All tests in this course are **open-book** and **open-notes**.

You may use a calculator, and most likely you will need one, so bring it with you.

**To 585 students:** You are taking this course at a *graduate* level! You will be given extra, more difficult, assignments periodically. Unlike regular homework assignments, those extra assignments are mandatory. The extra assignments will make 15% of your course grade, the rest will count for 85%. The 585 homework can be turned in any time before or on the final test (there is no other deadline). If you submit your 585 homework before the final exam, then you will have chance to correct your mistakes and resubmit it again for regrading (without penalty and unlimited number of times). If you do correctly 80% of 585 problems, you will get full credit for this part of the course. If you do more, you'll get extra credit.

*Welcome to MA 485/585 and best of luck to you all.*

## Syllabus

Topics from Classnotes	Sections in Textbook	Dates
1. Combinatorial probabilities	2.2 + 2.3 + 2.4	Aug 22-27
2. Probability space	1.2 + 1.3 + 1.4 + 1.7	Aug 29 - Sep 5
3. Conditional prob., independence	3.1 + 3.2 + 3.3 + 3.4 + 3.5	Sep 7-14
4. Discrete random variables	4.1 + 4.3 + 5.1 + 5.2 + 5.3	Sep 17-21
5. Continuous random variables	4.2 + 6.1 + 7.1	Sep 24 - Oct 1
6. Exponential random variables	7.3	Oct 3-5
7. Functions of random variables	6.2	Oct 5-8
8. Normal random variables	7.2	Oct 10-12
9. Joint distributions	8.1 + 8.2 + 8.4 + 8.5	Oct 15-19
10. Mean value	4.4 + 6.3 + 9.1	Oct 22-24
11. Variance	4.5 + 6.3	Oct 26-29
12. Moment generating function	10.1 + 10.2	Oct 31 - Nov 5
13. Covariance and correlation	9.2 + 9.3	Nov 7-9
14. Law of large numbers	10.3 + 10.4	Nov 12-14
15. Central limit theorem	7.2 + 10.5	Nov 19-21
16. Random walks (gambler's ruin)	from 3.3	Nov 26 - Dec 3
17. Poisson process	from 5.2	Dec 5-7

The syllabus is tentative, some changes may occur.

Regular class attendance is very important and strongly encouraged. The instructor may cover material that is not in the book.

Class notes containing the material are available on my web site (91 pages). Also, homework assignments, past year tests (some with answers), and more are posted on my web page:

[www.math.uab.edu/chernov/teach.html](http://www.math.uab.edu/chernov/teach.html)

(or just go to [www.math.uab.edu](http://www.math.uab.edu), click on “people”, then “chernov”, then “teaching”). You will need an Acrobat Reader (it is free) to view/print the class notes and other material. Instructions for obtaining Acrobat Reader are provided on my web page.