

Probability, MA 485/585-4A Fall 2004

Class meets on Tuesdays and Thursdays 3:30-4:45pm in Room 124 CB15

Instructor: Dr. Nikolai Chernov

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

Office hours: Tuesday and Thursday 11am-noon, and by appointment

E-mail: chernov@math.uab.edu

Text: R. Durrett, *The Essentials of Probability*

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 Test I (Sep 23)	25 %		30 %
Midterm Test II (Oct 28)	25 %		30 %
Final Exam (Dec 9, 4:15-6:45)	35 %		40 %

Homework: Problems will be assigned weekly on Tuesdays, unless announced otherwise. HW will be due the next Tuesday after assignment. Corrected and graded HW will be returned on Thursday 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-level problems can be turned in any time before (or on) the final exam. The 585-level problems can be resubmitted for regrading unlimited number of times without penalty. If, in the end, you do correctly 90% of the 585-level 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	Dates
1. Combinatorics	Aug 19, 24
2. Probability space	Aug 26, 31
3. Conditional probability and independence	Sep 2, 7
4. Discrete random variables	Sep 9, 11
5. Continuous random variables	Sep 16, 21
6. Exponential random variables	Sep 28
7. Functions of random variables	Sep 30
8. Normal random variables	Oct 5, 7
9. Joint distributions	Oct 7, 12
10. Mean value	Oct 14, 19
11. Variance	Oct 19, 21
12. Moment generating function	Oct 21, 26
13. Covariance and correlation	Nov 2, 4
14. Law of large numbers	Nov 9
15. Central limit theorem	Nov 11, 16, 18
16. Random walks (gambler's ruin)	Nov 18, 23, 30
17. Poisson process	Dec 2

The syllabus is tentative, some changes may occur.

Test I covers topics 1–4; Test II covers topics 5–11; Final Exam covers topics 12–17 and some selected topics from the 1-11 range (to be announced in advance).

Regular class attendance is very important and strongly encouraged. The instructor will follow the class notes (not the book).

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

www.math.uab.edu/chernov/teach.html

(or just go to 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.