

Probability MA 485/585-1D Fall 2008

Class meets on Mon/Wed/Fri at 11:00am until 11:50am in Room 215 BEC

Instructor: Dr. Nikolai Chernov

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

Office hours: MWF 10:00-10:45am, and by appointment; walk-ins are welcome

E-mail: chernov@math.uab.edu

There is **no textbook** for this course.

Class notes are available on the instructor's web page (see the back of this flyer).

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

Homework	10 %	or	0 %
Midterm Test I (Sep 29)	30 %		30 %
Midterm Test II (Oct 31)	30 %		30 %
Final Exam (Dec 5, 10:45-1:15)	30 %		40 %

Homework: The list of homework exercises and due dates are available on the instructor's web page. You need to submit your homework on the due date in class (or on the same day put it into the bin near the instructor's office). No late homework. Corrected and graded HW will be returned at the next class meeting. Homework is **not mandatory**. If you turn the HW regularly 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. It is advised that you do homework as often as possible, for your practice, even if you cannot do it regularly. Exercises marked as Bonus and Graduate can be attempted for extra credit, by the same due dates as regular exercises.

Tests: All tests in this course are open-notes. You may use a calculator, and most likely you will need one, so bring it with you. You may bring a laptop, too.

To 585 students: You are taking this course at a graduate level! You will need to do all homework exercises marked as Graduate (some of them require reading Chapter 18 from the class notes, which is marked for graduate students). Unlike regular homework assignments, the graduate exercises are **mandatory** for 585 students. They will make 15% of your course grade, the rest will count for 85%. The graduate homework problems can be turned in any time before (or on) the final exam. After they are graded and returned, you can correct your solutions and resubmit your work for a better credit (there is no limit or penalty for resubmissions, but the deadline is the final exam). If, in the end, you do correctly 26 out of 28 graduate exercises, 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

Chapters of the class notes	Dates
1. Combinatorics	Aug 20, 22, 25
2. Probability space	Aug 25, 27, 29
3. Conditional probability and independence	Sep 3, 5, 8
4. Discrete random variables	Sep 10, 12, 15
5. Continuous random variables	Sep 17, 19, 22
6. Exponential random variables	Sep 24, 26
7. Functions of random variables	Oct 1, 3
8. Normal random variables	Oct 3, 6, 8
9. Joint distributions	Oct 10, 13, 15
10. Mean value	Oct 17, 20
11. Variance	Oct 22, 24
12. Moment generating function	Oct 24, 27, 29
13. Covariance and correlation	Nov 3, 5
14. Law of Large Numbers	Nov 5, 7
15. Central Limit Theorem	Nov 10, 12, 14
16. Random walks	Nov 17, 19, 21, 24
17. Poisson process	Dec 1, 3

The syllabus is tentative, some changes may occur.

Test I covers topics 1–5; Test II covers topics 6–11; Final Exam covers topics 12–17 and some selected topics from the 1-11 range (to be announced later in class).

Regular class attendance is very important and strongly encouraged. The instructor will follow the class notes, so if you have to miss a class, study the notes thoroughly.

Class notes are available on the instructor's web page:

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

You should print them and use them (they are in PDF format, so you will need an Adobe Acrobat Reader). Also, homework assignments, due dates, past tests (some with answers), helpful calculators, and more are posted on that web page.