The class meets on Mon/Wed/Fri from 10:10am to 11:00 am in Room EB 131

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Office hours: Tuesday/Thursday, 9am-11am, or by appointment
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There is NO required textbook for this course. Instead, a full set of Lecture Notes in pdf-format, written by N. Chernov, will be used and is available on the CANVAS page of this course.

Grading policy: Of the following two schedules, the one that yields the better grade will be applied.

Homework 20 % or 0 %
Midterm Test I (Early October) 25 % 30 %
Midterm Test II (Early November) 25 % 30 %
Final Exam (Friday, December 14, 8:00-10:30 am) 30 % 40 %

Homework:

• Weekly homework sets will be posted on CANVAS and will usually be due within one week. Answers to the homework problems, including full solutions, need to turned in on the due date in class or put in the plastic bin on the wall near the instructors office on the same day. Corrected and graded HW will be returned within one week.

• No late homework is accepted.

• Homework is NOT mandatory. If you turn in 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 for credit.

• Exercises marked as Bonus and Graduate can be attempted for extra credit.

Tests: All tests in this course are open-notes. You may use a calculator, and most likely you will need one, so bring one with you. You may also use a phone, laptop or a tablet without internet connection (Wi-Fi switched off, airplane mode).

To MA 585 students:

• You are taking this course at the graduate level!
• As an extra requirement, you will need to do the 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 MA 585 students. They will make 15% of your course grade (with your score on schedule #1 or #2 above re-scaled to 85%). I will allow you to skip up to 20% of the graduate exercises and still receive the full 15% contribution to your grade.

• The graduate homework problems can be turned in at any time before (or on) the final exam day.

• The tests and final exam are identical for MA485 and MA585.

Syllabus and tentative schedule

Chapter of Lecture Notes | Tentative Dates
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1. Combinatorics | 8/27, 8/29, 8/31
2. Probability space | 9/5, 9/7
3. Conditional probability and independence | 9/10, 9/12, 9/14
4. Discrete random variables | 9/17, 9/19, 9/21
5. Continuous random variables | 9/24, 9/26, 9/28
6. Exponential random variables | 10/1, 10/3
   **Test - 1** (covers sections 1-5) | Fri 10/5
7. Functions of random variables | 10/8, 10/10
8. Normal random variables | 10/12, 10/15, 10/17
9. Joint distributions | 10/19, 10/22, 10/24
10. Mean value | 10/26, 10/29, 10/31
   **Test - 2** (covers sections 6-10) | Wed 11/7
12. Moment generating function | 11/12, 11/14, 11/16
13. Covariance and correlation | 11/26, 11/28
14. Law of Large Numbers | 11/30, 12/3
15. Central Limit Theorem | 12/5, 12/7
Midterm Test I covers topics 1-5. Midterm Test II covers topics 6-10. The Final Exam covers topics 11–15 as well as background material from sections 1 to 10 required to work problems from the later sections.

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

- This syllabus, the lecture notes for the course, as well as homework assignments with due dates are made available on the CANVAS page of this course. While I will try to send reminders about homework being due, it is your responsibility to regularly check for updated postings on CANVAS.

- If you would like to use a book, in addition to the lecture notes, you can buy one, or check one out from a library. Here are suggested books:

  S. Ross, *A First Course in Probability*, Prentice Hall, or


  The former is simpler and more elementary, the latter is more sophisticated. A free online textbook by Marcel Finan, covering topics similar to Ross, is available at faculty.atu.edu/mfinan/actuarieshall/Pbook.pdf