

MAT 521 – Introduction to Probability

Fall 2016 Syllabus

Section 3: Tu/Thur 9:30–10:50am, Carnegie 100

Course Description This course is an introduction to probability theory. It provides a logical framework for quantifying uncertainty and randomness, with the aim of strengthening probabilistic intuition and permitting accurate computation. Topics include probabilities, random variables, expectation, inequalities and limit theorems.

Prerequisite A solid background in calculus at the level of MAT 397 (including multiple integrals).

Instructor Prof. JT Cox, 311B Carnegie, 443-1488, jtcox@syr.edu

Office Hours Held in Carnegie 311B

- Mon 2:00–3:30, Wed 2:00–3:30
- and at other times by appointment

Texts

- A comprehensive calculus book
- Introduction to Probability, by Blitzstein and Hwang

Course Web page [BlackBoard](#) and [WeBWorK](#) will be used.

Calculator policy A calculator is useful for homework problems, but using the statistical freeware package “R” is recommended instead. Calculators **are not allowed** on exams.

Cell phone Policy

- Cell phones should be turned off and put away during class.
- Cell phones **are not allowed** on exams. Specifically, using or having available for use any calculator, cell phone or other electronic device during any exam will be considered a **violation** of the Academic Integrity Policy. During exams, cell phones and other electronic devices **must be stowed out of reach**, either in a closed backpack or at the front of the room.

Reading There will be daily reading assignments.

Homework Homework is comprised of two parts aligning with the two main aims of the course. The first is to enhance accurate computation. For this, weekly homework will be assigned on WeBWorK (<http://webwork.syr.edu>), an online homework system. This will involve routine computational problems, a successful understanding of which should be considered the minimum requirement to pass the course. The second part is to strengthen probabilistic thinking and obtain

a deeper understanding of the subject. For this, “strategic practice problems” will be assigned from the text. Some of these problems are quite challenging, but you will gain a great deal from attempting to solve them. Solutions to these problems are available online, but you should make a concerted effort to solve the problems before looking at the solutions. This part of the homework will not be graded, but some of these problems will appear on the midterm exams, and on the final.

Exams There will be 2 midterm exams and a final exam. No makeup exams will be given. The tentative exam dates are

- Midterm 1: Thur Sep 29
- Midterm 2: Tues Nov 1
- Final: Friday Dec 16, 5:15–7:15pm (This date is **NOT** tentative.)

Exams will be based on class notes and examples, text readings and examples, and homework assignments. In addition to problems, definitions, and theorem statements, short proofs may be asked on exams. The final exam will be given on the scheduled date/time and **will not be offered at any other time!** Do not make travel plans that conflict with any exam date.

Grading The course grade weighting scheme is as follows: homework 15%, each midterm exam 25%, final exam 35%. Please note: there will be no extra credit assignments.

Attendance You are expected to attend **every class, arriving on time.** *Please do not take this course if you cannot arrive on time every day.* If you do miss a class, it is your responsibility to obtain a copy of the lecture notes for that class from another student. You are also responsible for any announcements about changes to the course schedule, the exam schedule or the course requirements made during that class.

Learning Goals Students will master the basic ideas of probability and associated mathematical techniques, and acquire the skills needed for the application of these ideas and mathematical tools to the further study of probability and/or statistics.

Disability-Related Accommodations If you believe that you need accommodations for a disability, please contact the Office of Disability Services (ODS), <http://disabilityservices.syr.edu>, located in Room 309 of 804 University Avenue, or call (315) 443-4498, TDD: (315) 443-1371 for an appointment to discuss your needs and the process for requesting accommodations. ODS is responsible for coordinating disability-related accommodations and will issue students with documented Disabilities Accommodation Authorization Letters, as appropriate. Since accommodations may require early planning and generally are not provided retroactively, **please contact ODS as soon as possible.**

Academic Integrity. Syracuse University’s academic integrity policy reflects the high value that we, as a university community, place on honesty in academic work. The policy defines our expectations for academic honesty and holds students accountable for the integrity of all work they submit. Students should understand that it is their responsibility to learn about course-specific expectations, as well as about university-wide academic integrity expectations. The university policy governs appropriate citation and use of sources, the integrity of work submitted in exams and assignments, and the veracity of signatures on attendance sheets and other

verification of participation in class activities. The policy also prohibits students from submitting the same written work in more than one class without receiving written authorization in advance from both instructors. The presumptive penalty for a first instance of academic dishonesty by an undergraduate student is course failure, accompanied by a transcript notation indicating that the failure resulted from a violation of academic integrity policy. The presumptive penalty for a first instance of academic dishonesty by a graduate student is suspension or expulsion. SU students are required to read an online summary of the university's academic integrity expectations and provide an electronic signature agreeing to abide by them twice a year during pre-term check-in on MySlice. For more information and the complete policy, see <http://academicintegrity.syr.edu/>. For more precise details, see

- [One page guide: AI at SU](#)
- [10 things all students need to know about AI](#)

Religious observances policy SU religious observances policy recognizes the diversity of faiths represented among the campus community and protects the rights of students, faculty, and staff to observe religious holidays according to their tradition. Under the policy, students are provided an opportunity to make up any examination, study, or work requirements that may be missed due to are religious observance provided they notify their instructors before the end of the second week of classes. For fall and spring semesters, an online notification process is available through MySlice (Student Services -> Enrollment -> My Religious Observances) **from the first day of class until the end of the second week of class.**

Strategic Practice Problems

Chapter	Problems
1	8,9,15,16,18,22,23,26,29,31,32,48,52
2	1,2,30,31,32
3	6,11,18,21,25,28,29,35,37,42
4	13,17,22(a),24,26,30,31,32,50,56,59,60,63,65
5	11,12,16,36,38,50,51
6	13,14,21
7	18,20,24,31,32,39,52
8	4,6,16,24
10	1,2,7,10,17,18,21,22,23