

STA 4321 / 5325: Introduction to Probability
Fall 2017

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Grades will be posted on Canvas.

Office hours: Tues 1:45-3:00, Wed 11:45-12:45, Wed 1:45-3:00 in FLO 220
TA office hours TBA

Textbook: *Mathematical Statistics with Applications*, 7th ed.
by Wackerly, Mendenhall, and Scheaffer

The book not required; some book problems will be listed as optional extra practice to complement homework, but otherwise we will not refer to it.

Roughly, topics in chapters 1-6 will be covered, but in greater depth. Please note that exams will test all material taught in lecture, including concepts that we cover beyond the textbook. Therefore regular class attendance, while not mandatory, is encouraged.

Lecture sections: The three lecture times will cover the same material.

1. Mon Wed Fri 10:40 - 11:30
2. Mon Wed Fri 12:50 - 1:40
3. Tue 11:45 - 1:40, Thu 12:50 - 1:40

Prerequisites: Three semesters of calculus (MAC 2311-2313 or equivalent).

Objectives: The course provides an introduction to probability theory -- the ideas and tools we need for understanding randomness and uncertainty. We will spend time on both learning the mathematical concepts and applying them to practical examples. This course lays the necessary foundations for further courses in statistical theory such as STA4322.

Rough schedule of topics:

Weeks 1-4:

Sample spaces, events, counting, definitions of probability, independence, conditional probability, Bayes rule, law of total probability

Weeks 5-8:

Random variables, expectation, discrete and continuous distributions, examples of famous distributions

Weeks 9-13:

Joint distributions, covariance, moment generating functions, conditional expectation, distributions of functions of random variables

Course requirements:

The final grade will be based on homework (10%), and three exams during the semester as detailed below. There will be no final exam.

- *Homework* will be assigned approximately weekly, as solving problems regularly is integral to the understanding of the course material. Homework is due at the specified time and date. No late homework will be accepted. Assignments will be equally weighted; your two lowest scores on the homework assignments will be dropped. You are welcome to discuss homework problems with other students; however, the solutions you submit must be written by yourself, in your own words.
- *Three exams* will be held, tentatively as follows:

Tue Sep 19	8:20-9:10pm	25% of grade
Thu Oct 19	8:20-9:10pm	25% of grade
Tue Dec 5	8:20-9:50pm	40% of grade

Note evening time slot; all three sections will be taking the exams together. The exams are not cumulative, but please note that the later material will build on concepts covered earlier in the course. All exams are closed-book, closed-calculator, closed-phone. You may bring two double-sided pages of self-prepared notes to the exams.

Grading:

Final grades will be normalized. Thus while the tentative cutoffs are the usual 10% scale (90% = A, 80% = B, etc.), they will very likely be relaxed. Assigned grades are not negotiable.

Policies:

Please be familiar with the Academic Regulations listed in the UF catalog.

Note that no make-up exams will be given with the exception of documented medical emergencies and to resolve exam time conflicts with other courses as according to UF policy. Any accommodations requested will require appropriate arrangements with the Dean of Students Office. You are expected to abide by the Student Honor Code and exhibit academic integrity.