STA 4321/5325

Fall 2019

Introduction to Probability / Fundamentals of Probability

Meets Tuesdays (11:45 – 1:40) and Thursdays (12:50-1:40) in Griffin-Floyd 100

Instructor: Joseph Antonelli

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Office hours: Mondays 11:45am – 12:35pm, Thursdays 10:40am – 11:30am, Fridays 1:55pm – 2:45pm

Course Website: e-Learning

Course Notes/Material: Notes for the week will be posted at the beginning of each week on the course website. These should contain nearly all of the material that we cover in class, however, I will present some additional material in class that is not posted on the course website.

Required Text(s): Seventh edition of Mathematical Statistics with Applications by Wackerly, Mendenhall, and Scheaffer. (ISBN: 9780495110811)

Course Description: The sequence of courses STA 4321-4322 (rep. 5325-5328) provides a formal and systematic introduction to mathematical statistics for students who have passed three semesters of standard undergraduate level calculus. STA 4321/5325 introduces the background in probability that is necessary to understand the classical statistical theory introduced in STA 4322/5328. Major topics include the basic formal elements of probability, discrete and continuous random variables, multivariate distributions, distributions of functions of random variables, and fundamental limit theorems.

Homework

There will be approximately four homework assignments spread out throughout the semester. You are allowed to work together on homework assignments although I strongly encourage you to try all problems on your own before consulting with fellow classmates. The homeworks are intended to prepare you for the exams, and they will best prepare you if you try them on your own first.

Exams

There will be three exams given in class. You will be allowed a double sided, one page formula sheet on the exam. This sheet should be handwritten, and must be on a standard 8.5" by 11" sheet of paper. We will have practice exams posted on the website that we will go over in class together the class preceding the exam.

Important dates (These are tentative and subject to change. Any changes will be announced in class and on the course website)

Exam #1 . . . . . Tuesday, September 17th in FLO-100
Exam #2 . . . . . Tuesday, October 22nd in FLO-100
Exam #3 . . . . . TBD

Grading

Grade distribution

Exams 1, 2 and 3	25% each
Homework	25%

Letter grade assignment

These are tentative and subject to change, however, they will only change in the direction that is good for you. There is a good chance that the course will be curved and the requirements for getting any particular grade level will be lower than what you see here. If your grade falls above a given threshold below, then you are guaranteed to get at least that grade for the course.

		A	90 to 100	A-	87 to < 90
B+	84 to < 87	B	80 to < 84	B-	77 to < 80
C+	74 to < 77	C	70 to < 74	C-	67 to < 70
D+	64 to < 67	D	60 to < 64	D-	55 to < 60
E	< 55				

Make-up

Requirements for class attendance and make-up exams, assignments, and other work in this course as well as policies regarding absences, religious holidays, illness and student athletes are consistent with UF Attendance Policies (https://catalog.ufl.edu/UGRD/academic-regulations/attendance-policies/)

Additional make-up policy requirements:

- Every effort should be made to complete the assignment/exam during the open period. Only extreme situations will warrant a makeup. Contact the instructor prior to the exam - as soon as you realize you will be unable to take the assignment/exam at the scheduled time. Each case will be reviewed individually. Valid and detailed documentation is a prerequisite for scheduling a makeup under such extenuating circumstances.

- Make-ups need to be scheduled within a week from the assignment deadline. Student is responsible for scheduling.

  - Being on vacation or booking a trip prior to the completion of the semester is not a valid reason to request a makeup. Please reference the most recent Academic Calendar (https://catalog.ufl.edu/UGRD/dates-deadlines/pdfs/)

UF and CLAS Policies

Dropping, Withdrawing and Incomplete

Dropping and Withdraw

For late course drops and course withdrawals please visit
https://catalog.ufl.edu/UGRD/academic-regulations/dropping-courses-withdrawals/

Incomplete

An incomplete grade may be assigned at the discretion of the instructor as an interim grade for a course in which the student has completed a major portion of the course with a passing grade, been unable to complete course requirements before the end of the term because of extenuating circumstances, and obtained agreement from the instructor and arranged for resolution of the incomplete grade in the next term. Instructors are not required to assign incomplete grades. For complete details please visit CLAS incomplete grade policies and forms.
(https://www.advising.ufl.edu/academicinfo/clas-policiesprocedures/incomplete-grades/)

Accommodating Students with Disabilities

Students requesting accommodation for disabilities must first register with the Dean of Students Office. The Dean of Students will provide documentation to the students who must then provide this documentation to the instructor when requesting information. You must submit this documentation prior to submitting any assignments for which you are requesting accommodation.

Academic Misconduct

Students are held accountable to the UF Honor Code.
(https://sccr.dso.ufl.edu/process/student-conduct-code/)

Evaluations

Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at https://evaluations.ufl.edu. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at
https://evaluations.ufl.edu/results/.

Tentative Course Outline

Week	Content
1	Set theory, permutations, counting rules
2	Counting rules, conditional probability, Bayes rule, independence
3	Random variables, Probability mass functions, distribution functions
4	Expected value, variance, practice exam
5	EXAM 1, discrete probability distributions
6	Discrete probability distributions
7	Continuous probability distributions, probability density function
8	Properties of continuous probability distributions
9	Examples of continuous distributions, practice exam
10	EXAM 2, more continuous distributions
11	Moment generating functions, joint probability distributions
12	Joint distribution functions, probabilities with two random variables
13	Covariance, conditional expectation
14	Sums of random variables, functions of random variables, transformations
15	Thanksgiving break
16	EXAM 3