STA-4321/5323 Introduction to Mathematical Statistics
Syllabus
Spring 2021 - 9033/9034-0001

Meetings: Remote (synchronous) T/R 9:45 AM - 11:00 AM
Instructor: Dr. Jonathan Stewart
Office hours: Remote via Zoom/Canvas, TBA
Course website: Canvas
Email: jrstewart@fsu.edu
Use subject line '[STA-4321]'/'[STA-5323]' in all email correspondence.

Grader: Inkoo Lee

Course description: STA-4321/5323 "Introduction to Mathematical Statistics" aims to provide the comprehensive introduction to the theory of probability and random variables necessary for a first course in mathematical statistics. Topics in the course include

- Basics of combinatorial probability;
- Axioms of probability;
- Events and probabilities of events;
- Conditional probability and independence;
- Conditional expectation;
- Random variables (continuous and discrete);
- Multivariate distributions of random variables;
- Probability inequalities;
- The Law of Large Numbers;
- The Central Limit Theorem.

Prerequisites: The course prerequisite is MAC 2313, titled Calculus with Analytic Geometry III.

Students are required to be familiar with functions of several variables, vectors, as well as derivatives, including partial derivatives, gradients, and the Jacobian, multiple integration, optimization, and other topics in multivariable calculus (i.e., Calculus III). By necessity, the course also assumes familiarity with topics in single variable calculus (i.e., Calculus I + II).

Textbook: The textbook required for this course is *A First Course in Probability*, by Sheldon Ross, 10th Edition (but any earlier edition is likely to be sufficient). Please obtain the textbook from your preferred source.

Assignment submission policy: Every assignment will be issued with a deadline date and time clearly listed on the assignment.

All assignments are to be submitted electronically through the course canvas site assignment page. It is the responsibility of each student to ensure they correctly submit their work on-time.

No late submissions will be accepted for any assignment, quiz, or examination.

Attendance policy: Attendance to lecture is formally required, however I will not be taking attendance past the first lecture (as required by university policy). That being said, I *strongly* encourage students to complete the required readings prior to each lecture and to attend lecture.

Excused absences include documented illness, deaths in the family and other documented crises, call to active military duty or jury duty, religious holy days, and official University activities. These absences will be accommodated in a way that does not arbitrarily penalize students who have a valid excuse. Consideration will also be given to students whose dependent children experience serious illness.

Grade policy: The course is worth 100 total points which are divided into three categories that determine the final letter grade:

- Assignments - 20% of total points
- Quizzes - 20% of total points
- Examinations - 60% of total points

Category descriptions:

- **Assignments.** Course assignments will primarily consist of problem sets, but may also include course discussion sections on canvas, as well as other course exercises. Collaboration on assignments is allowed—and encouraged!—but, all assignments must be written-up individually and submitted individually. See the policy below on collaborative work.
- **Quizzes.** Students can expect weekly (or near weekly) quizzes over material discussed that week. Quizzes are designed and intended to help students identify deficiencies and gaps in knowledge, as well as test comprehension of material presented that week in lecture. Quizzes are not collaborative work and must be taken individually without conferring with others.
- **Examinations.** There will be three examinations throughout the course, each worth 20% of the total points. The exams are in theory noncumulative, but the course material necessarily builds upon itself and latter topics may require knowledge, familiarity, or mastery of previous topics outside of the topic scope of a specific examination. Exams are not collaborative work and must be taken individually without conferring with others.
- **Final.** There is no final examination in this course.

Final letter grades for the course will be assigned at the end of the semester. The assignment of letter grades will not be stricter than the following rubric for end of semester point totals:

A	: $[94, 100)$	C	: $[73, 76)$
A-	: $[90, 94)$	C-	: $[70, 73)$
B+	: $[86, 90)$	D+	: $[66, 70)$
B	: $[83, 86)$	D	: $[63, 66)$
B-	: $[80, 83)$	D-	: $[60, 63)$
C+	: $[76, 80)$	F	: $[0, 60)$

Final point totals will be rounded to the nearest integer.

No grade adjustments will be considered on an individual basis and no extra credit is guaranteed to be provided.

Policy for collaborative work: Any work submitted for a grade which permits collaboration is expected to be individually written-up by the student submitting the assignment. While collaboration is encouraged—where allowed—students must write their own solutions and responses in their own words. Direct copying of write-ups, analyses, or problem solutions from other students or sources will be considered a violation of the honor code and will be reported for review.

Academic integrity and honor policy: The Florida State University Academic Honor Policy outlines the university's expectations for the integrity of students' academic work, the procedures for resolving alleged violations of those expectations, and the rights and responsibilities of students and faculty members throughout the process.

Students are responsible for reading the Academic Honor Policy and living up to their pledge to "... be honest and truthful and ... [to] strive for personal and institutional integrity at Florida State University." The policy in full can be found at Academic Honor Policy PDF (click me).

Americans with Disabilities Act: Florida State University (FSU) values diversity and inclusion; we are committed to a climate of mutual respect and full participation. Our goal is to create learning environments that are usable, equitable, inclusive, and welcoming. FSU is committed to providing reasonable accommodations for all persons with disabilities in a manner that is consistent with academic standards of the course while empowering the student to meet integral requirements of the course.

To receive academic accommodations, a student:

1. must register with and provide documentation to the Office of Accessibility Services (OAS);
2. must provide a letter from OAS to the instructor indicating the need for accommodation and what type; and,
3. should communicate with the instructor, as needed, to discuss recommended accommodations. A request for a meeting may be initiated by the student or the instructor.

Please note that instructors are not allowed to provide classroom accommodations to a student until appropriate verification from the Office of Accessibility Services has been provided.

This syllabus and other class materials are available in alternative format upon request.

For more information about services available to FSU students with disabilities, contact the

Office of Accessibility Services
874 Traditions Way
108 Student Services Building
Florida State University
Tallahassee, FL 32306-4167
(850) 644-9566 (voice)
(850) 644-8504 (TDD)
oas@fsu.edu
https://dsst.fsu.edu/oas/