



STA 4321 - Introduction to Probability

Spring 2026

Course Overview

Instructor Information	
Instructor: Yeison Quiceno	Office Hours: WF 9:30-10:30 AM
Email: yeison.quicenodu@ufl.edu	
Office: Griffin Floyd Room 117A	Phone: (352) 392-1941

Course Website: elearning.ufl.edu

Course Time/Location: MWF, 8:30 AM - 9:20 AM, TUR 2319

Teaching Assistant

Name	Email	Office Hours	Office	Phone
Hongqiang Sun	sunh1@ufl.edu	T 4-5PM, R 3-4PM	FLO 115A	(352) 392-1941

University Policies and Resources:

- This course complies with all UF policies. For information on those policies and for a list of campus resources, please see this page: go.ufl.edu/syllabuspolicies.

Materials and Supplies Fees: None

Technical Support: For technical issues with course materials, contact:

- UF Help Desk: helpdesk.ufl.edu or (352) 392-4357

Course Description: This course provides a formal introduction to probability theory as preparation for mathematical statistics. 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.

Course Objectives:

- Develop fluency with the axioms of probability and core counting principles.
- Work confidently with discrete and continuous random variables and their distributions.
- Compute expectations, variances, and other summaries (including via generating functions when appropriate).

- Analyze joint, conditional, and marginal distributions; independence; covariance and correlation.
- Determine distributions of functions of random variables using standard methods.
- Understand and apply fundamental limit ideas (as covered in the course).

Student Learning Outcomes: At the end of this course, students will be expected to:

- State and use basic probability rules and compute probabilities in a variety of settings.
- Identify and work with common families of discrete and continuous distributions.
- Compute and interpret expected values, variances, covariances, and correlations.
- Work with multivariate distributions and compute probabilities/expectations involving multiple random variables.
- Find distributions of functions of random variables using appropriate techniques.

Prerequisites: MAC 2313 (or equivalent third-semester calculus). Prior exposure to an introductory statistics course such as STA 2023 or STA 3032 is strongly recommended.

Credit Hours: 3

Required Texts:

1. Wackerly, D. D., Mendenhall, W., & Scheaffer, R. L. (2008). *Mathematical Statistics with Applications* (7th ed.). Brooks/Cole, Cengage Learning.

Course Communication:

- Use e-mail to contact the instructor regarding administrative matters. Please include **STA 4321** in the subject line.
- For questions regarding course content, please see the TAs during office hours.

Syllabus Changes: The instructor reserves the right to update any part of this syllabus as necessary. Students will be notified of any changes.

Course Policies

Demeanor

All members of the class are expected to follow rules of common courtesy in all classroom discussions, email messages, threaded discussion and chats.

Attendance

Attendance is expected and will be essential for performing well in the class. There is however, no attendance grade. Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies. For further information, refer to the [University Attendance Policies](#) for more information.

Every effort should be made to attend the exam on the specified exam dates. Makeup exams are warranted only under exceptional circumstances. Contact the instructor as soon as you realize you will be unable to take the exam at the scheduled time. Each case will be reviewed individually. Valid and detailed documentation is required for scheduling a makeup.

Participation

While participation is not graded, active engagement (e.g., asking questions, discussing concepts) is encouraged. If you have barriers to participation (e.g., anxiety, language concerns), contact the instructor to discuss alternatives. All communication should adhere to the **Demeanor** policy above.

Quizzes

- There will be approximately nine in-class quizzes. Each will take place during the final 5 to 10 minutes of class time.
- No books, notes, or other references may be used during a quiz.
- All quizzes have equal weight for grading, but **the three lowest quiz scores will be dropped**.
- No make-up quizzes will be offered.

Suggested Exercises (Homework)

Appropriate textbook readings and suggested exercises will be posted as the course progresses. You are not expected to submit your answers to the suggested exercises, but you should solve them to thoroughly learn the material and best prepare yourself for exams. Collaboration is encouraged for learning; however, assessments are completed individually.

Exams

There will be **three** in-class exams held during regular class time. **No exam scores will be dropped**. Policies and coverage details will be announced prior to each exam date.

For the exams, you are allowed one A4 sheet (front and back) of notes and a scientific calculator or four-function calculator. Graphing calculators, TI-nspires, virtual calculators, or other smart devices are NOT permitted. Appropriate tables will be provided, if necessary. You are not allowed to print your own tables.

The A4 note sheet is a collective resource prepared by the instructor in collaboration with students prior to the exam. Students may suggest edits, examples, or formulas for inclusion, but the final version is shared with all students and distributed at the start of the exam. Personal or substitute note sheets are not permitted.

Exam #1	February 11 th , 2026, at 8:30 a.m. - 9:20 a.m.
Exam #2	March 25 th , 2026, at 8:30 a.m. - 9:20 a.m.
Exam #3	April 22 nd , 2026, at 8:30 a.m. - 9:20 a.m.

Grade Corrections

If you believe there was a mistake made in the grading of your quiz or exam, please see the instructor within *one week* after the grade has been posted. Grade negotiation is not appropriate.

Grading

Grade Distribution

Assessment	Weight
Quizzes	25%
Exam 1	25%
Exam 2	25%
Exam 3	25%
Total	100%

Letter Grade Assignment

Final scores are not rounded (e.g., 89.9 = A-, not A). Grades will be assigned on the University's grading scale that includes minus-grades. Please familiarize yourself with the policy related to this scale and resulting grade point equivalences. Details may be found here: [UF Grade and Grading Policies](#).

Make-up

Requirements for other work in this course as well as policies regarding absences, religious holidays, illness and student athletes are consistent with UF Attendance Policies.

Additional Make-up Policy Requirements

- Make-up quizzes are not offered.
- Make-up exams are considered only in exceptional circumstances with valid documentation.
- If you have an emergency on the day of an exam, the instructor must be contacted by midnight of the day of the exam.

Addressing Issues

Technical Difficulties

Please contact the UF Help desk via e-Learning "Help" tab or UF IT Service Portal. Any requests for make-ups due to technical issues must be accompanied with appropriate documentation/proof including screenshots and communication with the help desk. You **MUST** contact your instructor within 24 hours of the technical difficulty if you wish to request a make-up.

Grievances/Commendations

Should you have any grievances or commendations with your experience in this course you can always address them

- to the instructor at yeison.quicenodu@ufl.edu, or
- to the Department of Statistics.

For issues that are not satisfactorily resolved at the department level or which seem to be broader than one department, students are referred to the Office of the Ombuds.

UF and CLAS Policies

Dropping, Withdrawing and Incomplete

Dropping and Withdraw

For late course drops and course withdrawals check the catalog.

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.

Accommodating Students with Disabilities

Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the Disability Resource Center. See "Get Started with the DRC" webpage <https://disability.ufl.edu/get-started/>. It is important for students to share their accommodation letter with their instructor and discuss their access needs, as early as possible in the semester.

U Matter, We Care

U Matter, We Care offers care related resources and programs focused on health, safety, and holistic well-being.

Academic Integrity

UF students are bound by The Honor Pledge:

“We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code.”

On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied:

“On my honor, I have neither given nor received unauthorized aid in doing this assignment.”

The Student Conduct Code specifies behaviors that violate this code and outlines possible sanctions. For details, visit the [Student Honor Code and Conduct Code](#) website.

If you have any questions or concerns, please consult with the instructor or TAs in this class.

Evaluations

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online. Students can complete evaluations in three ways: [1] The email they receive from GatorEvals; [2] Their Canvas course menu under GatorEvals; or [3] The central portal at <https://ufl.bluera.com/ufl/>. Guidance on how to give feedback in a professional and respectful manner is available at <https://gatorevals.aa.ufl.edu/students/>. Students will be notified when the evaluation period opens. Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/public-results/>.

Tentative Schedule

The following is a *tentative* daily lecture plan. The pace may be adjusted as needed. (Spring Break week is omitted by request.)

Daily lecture plan:

Monday, January 12 – Discussion of course policies and Motivation (*Suggested Reading Chapter 1 and Section 2.1*)

Wednesday, January 14 – Basic set theory, Sample spaces and events, Formal definition of probability (*Suggested Reading Section 2.2 and Section 2.3*)

Friday, January 16 – Fundamental theorem of counting, Permutations (*Suggested Reading Section 2.4*)

Monday, January 19 – *No class (Martin Luther King Jr. Day)*

Wednesday, January 21 – Counting rules (*Suggested Reading Section 2.5*)

Friday, January 23 – Conditional probability (*Suggested Reading Section 3.1*)

Monday, January 26 – Inclusion-Exclusion principle, Law of Total Probability, Bayes Rule (*Suggested Reading Section 3.2*)

Wednesday, January 28 – Monty Hall problem (*Suggested Reading Section 3.3*)

Friday, January 30 – Random variables, probability mass and distribution functions (*Suggested Reading Section 4.1*)

Monday, February 2 – Expected values and variance (*Suggested Reading Section 4.1*)

Wednesday, February 4 – Chebyshev's theorem (*Suggested Reading Section 4.2*)

Friday, February 6 – Bernoulli random variables (*Suggested Reading Section 4.3*)

Monday, February 9 – Binomial and Geometric random variables (*Suggested Reading Section 4.4*)

Friday, February 13 – Negative binomial random variables (*Suggested Reading Section 4.5*)

Monday, February 16 – Poisson random variables (*Suggested Reading Section 4.6*)

Wednesday, February 18 – Hypergeometric random variables (*Suggested Reading Section 4.7*)

Friday, February 20 – Recap and summary of discrete random variables (*Suggested Reading Section 4.8*)

Monday, February 23 – Continuous random variables, probability density function (*Suggested Reading Section 5.1*)

Wednesday, February 25 – Properties of probability density functions (*Suggested Reading Section 5.1*)

Friday, February 27 – Expected value and Chebyshev's inequality for continuous random variables (*Suggested Reading Section 5.2*)

Monday, March 2 – Uniform and Exponential distributions (*Suggested Reading Section 5.3*)

Wednesday, March 4 – Gamma distribution (*Suggested Reading Section 5.4*)

Friday, March 6 – Normal distribution (*Suggested Reading Section 5.5*)

Monday, March 9 – The standard normal CDF (*Suggested Reading Section 5.6*)

Wednesday, March 11 – The Beta distribution (*Suggested Reading Section 5.7*)

Friday, March 13 – The Moment Generating Function and its properties (*Suggested Reading Section 5.10*)

Monday, March 23 – Mixed random variables (*Suggested Reading Section 5.11*)

Friday, March 27 – Joint mass functions (*Suggested Reading Section 6.1*)

Monday, March 30 – Joint distribution functions (*Suggested Reading Section 6.2*)

Wednesday, April 1 – Independent random variables (*Suggested Reading Section 6.3*)

Friday, April 3 – Probabilities and expectations involving two random variables (*Suggested Reading Section 6.3*)

Monday, April 6 – General definition of independence, covariance and correlation (*Suggested Reading Section 6.4*)

Wednesday, April 8 – Conditional expectations (*Suggested Reading Section 6.5*)

Friday, April 10 – Multinomial distribution and moment generating functions for sums (*Suggested Reading Section 6.6*)

Monday, April 13 – Distribution of functions of random variables (*Suggested Reading Section 7.2 and 7.3*)

Wednesday, April 15 – Method of transformations and conditioning (*Suggested Reading Section 7.4 and 7.5*)

Friday, April 17 – Method of moment generating functions (*Suggested Reading Section 7.6*)

Monday, April 20 – Review / catch-up / practice problems

Note: Exam dates are listed in the Exams section above and are not repeated here.