

Introduction to Probability/Fundamentals of Probability

STA 4321/5325

Fall 2024

Course Information:

Section: 5516/ 5517

Time: MWF 8:30–9:20 am

Classroom: TUR2319

Instructor: Dr. Satarupa Bhattacharjee

Office hour	Contact
MWF 2:00-3:00 pm or by appointment on Zoom	Office: 203 Griffin-Floyd Hall Email: bhattacharjee.sa@ufl.edu Phone: 352-392-1941

TA: Swarnali Raha

Office hour	Contact
Tuesdays 2:30–3:30 pm Thursdays 1:00–2:00 pm or by appointment on Zoom	Office: 100A Griffin-Floyd Hall Email: swarnali.raha@ufl.edu Phone: 352-392-1941

Text: *Mathematical Statistics With Applications*, (7th Edition (2008)) by Wackerly, Mendenhall, & Scheaffer, Brooks/Cole.

Optional reading :

1. Introduction to Probability and Its Applications, (3rd Edition, Cengage) by Richard L. Scheaffer & Linda J. Young
2. A First Course in Probability (10th Edition) by Sheldon Ross

Web resource : All the assignments and lecture notes for the courses will be posted on Canvas. <https://ufl.instructure.com/courses/520314>

Prerequisite:

MAC 2313 (or equivalent third semester calculus course). A well prepared student should have taken an introductory statistics course, such as STA 2023 or STA 3032.

Course Objective:

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.

Course Contents:

- Basic formal elements of probability
- Discrete and continuous random variables
- Multivariate distributions
- Distributions of functions of random variables
- Fundamental limit theorems

Exams:

Tentative dates:

Midterm I: September 16, 2024 (Monday)

Midterm II: October 23, 2024 (Wednesday)

Final: December 12, 2024 (Thursday)

- The exams will be cumulative and will be held in TUR2319 during class time.
- The exams can only be made up for legitimate reasons, such as verified illness, participation in other university-sponsored activities, jury duty, military service, and religious observances. Only one make-up exam will be offered and you must either let the instructor know well before the scheduled day of the exam which you need to be excused from (for a non-emergency reason), or produce a proof of emergency (or medical problem) as soon after the missed exam as possible.
- A non-graphing calculator might be used for the exams and quizzes however you will not be penalized for not simplifying terms like $\binom{20}{4}/\binom{30}{6}$ make-up.
- You will be permitted to bring one 8.5 by 11 inches sheet of paper with formulas or notes written on both sides to each exam.

Quizzes:

- There will be approximately nine in-class pop-quizzes - each will take place during the final 10 to 15 minutes of class time.
- You will be informed about which week the quiz will take place but you will not know the exact day (among Monday, Wednesday, or Friday) in advance.
- There will be typically 1 or 2 problems in each quiz, based on homework exercises assigned about a week before, problems done in class, or of similar difficulty level.
- No books, notes or other references may be used during a quiz.
- All quizzes have equal weight for grading, but three of your (lowest) quiz scores will be dropped. No make-up quizzes will be offered.
- You are encouraged to discuss homework problems with other students; however, you must answer on your own during the quizzes. Solutions will be posted after the quizzes.

Homework Assignments:

- Weekly or bi-weekly homework assignments will be posted on Canvas. **Homeworks are to be submitted on Canvas on the due date.**
- Homeworks can be typed or handwritten. If handwritten, please take clear scans/photographs of the homework. The only condition is that they should be neat and legible. Illegible homeworks will not be graded.
- Solution keys will be provided on Canvas after the deadline and submissions will no longer be accepted after that.
- **Late HW submissions will not be accepted regardless of reason.**
- **One homework with the lowest score will be dropped. No exceptions to a second drop will be made.**
- **Please write STA 4321/5325 on your submitted Homework along with your name and your student ID. Follow the instructions for each individual assignment.**

Grades:

Midterm I: 25%, Midterm II: 25%, Final: 30%, Quizzes: 15%, Homework: 5%.

- The Final Exam Score will override the lowest of the two Midterm scores (percentage-wise), if applicable. This will give you a chance to perform better at the end of the course.
- One or two problems in the homeworks will be randomly graded.
- Grades will be based on relative standing in the class. Based on the composite score, the top 25% will receive at least an A-, the top 50% will receive at least a B, and the top 80% will receive at least a C-.
- The instructor and Teaching Assistant make every effort to ensure that grades assigned are scrupulously fair and reflect the quality of the work concerned. Due to this process of consultation and the use of uniform grading criteria, the TA has complete authority in all actions that she undertakes regarding the quizzes and homeworks, and the instructor is unlikely to rescind any of his decisions.
- Active participation in class will accrue extra credit (of 5 points maximum to be added to the total score of a student at the end of the semester).

Course policies:

Attendance: This course abides by the UF [Class Attendance Policy](#).

Classroom lecture attendance is fully expected, even if not strictly enforced. You are responsible for learning all material presented during lecture, and any topic covered is a potential exam topic (unless otherwise stated).

Reasonable Accommodations To request classroom accommodation, please be certain that you have made all necessary arrangements with the Dean of Students Office, and obtain from them documentation to submit to the instructor at the time of your request. A request must be made to the instructor at least one week in advance of the date for which the accommodation is requested. This course information and policies sheet can be made available in alternative formats to accommodate print-related disabilities. Contact the instructor for more information. Resources: [Disability Resource Center](#)

UF Policies All UF, College of Liberal Arts and Sciences, and Department of Statistics policies regarding ethics, honorable behavior, and mutual respect apply in this course.

- UF Grading Policy:

<https://catalog.ufl.edu/UGRD/academic-regulations/grades-grading-policies/>

- Course Evaluation :
<https://gatorevals.aa.ufl.edu/>
- UF Academic Regulations:
<https://catalog.ufl.edu/UGRD/academic-regulations/>
- ALL UF Policies and Procedures:
<https://aa.ufl.edu/policies/>
- U Matter WeCare:
<https://umatter.ufl.edu/>
- UF Registrar:
<https://registrar.ufl.edu/>
- ONE.UF:
<https://one.ufl.edu/>
- Academic Integrity:
<https://www.cise.ufl.edu/static/conflict-resolution-fall2017-presentation.pdf> and <http://www.dso.ufl.edu/sccr/honorcode.php>
- Educational Equity Statement:
https://soccrim.clas.ufl.edu/wp-content/uploads/sites/143/2023_Equity_in_Education_Syllabus.pdf
- Student Honor Code and Student Conduct Code:
<https://policy.ufl.edu/regulation/4-040/>
- Academic Misconduct:
<https://php-academic-integrity.sites.medinfo.ufl.edu/helping-students-suspecting-academic-misconduct/>
- Student Concern Reporting:
<https://report.ufl.edu/student-concern/>
- Mental Health Services:
<https://counseling.ufl.edu/resources/>

Help and Discussion: Although you are encouraged to work with other students on the class activities and discussion sessions, the homework write up and exams must be your own work. Academic dishonesty will be treated very seriously. Do not put yourself and another student in jeopardy by cheating.

Do not hesitate to get in touch with the instructor or TA if you are experiencing problems, need help, or have any questions or other course-related concerns. You can contact any of them via Canvas discussion board, an email or by coming to office hours.