STAT 3100 Introduction to Mathematical Statistics I

Section 1 **Fall 2024**

Lectures	M/W/F 11:30 a.m. – 12:20 p.m., 70 Van Allen Hall (VAN)
Instructor	Dr. Nathan Wikle, `nathan-wikle@uiowa.edu`
Office Hours	Tu/Th 2:00 – 3:00 p.m., W 10:15 – 11:15 a.m., 207 SH Students are welcome to stop by my office during these hours to discuss questions about the course material or other concerns. I am also available by appointment.
Assistant/Grader	Not yet assigned, `grader-email@uiowa.edu`
Course Website	**https://icon.uiowa.edu** Announcements, course materials (e.g., homework problems, lecture notes, etc.), and other information will be regularly posted in ICON.

Course Description and Objectives. This course introduces students to the theory of random variables and probability distributions, including: fundamental properties of probability, discrete distributions, continuous distributions, bivariate distributions, and distributions of functions of random variables. In general, this corresponds to Chapters 1–5 of the textbook.

Upon completion of this course, students will have an understanding of elementary concepts in probability and statistics, and they will be prepared for more advanced classes in statistical inference (e.g., STAT:3101).

Textbook. Hogg, Tanis, and Zimmerman (2018). *Probability and Statistical Inference*, 10th ed.

Prerequisites. MATH:1860 or MATH:1560, or equivalents (i.e., undergraduate calculus), are required prerequisites for this course. If you are unsure you satisfy these requirements, please talk with the instructor.

It is highly encouraged that you concurrently enroll in STAT:7190 (Mathematical Basics for Mathematical Statistics), a one-hour prep course offered on an S-F basis. This course will review mathematical concepts that you will see repeatedly in STAT:3100 and STAT:3101, and past experience suggests that most students who take this course will perform substantially better in STAT:3100 and STAT:3101 than they would otherwise.

Students majoring in Actuarial Science are also strongly encouraged to add ACTS:3110 (Actuarial Exam P Preparation). This 1-hr prep course is offered on an S-F basis for graduate and undergraduates. It is designed to work through a variety of probability problems (overlapping with much of the material in STAT:3100), so that students will be successful on the SOA / CAS "P" professional examination.

Course Home. The College of Liberal Arts and Sciences (CLAS) is the home of this course, and CLAS governs the add and drop deadlines, the "second-grade only" option (SGO), academic misconduct policies, and other undergraduate policies and procedures. Other UI colleges may have different policies.

- The Course Home Department is Statistics and Actuarial Science, 241 SH.

- DEO: Dr. Kung-Sik Chan, 241 SH, `kung-sik-chan@uiowa.edu`

Grading. Your semester grade will consist of the following components:

Homework	30%	
Quizzes	10%	
Midterm Exam 1	15%	week of Sep. 23–27 (tentative)
Midterm Exam 2	15%	week of Oct. 28 – Nov. 1 (tentative)
Final Exam	30%	week of Dec. 16–20 (to be determined by University)
Total	100%	

A "plus-minus" grading scale will be used for this class. As a rough guide, the scale is as follows:

- A, A- $\rightarrow$ [90%, 100%]
- B+, B, B- $\rightarrow$ [80%, 90%)
- C+, C, C- $\rightarrow$ [70%, 80%)
- D+, D, D- $\rightarrow$ [60%, 70%)
- F $\rightarrow$ [0%, 60%)

Quizzes and Exams. We will (tentatively) have four to five announced quizzes in class. They will emphasize examples and key concepts that are repeatedly mentioned in class, as well as those encountered in homework problems. There will be two midterms and one final exam; the final exam will be comprehensive. All exams will be closed book unless otherwise notified.

Final Exam. The final exam will take place the week of Dec. 16–20. The exact date, time, and location will be determined by the University's Office of the Registrar. The final exam schedules are published the fifth week of the semester (Sep. 23–27). Attendance is mandatory.

Makeup policy for Quizzes and Exams. In case of illness or emergency, contact the instructor in person or by email prior to the exam or quiz. Each case will be reviewed individually. Please see the University's policies for absences from scheduled exams.

Homework. Homework will be usually assigned on Fridays and will be due the following Friday. Homework submission will be online (via ICON) and the students are expected to upload a scanned (or typed) copy of their homework. Your work and its scanned (or typed) copy must be legible and include your name at the top to receive credit. Any exceptions will be announced in class or in Canvas. Due to time constraints, the grader may grade only some of the assigned questions, but you are responsible for understanding all questions.

Unless stated otherwise, to **receive full credit, show your work** when solving homework problems instead of just presenting a numerical result. You are encouraged to discuss and study with others. But **the submitted work must reflect your own effort**. If you do **discuss with others** on homework assignments, please: **(a) write up your own assignment** and make sure you completely understand all solutions that you submit, and **(b) write the names of the others in your study group** on your assignment.

Unless prior arrangements are made with me well in advance (for reasons judged to be acceptable by me), **late homework will receive zero credit**. However, to help cover for any unexpected emergencies, **your lowest homework score will be dropped** at the end of the semester.

Attendance. Attendance is required; relevant attendance and absence policies can be found here.

Academic Honesty and Misconduct. All students in CLAS courses are expected to abide by the CLAS Code of Academic Honesty. Undergraduate academic misconduct must be reported by instructors to CLAS according to these procedures. Graduate academic misconduct must be reported to the Graduate College according to Section F of the Graduate College Manual.

Student Complaints. Students with a complaint about a grade or a related matter should first discuss the situation with the instructor, and finally with the Director or Chair of the school, department, or program offering the course.

Undergraduate students should contact CLAS Undergraduate Programs for support when the matter is not resolved at the previous level. Graduate students should contact the CLAS Associate Dean for Graduate Education and Outreach and Engagement when additional support is needed.

Drop Deadline for this Course. You may drop an individual course before the deadline; after this deadline you will need collegiate approval. You can look up the drop deadline for this course here. When you drop a course, a "W" will appear on your transcript. The mark of "W" is a neutral mark that does not affect your GPA. Directions for adding or dropping a course and other registration changes can be found on the Registrar's website. Undergraduate students can find policies on dropping CLAS courses here. Graduate students should adhere to the academic deadlines and policies set by the Graduate College.

Accommodations for Students with Disabilities. UI is committed to an educational experience that is accessible to all students. A student may request academic accommodations for a disability (such as mental health, attention, learning, vision, and physical or health-related conditions) by registering with Student Disability Services (SDS). The student is then responsible for discussing specific accommodations with the instructor. More information is available here.

Additional University Resources and Policies.

- Basic Needs and Support for Students
- Classroom Expectations
- Exam Make-up Owing to Absence
- Free Speech and Expression
- Mental Health
- Military Service Obligations
- Non-discrimination
- Religious Holy Days
- Sexual Harassment/Misconduct and Supportive Measures
- Sharing of Class Recordings