

Math 3670

Probability and Statistics with Applications

Summer 2025

Catalog Description

Introduction to probability, probability distributions, point estimation, confidence intervals, hypothesis testing, linear regression and analysis of variance.

Prerequisites

MATH 2401 or MATH 24X1 or MATH 2411 or MATH 2551 or MATH 2550 or MATH 2X51.

Textbook

Title: Introduction to Probability and Statistics for Engineers and Scientists

Author: Sheldon Ross. Editor: academic Press. Edition: 6th edition

<https://www.sciencedirect.com/book/9780128243466/introduction-to-probability-and-statistics-for-engineers-and-scientists>.

Instructor

Dr. Alexandre Locquet, office 206.

Communication: Please send me messages exclusively via Canvas, using the “Inbox” tab on your dashboard. Kindly avoid using email.

Lecture Times

TBD

Office hours

TBD

Grading Policy

Homework	14%
Quiz 1	28%
Quiz 2	28%
Final Exam	30%

Important Dates

Quiz 1	TBD
Quiz 2	TBD
Final Exam	TBD

Quizzes and Final Exam

The quizzes and final exam will be conducted in person, closed-book, and closed-notes. The final exam will be comprehensive (cumulative). The use of a calculator is permitted.

Requests for regrading a quiz must be submitted to the instructor within one week of receiving the graded quiz. If you have a valid reason for missing Quiz 1 or Quiz 2, the weight of the missed quiz will be transferred to the final exam.

If you are dissatisfied with your performance on Quiz 1 or Quiz 2, you may request, in writing, within one week of receiving the graded quiz, to transfer the weight of one of the two quizzes to the final exam. This decision is irreversible. However, if you miss a quiz without an acceptable reason, your score for that quiz will be zero, and the weight cannot be transferred to the final exam.

If the sanitary situation requires it, the quizzes and final might be administered online at some point during the term. You can use [this](#) formula sheet for the quizzes and final.

Homework

Seven problem sets will be assigned during the course. Homework must be submitted electronically on Canvas as a single, legible PDF file. The submission time recorded on Canvas will determine whether a homework is submitted on time—no exceptions will be made.

A completion grade will be assigned as follows:

- If a homework is **submitted on time** and **every problem is answered**, the student will receive **2% credit**.
- If only one of these conditions is met, the student will receive **1% credit**.
- If neither condition is met, **0% credit** will be assigned.

Homework submitted more than **2 days late** will receive **0% credit**, even if all problems are answered.

Late homework submissions can only be excused by Dr. Voss, a Dean of Students representative. Please contact him and request that he informs me of his decision regarding your late submission.

Attendance

A **1% BONUS** is available for attendance. Attendance will be tracked using **PointSolutions Technology** and/or attendance sheets to count the number of absences.

Students must install the PointSolutions app on a mobile device. As a Georgia Tech student, the installation and use of the app are free. In the app's settings, ensure the region is set to "**North/South America**" (not Europe).

Students who miss no more than **two lectures** during the entire term will receive the **1% attendance BONUS**. Students who miss more than two lectures will receive **0% for the attendance BONUS**.

In-Lecture Polling

Students will be required to answer questions during certain lectures using the **PointSolutions app**. Bonuses will be awarded based on performance as follows:

- Students who correctly answer at least **80%** of all questions asked during the term will receive a **2% BONUS**.

- Students who correctly answer more than **60%** but less than 80% of all questions will receive a **1% BONUS**.
- Students who correctly answer less than **60%** of all questions will receive **0% BONUS** for the “In-lecture polling bonus.”

If a question is not answered—for any reason, including absence—it will be counted as **incorrect** when determining the bonus.

The session ID for PointSolutions is **gt157160**.

Student-Faculty Expectations Agreement

At Georgia Tech, we believe in fostering an atmosphere of mutual respect, recognition, and responsibility between faculty members and students. For a detailed articulation of the basic expectations you can have of me and I have of you, please refer to the Georgia Tech catalog:

<http://www.catalog.gatech.edu/rules/22/>.

Ultimately, respect for knowledge, dedication to hard work, and maintaining cordial interactions will help create the supportive and collaborative environment we strive for. I encourage you to uphold the ideals of Georgia Tech throughout this class.

Honor Code

Students are expected to adhere to the [Georgia Tech Honor Code](#) at all times. Any instances of academic misconduct will be taken very seriously and reported to the Dean of Students.

CIOS

You are encouraged to complete the **Course-Instructor Opinion Survey (CIOS)**. If **100% of the students** complete the survey, the entire class will receive a **0.5% bonus**.

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- 1.1 Origin of uncertainty
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I.4. Axiomatic Definition of Probability

- 4.1 A Special Case: the Simple Sample Space

I.5. Conditional Probability

- 5.1 Probability of Event Intersections
- 5.2 Independence of Events

I.6. Bayes' Theorem

I.7. Counting Techniques

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II.3 The Cumulative Distribution Function *Text:4.1, 4.2*

II.4 The Probability Density Function of Continuous Random Variables *Text: 4.1,4.2*

II.5 Expectation and Variance of a Random Variable *Text: 4.4,4.5,4.6*

- 5.1 Expectation
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