

# ISyE 2027 Syllabus & Course Policies

## Probability with Applications

### Instructor

Damon P. Williams, Ph.D.  
Email: [damon.williams@gatech.edu](mailto:damon.williams@gatech.edu)  
Office Location: Groseclose – Room 215 (Advising Office)  
Office Hours: Fridays 11am to 12pm

### Teaching Assistant

TBD  
Email: TBD  
Office Location: TBD  
Office Hours: TBD

### Lectures

MWF, 9:30am – 10:45am, TBD

### Exams (Online)

**Exam 1: Mon. June 22<sup>nd</sup>. (60 mins)**  
**Exam 2: Mon. July 13<sup>th</sup>. (60 mins)**  
**Final Exam: Wed. July 29<sup>th</sup>. (90 mins)**

### Textbook (Online)

Visit this below link to get purchase access to the textbook and online materials  
<https://edugen.wileyplus.com/edugen/class/cls759510/>

*Statistics and Probability for Engineers*, 7th Edition, Douglas C.  
Montgomery & George C. Runger, Wiley.

### Course Website

Canvas: <https://canvas.gatech.edu>

### Course Description:

The objective of this course is to introduce the students to topics including conditional probability, density and distribution functions from engineering, expectation, conditional expectation, laws of large numbers, central limit theorem, and introduction to Poisson Processes.

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#### Course Outcomes:

##### Statistical Knowledge:

By the end of this course, students will be able to ...

- A. Define and compute probabilities, measures of location and spread, and distribution functions for functions of random variables
- B. Compare and contrast the basic probability distributions
- C. Use and justify the Central Limit Theorem to approximate probabilities related to sums of independent, identically-distributed random variables
- D. Analyze and discuss how randomness affects a system's behavior and performance
- E. Model and analyze probability problems at the level of the news-vendor problem.

##### Engineering Practice:

By the end of the course, students will be better prepared to practice engineering by

- F. improving their engineering judgment;
- G. improving their communication skills; and
- H. improving their teamwork skills.

##### Life-long Learning:

By the end of the course, students will be better prepared for life-long learning by

- I. increasing their critical stance;
- J. improving their research skills; and
- K. strengthening their internal authority.

#### Prerequisites

You must know calculus at the level of Calculus II (Math 1502). You must also have completed or be currently enrolled in Calculus III (Math 2401).

#### Grading:

- Fun Quizzes: 25%
- Midterm Exam Reflections (2): 5%
- Exam 1: 20%
- Exam 2: 20%
- Final Exam: 30%

Students are responsible for all announcements made in class and for all changes in the schedule that are posted on the class website.

All grades will be posted to Canvas. Please check it often to ensure your grades are correct.

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Course grades will be determined by the following straight scale:

- A  $x \geq 89.45$
- B  $79.45 \leq x \leq 89.44$
- C  $69.45 \leq x \leq 79.44$
- D  $59.45 \leq x \leq 69.44$
- F  $59.44 \geq x$

#### Final Exam Replacement

If a student's final exam score is greater than the average of their Exam 1 and Exam 2 score, then their final exam score will replace their scores on Exam 1 and Exam 2.

#### Final Exam Exemption

After all grades are completed a student may exempt the final exam and accept the below course grade if their course grade is  $x$

- A  $x \geq 94.45$
- B  $x \geq 86.45$
- C  $x \geq 75.45$

#### Assignments

**Fun Quizzes:** Short two or three question quizzes given at the beginning of randomly selected class periods. *No makeup quizzes will be given.* You may pick up your graded quizzes from the TA after the grade is posted to Canvas

**Homework:** Homework will be posted on Wiley Plus (<https://edugen.wileyplus.com/edugen/class/cls759510/>). *Homework is neither collected nor graded.* Some homework questions may be used on in-class quizzes.

**Exams:** There will be online exams (midterm and final). Students are allowed a calculator and pencil for all exams.

Make up exams will only be given for official Georgia Tech accepted reasons. All make up exams must be scheduled with the Instructor at least one week prior to the exam.

**Midterm Exam Reflections:** This tool is intended for your post-exam reflection. Reviewing your midterm exams and understanding the concepts that were missed are essential in preparing for a cumulative final exam.

#### Re-grade Policy

If you believe that there has been an error in the grading of your quiz or exam, you have one week from the day it was returned to the class to submit it for a re-grade. (Note: one week is counted from the day the homework became available to the class; you do not get an extension if you chose to pick it up late.) When you resubmit the assignment, it must be accompanied by a written explanation of the suspected grading mistake *stapled to the original assignment*. Re-grades involve re-grading the entire assignment or exam; so you may, in fact, get a lower grade than your original grade.

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#### **In Class Cell Phone and Laptop Policy**

Simple: Please be respectful of your classmates and our learning community.

#### **Email**

All emails to the Instructor and/or Teaching Assistants must have [ISyE 2027] in the subject line. Failure to place this in the subject line could cause your email not to be read.

### **HONOR CODE**

All students are expected to be familiar with the Honor Code ([www.honor.gatech.edu](http://www.honor.gatech.edu)) and are bound by its requirements. You must observe the Honor Code with respect to examinations, assignments, and all other aspects of this course.

In particular:

Homework: Quizzes are individual assignments. You may not consult or collaborate with anyone (human) or anything (computer, pda, cell phone, notes, etc.) while taking a quiz.

Exams: Both exams will be closed book. You will be allowed to bring a calculator to perform simple arithmetic operations and a pencil.