

MATH 2603, INTRODUCTION TO DISCRETE MATH

Course Number: Math 2603

Course Name: Introduction to Discrete Math

Textbooks: *Discrete Mathematics with Applications* , 5th edition, by Susanna Epp .

Lecture Time: Tu, Th. 9:30-10:45AM in Instructional Center 111.

Instructor: Greg Blekherman

Office Hours: TBA.

Studios: D01, MW 12:30-1:20PM

D02, MW 12:30-1:20PM

D03, MW 12:30-1:20PM .

Classroom Expectations.

Learning Objectives: The main themes of this course are logic and proof, induction and recursion, discrete structures, combinatorics and discrete probability, algorithms and their analysis, and applications and modeling. Throughout the course, you will be expected to demonstrate your understanding of these themes by being able to do each of the following.

- Logic and Proof: Students will be able to understand mathematical reasoning in order to read, comprehend, and construct mathematical arguments, which serves as the foundation for subsequent discussions of methods of proof.
- Induction and Recursion: Students will be able to apply recursive thinking to solve combinatorial or algorithmic problems and write induction proofs.
- Discrete Structures: Students can work with discrete structures, which are the abstract mathematical structures used to represent discrete objects and relationships between these objects. The discrete structures we will study include the sets of integers and rational numbers, general sets, Boolean algebras, functions, relations, graphs and trees, formal languages and regular expressions, and finite-state automata.
- Combinatorics and Discrete Probability: Students will possess the ability to count or enumerate objects and determine discrete probabilities using basic techniques of combinatorial analysis.
- Algorithms and Their Analysis: Students will be able to perform mathematical analysis of algorithms, including specification of an algorithm, verification that it works properly, and analysis of computer memory and time required to perform it.
- Applications and Modeling: Students will learn to model real-world problems with discrete mathematics and solve these problems with abstract reasoning.

Academic Dishonesty. All students are expected to comply with the Georgia Tech Honor Code. Any evidence of cheating or other violations of the Georgia Tech Honor Code will be submitted directly to the Dean of Students. The institute honor code is available at

<http://www.honor.gatech.edu/>

Grading. Your grade will be determined based on attendance, weekly quizzes, three in-person midterms and an in-person final exam. Your grade will be according to the following scale:

Grading Scale:

(20%) Active Engagement (Attendance and Quizzes).

(45%) Midterm Exams.

(35%) Final Exam.

In case it is beneficial to your grade, I will substitute your grade on the final exam for your lowest midterm grade.

Regrade requests must be submitted within 1 week of receiving an assignments back. Requests submitted later will be rejected.

Homework: Homework will be assigned weekly. *The homework will not be collected. However, solving homework problems is key to doing well in the class.*

Active Engagement (Attendance and Quizzes): Quizzes will take place weekly on Wednesdays, with the exception of the first week, and the weeks of exams. There will be a total of 11 quizzes and each quiz will be scaled to be worth 10 points. The lowest quiz score will be dropped, so you can earn a maximum of 100 points from quizzes.

Attendance will be taken during lectures. There are 24 lectures (not including exams and the first week), and I will drop your lowest 4 scores. Each lecture is worth 1/2 point, so you can earn up to 10 points from attending lectures. Your active engagement grade will be computed out of 105 points, with the maximum score of 110.

Exams: Midterm exams will occur **in class** during scheduled class time. There will be 3 midterms with dates posted on Canvas.

How to Succeed in this Course:

Textbook: Please read the sections of the textbook and/or course material linked from Course Schedule **before coming to class**.

Homework: It is more important that you understand **method of solution** of the homework problem than just getting the right answer. If you make sure that you understand how to do problems **similar to homework problems**, it will greatly help you to succeed in the course.

If you are struggling in the course please **reach out to me early**. We will find a plan working together, but it is important that I am aware of your difficulties.

Group Study: I encourage you to study together!

Piazza: Please utilize Piazza (linked from Canvas), as much as possible for questions about the class!

Academic Support:

- Drop-In Tutoring/MathLab: <https://tutoring.gatech.edu/drop-in/>
- Center for Academic Success: <http://success.gatech.edu>
- 1-on-1 Tutoring <http://success.gatech.edu/1-1-tutoring>
- Academic coaching <http://success.gatech.edu/coaching>