Introduction to Discrete Mathematics

Last Updated: Mon, 02/09/2026

Course prefix: CS

Course number: 2050

Section: A

CRN
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Instructor first name: Ronnie

Instructor last name: Howard

Semester: Spring

Academic year: 2026

Catalog description:

This course serves as the foundational gateway to the mathematical theory of computation. Students will transition from computational problem-solving to formal mathematical reasoning, developing the rigor required to define, analyze, and prove the properties of computer science structures. The curriculum bridges abstract theory and practical application, covering the essential primitives of logic, set theory, and combinatorics.

Throughout the semester, students will explore the "why" behind computing by mastering formal proof techniques—including induction and recursion—and applying them to core CS domains such as algorithm analysis, cryptography, and models of computation. By the conclusion of the course, students will possess the mathematical vocabulary necessary for advanced study in algorithms, complexity, and data structures.

Academic honesty/integrity statement:

Students are expected to abide by the Georgia Tech Academic Honor Code. Academic misconduct is taken seriously; specifically, you are forbidden from supplying a copy of any assignment—electronically or otherwise—to another student. If you share your work and it is copied, both parties will be charged.

Collaboration Guidelines

Collaboration is a vital learning tool, but it must be handled responsibly:

Permitted: Discussing concepts, talking through logic, and assisting with high-level debugging with current CS 2050 students, TAs, or the instructor.

Prohibited: Exchanging written solutions, formulas, or LaTeX code. You may not write out solutions for others on paper, tablets, or whiteboards.

Requirement: You must list the names of all collaborators on every homework submission.

Artificial Intelligence (AI) Policy

You may use AI assistants (like ChatGPT) as learning tools, provided you follow these heuristics to ensure the work remains your own:

Never Copy/Paste: Do not copy anything from an AI conversation into your assignment.

The "Close the Tab" Rule: Use the AI to learn, then close the interaction entirely before opening your assignment to write your solution from your own revised knowledge.

No Integrated AI: Avoid using AI tools that directly add content within your composition environment (e.g., AI auto-complete for LaTeX).

Consequence of Misconduct

All submitted work must be your own unique creation. Submissions that are not fundamentally original will receive a zero and be referred to the Office of Student Integrity (OSI).

The Honor Code: https://osi.gatech.edu/students/honor-code

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