



Fordham University
Department of Computer and Information Science

Fall 2025 CISC 1100 R03: Structures of Computer Science

General Information

Instructor:	Ali Alfatemi
Email:	aalfatemi@fordham.edu
Campus:	Rose Hill (RH)
Meeting Times:	Mon & Thu, 5:30–6:45 PM
Room:	John Mulcahy Hall (JMH) 330
Office Hours:	Mon & Thu, 4:30–5:30 PM in JMH 333 (and by appointment)

Course Description

An introductory course in the discrete structures used in computer and information technology. Emphasis will be placed on the ability to solve problem and develop logical thinking. Topics such as sets, functions, elementary combinatorics, discrete probability, logic, Boolean algebra, recursion and graphs will be covered through the use of algorithmic and concrete construction. The learned materials are reinforced by computer laboratory assignments. This course also fulfills the Mathematical Reasoning requirement of the Core Curriculum.

Learning Outcomes

By the end of the course, students will be able to:

- Use propositional and predicate logic to formalize statements and construct valid proofs.
- Model and analyze problems using sets, relations, and functions.
- Apply counting techniques to solve combinatorial problems.
- Reason about algorithms using invariants, correctness arguments, and basic complexity estimates.
- (If covered) Represent and reason about graphs, including paths, connectivity, and trees.

Textbook

Fundamentals of Discrete Structures, D. M. Lyons *et al.*, 2nd ed.

Planned Topics

- Sets
- Sequences and Summations

- Formal Logic
- Relations
- Functions
- Combinatorics and Counting
- Graph Theory (time permitting)

Course Project

Students (individually or in pairs) will complete a project that models a well-defined problem using CISC 1100 concepts of Planned Topics and implements a working software solution. Tools/languages are flexible with instructor approval.

Deliverables: proposal, code, report, and short presentation/demo.

Evaluation: based on course relevance, correctness, and clarity.

Grading

The percentages given below are guidelines for both the student and instructor and may be changed as needed to reflect circumstances in the course. Any changes that occur during the semester will be minor.

Component	Weight
Participation	5%
Attendance	5%
Homework	20%
Project	15%
Midterms	30%
Final Exam	25%

Policies

- Attend all classes and participate. More than three unexcused absences may affect your grade.
- Submit work on time in Blackboard. Collaboration is allowed, but all submissions must be your own. Late work requires prior approval.
- No make-up exams.
- Follow Fordham's academic integrity policy. Cheating or plagiarism will result in disciplinary action.
- Check **Blackboard** and your Fordham email regularly for announcements and materials.

Note: The instructor may make reasonable changes to this syllabus; any updates will be announced in class and posted on Blackboard.