CS 115 Introduction to Computer Science in C++
Fall, 2025
Instructor: Dr. Jun Wu
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Office: GITC 4321A
Office Hours: Monday, Thursday 1:20 PM – 2:20 PM

Prerequisites/Co-requisites:

No Prerequisites/Co-requisites required

Course description:

Fundamentals of computer science are introduced, with emphasis on programming methodology and problem solving. Topics include basic concepts of computer systems, software engineering, algorithm design, programming languages and data abstraction, with applications. The high-level language C++ is fully discussed and serves as the vehicle to illustrate many of the concepts.

Course Learning Outcomes:

1. **C++ Fundamental Concepts**
   - Analyze and apply C++ syntax and semantics in programming solutions
   - Implement basic data types effectively, including integers, doubles, booleans, characters, and strings
   - Design and construct complex data structures, such as arrays and vectors
   - Create control flow structures, including conditionals (if-else, switch statements) and loops (for, while, do-while)
   - Design and implement functions with parameters and return values
2. **Object-Oriented Programming (OOP)**
   - Construct classes and objects with attributes and methods
   - Evaluate and implement encapsulation to ensure data integrity and security
3. **Problem-Solving Skills**
   - Analyze real-world problems and develop effective algorithms to solve them
   - Decompose complex problems into smaller, manageable modules
   - Create programming solutions using clear, organized, and efficient code
4. **Debugging and Testing**
   - Identify and resolve syntax, runtime, and logical errors using various debugging techniques
   - Design and execute multiple test cases to validate program functionality, accuracy, and robustness

Textbook:

Starting Out with C++, from Control Structures through Objects, 9th Edition
by Tony Gaddis
ISBN: 978-1-292-22233-2

Online Learning Platform: zyBooks
Instruction to subscribe:
1. Sign in or create an account at learn.zybooks.com
2. Enter code **NJITCS115WuFall2025**
3. Subscribe

Brief List of Topics to be Covered:
week 1: Introduction to C++
week 2 & 3: Variables / Assignments
week 4 & 5: Branches
week 6, 7, 8 Exam1, Loops
week 9, 10: User-Defined Functions, Exam2
week 11, 12: Arrays / Vectors
week 13, 14: Objects and Classes
week 15: Exam 3

Grading:

Attendance	10%
Participation Activities	10%
Challenge Activities	15%
Lab Activities	20%
Exam 1	15%
Exam 2	15%
Exam 3	15%
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TOTAL	100%

I will respond to all emails/Inbox messages within 48 hours. Homework will be auto-graded instantly.

Letter Grade	A	B+	B	C+	C	D	F
Numerical Grade	90-100	85-89.9	80-84.9	75-79.9	70-74.9	60-69.9	<=59.9

Policy for Late Work:

Late submissions will not be accepted unless there are special circumstances (e.g., jury duty, medical issues) with proper documentation.

Exam Policies:

ID Requirement: You must bring a photo ID to all exams. Students with special needs are advised to make arrangements with the Office of Accessibility Resources and Services, Kupfrian Hall 201.

No Makeup Exams: If you miss an exam due to a documented special circumstance, the weight of the missed exam may be imputed from the other exam.

Lockdown Browser: Lockdown Browser need to be downloaded before the exams.

Generative AI Tools and Other External Resources:

This course expects students to work without artificial intelligence (AI) assistance in order to better develop their skills in this content area. The use of AI tools to generate solutions for homework, exams, or other individual assignments is strictly prohibited in this course. Any unauthorized use of AI to complete assignments will be considered a violation of academic integrity policy.

Academic Integrity Policy:

Academic Integrity is the cornerstone of higher education and is central to the ideals of this course and the university. Cheating is strictly prohibited and devalues the degree that you are working on. As a member of the NJIT community, it is your responsibility to protect your educational investment by knowing and following the academic code of integrity policy that is found at: NJIT Academic Integrity Code.

Please note that it is my professional obligation and responsibility to report any academic misconduct to the Dean of Students Office. Any student found in violation of the code by cheating, plagiarizing, or using any online software inappropriately will result in disciplinary action. This may include a failing grade of F, and/or suspension or dismissal from the university. If you have any questions about the code of Academic Integrity, please contact the Dean of Students Office at dos@njit.edu

Cellular Phones:

The use of cell phones is not permitted during class time. If there is an issue you must addend to, please do so outside the classroom.

Accommodation of Disabilities: Office of Accessibility Resources and Services (OARS) offers long term and temporary accommodations for undergraduate, graduate and visiting students at NJIT. If you need accommodations due to a disability, please contact OARS via email at OARS@NJIT.EDU. The office is in Kupfrian Hall Room 201. For further information please visit the OARS office website at: https://www.njit.edu/accessibility/ Please notice, if you are eligible for extra time and would like to use it in the final exam,

please notify instructor and OARS at least two weeks prior to the exam so that accommodations can be made.

Student Absences for Religious Observations:

NJIT is committed to supporting students observing religious holidays. Students must notify me in writing of any conflicts between course requirements and religious observances, ideally by the end of the second week of classes and no later than two weeks before the anticipated absence. We will do our best to provide academically reasonable accommodations, allowing students to complete missed assignments, exams, quizzes, or other coursework within the term.

Academic Calendar Notice:

Please note that according to the Fall, 2025 academic calendar, October 2nd is the "Wellness Day", while the university is open that day, no class are to be held. Thursday classes meet on November 25th, 2025. Friday classes meet on November 26, 2025