



CS246 – 001: Data Structures
Department of Physics and Computer Science
COURSE SYLLABUS

Instructor:	Jonathan Skeete	Term:	Fall 2025
Office:	AB1 – 403G (upon request)	Class Meeting Days:	Mon (In Person), Wed (Online)
Phone:	TBA	Class Meeting Times:	9:00am -10:40am
E-Mail:	Jonathan.skeete@mec.science	Class Location:	AB1-C09, Zoom
Office Hours	TBA	Website:	BrightSpace, GitHub

I. Welcome!

Welcome to Data Structures.

II. University Course Catalog Description

This course introduces the different ways that data is organized and stored in computer memory and the relevant procedures used in the manipulation of that data. The idea of abstract data types (ADTs) is first introduced and then reinforced through the characterization of fundamental data structures in the discipline - stacks, queues, and trees. Other topics are recursive algorithms, dynamic storage, and complexity. Algorithms for searching and sorting are also implemented.

III. Course Overview

This course is arguably the most important course that a computer science major will take. It provides the essential building blocks utilized in software design, implementation and analysis. Students will be introduced to several data structures including lists, stacks, queues, trees and graphs, and deepen their understanding of object-oriented programming. The course will also cover sorting algorithms, divide and conquer techniques, greedy methods, recursion, dynamic programming, and algorithmic complexity

IV. Course Objectives / Student Learning Outcomes (SLOs)

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

- Demonstrate a familiarity with major algorithms and data structures.
- Analyze common computing operations performed on a variety of data structures using asymptotic and amortized analysis as appropriate.
- Choose an appropriate data structure based on application requirements.
- Use and/or modify major data structures and algorithms in a complex application.
- Understand and formulate recursive solutions to problems.

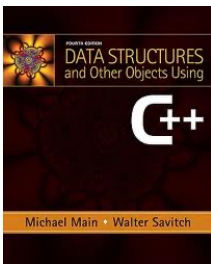
V. Course Prerequisites

CS244 Object-Oriented Programming

VI. Course Credits

3 credits; 3 class hours

VII. Required Texts and Materials



Data Structures and Other Objects Using C++, Fourth Edition, Michael Main and Walter Savitch, ISBN 0132129485

VIII. Basis for Final Grade

The final grade will be determined based on exams, quizzes, assignments, and final project as follows:

Assessment	Percent of Final Grade
Assignments	30%
Project	10%
Quizzes	20%
Midterm Exam	20%
Final Exam	20%
	100%

The final grade will be a letter based on the following table:

Grading Scale (%)	
97 - 100	A+
93 - 96.9	A
90 - 92.9	A-
87.1 - 89.9	B+
83 - 87	B
80 - 82.9	B-
77 - 77.9	C+
70 - 76.9	C
67.1 - 69.9	D+
63 - 67	D
60 - 62.9	D-
0 - 59.9	F

IX. Grade Dissemination

Grades for all exams and assignments will be posted on Brightspace.

X. Course Policies: Grades

Late Work Policy: There are no make-ups for missed assignments, or exams. Late work submissions will be assessed a penalty for each day after the deadline.

Grades of Incomplete (INC): INC grades are at the discretion of the instructor and only given in very specific circumstances. An "INC" grade is given when the student the student is doing passing work during a semester and who for some justifiable reason has not been able to complete a particular assignment or misses a final exam. Check the College catalog for further information regarding INC grades.

XI. Course Policies: Technology and Media

Computers and other electronic devices can only be used to access lecture materials. Students are not to work on other materials in class.

Students are required to check email and Brightspace with regularity to check for class information and announcements.

XII. Course Policies: Student Expectations

Attendance Policy: All students have the responsibility to arrive on time, attend class regularly, and to participate fully in the work of the course. Students who miss class are responsible to find out what was discussed and learn the material that was covered on the missed day(s). The instructor is not responsible for teaching missed material under any circumstances.

Assigned readings, problems and programs should be completed before class. Several computer programs/projects will be assigned to reinforce the concepts presented in class.

Honor Code and Plagiarism (Cheating): Students are required to sign and adhere to the departmental honor pledge. Check with the department for a copy of the pledge.

EXAMS AND QUIZZES

Cell phones or any other electronic devices cannot be used during exams. Any form of cheating during an exam will cause immediate removal from the exam and a grade of zero.

HOMEWORK ASSIGNMENTS

Unless otherwise specified, homework assignments are to be completed individually. Discussions with other people about how to solve the problem, strategies, or problems that might arise, are permitted. However, each person should write his/her own programs independently.

Do not, under any circumstances, copy another person's code/homework. Incorporating someone else's code into your program in any form will be considered plagiarism and therefore a violation of academic regulations. You must be prepared to explain any program code you submit. When a student is unable to explain the working of a piece of code that he/she submitted, no credit will be given for the homework. At the discretion of the professor, the action might be reported to the Department and the Office of Student Affairs.

Disability Access: Any student who may require accommodations due to a disability must be registered with the Office of Services for the Differently-Abled and notify the instructor at the start of the semester.

XIII. Important Dates to Remember

Check the official academic calendar from the Office of the Registrar for special dates such as last day to add/drop classes, withdrawal deadline, closings, breaks, and examinations. Notice that the exam dates can be changed at the discretion of the professor.

Week 02 – Monday (9/01/2025): NO CLASS SCHEDULED

Week 05 – Monday (9/22/2025): NO CLASS SCHEDULED

Week 05 – Wednesday (9/24/2025): NO CLASS SCHEDULED

Week 06 – Wednesday (10/01/2025): NO CLASS SCHEDULED

Week 08 – Monday (10/13/2025): NO CLASS SCHEDULED

Week 08 – Tuesday (10/14/2025): MONDAY SCHEDULE, IN PERSON

Week 09 – Monday (10/20/2025): NO CLASS SCHEDULED

Week 09 – Friday (10/24/2025): MONDAY SCHEDULE, IN PERSON

XIV. Schedule

The schedule, together with assignments, is subject to change in the progress of the course. Some topics might take longer than expected. Announcements made in the class and on Brightspace/email override the schedule in case of conflicts.

Week	Topic
1 - 3	C++ OOP Programming Review Abstract Data Types and C++ Classes Template Functions and Template Classes
4	Intro to Running Time Analysis Container Classes
6-7	Pointers and Dynamic Arrays Linked Lists
8	Stacks and Queues
9	Sets
10	Searching: Linear Search and Binary Search
11	Trees Balanced Trees
12	Hash Tables
13	Recursive Thinking
14	Sorting Algorithms
15	Graphs