

CSC300 Data Structures I - Syllabus

Contact Information

Instructor: Glenn Lancaster
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Course HomePage

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Section 501

Classroom: CDM, Room 224
Lecture Dates: Jan 07 - March 13
Time: TTh 1:30pm - 3:00pm
Final Exam: Thursday March 20, Room 224,
11:45 - 2:00

Withdraw Dates

Last Date to withdraw with tuition refund:
January 17
Last Date to withdraw (no refund): February
21

Course Summary

This is the first course in a two-course sequence on data structures using Java. The course introduces basic Java programming, reviews recursion, introduces asymptotic notations, and focuses mainly on linear data structures including arrays, linked lists and their variants, stacks and queues, and data structures supporting disjoint-set operations. The implementation of the basic operations on each data structure are discussed and analyzed in terms of their efficiency. The applications covered highlight and exploit the unique characteristics of the data structures, and emphasize problem solving and recursive thinking.

Objectives

At the end of the course, students should be able to:

- Basic OO programming techniques
- Use of debuggers
- Use of testing
- Understanding correctness of programming
- Understanding performance characteristics of programs
- Competence with iterative and recursive solutions to problems

Prerequisites

CSC242 or csc243

Text/Resources

The text is available through Depaul Library's [Safari](#) subscription in case you are delayed in getting the book. The recommended books are also available as noted.

Required Text and Reference

Text

Sedgwick, Robert and Wayne, Kevin,
[Algorithms](#), Fourth edition.
ISBN: 978-0-321-57531-3



Be sure to use this edition. If you don't have access to the book yet, partial contents, selected book exercises, etc., are available on the book site (click on the book). The full text is also available for web browsing only through [DePaul Library e-books](#) 24x7 (See Safari Books Online).

Online Java Reference

Brad Miller and James Riely, [Java For Python Programmers](#)

Recommended Books/References for Java Language

- Allan Downey, [How to Think Like a Computer Scientist](#) (other format)
- [MIT Notes](#)
- Java Texts (good if you need a java text with more details than the course text)
 - Kathy Sierra and Bert Bates, "Head First Java" ISBN: 978-0-596-00920-5
 - Cay Horstmann, "Big Java"

Software

The Eclipse IDE will be used for Java programming, testing (JUnit), and debugging in the lectures and assignments.

Tentative Schedule

Week	Topic	Text Sections
1	Java and Eclipse: Arrays, Iteration and Recursion	1.1
2	Data Abstraction, Objects, References	1.2
3	Linked Structures	1.3
4	Linked Structures and Resizing Arrays	1.3
5	Analysis	1.4
6	Midterm and Union Find	1.5
7	Union Find and Elementary Sorts	1.5 and 2.1
8	Elementary Sorts	2.1
9	Priority Queues and Heaps	2.4, 2.5, 6.1
10	Mergesort and Quicksort and Review	2.2, 2.3
11	Final Exam	

Expectations

- It is expected that you read each week's text sections before taking the corresponding online quiz.
- You may discuss the program assignments with me or with other members of the class (but do not copy others' material).
- You should start assignments early to avoid late penalties.

Assessment

Quizzes

Short weekly online quizzes will be given with questions that should be answered easily if you have read and understood that week's text section.

Program Assignments

Programs will be assigned regularly. Each program will have a specified due date of either 1 or 2 weeks. Programs may be submitted after the due date, but will incur a 10% late penalty after the official due date.

Exams

The midterm exam will be given in the 6th week.

The final will be given in the regular class room in the 11th week (Thursday, March 20).

Percentage of Final Grade

Quizzes:	15%
Programs:	30%
Midterm Exam:	25%
Final Exam:	30%

Final Course Grade Based on Total Percentage Earned

A :	93 - 100
A-:	90 - 92
B+:	88 - 89
B :	83 - 87
B-:	80 - 82
C+:	78 - 79
C :	73 - 77
C-:	70 - 72
D :	60 - 69
F :	0 - 59

Students with Disabilities

Students who feel they may need an accommodation based on the impact of a disability should contact the instructor privately to discuss their specific needs. All discussions will remain confidential.

To ensure that you receive the most appropriate accommodation based on your needs, contact the instructor as early as possible in the quarter (preferably within the first week of class), and make sure that you have contacted the Center for Students with Disabilities (CSD) at:

Student Center, LPC, Suite #370
Phone number: (773)325.1677
Fax: (773)325.3720
TTY: (773)325.7296

Incomplete Grades

A grade of IN (incomplete) may be given only in unpredictable and unexpected circumstances. It should be requested two weeks before the final exam, approved by the instructor and also by an associate dean of CDM. If approved you will have one quarter to complete the work. See [CDM's incomplete policy](#) for details.

Academic Integrity

All work submitted should be your own. You may have general discussions with the instructor and others about assigned programs and assignments. However no code should be solicited or copied from others. Code copied from the text or the text web site is allowed provided you clearly indicate the source in a comment in your code.

Copying code and submitting it as your own is a violation of DePaul's [Academic Integrity Policy](#).