

Computer Engineering 12/12L

Abstract Data Types and Data Structures

Spring 2020

Mondays, Wednesdays, and Fridays
10:30 am – 11:35 am and 1:00 pm – 2:05 pm

Instructors

Website: <http://www.cse.scu.edu/~atkinson/teaching/sp20/012/>

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Grading

Lecture

Exams (non-cumulative): 30% 4/29, 5/20, 6/8
Term Project: 10% 5/31

Laboratory

Lab Project 1: 10% 4/5
Lab Project 2: 10% 4/12
Lab Project 3: 20% 4/26
Lab Project 4: 20% 5/10
Lab Project 5: 20% 5/24
Lab Project 6: 20% 6/6

Textbooks

Required: Gilberg and Forouzan, *Data Structures – A Pseudocode Approach with C*, Brooks/Cole.
Recommended: Kernighan and Ritchie, *The C Programming Language*, 2nd edition, Prentice Hall.

Course Website

Assignments will be posted on and collected through the course website. Your username for the website is your Engineering Computer Center username, and your password is the last seven digits of your student ID. At this time, we are still evaluating the best mechanism to give the exams online.

Pathways

This course is associated with the *The Digital Age* Pathway. If you declare this Pathway, you may use a representative piece of work from this course as one of the Pathway materials you will upload during your junior or senior year.

Learning Outcomes

Students will . . .

1. Separate an abstract data type into an interface and an implementation.
2. Compare, contrast, and implement simple container data types (lists, sets, maps, priority queues).
3. Compare, contrast, and implement classic data structures (arrays, hash tables, linked-lists, trees, graphs).
4. Know the average-case and worst-case running times for common operations (insertion, deletion, retrieval, minimum, maximum) on the classic data structures.
5. Compare and contrast classic searching and sorting algorithms.

Policies

Exams

You must take the exams in the section for which you are registered. Exams will be given online during the scheduled class or final exam time. Note that although we will be using the scheduled final exam time for the last of the three exams, all exams are non-cumulative and only 65 minutes in duration.

Accessible Education

If you have a documented disability for which accommodations may be required in this class, please contact the Office of Accessible Education as soon as possible to discuss your needs and register for accommodations with the University. If you have already arranged accommodations through OAE, please ***discuss them with the instructor within the first two weeks of class.***

Academic Integrity Policy

The University is committed to academic excellence and integrity. Students are expected to do their own work and to cite any sources they use. ***A student who is guilty of a dishonest act*** in an examination, paper, or other work required for a course, ***or who assists others in such an act***, may, at the discretion of the instructor, ***receive a grade of F for the course.*** In addition, a student found guilty of a dishonest act may be subject to sanctions up to and including dismissal from the University as a result of the student judicial process as described in the *Community Handbook*. A student who violates copyright laws, including those covering the copying of software programs, or who knowingly alters official academic records from this or any other institution is subject to similar disciplinary action.