

**SCHOOL OF COMPUTER SCIENCE AND ENGINEERING
CALIFORNIA STATE UNIVERSITY, SAN BERNARDINO
Winter Quarter 2019**

Course Number:	CSE 330	Instructor:
Course Title:	Data Structures	Dr. Kerstin Voigt
Prerequisites:	CSE 202 (grade \geq C), Math 272	JBH 349
Units:	4	(909) 537-5333
Meetings:	12:00-1:15pm MW, Lecture, JB 113 1:30-3:20pm M or W, Lab, JBH-358	kvoigt@csusb.edu
Office hours:	will be announced	http://blackboard.csusb.edu

Course Description

Abstract data structures including lists, stacks, queues and trees; their storage allocation and associated application algorithms. Three hours lecture and two hours activity laboratory. Materials fee required. Prerequisites: CSE 202 with grade of C, and MATH 272. (4 units)

Course Objectives

This course teaches abstract data structures including vectors, lists, stacks, queues, sets, trees and maps. Students will learn that choices of data structures and performances of algorithms are intricately interwoven; a suitably chosen data structure can greatly facilitate and drive the solution to a problem by optimally supporting the operations of the algorithm. Students will learn how and why badly chosen data structures lead to programs with undesirable time and space performance profiles.

Student Learning Outcomes: This course contributes to the achievement of the ABET student learning outcomes

- a. An ability to apply knowledge of computing and mathematics appropriate to the discipline.
- b. An ability to analyze a problem, and identify and define the computing requirements appropriate to its solution.
- c. An ability to design, implement, and evaluate a computer-based system, process, component, or program to meet desired needs.
- i. An ability to use current techniques, skills, and tools necessary for computing practice.
- j. An ability to apply mathematical foundations, algorithmic principles, and computer science theory in the modeling and design of computer-based systems in a way that demonstrates comprehension of the trade-offs involved in design choices.

Textbook

Mark Allen Weiss, *Data Structures and Algorithm Analysis in C++*, Pearson, Fourth Edition, 2014.

Requirements

The course requirements are the regular participation in class, submission of assigned work, one midterm exam and one final exam. The course grade will be determined based on the weighed sum

$$\text{Lab} \times 0.20 + \text{Assignments} \times 0.25 + \text{Midterm} \times 0.25 + \text{Final} \times 0.3 = \text{TotalScore (max. 100)}$$

Grades

Number of points and check marks earned will add up to a score out of a maximum of 100. To this end, all points and scores you may obtain, e.g., X of Y, will ultimately counted as $X * 100 / Y$ percent and weighted according to category.

Scores translate into letter grades as follows:

Total%		100-94		93-90		89-88		87-82		81-80		79-78		77-70		69-65		64-60		59-55		54-50		49-0	
Grade		A		A-		B+		B		B-		C+		C		C-		D+		D		D-		F	

Miscellaneous Rules and Expectations

- Assignments and exam must be **individual work**.
- For lab work, teams of two are acceptable, but individual work is by no means discouraged.
- Assignments must be handed in **by the due date**. No check marks will be earned for late work.
- Students must take all **exams when scheduled**. Exceptions may be made for extenuating circumstances.
- Students are expected to read the relevant textbook chapters on their own initiative.
- **Plagiarism and other forms of cheating** not be tolerated (see below).

Schedule of Topics

This schedule of topics may be subject to change as the quarter progresses.

Week 1: C++ and Algorithm Fundamentals (Chapters 1,2)
Week 2: ADT Vector (Chapter 3) – Homework 1
Week 3: ADT Linked List (Chapter 3)
Week 4: Iterators, List Iterators (Chapter 3) – Homework 2
Week 5: Stacks, Queues, Applications (Chapter 3)

-----> **MIDTERM EXAM** <-----

Week 6: Trees, Binary Trees (Chapter 4) – Homework 3
Week 7: Searching and Sorting(Chapter 4)
Week 8: Sets and Maps (Chaper 4) – Homework 4
Week 9: Sets and Maps cont., Priority Queues (Chapters 4,6)
Week 10: Priority Queues (Chapter 6) – Homework 5

-----> **FINAL EXAM** <-----

Expect homework to consist of the programming assignment; typically. The data of the FINAL EXAM is set by the University; it can be looked up online under "Academic Calendar".

Plagiarism and Cheating

Students are expected to be familiar with the Universitys Policy on cheating and Plagiarism. Please review the relevant pages from the CSUSB Bulletin pages:

"Plagiarism and cheating are violations of the Student Discipline Code (see Appendix) and may be dealt with by both the instructor and the Judicial Affairs Officer. Procedures for addressing cheating and plagiarism are found below. Questions about academic dishonesty and the policy

should be addressed to the Office of the Vice President, Student Services. Plagiarism is the act of presenting the ideas and writing of another as one's own. Cheating is the act of obtaining or attempting to obtain credit for academic work through the use of any dishonest, deceptive, or fraudulent means. Cheating includes but is not limited to:

- Copying, in part or in whole, from another's test, software, or other evaluation instrument;
- Submitting work previously graded in another course unless this has been approved by the course instructor or by departmental policy;
- Submitting work simultaneously presented in two courses, unless this has been approved by both course instructors or by the department policies of both departments;
- Using or consulting during an examination sources or materials not authorized by the instructor;
- Altering or interfering with grading or grading instructions;
- Sitting for an examination by a surrogate, or as a surrogate;
- Any other act committed by a student in the course of his or her academic work, which defrauds or misrepresents, including aiding or abetting in any of the actions defined above. Plagiarism is academically dishonest and subjects the offending student to penalties up to and including expulsion. Students must make appropriate acknowledgements of the original source where material written or compiled by another is used.

Procedure. Allegations of academic dishonesty may be handled directly by the instructor or may be referred by the instructor to the Judicial Affairs Officer. If handled by the instructor, the instructor has the following responsibilities:

- To preserve the evidence in support of the allegation;
- To notify the student of the allegation and of the evidence on which it is based;
- To provide the student a reasonable opportunity to challenge or rebut the allegation;
- To notify the student of the action being taken.

The instructor may employ any of the following sanctions:

- Verbal or written reprimand;
- Assignment of appropriate task or examination;
- Change of grade, including assigning a punitive grade to the work involving the dishonesty, or for the course, project, thesis, or any other summary evaluation of the student's academic work.
- In determining eligibility for graduation with University Honors for with a second bachelor degree, all baccalaureate-level coursework completed past high school will be used in the GPA calculation.

If the student does not wish to accept the sanction proposed by the instructor, the student may request and require that the allegation be referred to the Judicial Affairs Officer. In that event, the procedures specified under Executive Order 970 (Student Disciplinary Procedures of the California State University) shall be observed. The instructor shall not impose any sanction other than the sanction(s) imposed through the disciplinary procedure."

Instances of academic dishonesty will not be tolerated. Cheating on exams or plagiarism (presenting the work of another as your own, or the use of another persons ideas without giving proper credit) will result in a failing grade and sanctions by the University. For this class, all assignments are to be completed by the individual student unless otherwise specified."

Dropping and Adding

You are responsible for understanding the policies and procedures about add/drops, academic renewal, etc. to be found in the CSUSB Bulletin.

Campus Policy in Compliance with the American Disabilities Act

Support for Students with Disabilities: If you are in need of an accommodation for a disability in order to participate in this class, please see the instructor and contact Services to Students with Disabilities at (909)537-5238. If you require assistance in the event of an emergency, you are advised to establish a buddy system with a buddy and an alternate buddy in the class. Individuals with disabilities should prepare for an emergency ahead of time by instructing a classmate and the instructor.