Spring 2021 CS 321 Data Structures
3 credit hours
MoWe 3:00PM - 4:15PM, Room: REMOTE

Instructor: Steve Cutchin, REMOTE, email: stevencutchin@boisestate.edu
Office Hours: Tue,Wed,Thur 1:00-2:00 and by appointment.

Textbook: Thomas H. Cormen, ... "Introduction to Algorithms"
Errata for all editions: `http://mitpress.mit.edu/books/introduction-algorithms`

Prerequisites: CS 221 and MATH 189

Course Catalog Description: Sorting, searching, and order statistics. Further data structures: trees, priority queues, dictionaries, balanced search trees, B-Trees, heaps, hash tables, and graphs.

Course Overall Objectives: At the end of the course, students will be

- able to apply the most efficient known algorithms to solve searching and sorting problems.
- familiar with variety of different data structures and their appropriate usage.
- able to choose appropriate data structures to implement algorithms.
- able to apply basic graph search algorithms (such as BFS and DFS) to applications.

Course Outline: numbers are estimates

Topic	Lectures
Getting Started (chapter 2.1 & 2.2) and Sorting Algorithms	2
More Sorting & Order Statistics (Chapter 6, 7, 8, 9)	4
Basic Data Structures (Chapter 10)	1
Hash Tables (Chapter 11)	8
Trees (Concept & Terminology, Expression Trees, Hoffman Trees)	2
Search Trees (Chapter 12 Binary Search Trees, AVL trees, Chapter 18 B-Trees)	8
Introduction to Graphs (Chapter 22)	4
Programming Assignments Discussion	3
Exams & reviews	5

Grade Information:

3 Homeworks and 4-5 Programs	50%
Test 1	15%
Test 2	15%
Final exam	20%
Total	**100%**

Exams:

- All exams are open book and open notes. But you must not use your laptop/tablet/phone during the exam.
- E-readers are acceptable but be prepared to show that WiFi is disabled for your E-reader.
- The midterm exam date will be announced at least two weeks before the exam.

Grade Scale: You are guaranteed to receive at least the grade as follows:

A+	$\geq 95\%$	A $\geq 91\%$	A− $\geq 88\%$
B+	$\geq 85\%$	B $\geq 81\%$	B− $\geq 78\%$
C+	$\geq 75\%$	C $\geq 71\%$	C− $\geq 68\%$
D+	$\geq 65\%$	D $\geq 61\%$	F $< 60\%$

- I reserve the right to lower the cutoffs if I feel it is appropriate.
- Homeworks submitted up to 24 hours past due date lose 10% of grade.
- Homeworks may be submitted up to one week late with a penalty of 50% of grade and may not be graded till the end of the semester.
- No homeworks will be accepted beyond one week from due date.

Academic Honesty: The University's goal is to foster an intellectual atmosphere that produces educated, literate people. Because cheating and plagiarism are at odds with that goal, those actions shall not be tolerated in any form. Academic dishonesty includes assisting a student to cheat, plagiarize, or commit any act of academic dishonesty. Plagiarism occurs when a person tries to represent another person's work as his or her own or borrows directly from another person's work without proper documentation.

If a student engages in academic dishonesty, the student may be dismissed from the class and may receive a failing grade. Other penalties may include suspension or expulsion from the University.

Much more information about academic integrity, including examples of academic dishonesty, is at:

`http://cs.boisestate.edu/~buff/files/www-integrity.pdf`

If you are unsure about a particular behavior, ask your instructor.

University Attendance Policy: `http://registrar.boisestate.edu/catalogs/gr-online/gr-general-policies.shtml#attendance`: Students are expected to attend classes regularly. Missing one of two first classes may result in your automatic withdraw from the class.