**San José State University**

To educate students on how to assess and determine the time complexity of algorithms.

**Course Learning Outcomes (CLO)**

Success in this course is based on the expectation that students will spend, for each unit of credit, a minimum of 45 hours over the length of the course (normally three hours per unit per week) for instruction, preparation/studying, or course related activities, including but not limited to internships, labs, and clinical practica. Other course structures will have equivalent workload expectations as described in the syllabus.

**Grading Information**

Course weightings will be as follows:

25% Assignments (programming and non-programming)
5% Participation
20% Midterm 1
20% Midterm 2
30% Final Exam

Exams may be curved up based on student performance.

Course grades will be determined by your final weighted average:
*A plus = 97% or higher*
*A = 93% up to 97%*
*A minus = 90% to 93%*
*B plus = 87% to 90%*
*B = 83% to 87%*
*B minus = 80% to 83%*
*C plus = 77% to 80%*
*C = 73% to 77%*
*C minus = 70% to 73%*
*D plus = 67% to 70%*
*D = 63% to 67%*
*D minus = 60% to 63%*
*F = 0% to 60%*
Boundary cases count as the higher of the two grades.

All students have the right, within a reasonable time, to know their academic scores, to review their grade-dependent work, and to be provided with explanations for the determination of their course grades.
See University Policy S20-2 for more details.

**Classroom Protocol**

Students must not share any course material publicly (on Canvas, GitHub, etc.) without Instructor permission, including but not limited to lecture notes, passwords, homework/exam solutions, and class meeting links.

**University Policies**

Per University Policy S16-9, relevant university policy concerning all courses, such as student responsibilities, academic integrity, accommodations, dropping and adding, consent for recording of class, etc. and available student services (e.g. learning assistance, counseling, and other resources) are listed on Syllabus Information

| | | |
|---|---|---|
| 3 | M 2/10 | Heaps and Heapsort |
| 3 | W 2/12 | Priority Queues-Linear Time Sort, Counting sort |
| 4 | M 2/17 | Bucket Sort, Quicksort |
| 4 | W 2/19 | Review for midterm 1 |
| 5 | M 2/24<br>W 2/26 | No class due to conference travel |
| 6 | M 3/3 | Midterm 1 |
| 6 | W 3/5 | Binary Search Trees |
| 7 | M 3/10 | Binary Search Trees / Hash Tables |
| 7 | W 3/12 | Hash Tables / Red-Black trees |
| 8 | M 3/17 | Red-Black trees |
| 8 | W 3/19 | Dynamic Programming |
| 9 | M 3/24 | Dynamic Programming |
| 9 | W 3/26 | Greedy Algorithms |
| 10 | M 3/31<br>W 4/2 | Spring break |
| 11 | M 4/7 | Midterm 2 |
| 11 | W 4/9 | Graph Introduction (Representation, BFS, DFS) |
| 12 | M 4/14 | Directed graph, Topological Sort, Strongly Connected Components |
| 12 | W 4/16 | Minimum Spanning Tree<br>Algorithm |
| 13 | M 4/21 | Shortest Paths: Bellman-<br>Algorithm |
| 13 | W 4/23 | Continued Shortest Paths |
| 14 | M 4/28 | NP-complete problems |
| 14 | W 4/30 | NP-complete problems |
| 15 | M 5/5 | Guest speaker workshop (internship & job search) |
| 15 | W 5/7 | Review for Final |
| 16 | M 5/12 | Review for Final |
| Final Exam | M 5/19, 20 | **Section 10: <u>Tuesday, May 20, 10:45 AM-12:45 PM</u>**, Duncan Hall, Room 416<br><br>**Section 12: <u>Thursday, May 15, 1:00-3:00 PM</u>**, Science Building, Room 311 |