San José State University School of Science/Department of Computer Science CS 146-04, Data Structures and Algorithms, Spring Semester, 2021

Course and Contact Information

Instructor:	Navrati Saxena
Office Location:	MH 214 MacQuarrie Hall Online Via Zoom during CoVID
Telephone:	(408) (924-5121)

Email:

Technology Intensive, Online Course

- 1. Online synchronous class. In class, each student is required to have an internet-connected device (e.g. smartphone, tablet, laptop computer) to be used exclusively for learning-related activities. In addition a microphone and webcam will be needed if they are not inbuilt in the internet-connected device.
- 2. This course utilizes the Learning Management Sy2.

Required Texts/Readings

Textbook

No fixed textbooks. Study materials compiled using different sources will be provided on the Canvas site.

Suggested Reading:

Main Book

 Cormen, Leiserson, Rivest and Stein, Introduction to Algorithms, 3rd Edition. ISBN-10: 0262033844. ISBN-13: 978-0262033848. MIT Press, 2009. Available at: <u>https://sjsuprimo.hosted.exlibrisgroup.com/permalink/f/egdih2/TN_cdi_askewsholts_vlebooks_978026</u> 2270830 (Links to an external site.) You will need to enter your SJSUOne ID to access the book from the above link.

Class Participation/In-class Activities

- 1. You will be presented with in-class exercises/activities in synchronous class sessions to be completed individually or in groups.
- 2. These in-class exercises will be due at the end of class
- 3. These exercises are intended to serve as a review to help you and the instructor assess learning in the class.
- 4. In order to keep the class interactive and interesting a simple question or a riddle or a motivational quote will be shared during the synchronous zoom meeting via the zoom

Grade	Percentage
A plus	95% to 100%

A

Students are not allowed to record without instructor permission.

Students are prohibited from recording class activities (including lectures, office hours, advising sessions, etc.), distributing class recordings, or posting class recordings. Materials created by the instructor for the course (syllabi, lectures and lecture notes, presentations, etc.) are copyrighted by the instructor. This university policy (S12-7) is in place to protect the privacy of the students in the course, as well as to maintain academic integrity through reducing the instances of cheating. Students who record, distribute, or post these materials will be referred to the Student Conduct and Ethical Development office. Unauthorized recording may violate university and state law. It is the responsibility of students that require special accommodations or assistive technology due to a disability to notify the instructor.

Zoom Classroom Etiquette

Mute Your Microphone: To help keep background noise to a minimum, make sure you mute your microphone when you are not speaking.

Be Mindful of Background Noise and Distractions: Find a quiet place to "attend" class, to the greatest extent possible.

- Avoid video setups where people may be walking behind you, people talking/making noise, etc.
- Avoid activities that could create additional noise, such as shuffling papers, listening to music in the background, etc.

Position Your Camera Properly: Be sure your webcam is in a stable position and focused at eye level.

Limit Your Distractions/Avoid Multitasking: You can make it easier to focus on the meeting by turning off notifications, closing or minimizing running apps, and putting your smartphone away(unless you are using it to access Zoom).

Use Appropriate Virtual Backgrounds: If using a virtual background, it should be appropriate and professional and should NOT suggest or include content that is objectively offensive or demeaning.

Attendance and arrival times

Students are expected to be set up for lecture by the time the class begins for synchronous sessions. Attendance in class is not mandatory and shall not be used per se as a criterion for grading. However, class attendance and participation are highly recommended.

Behavior

Students should remain respectful of each other at all times. Interruptive or disruptive attitudes are discouraged. During the online synchronous sessions, the use of electronic devices (laptops, tablets, and smartphones) should be limited to activities closely related to the learning objectives. All cell phones must be silenced prior to entering the synchronous sessions. Students are encouraged to keep their webcams "ON" as much as possible. To avoid disturbances, please keep yourself in mute mode, unless you would like to speak something or ask a question. You can also use the "Raise Hand" tool of zoom if you have any questions.

Students are expected to respect a diversity of opinions, ethnicities, cultures, and religious backgrounds. Students will treat online discussions with their peers as if they were in-class, face-to-face interactions.

Safety

Students should familiarize themselves with all emergency exits and evacuation plans.

Communication with the instructor

Students are encouraged to approach the instructor, Prof. Navrati Saxena, in case of any doubts or issues. The best way to approach her is to meet her during her office hours or to mail her and request for a zoom meeting. She usually responds within 2 working days. In the subject of the mail, do specify if the matter is urgent and needs immediate attention. Please start the subject of your email with the course code.

University Policies and Procedures

Per University Policy S16-9 (http://www.sjsu.edu/senate/docs/S16-9.pdf), relevant university

			Monady, Maron 10, 2021	
	8			Radix Sort and its analysis
		15	Wednesday, March 17, 2021	Review session for mid-term exam
				Practice mid-term
		16	Monday, March 22, 2021	Mid-Term Exam 20% (All sorting including heap)
	9	END OF MODULE 3		
		17	Wednesday, March 24, 2021	Review on Trees, Binary Trees
				Advanced Trees: Red-Black Trees
				Homework 4 out (Red-Black trees and B-Trees) 5%
4		18	Monday, March 29, 2021	Spring Recess (* SPRING RECESS*)
	10	19	Wednesday, March 31, 2021	Spring Recess (* SPRING RECESS*)
		20	Monday, April 05, 2021	Advanced Trees: Red-Black Trees
	11	21	Wednesday, April 07, 2021	Advanced Trees: B-Trees
				Homework 4 due
	12	22	Monday, April 12, 2021	Quiz 3. 20 minutes quiz. (RB Tree, B Tree) Open from
				8.30 AM until 9.30 AM 7%
				Introduction to Hashing
				END OF MODULE 4
		23	Wednesday, April 14, 2021	Hashing, Hash Tables and Hash Functions
		24	Monday, April 19, 2021	Resolving collisions in Hashing
	13	25	Wednesday, April 21, 2021	Quiz 4. 20 minutes quiz. (Hashing) Open from 8.30 AM
				until 9.30 AM 7%
5				Trees and Graphs BFS & DFS
			END	OF MODULE 5
		26	Monday, April 26, 2021	
	14	27	Wednesday, April 28, 2021	Greedy Algorithms and technique:
	-	28	Monday, May 03, 2021	Quiz
	15			8.30 AM until 9.30 AM 7%
				All-Pairs Shortest Paths: Floyd-Warshall
				Homework
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16	31	Wednesday, May 12, 2021	Homework 5 due
			NP-completeness, Reductions
	32	Monday, May 17, 2021	Last Day of Instruction Last Day of Classes
			Review session for end-term exam
17			Practice End-term
1	I	May 20; 09:45 - 1200	Final Examination (DFS, BFS, Prim's, Dijkastra's, Floyd-

Warshall, DP) – 20% https://www.sjsu.edu/dasses/final-exam-