

San José State University
School of Science/Department of Computer Science
CS 158A Computer Networks, Summer 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:	navrati.saxena@sjsu.edu
Office Hours:	Tuesday, 10 AM ~ 12 PM PST (Days and time) [If the office hours does not suit you, please email me and I will be happy to set up a zoom meeting with you]
Class Days/Time:	Monday/Wednesday; 1 PM ~ 3 PM
Classroom:	Online course. Zoom meetings
Prerequisites:	CS 146, and CS 147 or CMPE 120, (with grades of “C-” or better in each)
Class Zoom Link	https://sjsu.zoom.us/j/84453160016?pwd=UXI6d09OUmZKSFRNL1JTNmZLMnZQdz09
Scholar Support Hours/Office Hours Zoom Link	https://sjsu.zoom.us/j/88992056035?pwd=TFIhemlkL2l2RUtpU3RKYTVpVXRQQT09

Course Description

Introduction to computer networks, including network layered architectures, local and wide area networks, mobile wireless networks, Internet TCP/IP protocol suite, network resource management, network programming, network performance, network security, network applications, wireless networks, and current topics.

Course Format

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 System (LMS), Canvas. General information about the LMS can be found at the eCampus website - <http://www.sjsu.edu/at/ec> ([Links to an external site.](#))
3. Any operating system which can support pdf files, SJSU canvas software, and Microsoft office is needed.
4. Java compiler (version 7 or later)

MYSJSU Messaging

1. Course materials such as syllabus, handouts, notes, assignment instructions, announcements etc. can be found on Canvas Learning Management System course login website. All communications relevant to the course will be sent out using the Canvas messaging system (Canvas email and announcement board).
2. Students are responsible for regularly checking with the messaging system through Canvas to learn of any updates.
3. For help with using Canvas see Canvas Student Resources page (http://www.sjsu.edu/ecampus/teaching-tools/canvas/student_resources ([Links to an external site.](#))) or reach out to Technical Support for Canvas: Email: ecampus@sjsu.edu; Phone: (408) 924-2337; <https://www.sjsu.edu/ecampus/support/> ([Links to an external site.](#))

Course Learning Outcomes (CLO)

Upon successful completion of this course, students will be able to:

1. Become familiar with network layered architecture.
2. Have the ability to understand the client/server model and the structures and design of computer networks.
3. Understand the concepts of reliable data transfer and how TCP implements these concepts.
4. Know the principles of congestion control, of routing, etc.
5. Ability to know network programming and how to implement client/server programs.
6. Ability to configure a basic computer network.
7. Become familiar with the latest developments in networking, namely, Internet of Things (IoT), 5G Wireless Networking

Required Texts/Readings

Study materials compiled using different sources will be provided on the Canvas site.

Suggested Reading:

1. Computer Networking: A Top-Down Approach, 8th edition, by James Kurose and Keith Ross. ISBN-10: 0-13-668155-7 | ISBN-13: 978-0-13-668155-7 | ©2021 Pearson.
2. Computer Networks by Andrew Tanenbaum and David Wetherall 5th Edition Prentice Hall/Pearson.

Library Liaison

Megwalu, Anamika
Phone: 408-808-2089
Email: anamika.megwalu@sjsu.edu

Course Requirements and Assignments

1. 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.
2. This course requires students to go through the lecture materials in detail. Students are expected to develop their skills and do similar problems and analyses on their own.
3. Attainment of the learning objectives (as listed above) will be assessed via in-class activities quizzes, homework, project, and final exam.
4. Weights of these above-mentioned assessment activities (relevant for this course) are given below. Their schedule are mentioned in the week-wise schedule of the course.
5. Make-up exams and quizzes will be granted only for extenuating circumstances. Contact the instructor as soon as possible during the semester if you have such a circumstance. Absence from examinations and quizzes without prior approval will result in a score of 0.
6. All assessments - homework assignments, quizzes, project and exams will be posted and submitted on Canvas. For full credit, they must be submitted by the posted due date.

Assessment Type	Total Weightage
Four Quizzes each @ 7%	28%
Four Homework each @ 5%	20%
Project	20%
End-term exam	32%
Total	100%

Assessment	Date	Weightage
Quiz 1	June 16	7%
Homework 1	June 21	5%
Quiz 2	June 23	7%
Quiz 3	June 30	7%
Homework 2	June 30	5%
Homework 3	July 12	5%
Project submission	July 19	20%
Quiz 4	July 21	7%
Homework 4	July 28	5%
End term exam	August 4	32%
Total		100%

NOTE that [University policy F69-24 \(Links to an external site.\)](http://www.sjsu.edu/senate/docs/F69-24.pdf) at <http://www.sjsu.edu/senate/docs/F69-24.pdf> states that “Students should attend all meetings of their classes, not only because they are responsible for material discussed therein, but because active participation is frequently essential to insure maximum benefit for all members of the class. Attendance per se shall not be used as a criterion for grading.”

Grading Information: Determination of Grades

Students’ grades will be determined based on the overall percentage obtained across all of the mentioned above assessments. The benchmarks of the grades are mentioned in the table below.

<i>Grade</i>	<i>Percentage</i>
<i>A plus</i>	<i>95% to 100%</i>
<i>A</i>	<i>90% to 94%</i>
<i>B plus</i>	<i>85% to 89 %</i>
<i>B</i>	<i>80% to 84%</i>
<i>C plus</i>	<i>75% to 79%</i>
<i>C</i>	<i>70% to 74%</i>
<i>D plus</i>	<i>65% to 69%</i>

<i>Grade</i>	<i>Percentage</i>
<i>D</i>	60% to 64%
<i>F</i>	< 60%

Regrades

If you believe an error was made in the grading of your quiz or exam, you may request a regrade from me, Professor Saxena, either during my zoom office hours or by sending me an email. A request for a regrade must be made no more than a week after the quiz or exam is returned.

Classroom Protocol

Recording Zoom Classes

This course or portions of this course (i.e., lectures, discussions, and student presentations) will be recorded for instructional or educational purposes. The recordings will only be shared with students enrolled in the course through Canvas. The recordings will be deleted at the end of the semester. If, however, you would prefer to remain anonymous during these recordings, then please speak with the instructor about possible accommodations (e.g., temporarily turning off identifying information from the Zoom session, including student name and picture, prior to recording).

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 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 web page (<http://www.sjsu.edu/gup/syllabusinfo>), which is hosted by the Office of Undergraduate Education. Make sure to visit this page to review and be aware of these university policies and resources

Academic Integrity

For this class, you should obviously not cheat on tests/quizzes/exams. For quizzes and exams, you should not discuss or share code or problem solutions between groups or friends! At a minimum a 0 on the quiz or exam will be given. A student caught using resources like Rent-a-coder will receive an F for the course. Faculty members are required to report all infractions to the Office of Student Conduct and Ethical Development. All quizzes and exams that a student submits will be checked by turn-it-in for plagiarism.

Accommodations

If you need a classroom accommodation for this class and have registered with the Accessible Education Center (<https://www.sjsu.edu/aec/> ([Links to an external site.](#))), please come see me earlier rather than later in the semester to give me a heads up on how to be of assistance. Your experience in this class is important to me. If you have already established accommodations with Student Accessibility Services, please communicate your approved accommodations to me at your earliest convenience so we can discuss your needs in this course.

Course Week-wise Schedule

Week	Date	Topics	Readings	Assessments
1	Wed, Jun 2	Welcome and course introduction Computer Networks: An Introduction	Chapter 1	Pre-requisite due Jun 4
2	Mon, Jun 7	Network Performance	Chapter 1	
	Wed, Jun 9	Application layer protocols	Chapter 2	
3	Mon, Jun 14	Application layer protocols	Chapter 2	
	Wed, Jun 16	Transport layer protocols	Chapter 3	Quiz 1 - 7%; Project Out
4	Mon, Jun 21	Transport layer protocols	Chapter 3	Homework 1 due – 5%
	Wed, Jun 23	Network layer	Chapter 4	Quiz 2 - 7%;
5	Mon, Jun 28	Network layer	Chapter 5	
	Wed, Jun 30	Project Discussions / Link Layer	Chapter 6	Quiz 3 - 7% Homework 2 due – 5%
6	Mon, Jul 5	Independence Day - Campus Closed		
	Wed, Jul 7	Link Layer	Chapter 6	
7	Mon, Jul 12	Physical Layer <i>*Refer Computer Networks-Tanenbaum</i>	<i>*Chapter 2</i>	Homework 3 due – 5%
	Wed, Jul 14	Review so far		
8	Mon, Jul 19	Project Submission/Demonstration via Zoom		Project Submission/Demonstration via Zoom 20%
	Wed, Jul 21	Wireless and mobile networks: Architecture		Quiz 4 – 7%
9	Mon, Jul 26	Wireless and mobile networks: Multiple Access Protocols	Chapter 7	
	Wed, Jul 28	Optical Networks: Physical and MAC Layer	Chapter 7	Homework 4 due – 5%
10	Mon, Aug 2	Review and wrap-up		Invited Guest Visit
	Wed, Aug 4	End-term Exam		End-term Exam - 32%