SJSU SAN JOSÉ STATE UNIVERSITY

College of Science · Computer Science

Computer Networks

CS 158A

Summer 2025 Section 01 In Person 3 Unit(s) 06/02/2025 to 08/08/2025 Modified 05/23/2025

Course Description and Requisites

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.

Prerequisite(s): CS 146 and CS 47 (with a grade of "C-" or better). Computer Science or Software Engineering majors only, or instructor consent.

Letter Graded

Classroom Protocols

Communication with the instructor

Students are requested to use the Canvas message function to contact the instructor. Private messages sent to the instructor's email address gets lost due to the large volume of emails received.

The instructor does not write messages after normal business hours, on weekends or holidays.

Reviewing code for the homework and technical trouble-shooting should be done during the office hours.

Never send your entire code for an assignment to the instructor. The instructor will not fix all the bugs in your code.

Program Information

Diversity Statement - At SJSU, it is important to create a safe learning environment where we can explore, learn, and grow together. We strive to build a diverse, equitable, inclusive culture that values, encourages, and supports students from all backgrounds and experiences.

Course Learning Outcomes (CLOs)

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

- Understand the network layers and their roles.
- Understand how IP addresses and routing work.
- Understand the difference between TCP and UDP and when to use each of them.
- Understand security risks of computer networks.
- Understand the basis of emerging network technologies.
- Understand how to use a packet capturing software.
- Develop applications using both TCP and UDP.

Course Materials

"Computer Networking: A Top-Down Approach" by Jim Kurose and Keith Ross
or
"Computer Networks: A Systems Approach" by Larry Peterson and Bruce Davie [Officially available online: https://book.systemsapproach.org/ (https://book.systemsapproach.org/)]

Grading Information

Assignment	Grade Weight
Exam 1	15 %
Exam 2	15 %
Assignment 1	10 %
Assignment 2 (+ demo)	10 %
Assignment 3 (+ demo)	10 %
Assignment 4 (+ demo)	10 %
Assignment 5	10 %
Wednesday Quiz (wq) 1-5	4 % x 5 = 20 %

Extra-credits and Reworks

No extra-credit assignments or rework opportunities will be given.

Late Submission

Late submissions within 24 hours will be deducted 10% of its final grade. Submissions over 24 hours late will have 20% grade deducted. Late submissions over 2 days will not be accepted.

Missed Assignments or Exams

When students need to miss an assignment deadline or exam due to health conditions or any other emergency, it should be reported within ONE week after the due date.

Final Grade Table

Total Grade	Letter Grade
97% and above	A plus
93% to 96%	A
90% to 92%	A minus
87% to 89%	B plus
83% to 86%	B
80% to 82%	B minus
77% to 79%	C plus
73% to 76%	C
70% to 72%	C minus
67% to 69%	D plus
65% to 66%	D
60% to 64%	D minus
59% and below	F

University Policies

Per University Policy S16-9 (PDF) (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 the Syllabus Information (https://www.sjsu.edu/curriculum/courses/syllabus-info.php) web page. Make sure to visit this page to review and be aware of these university policies and resources.

Course Schedule

Date	Topic 1	Topic 2	Note
6/2	Course Introduction	Intro to Computer Networks (01)	
6/4	Intro to Computer Networks (01)	Intro to Computer Networks (01)	
6/9	Application Layer (02)	Socket Programming (02)	
6/11	Application Layer (02)	Application Layer (02)	wq1
6/16	Socket Programming: multi thread	Socket Programming: multi thread	
6/18	Socket Programming review	Transport Layer (03)	a1 due, wq2
6/23	Transport Layer (03)	Transport Layer (03)	
6/25	Transport Layer (03)	Socket Programming: Design a protocol	wq3
6/30	Socket Programming review	Exam Review 1	a2 due
7/2	Exam 1	Network Layer (04)	
7/7	Network Layer (04)	Network Layer (05)	
7/9	Socket Programming review	Wireshark	a3 due, wq4
7/14	Network Layer (05)	Network Layer (05)	
7/16	Advanced Topics in Networking	Advanced Topics in Networking	
7/21	Docker networking	Docker networking	a4 due
7/23	Link Layer (06)	Link Layer (06)	wq5
7/28	Link Layer (06)	Network Security (07)	
7/30	Network Security (07)	Network Security (07)	a5 due
8/4	Exam Review 2		
8/6	Exam 2		