San José State University Computer Science Department

CS 158-A, Computer Networks, Section 1, Fall 2022

# Course and Contact Information

**Instructor:** Dr. Faramarz Mortezaie

**Email:** [faramarz.mortezaie@sjsu.edu](mailto:faramarz.mortezaie@sjsu.edu)

**Office Hours:** Thursday 1:00 PM - 2:00 PM

Office hour Zoom Link:

<https://sjsu.zoom.us/j/89870009758>

**Class Days/Time:** MW 10:30 - 11:45 AM

**Classroom:** MH 233

**Prerequisite:** CS 146 Data Structures and Algorithms and CS 147 Computer Architecture

with grade C- or better.

# Catalog 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. Prerequisite: CS 146, and CS 147 or CMPE 120, (with grades of "C-" or better in each); or instructor consent.

# 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.

# Course Learning Objectives (CLO)

|  |  |
| --- | --- |
| CLO1 | Have an ability to know the concepts and principles underlying the structures and designs of computer net |
| CLO2 | Have an ability to understand network layered architectures and their associated benefits. |
| CLO3 | Have an ability to understand the Internet TCP/IP protocol suite. |
| CLO4 | Have an ability to know basic network programming, performance and diagnostic tools. |

**Required Texts/Readings**

**Textbook**

Computer Networks by Andrew Tanenbaum and David Wetherall fifth Edition Prentice Hall/Pearson

## Required Websites

Canvas

## Course Requirements and Assignments

SJSU classes are designed such that to be successful, it is expected that students will spend a minimum of forty-five hours for each unit of credit (normally three hours per unit per week), including preparing for class, participating in course activities, completing assignments, and so on. More details about student workload can be found in [University Policy S12-3](http://www.sjsu.edu/senate/docs/S12-3.pdf) at <http://www.sjsu.edu/senate/docs/S12-3.pdf>.

[University policy F69-24](http://www.sjsu.edu/senate/docs/F69-24.pdf) at http://www.sjsu.edu/senate/docs/F69-24.pdf states, “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

|  |  |
| --- | --- |
| Homework, Discussion, Quiz | 25% |
| Exam-1 | 25% |
| Exam-2 | 25% |
| Comprehensive Final Exam | 25% |

No late work will be accepted.

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**Grading Scale:**

|  |  |
| --- | --- |
| A+  A  A- | 98 – 100%  93 – 97%  90 – 92% |
| B+  B  B- | 88 – 89%  83 – 87%  80 – 82% |
| C+  C  C- | 78 – 79%  73 – 77%  70 – 72% |
| D+  D  D- | 68 – 69%  63 – 67%  60 – 62% |
| F | 59% and less |

This course must be passed with a C- or better in order to enroll in CMPE 50 in the following semesters.

A minimum aggregate GPA of 2.0 SJSU Studies (R, S, & V) shall be required of all students as a graduation requirement.” To see full text, review [University Policy S11-3](http://www.sjsu.edu/senate/docs/S11-3) at <http://www.sjsu.edu/senate/docs/S11-3.pdf>.

Note that “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 F13-1](http://www.sjsu.edu/senate/docs/F13-1.pdf) at http://www.sjsu.edu/senate/docs/F13-1.pdf for more details.

## Classroom Protocol

***Attendance***

Students are expected to attend all the lectures and the lab section that they are enrolled in.

***Proctoring Software and Exams***

Exams will be proctored in this course through Respondus Monitor and LockDown Browser. Please note it is the instructor’s discretion to determine the method of proctoring. If cheating is suspected the proctored videos may be used for further inspection and may become part of the student’s disciplinary record. Note that the proctoring software does not determine whether academic misconduct occurred, but does determine whether something irregular occurred that may require further investigation. Students are encouraged to contact the instructor if unexpected interruptions occur during an exam.

***Technical difficulties Internet connection issues***

Canvas AutoSaves responses a few times per minute as long as there is an internet connection. If your internet connection is lost, Canvas will warn you but allow you to continue working on your exam. A brief loss of internet connection is unlikely to cause you to lose your work. However, a longer loss of connectivity or weak/unstable connection may jeopardize your exam. Other technical difficulties: Immediately email the instructor a current copy of the state of your exam and explain the problem you are facing. Your instructor may not be able to respond immediately or provide technical support. However, the copy of your exam and email will provide a record of the situation.

Contact the SJSU technical support for Canvas:

Technical Support for Canvas

Email: [ecampus@sjsu.edu](mailto:ecampus@sjsu.edu)

Phone: (408) 924-­‐2337

<https://www.sjsu.edu/ecampus/support/>

If possible, complete your exam in the remaining allotted time, offline if necessary. Email your exam to your instructor within the allotted time or soon after.

## University Policies

### General Expectations, Rights and Responsibilities of the Student

As members of the academic community, students accept both the rights and responsibilities incumbent upon all members of the institution. Students are encouraged to familiarize themselves with SJSU’s policies and practices pertaining to the procedures to follow if and when questions or concerns about a class arises. To learn important campus information, view [University Policy S90–5](http://www.sjsu.edu/senate/docs/S90-5.pdf) at http://www.sjsu.edu/senate/docs/S90-5.pdf and SJSU current semester’s [Policies and Procedures](http://info.sjsu.edu/static/catalog/policies.html), at http://info.sjsu.edu/static/catalog/policies.html. In general, it is recommended that students begin by seeking clarification or discussing concerns with their instructor. If such conversation is not possible, or if it does not address the issue, it is recommended that the student contact the Department Chair as the next step.

### Dropping and Adding

Students are responsible for understanding the policies and procedures about add/drop, grade forgiveness, etc. Refer to the current semester’s [Catalog Policies](http://info.sjsu.edu/static/catalog/policies.html) section at http://info.sjsu.edu/static/catalog/policies.html. Add/drop deadlines can be found on the current academic year calendars document on the [Academic Calendars webpage](http://www.sjsu.edu/provost/services/academic_calendars/) at http://www.sjsu.edu/provost/services/academic\_calendars/. The [Late Drop Policy](http://www.sjsu.edu/aars/policies/latedrops/policy/) is available at http://www.sjsu.edu/aars/policies/latedrops/policy/**.** Students should be aware of the current deadlines and penalties for dropping classes.

Information about the latest changes and news is available at the [Advising Hub](http://www.sjsu.edu/advising/) at http://www.sjsu.edu/advising/.

### Consent for Recording of Class and Public Sharing of Instructor Material

[University Policy S12-7](http://www.sjsu.edu/senate/docs/S12-7.pdf), http://www.sjsu.edu/senate/docs/S12-7.pdf, requires students to obtain instructor’s permission to record the course.

* “Common courtesy and professional behavior dictate that you notify someone when you are recording him/her. You must obtain the instructor’s permission to make audio or video recordings in this class. Such permission allows the recordings to be used for your private, study purposes only. The recordings are the intellectual property of the instructor; you have not been given any rights to reproduce or distribute the material.”
* “Course material developed by the instructor is the intellectual property of the instructor and cannot be shared publicly without his/her approval. You may not publicly share or upload instructor generated material for this course such as exam questions, lecture notes, or homework solutions without instructor consent.”

### Academic Integrity

Your commitment, as a student, to learning is evidenced by your enrollment at San Jose State University. The [University Academic Integrity Policy S07-2](http://www.sjsu.edu/senate/docs/S07-2.pdf) at http://www.sjsu.edu/senate/docs/S07-2.pdf requires you to be honest in all your academic course work. Faculty members are required to report all infractions to the office of Student Conduct and Ethical Development. The [Student Conduct and Ethical Development website](http://www.sjsu.edu/studentconduct/) is available at http://www.sjsu.edu/studentconduct/.

### Campus Policy in Compliance with the American Disabilities Act

If you need course adaptations or accommodations because of a disability, or if you need to make special arrangements in case the building must be evacuated, please make an appointment with me as soon as possible, or see me during office hours. [Presidential Directive 97-03](http://www.sjsu.edu/president/docs/directives/PD_1997-03.pdf) at http://www.sjsu.edu/president/docs/directives/PD\_1997-03.pdf requires that students with disabilities requesting accommodations must register with the [Accessible Education Center](http://www.sjsu.edu/aec) (AEC) at http://www.sjsu.edu/aec to establish a record of their disability.

**CS 158A / *Computer Networks* / Fall 2022, Course Schedule**

*The schedule is subject to change with fair notice announced in class.*

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| --- | --- | --- | --- |
| Week | Date | Topics | Reading Assignments and  homework |
| 1 | 08/22  08/24 | *Orientation*  Network Models  OSI Layers | Chapter-1  Homework-1 |
| 2 | 08/29  08/31 | Introduction to Physical Layer  Digital Communication  Transmission Impairment  Shannon and Nyquist theorems | Chapter-2  Homework-2 |
| 3 | 09/05  09/07 |  | Chapter-3 Homework-2 |
| 4 | 09/12  09/14 | Data Link Layer  Data Link Layer | Chapter-3  Homework-3 |
| 5 | 09/19  09/21 | Data Link Layer  Data Link Layer | Chapter-3  Homework-4 |
| 6 | 09/26  09/29 | Review  Exam-1 | Chapters 1 to 3  Project Proposal |
| 7 | 10/03  10/05 | Medium Access Control  Medium Access Control | Chapter-4  Homework-5 |
| 8 | 10/10  10/12 | Introduction to Transport Layer | Chapter-4 and 5  Homework-6 |
| 9 | 10/17  10/19 | Flow control and Sliding window  Go back N and Selective Repeat | Chapter-5  Homework-7 |
| 10 | 10/24  10/26 | Transport Layer Protocols |  |
| 11 | 10/31  11/02 | TCP/UDP Headers  Connection establishment  3 ways handshaking | Chapter-5  Homework-8 |
| 12 | 11/07  11/09 | Review  Exam-2 | Chapters 4 and 5 |
| 13 | 11/14  11/16 | Client/Server Programming | Chapter-6  Homework-9 |
| 14 | 11/21  11/23 | Client/Server Sockets | Chapters 6 and 7  Homework-10 |
| 15 | 11/28  11/30 | Computer Security  Encryption and Decryption | Chapter-7  Homework-10 |
| 16 | 12/05  12/07 | Blockchain  Peer to Peer Networks | Formal Report |
| 17 | 12/09 | Presentation  Final Exam | 7:15 – 9:30 AM (Friday) |