SJSU SAN JOSÉ STATE UNIVERSITY

College of Science · Computer Science

Computer Network Management

CS 158B

Spring 2026 Section 01 In Person 3 Unit(s) 01/22/2026 to 05/11/2026 Modified 01/25/2026

Contact Information

Mr. Sri Rajagopal

Email: sri.rajagopal@sjsu.edu

Lecture: Mon, Wed 6:00 pm - 7:15 pm PST

Lecture room: MacQuarrie Hall 424

Office Hours: After Class: Mon/Wed 7:20 - 8:20 pm

Office: Duncan 282

Note: Can meet outside office hours by appointment over zoom

Course Description and Requisites

Principles and technologies of network management: reference models, functions (fault, configuration, performance, security and accounting management), management information, communication protocols, integration, and assessment. Network security and cyber defense: cryptography, key distribution, authentication protocols, network attacks, access control, and example systems.

Prerequisite(s): CS 158A or CMPE 148 (with a grade of "C-" or better); Allowed Majors: Computer Science, Software Engineering or Forensic Science: Digital Evidence; or instructor consent.

Letter Graded

Classroom Protocols

Effective in-class participation is crucial to doing well on assignments, quizzes and examinations. Please arrive to class on time and makesure your cell phones are silent during the lecture.

Class time will be spent in interactive lecture. You are required to bring your charged wireless laptop with internet access to class. Your laptop must remain closed except for designated activities.

AI use policy:

AI platforms can be used for research and to work on assignments, but they should never replace your own critical thinking. Students using AI should be transparent about the use in their submission in writing (what tool was used and what it was used for). Submitting AI generated work as your own without acknowledgement is not allowed. Direct reproduction (copy and paste or word for word) from AI tools is not allowed.

AI tools cannot be used for quizzes and exams. Students will require the use of lockdown browser for quizzes and exams.

Academic Integrity Policy

https://www.sjsu.edu/studentconduct/docs/SJSU-Academic-Integrity-Policy-F15-7.pdf (https://www.sjsu.edu/studentconduct/docs/SJSU-Academic-Integrity-Policy-F15-7.pdf)

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)

Explain FCAPS and map real-world tools and workflows to each function
Design a network management architecture for enterprise and cloud environments
Collect, analyze, and visualize telemetry
Diagnose faults and performance issues using monitoring and observability data
Understand control vs data plane separation, network controllers, and policy enforcement
Apply security concepts in authentication and monitoring
Manage containerized and cloud networks
Evaluate AI-driven network operations (AIOps) opportunities and limitations

Course Materials

- There is no required textbook. Class notes, slides and links to online resources will be posted on class Google drive.

Course material developed by the instructor is the intellectual property of the instructor. Students cannot publicly share or upload instructor generated material for this course such as exam questions, Programming assignment, lecture notes, lecture slides, hands-on exercises or homework solutions without instructor permission.

- For hands on labs / exercises

- Students will require their own computing environment (laptop with enough resources) to run a hypervisor (such as Oracle VirtualBox) and Virtual machine applications
- Students will require their own AWS account (AWS also offers free tier plan for upto 6 months and $200 credit)

Course Requirements and Assignments

Sufficient knowledge of Computer Networks (CS158A) is a pre-requisite. The course also makes use of lab environments on your laptop. Familiarity with hypervisor (Oracle VirtualBox or similar), Linux virtual machines and python programming language will be needed.

Assignments

Both in-class and homework assignments will be posted and submitted on Canvas. For full credit, they must be submitted by the posted due date and time. A detailed grading rubric is provided for all assignments. Please make sure you read and follow the grading rubric to ensure full credit.

Unless explicitly called out as a team work, assignments are expected to be completed individually as your own original work.

When grading an assignment, I may ask for additional information.

Quizzes

We will have a small quiz (almost) every week to check your understanding of the previous week's material. The worst 2 quizzes will be dropped for calculation of the final grade. You must be in the classroom and must use the LockDown browser to access and answer the question on Canvas. Missed quizzes cannot be made up as answers will be discussed in the class.

Midterm Exam

The midterm exam will take place in the classroom during class time on March 25.

Final Exam

The final exam is scheduled according to the SJSU Final Exam Schedule, on Wednesday, May 13, 5:30 - 7:30 pm. Please check SJSU schedule https://www.sjsu.edu/classes/final-exam-schedule/spring-

2026.php (https://www.sjsu.edu/classes/final-exam-schedule/spring-2026.php) for any updates. The final exam will be cumulative.

Grading Information

Late Assignments Policy:
Late assignments will be accepted with a 1-point penalty for each day or partial day late. Late days include weekend days. For example, an assignment due on Tuesday by 5 PM will incur a penalty of 1 point if submitted at 8 AM on Wednesday. No submissions will be accepted more than 2 days late.

Extra-credits and Reworks
No extra-credit assignments or rework opportunities will be given.

Exams:

No make-up exams are given.

Final Credit Weighting:

Assignments (Homework and In-class)	40%
Quizzes	20%
Mid Term Exam	20%
Final Exam	20%

Total Points (%)	Grade
>97	A+
93 - 97	A
90 - 93	A-
87 - 90	B+
83 - 87 %	B
80 - 83 %	B-
77 - 80 %	C+
73 - 77 %	C

70 - 73 %	C-
67 - 70 %	D+
63 - 67 %	D
60 - 63 %	D-
0 - 60 %	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

The class schedule will cover the following topics:

Introduction to Network Management
FCAPS Framework (Foundation)
SNMP
Management Planes and Architectures
Telemetry, Metrics, Logs and Traces
Fault and Performance Management
Programmable Networks
Cloud Network Management
Security and Threat Aware Network Management
AI Assisted Network Management

Important Dates

01/26/2026	Monday	First Class
03/25/2026	Wednesday	Mid Term Exam
03/30/2026	Monday	No Class
04/01/2026	Wednesday	No Class
05/11/2026	Monday	Last day of instruction
05/13/2026	Wednesday	Final Exam 5:30 - 7:30 pm