

San José State University
Department of Computer Science
CS158B, Computer Network Management, Section 1, Fall 2021

Course and Contact Information

Instructor:	Paul Nguyen
Office Location:	Online
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Office Hours:	Mondays and Wednesdays: 8:45PM – 9:45PM
Classroom:	Online: Mondays & Wednesdays: 7:30PM – 8:45PM
Prerequisites:	CS 158A or CMPE 148 (with a grade of C- or better) or instructor consent.

Course Description

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.

Course Learning Outcomes (CLO)

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

1. Understand and use fundamental network management protocols.
2. Understand the design and functionality of the SNMP protocol and use it.
3. Understand the design and functionality of CLI interfaces for network management
4. Understand the design and functionality of syslog, snmp traps
5. Understand the goals and challenges of autonomic management
6. Understand the goals and challenges of distributed management
7. Understand Internet of Things technology.
8. Familiar and Hands On with industry Network Management tools such as WhatsUp Gold, MG-Soft and Cisco IoT technologies

Textbooks/Materials

Network Management: Concepts and Practice, A Hands-On Approach, by J. Richard Burke (978-0130329509)

Cisco IoT Connected Thing materials

Other technology requirements / equipment / material for all Labs

- MG-Soft software tool
- Wireshark www.wireshark.org
- GNS3/Packet Tracer

Course Requirements and Assignments

SJSU classes are designed such that in order 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 at <http://www.sjsu.edu/senate/docs/S12-3.pdf>.

NOTE that University policy F69-24, “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

Homework: 30%
Chapter Quiz: 20%
Final project: 30%
Final Quiz: 10%
Research paper: 10%

Percentage	Grade
>97	A+
92-96	A
90-91	A-
88-89	B+
82-87	B
80-81	B-
78-79	C+
72-77	C
70-71	C-
60-69	D
59 and below	F

Classroom Protocol

- Attendance is crucial to doing well on assignments and examinations.
- The pre-requisites to this course will be monitored.

University Policies

Per [University Policy S16-9](http://www.sjsu.edu/senate/docs/S16-9.pdf) (<http://www.sjsu.edu/senate/docs/S16-9.pdf>), relevant information to all courses, such as academic integrity, accommodations, dropping and adding, consent for recording of class, etc. is available on Office of Graduate and Undergraduate Programs' [Syllabus Information web page](http://www.sjsu.edu/gup/syllabusinfo/) at <http://www.sjsu.edu/gup/syllabusinfo/>.

CS 158B / Computer Networks Management, Fall 2021, Course Schedule

This detailed outline is subject to change based on the needs of the class. Updates will be notified in the class and Canvas will be kept up to date.

Course Schedule

Week	Date	Topics, Readings, Assignments, Deadlines
1	8/23 M	Course Introduction
1	8/25 W	Review networking protocols
2	8/30 M	Review building a network with RIP protocol
2	9/1 W	Review building a network with OSPF protocol
3	9/6 M	No class
3	9/8 W	Review building a network with OSPF protocol
4	9/13 M	Cisco NetAcad: Things and Connections
4	9/15 W	Cisco NetAcad: Things and Connections
5	9/20 M	Cisco NetAcad: Networks, Fog and Cloud Computing
5	9/22 W	Cisco NetAcad: Networks, Fog and Cloud Computing
6	9/27 M	SNMP and Network Device simulator
6	9/29 W	SNMP and Network Device simulator
7	10/4 M	Introduction to MG Soft Tool, PRTG, GNS3, and What'sUp Gold
7	10/6 W	Introduction to MG Soft Tool, PRTG, GNS3, and What'sUp Gold
8	10/11 M	Cisco NetAcad: Digitization of the Business
8	10/13 W	Cisco NetAcad: Digitization of the Business
9	10/18 M	Cisco NetAcad: Create an IoT Solution
9	10/20 W	Cisco NetAcad: Create an IoT Solution
10	10/25 M	Research paper discussion
10	10/27 W	Final Project discussion
11	11/1 M	Final Project discussion
11	11/3 W	Building simulation network with GNS3
12	11/8 M	Building simulation network with GNS3
12	11/10 W	No Class
13	11/15 M	Research paper due
13	11/17 W	Final Project Demonstration

Week	Date	Topics, Readings, Assignments, Deadlines
14	11/22 M	Final Project Demonstration
14	11/24 W	No Class
15	11/29 M	Final Project Demonstration
15	12/1 W	Final Project Demonstration
16	12/6 M	
Final Exam	12/8 W	7:45-9:00 PM