

San José State University
Science/Computer Science
CS 158B, Network Management, Section 1, Fall 2018

Course and Contact Information

Instructor:	Ben Reed
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Office Hours:	Monday & Wednesday 10:30-11:30, 3:00-4:00 Tuesday & Thursday 10:30-11:30, 1:00-2:00
Class Days/Time:	Monday & Wednesday/ 1:30-2:45
Classroom:	MH 422
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. Prerequisite: CS 158A or CMPE 148 (with a grade of "C-" or better), or instructor consent.

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 and use the facilities provided by SNMP.
3. Understand how VLANs work and why they are used.
4. Understand how firewalls work and manage them.
5. Understand PKI key distribution.
6. Experience the challenges of managing networked systems.
7. Know how to monitor and manage faults in networked systems.
8. Know how to use packet capture tools to understand problems in networks.

Required Texts/Readings

Textbook

We will refer to a variety of online material

Other technology requirements / equipment / material

Programming assignments will be a significant part of this course, so access to a computer is required.

Course Requirements and Assignments

Homework will be given, but will not be graded. It is intended for self evaluation and will be the basis for future exams. I encourage students to work on homework in groups and discuss possible solutions together. We will take time at the beginning of each class to discuss any difficulties students have completing the homework.

It is anticipated that programming projects will be assigned each week on Tuesday during class, and will be due the following Monday at 5PM. Any assignments turned in late on the Monday it is due will have 10 points deducted from the final score. Any assignments turned in late after the Monday it is due will have 20 points deducted.

Programming assignments are not group projects. If students get help on assignments, even to resolve a stupid problem, it must be documented in the code with the name of the person rendering the help and a brief description of the help provided. Extensive help on a project will result in a reduced grade. Failure to document help, or any other forms of cheating will result in a failing grade on the assignment at a minimum and may result in failure of the course.

The [University Policy S16-9](http://www.sjsu.edu/senate/docs/S16-9.pdf), Course Syllabi (<http://www.sjsu.edu/senate/docs/S16-9.pdf>) requires the following language to be included in the syllabus:

“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, including but not limited to internships, labs, and clinical practica. Other course structures will have equivalent workload expectations as described in the syllabus.”

Final Examination or Evaluation

This course will have a cumulative final exam given during exam week.

Grading Information

Determination of Grades

Grades will be calculated by averaging the percentages of the average of group project grades, the individual project grades, the two mid semester exams, and the final. Thus, the grade distribution is 20% group projects, 20% individual projects, 20% exam 1, 20% exam 2, 20% final exam.

Percentage	Grade
92 and above	A
90-91	A-
88-89	B+
82-87	B
80-81	B-

78-79	C+
72-77	C
70-71	C-
68-69	D+
62-67	D
60-61	D-
59 and below	F

Classroom Protocol

This is your class. Please ask questions. Please come prepared. Do not engage in activity that may distract other students.

University Policies

Per University Policy S16-9, university-wide policy information relevant to all courses, such as academic integrity, accommodations, etc. will be 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/>” **Make sure to review these policies and resources.**

CS 166 / Information Security, Sections 3&5, Fall 2018 Course Schedule

Course Schedule

Week	Date	Topics, Readings, Assignments, Deadlines
1	8/22/2018	TFTP/historical perspective
2	8/27/2018	PXE
2	8/29/2018	tunnels/packet capture
3	9/3/2018	holiday
3	9/5/2018	SNMP intro
4	9/10/2018	ASN.1/MIB
4	9/12/2018	traps/inform
5	9/17/2018	SNMP v2
5	9/19/2018	SNMP v3 security
6	9/24/2018	YANG
6	9/26/2018	Review

7	10/1/2018	Exam 1
7	10/3/2018	IPtables
8	10/8/2018	network commands
8	10/10/2018	sar
9	10/15/2018	JMX
9	10/17/2018	monitoring
10	10/22/2018	syslog
10	10/24/2018	VLANs
11	10/29/2018	responding to problems
11	10/31/2018	post mortems
12	11/5/2018	Exam 2
12	11/7/2018	SSL
13	11/12/2018	holiday
13	11/14/2018	PKI
14	11/19/2018	tools of PKI
14	11/21/2018	holiday
15	11/26/2018	IPsec
15	11/28/2018	chatter on the wire
16	12/3/2018	arp poisoning/rogue dhcp/DNS attacks
16	12/5/2018	network scanning/fingerprints
17	12/10/2018	Review
Final Exam	12/12/2018	Starts at 12:15