San José State University
Aviation and Technology Department
Tech 66 Network Administration, Fall 2018

Course and Contact Information

Instructor	Dennis C. Frezzo, PhD
Office Location	Meet in E490
Telephone	Department Phone (408) 924-3192
Email	dennis.frezzo@sjsu.edu
Office Hours	Th 5:30-5:55 PM
Class Days/Time	Lecture Tu/Th 4:30-5:20 PM; Lab Th 6:00-8:45 PM
Classroom	E490
Prerequisites	Required: Tech 65. Helpful: CompE 30, some Linux, home networking.

Course Materials

Some course materials including the will be found on the SJSU CANVAS site for the course, and that will be the official system of record. Login instructions can be found at http://online.sjsu.edu. You must be registered in the course to receive access. Day-to-day, materials will be at https://www.netacad.com, the Cisco Networking Academy "Routing and Switching Essentials"/CCNA 2 course, and through the NetLab System. Accounts will be established and verified in class. A laptop with some type of hypervisor software (to allow the installation of virtual machines), Packet Tracer 7.2 (Windows or Linux version), Wireshark, terminal emulation software, and other free software as needed is required. No books are required though I will make suggestions.

Course Description

Review of key TCP/IP Protocol stack technologies. Design, configuration, and troubleshooting of switched and routed networks. VLANs. Static and Dynamic Routing. Networking Management protocols and technologies for administering networks. LANs,WANs; Edge, Fog, and Cloud computing. IoT and the Future of Networking. Preparation for Certification.

Course Learning Outcomes

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

1. Explain how a router will forward traffic based on the contents of a routing table
2. Implement static routing
3. Implement basic dynamic routing with RIP and contrast with EIGRP, OSPF, and BGP.
4. Explain how switching operates in a small to medium-sized network
5. Configure Ethernet switch ports and WiFi
6. Implement VLANs
7. Implement DHCP, NAT, and ACLs
8. Configure monitoring tools available for small to medium-sized networks
9. Use monitoring tools and network management protocols to troubleshoot data networks

10.   Explain simple sysadmin, devops, network tech, and network engineer job responsibilities
11.   Explain emerging network terminology including virtualization, NFV, automation, network programmability, IoT, Cloud, SDN, and IBN

Required Text/Readings

Course reading materials will be provided online by the instructor.

Course Requirements and Assignments

All assignments with description, due dates, and submission guidelines will be posted online.

Laboratory Assignments

Lab instructions will be provided to the students to perform assignments and for safe laboratory conduct.

Final Examination or Evaluation

The final exam will be comprehensive, covering all material presented in class. There will be no make-ups for missed exams, except for medical or other reasons outside the student's control, and such must be documented by written notice.

Grading Information

Course grade will be based on models, labs, activities, assessments, and a project with the following weight:

Homework	20%
Labs and In-Class Activities	40%
Quizzes, Chapter Exams, Performance Exam, and Final	40%

Determination of Grades

There will be no curving of grades. Final grades will be assigned as follows:

A 93-100	A- 90-92`	B- 80-82
B+ 87-89	B 83-86	C- 70-72
C+ 77-79	C 73-76	D- 60-62
D+ 67-69	D 63-69	F < 60

Classroom Protocol

Class participation and attendance are expected and recorded each week.

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 at http://www.sjsu.edu/gup/syllabusinfo/"

Tech 66 Network Administration

Fall 2018 Course Schedule / Outline

Week	Subject (may change as class needs dictate)
1	08/21: Review of Tech 65 and Cisco Introduction to Networking
2	08/28: Chapter 1 Routing Concepts plus more IPv4 and IPv6. Telnet and SSH; Lab 1 - Orientation
3	09/04: Chapter 2 Static Routing plus more home networking. No Lecture Tuesday. Lab 2 – Routing.
4	09/11: Chapter 3 Dynamic Routing with RIP plus intro to EIGRP, OSPF, and BGP. Lab 3 – Routing Protocols.
5	09/18: Chapter 4 Switched Networks plus WiFi design.
6	09/25: Chapter 5 Switch Configuration plus WiFi configuration. Lab 4 – Build a LAN
7	10/02: Chapter 6 VLANs plus Multilayer Switching. Lab 5 – Realistic LANs.
8	10/09: Chapter 7 TCP/IP Review and Access Control Lists plus IPv6 Lists (part 1)
9	10/16: Chapter 7 TCP/IP Review and Access Control Lists plus IPv6 Lists (part 2). Lab 6 - ACLs
10	10/23: Chapter 8 DHCP plus Overall IP Address Planning
11	10/30: Chapter 9 NAT plus more IPv6. Lab 7 – Services.
12	11/06: Chapter 10 Device Discovery, Management, Maintenance plus HTTP, SNMP. Lab 8 – Manage.
13	11/13: The Internet of Things and The Future of Networking
14	11/20: Thanksgiving Week. Online Lecture Tuesday. No in-person meetings.
15	11/27: Review for Tech 66 Final and CCENT Certification Exam. Lab 9 – Practice.
16	12/04: Skills Demonstration Exam. Lab 10 – Performance Exam.
17	12/14: Final Exam, Friday, 12/14, 1445-1700