San José State University
College of Engineering/Department of Aviation and Technology
Tech 65, Networking Theory and Application, Lec/Lab 02/12, Fall, 2018

Course and Contact Information

Instructor:	Richard Grotegut
Office Location:	TBD
Telephone:	(925) 354-8785
Email:	richard.grotegut@sjsu.edu
Office Hours:	Wednesdays 11:30 to 12:30
Class Days/Time:	LEC: M/W 1030 1120; LAB: M 1200 1445
Classroom:	ENG 490

Course Description

Introduces the architecture, structure, functions, components, and models of the Internet and other computer networks. The principles and structure of IP addressing and the fundamentals of Ethernet concepts, media, and operations are introduced. Students will build simple LANs, perform basic configurations for routers and switches, and implement IP addressing schemes. Preparation for Cisco certification examination.

Course Learning Outcomes (CLO) (Required)

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

1. Describe the devices and services used to support communications in data networks and the Internet.
2. Describe the role of protocol layers in data networks.
3. Describe the importance of addressing and naming schemes at various layers of data networks in IPv4 and IPv6 environments.
4. Design subnet masks and addresses to fulfill given requirements in IPv4 and IPv6 networks.
5. Explain fundamental Ethernet concepts such as media, services, and operations.
6. Build a simple Ethernet network using routers and switches.
7. Use Cisco command-line interface (CLI) commands to perform basic router and switch configurations.
8. Utilize common network utilities to verify small network operations and analyze data traffic.

Textbook/eLearning Material

Online Multimedia: www.netacad.com (Curriculum and Testing)
Login Name / Password: _____ / _____

Introduction to Networks, Companion Guide (**Optional**) ISBN Book: 9781587133169, eBook: 9780133475449
Introduction to Networks, Labs and Study Guide (**Optional**) ISBN 9781587133534

Other technology requirements / equipment / material

Resources: Packet Tracer v7.1 (supplied or available for download)
USB Flash Drive (4-gig or more)

Course Requirements and Assignments

You are expected to spend at least 3 to 5 hours per week outside class on homework assignments and review materials via the Internet. Attend all class meetings and seek clarification to understand the concepts presented by completing all the course modules, asking questions, participating in class discussions and activities, and utilize available resources. Participation and completion of all labs is required and will be done in-groups during class time. Due to the nature of this class and its labs, assignments will be given on a week-by-week basis. Lab rules will be strictly adhered to for the safety of the student, to prevent damage to the equipment, and to avoid interference with other students.

Grading Information (Required)

A large percentage of this course is computer-based training and therefore attendance and completion of all modules is key to obtaining a good grade. There will be class labs/activities, assessment exams and Midterm and Final exams.

Grading Information

Grading Percentages	
Labs/Activities / Summary Information	25
Chapter Assessments (11 total)	10
Mid-Term Exam	20
Skills Based Final	20
Final Exam (online)	20
Quizzes	5
Total	**100**

GRADE	**A**	**B**	**C**	**D**	**F**
%	**>= 90%**	**80-89%**	**70-79%**	**60-69%**	**<60%**

Final grades will be submitted no later than ten working days from completion of the last class. Student performance will be evaluated as follows:

- **Labs/Activities**: While labs may be done in teams and may vary depending on class progress, the results will be submitted individually. The goal is to complete each lab successfully and then be able to document what happened in the lab.
  *Lab grading may be based on different criteria; however each lab should be completed and turned in by the due date for the lab. Points may be deducted for late submissions.
- **Chapter Exams** are taken online via the Cisco Exam site.
- **Quizzes** will be given randomly, typically at the beginning of class, covering material from the previous class session(s).

Final Examination or Evaluation

- The **Skills Based Final** will be an individual effort to demonstrate your proficiency in applying the concepts learned in class. Class notes will be available during the skill based final exam for reference purposes.
- **Midterm and Final Assessment Exams**: Possession of any reference material during an exam, not expressly permitted by the Instructor (if any), or any other form of cheating or attempts at cheating, may result in a loss of all points for that exam.
- **Regardless of overall point total**:
  - Students MUST get a grade of 60% or better on the Skills Final and the Final Exam to get a ‘C’ or better in this class.
  - Students must take both the Skills Final and Cisco Final Exam to pass the class.

Classroom Protocol

Due to the nature of the course, attendance at all class meetings is required and will directly affect your grade. Attendance records will be maintained. If you are late to a class or must leave early it is your responsibility to make sure you are marked present for that date and obtain lecture notes/handouts! Classes begin promptly at the scheduled time. If a situation arises where the student cannot attend a class, it is the student's responsibility to meet with the instructor regarding any makeup work. The instructor may withdraw a student from a class if they have accumulated unofficial absence hours in excess of 20% of the total classroom hours the class meets. Official absences are defined as those in which you are involved in an official activity of the college, or could also mean prior approval obtained from the Instructor.

University Policies

Academic integrity

Your commitment as a student to learning is evidenced by your enrollment at San Jose State University. The University's Academic Integrity policy S07-2, located at http://www.sjsu.edu/senate/S07-2.htm, 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 is available at http://www.sjsu.edu/studentconduct/.

Instances of academic dishonesty will not be tolerated. Cheating on exams or plagiarism (presenting the work of another as your own, or the use of another person's ideas without giving proper credit) will result in a failing grade and sanctions by the University. For this class, all assignments are to be completed by the individual student unless otherwise specified. If you would like to include your assignment or any material you have submitted, or plan to submit for another class, please note that SJSU's Academic Integrity Policy S07-2 requires approval of instructors.

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 at http://www.sjsu.edu/president/docs/directives/PD_1997-03.pdf requires that students with disabilities requesting accommodations must register with the Disability Resource Center (DRC) at http://www.drc.sjsu.edu/ to establish a record of their disability.

Student Technology Resources

Computer labs for student use are available in the Academic Success Center at http://www.sjsu.edu/at/asc/ located on the 1st floor of Clark Hall and in the Associated Students Lab on the 2nd floor of the Student Union. Additional computer labs may be available in your department/college. Computers are also available in the Martin Luther King Library.

Tech 65 / Networking Theory and Application, Fall 2018, Course Schedule

Week	Date	Topics, Readings, Assignments, Deadlines
1	Aug 22	Introduction to class. Syllabus, log in procedures, Cisco NetAcad portal account creation, how to use the on-line curriculum,
2	Aug 27 Aug 29	MON: Chapter 1: Exploring the Network; LAB: Introduction to Packet Tracer WED: Assignments and Labs, Chap 1 (cont)
3	Sept 3 Sept 5	MON: Labor Day - Campus Closed – No Class WED: Chapter 2: Configuring a Network Operating System
4	Sept 10 Sept 12	MON: Chapter 2: (cont), LABS: Building a Simple Network; Configuring a Switch Management Address WED: Chapter 2 (cont) and Quiz
5	Sept 17 Sept 19	MON: Chapter 3: Network Protocols and Communications, LAB: Wireshark; Using Wireshark to View Network Traffic WED: Chapter 3 (cont) and Quiz
6	Sept 24 Sept 26	MON: Chapter 4: Network Access; LABS: Identifying Network Devices and Cabling; Building an Ethernet Crossover Cable WED: Chapter 4 (cont) and Quiz
7	Oct 1 Oct 3	MON: Chapter 5: Ethernet; LABS: Using Wireshark to Examine Ethernet Frames; Viewing Network Device MAC Addresses; Viewing the Switch MAC Address Table WED: Chapter 5 review and Quiz
8	Oct 8 Oct 10	MON: Lecture Only. NO LAB Scheduled WED: CLASS SESSION CANCELLED; off campus assignment to be determined.
9	Oct 15 Oct 17	MON: Chapter 6: Network Layer; LAB: Building a Switch and Router Network WED: Chapter 6 (cont) and Quiz
10	Oct 22 Oct 24	MON: Chapter 1-6 Review: LAB: MIDTERM Practical Exam WED: Midterm Practical Exam Review Assessment
11	Oct 29 Oct 31	MON: Chapter 7: IP Addressing; LABS: Configuring IPv6 Addresses on Network Devices; Testing Network Connectivity with Ping and Traceroute WED: Chapter 7 (cont) and Quiz
12	Nov 5 Nov 7	MON: Chapter 8: Subnetting IP Networks; LAB: Designing and Implementing a Subnetted IPv4 Addressing Scheme; Designing and Implementing a VLSM Addressing Scheme WED: Chapter 8 (cont) and Quiz
13	Nov 12 Nov 14	MON: Veteran's Day (Observed) - Campus Closed (V) WED: Chapter 9: Transport Layer
14	Nov 19 Nov 21	MON: Chapter 9 (Cont); LAB: Using Wireshark to Observe the TCP 3-Way Handshake; Using Wireshark to Examine a UDP DNS Capture; Using Wireshark to Examine TCP and UDP Captures WED: Non-Instructional Day – Campus Open
15	Nov 26 Nov 28	MON: Chapter 10 Application Layer; LABS: Observing DNS Resolution; Exploring FTP WED: Chapter 11 Build a Small Network: Build a Small Network
16	Dec 3 Dec 5	MON: Chapter 11 (cont); LABS: Accessing Network Devices with SSH; Securing Network Devices; Class Activity - Design and Build a Small Network WED: Review for FINAL
Final Exam	Dec 10	MON: During Scheduled LAB time.

Class Schedule - Subject to change based on class progress