

San José State University
Department of Aviation & Technology
Tech 65 Networking Theory and Applications, Section 01, Fall 2016

Course and Contact Information

Instructor:	Dr. Julio R. Garcia
Office Location:	IS 101
Telephone:	(408) 924 3222
Email:	julio.garcia@sjsu.edu
Office Hours:	MW: 1430 – 1530
Class Days/Time:	MW 1100 - 1145. Lecture MW 1200 - 1315, Lab Section 13 T 0900 - 1145, Lab Section 15
Classroom:	IS 216 Lecture IS 117. Lab Section 13 Eng 103. Lab Section 15
Prerequisites:	Tech 60 or equivalent

Course Format

Faculty Web Page and MYSJSU Messaging

Course materials such as syllabus, handouts, notes, assignment instructions, etc. can be found r on [Canvas Learning Management System course login website](http://sjsu.instructure.com) at <http://sjsu.instructure.com>.

Course Description

Introduction to networks and networking concepts. Network architectures. Network media. Configuring network operating systems. Making networks work. Network topology, standards, and protocols. Basic network design.

Course Learning Outcomes (CLO)

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

1. Describe the limitations, advantages, and disadvantages of each major network architecture, including Ethernet, token ring, AppleTalk, ARCnet, FDDI, and ATM.

2. Identify LANs and select appropriate hardware and software for specific networking needs.
3. Manage a computer network.
4. Design and setup a small network..

Required Texts/Readings

Textbook

Tomsho, G. (2016). Guide to Networking Essentials, (7th Ed). Cambridge, MA: Course Technology. ISBN-13: 9781305105430. Available at Spartan Bookstore/

Other technology requirements / equipment / material

TestOut Network Pro. This required software for the lab assignments as well as to reinforce the lecture material can be purchased online. This software also has videos covering most of the Tech 65 networking material. The instructions are in the "[TestOut Network Pro Student Worksheet](#)" document on [Canvas](#) (<https://sjsu.instructure.com>) under the "Modules" tab. The link to the [student purchasing guide](#) is <http://www.testout.com/home/student-resources/student-purchasing>. The promo code is 14-380TA,

Course Requirements and Assignments

Class Participation

You will answer selected questions for each chapter of the textbook. These questions are posted on Canvas. Click on the **Modules** tab. You can work in groups but *each student* must submit his/her own answers via Canvas by the due date. Class Participation contributes to CLO 1, learning the fundamental concepts and network terminology, developing teamwork skills and discussing the course material. You will submit it via Canvas by the due date. Class Participation is submitted weekly and has a weight of 10% of the final grade.

Case Projects

You will work in groups of 2-3 students to answer and submit the Case Projects reports (located in the textbook) on or before the due date. *Only one report per group*. Only the indicated students will get the credit. Case Projects contribute to CLO 2, applying the course material in solving proposed scenarios related to computer networks and developing teamwork skills. Case Projects are submitted weekly and have a weight of .10% of the final grade.

Lab Assignments.

You are expected to complete the lab experiments in the TestOut Network Pro software. It is to your advantage and professional development to complete each lab assignment, do a conscious work and do not procrastinate. It is strongly recommended that you complete these laboratory assignments on a continuous basis rather than all of them at once. All the scores you obtained

will be kept by the program but only the highest score will be considered. Lab assignments contribute to CLOs 3 and 4, reinforcing the course material and developing teamwork skills. All the lab assignments must be completed on or before the last day of instruction, December 12, 2016. Lab Assignments have a weight of .10% of the final grade.

Research Paper

Each student will write a research paper. Even though two students can select the same topic and make a PowerPoint presentation to the class together each student must submit his/her own research paper. A sample list of topics is indicated on the last page; however, if you would like to explore a topic of great interest to you then you should obtain the instructor's approval.

The research paper must include a title page, index, introduction, main body, conclusions, and references. The main body should have between 10 to 15 pages, double-spaced. Submit your research paper as an attachment in PDF format (preferable) or in WORD and as a single electronic file via [Canvas](https://sjsu.instructure.com) (<https://sjsu.instructure.com>). This means that the title page, main body, circuit, references and any appendices must be incorporated in a single document. You **do not** need to submit a hard copy.

You will select your topic of interest via Canvas by clicking on the **Collaborations** tab. You must select your topic by **September 14, 2016**.

Research Paper contributes to developing research and writing communication skills. Research Paper is due on December 7, 2016 and has a weight of 5% of the final grade.

Note: Before submitting the research paper check that it complies with the Research Paper guidelines posted on Canvas.

Oral Presentation

Students, working in groups of two, will explain their findings of the research paper to the class. Each group has a 5-7 minute time frame to get their points across. It is strongly recommended that you rehearse your presentation and use a professional presentation software package such as PowerPoint.

You **do not** need to submit a copy of your PowerPoint presentation.

Review the Oral Presentation Rubric posted on Canvas so you can do an exceptional and impressive presentation.

Oral Presentations contribute to developing oral communication skills. Oral Presentations will start on September 26 and have a weight of .5% of the final grade.

Design and Setup of a Small Network

Students working in groups of 2 - 4 will design and setup a small wired network with 3 or 4 workstations. Each group will provide its own hardware and software and will decide on the best NOS and the appropriate setup. This small wired network should be able to access files among

all workstations, access to a printer and/or access to a scanner. Each student must show his/her mastery of these skills by videotaping all the process including but not limited to parts identification, hardware/software installation, peripherals configuration and configuration setup. This means that while one of the members performs the process, another member videotapes him/her; then take turns.

Upload the video to YouTube or to any Cloud computing service and email the link with the names of all group members to the instructor.

The small network design contributes to CLO 4, developing teamwork skills and discussing the course material. The due date is December 7, 2016 and has a weight of .10% of the final grade.

Tests

You will take four quizzes, two midterms and the final exam..Tests will start and end at the indicated times on the greensheet. These tests contribute to CLO 1 and reinforcing the learning of the fundamental concepts and network terminology.

Final Examination

Final Exam will be taken Thursday, December 15 from 0715 to 0930.. The time frame is 100 minutes. You can take the Final Exam up to two (2) times. *In this case the higher score will be considered.*

Grading Information

Quizzes, midterms and final exam will be administered via Canvas. You will have the opportunity of practicing them so while you have more opportunities to learn the course material you will have a better chance of earning high grades. Class Participation and Case Projects will be evaluated based on the percent of accurate responses provided. Lab Assignments grade will be determined on the percent of lab assignments completed until the last day of classes.

Research Paper must follow the APA guidelines and must include the title page, index, introduction, main body, conclusions, and references. Oral Presentation grade will consider the mastery of the topic, quality of the slides, looking at the audience the audience, no misspellings and the 5-7 minute time frame to explain the main points. The design and setup of a small network grade will be based on showing a functional wired network and answering questions related to this design.

Determination of Grades

Grades will be determined based on your performance in Lab Assignments, Class Participation, Case Projects, Small Network Design and Setup, Research Paper, Oral Presentation, Quizzes, Midterms and Final Exam. The final grade for the course will be based on the following items and weights:

Lab Assignments	20%
Class Participation	10%

Case Projects	10%
Small Network Design and Setup	10%
Quizzes (4)	10%
Midterms (2)	15%
Research Paper/Oral Presentation	10%
Final Exam	15%

The final grade will be determined according to the following scale:

A+ = 96 - 100%	A = 93 - 95.9%	A- = 90 - 92.9%	B+ = 87 - 89.9%
B = 83 - 86.9%	B- = 80 - 82.9%	C+ = 77 - 79.9%	C = 73 - 76.9%
C- = 70 - 72.9%	D+ = 66 - 69.9%	D = 60 - 65.9%	F = 0 - 59.9%

1. Check continuously your standing in the class on [Canvas](https://sjsu.instructure.com) (https://sjsu.instructure.com). Notify the instructor immediately if there is an error in any of your grades. **You have up to 7 calendar days** to notify the instructor if your grade is missing or has been recorded incorrectly. ***The last day to correct any discrepancy is the last day of instruction (December 12, 2016).*** There will be no change in your grade after the final grade has been submitted to the university.
2. All late assignments submitted up to 7 calendar days after the due date and time will have a penalty of 50%.
3. **Assignments submitted after 7 calendar days of the due date will not be accepted and they will be recorded as 00.**
4. The last day to submit assignments is December 12, 2016.
5. If you miss a quiz and/or a Midterm you have up to 72 hours to take it with a 30% penalty.
6. If you miss the Final Exam you have up to 24 hours to take it with a 30% penalty.
7. In all **Group Assignments** only **one report** needs to be submitted by a designated member of the group. Make sure that all members of the group are mentioned in the report. **Only the students whose names are indicated on the group report will get the credit.**
8. Any email sent to the instructor requesting him to violate any of these ground rules or to improve your final grade because you need 0.1 point to improve from C+ to B-, do not want to repeat the class or are at risk of being disqualified from the university, etc. **will not be considered.**

Classroom Protocol

1. You are expected to attend all meetings for the course as you are responsible for material discussed therein, and active participation is frequently essential to ensure maximum benefit to all class members. Attendance is fundamental to course objectives; for example, you may be required to interact with others in the class.

2. You will study the assigned textbook chapter/material before coming to lecture and reviewing the PowerPoint presentation posted on [Canvas \(https://sjsu.instructure.com\)](https://sjsu.instructure.com). Click on the **Modules** tab.
3. You will answer selected questions for each chapter. The questions for each chapter are posted on Canvas under **Class Participation** on the **Modules** tab. You can work in groups but *each student* must submit his/her own answers via [Canvas \(https://sjsu.instructure.com\)](https://sjsu.instructure.com). Click on the **Assignments** tab. This will constitute your *class participation* grade.
4. After reviewing the chapter materials you will answer the Case Projects located at the end of each chapter of the textbook. You will work in groups of 2-3 students to answer and submit the Case Projects reports on or before the due date. ***Only one report per group. Only the indicated students will get the credit.***
5. Be prepared to check your answers of the Case Projects and participate in Group Discussion. This group discussion will reinforce and/or enhance your networking knowledge with current and relevant information.
6. Instructor will explain key points, answer questions from students, and may add related material to enrich the course content. Instructor will become more as a facilitator of learning. This means that the instructor will provide as much individual or group assistance as needed.
7. You should work and learn in teams. This is very important to be successful in the real world.

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/>

Tech 65 Networking Theory and Applications, Fall 2016 Course Schedule

List the agenda for the semester including when and where the final exam will be held. Indicate the schedule is subject to change with fair notice and how the notice will be made available.

Course Schedule**

Session	Date	Topics, Readings, Assignments, Deadlines
1	Aug 24	<ul style="list-style-type: none"> • Introduction/Orientation/Greensheet • Email Proof of completion of course prereq (Tech 60 or equivalent and MATH 008 or Equivalent) <p><i>Prepare for next session:</i></p> <ul style="list-style-type: none"> • Read Textbook, Chapter 1: Introduction to Computer Networks • Review PPT, Chapter 1 • Answer Case Projects, Chapter 1 (located in the textbook) <p>Answer Class Participation, Chapter 1 (located on Canvas --> Modules tab)</p>
2	Aug 29, 31	<ul style="list-style-type: none"> • Discuss Chapter 1 • Check/discuss answers Case Projects, Chapter 1 • Email Proof of completion of course prereq (Tech 60 or equivalent and MATH 008 or Equivalent) • Submit Case Projects, Chapter 1. <i>Due by 11:00 pm on 8/31! Only 1 report /Group. Only the indicated students will get the credit.</i> • Submit Class Participation, Chapter 1. <i>Due by 11:00 pm on 8/31! Individual submission.</i> • You will select your topic of interest via Canvas by clicking on the Collaborations tab. You must select your topic by September 14, 2016 <p>Note: Even though the due time in Canvas is 11:55 pm the actual due time is 11:00 pm so you have some extra minutes for your submission. This is for all submissions.</p> <p><i>Prepare for next session:</i></p> <ul style="list-style-type: none"> • Read Textbook, Chapter 2: Network Hardware Essentials • Review PPT, Chapter 2 • Answer Case Projects, Chapter 2 (located in the textbook) • Answer Class Participation, Chapter 2 (located on Canvas --> Modules tab)
3	Sept 5	Labor Day. Campus closed

Session	Date	Topics, Readings, Assignments, Deadlines
4	Sept 7, 12	<ul style="list-style-type: none"> • Discuss Chapter 2 • Check/discuss answers Case Projects, Chapter 2 • Submit Case Projects, Chapter 2. <i>Due by 11:00 pm on 9/12! Only 1 report /Group. Only the indicated students will get the credit.</i> • Submit Class Participation, Chapter 2. <i>Due by 11:00 pm on 9/12! Individual submission.</i> <p><i>Prepare for next session:</i></p> <ul style="list-style-type: none"> • Read Textbook, Chapter 3: Network Topologies and Technologies • Review PPT, Chapter 3 • Answer Case Projects, Chapter 3 (located in the textbook) • Answer Class Participation, Chapter 3 (located on Canvas --> Modules tab)
5	Sept 14, 19	<ul style="list-style-type: none"> • Discuss Chapter 3 • Check/discuss answers Case Projects, Chapter 3 • Submit Case Projects, Chapter 3. <i>Due by 9/19! Only 1 report /Group. Only the indicated students will get the credit.</i> • Submit Class Participation, Chapter 3. <i>Due by 9/19! Individual submission.</i> • Submit Research Paper Topic via Canvas. • Start working on Research Paper Topic and Oral Presentation • Oral Presentations will start on Sept 26. • Take Practice Quiz 1. You can take this test as many times as you wish <ul style="list-style-type: none"> • Take Quiz 1 – (Chapters 1 & 2). Open from 1100 to 1300. Time frame is 20 minutes. • Submit Case Projects, Chapter 3. <i>Due by 11:00 pm today! Only 1 report /Group. Only the indicated students will get the credit.</i> • Submit Class Participation, Chapter 3. <i>Due by 11:00 pm today! Individual submission.</i> <p><i>Prepare for next session:</i></p> <ul style="list-style-type: none"> • Read Textbook, Chapter 4: Network Media • Review PPT, Chapter 4 • Answer Case Projects, Chapter 4 (located in the textbook) • Answer Class Participation, Chapter 4 (located on Canvas --> Modules tab)
6	Sept 21, 26	<ul style="list-style-type: none"> • Discuss Chapter 4 • Check/discuss answers Case Projects, Chapter 4 • Submit Case Projects, Chapter 4. <i>Due by 11:00 pm on 9/26! Only 1 report /Group. Only the indicated students will get the credit.</i> • Submit Class Participation, Chapter 4. <i>Due by 11:00 pm on 9/26! Individual</i>

Session	Date	Topics, Readings, Assignments, Deadlines
		<p><i>submission.</i></p> <ul style="list-style-type: none"> • Take Practice Quiz 2. You can take this test as many times as you wish • Start Oral Presentations on 9/26. <p><i>Prepare for next session:</i></p> <ul style="list-style-type: none"> • Read Textbook, Chapter 5: Networks Protocols • Review PPT, Chapter 5 • Answer Case Projects, Chapter 5 (located in the textbook) • Answer Class Participation, Chapter 5 (located on Canvas --> Modules tab)
7	Sept 28	<ul style="list-style-type: none"> • Discuss Chapter 5 • Check/discuss answers Case Projects, Chapter 5 • Answer Case Projects, Chapter 5. <i>Due 10/3! Only 1 report /Group. Only the indicated students will get the credit.</i> • Answer Class Participation, Chapter 5. <i>Due 10/3! Individual submission.</i> • Continue working on Research Paper Topic and Oral Presentation
8	Oct 3	<ul style="list-style-type: none"> • Continue Oral Presentations • Submit Case Projects, Chapter 5. <i>Due by 11:00 pm today! Only 1 report /Group. Only the indicated students will get the credit.</i> • Submit Class Participation, Chapter 5. <i>Due by 11:00 pm today! Individual submission.</i> • Take Quiz 2 – (Chapters 3 & 4). Open from 1100 to 1300. Time frame is 20 minutes. <p><i>Prepare for next session:</i></p> <ul style="list-style-type: none"> • Watch TestOut videos 1.3.1, 1.33 and 1.3.4 • Read Textbook, Chapter 6: IP Addressing • Review PPT, Chapter 6 • Answer Case Projects, Chapter 6 (located in the textbook) • Answer Class Participation, Chapter 6 (located on Canvas --> Modules tab)
9	Oct 5, 10	<ul style="list-style-type: none"> • Discuss Chapter 6 • Check/discuss answers Case Projects, Chapter 6 • Continue Oral Presentations • Submit Case Projects, Chapter 6. <i>Due by 11:00 pm on 10/10! Only 1 report /Group. Only the indicated students will get the credit.</i> • Submit Class Participation, Chapter 6. <i>Due by 11:00 pm on 10/10! Individual submission.</i>

Session	Date	Topics, Readings, Assignments, Deadlines
		<ul style="list-style-type: none"> • Continue working on Research Paper Topic and Oral Presentation • Take Practice Midterm No. 1. You can take this test as many times as you wish
10	Oct 12	<ul style="list-style-type: none"> • Take Midterm 1 (Chapters 1 to 5). Open from 1100 to 1300. Time frame is 50 minutes. <p><i>Prepare for next session:</i></p> <ul style="list-style-type: none"> • Read Textbook, Chapter 7: Network Reference Models and Standards • Review PPT, Chapter 7 • Answer Case Projects, Chapter 7 (located in the textbook) • Answer Class Participation, Chapter 7 (located on Canvas --> Modules tab)
11	Oct 17, 19	<ul style="list-style-type: none"> • Discuss Chapter 7 • Check/discuss answers Case Projects, Chapter 7 • Submit Case Projects, Chapter 7. Due by 11:00 pm on 10/19! Only 1 report /Group. Only the indicated students will get the credit. • Submit Class Participation, Chapter 7. Due by 11:00 pm on 10/19! Individual submission. • Continue Oral Presentations • Continue working on Research Paper Topic and Oral Presentation • Take Practice Quiz 3. You can take this test as many times as you wish <p><i>Prepare for next session:</i></p> <ul style="list-style-type: none"> • Read Textbook, Chapter 8: Network Hardware in Depth. • Review PPT, Chapter 8 • Answer Case Projects, Chapter 8 (located in the textbook) • Answer Class Participation, Chapter 8 (located on Canvas --> Modules tab)
12	Oct 24, 26	<ul style="list-style-type: none"> • Discuss Chapter 8 • Check/discuss answers Case Projects, Chapter 8 • Submit Case Projects, Chapter 8. Due by 11:00 pm on 10/26! Only 1 report /Group. Only the indicated students will get the credit. • Submit Class Participation, Chapter 8. Due by 11:00 pm on 10/26! Individual submission. • Continue Oral Presentations • Start working on Research Paper due on Dec 7, 2016 • Start working on Small Network Design due on Dec 7, 2016 • Take Quiz 3 – (Chapters 6 & 7). Open from 1100 to 1300. Time frame is 20

Session	Date	Topics, Readings, Assignments, Deadlines
		<p><i>minutes</i></p> <p><i>Prepare for next session:</i></p> <ul style="list-style-type: none"> • Read Textbook, Chapter 9: Introduction to Network Security • Review PPT, Chapter 9 • Answer Case Projects, Chapter 9 (located in the textbook) • Answer Class Participation, Chapter 9 (located on Canvas --> Modules tab)
13	Oct 31, Nov 2	<ul style="list-style-type: none"> • Discuss Chapter 9 • Check/discuss answers Case Projects, Chapter 9 • Submit Case Projects, Chapter 9. <i>Due by 11:00 pm on 11/2! Only 1 report /Group. Only the indicated students will get the credit.</i> • Submit Class Participation, Chapter 9. <i>Due by 11:00 pm on 11/2! Individual submission.</i> • Continue Oral Presentations • Continue working on Research Paper due on Dec 7, 2016. • Continue working on Small Network Design due on Dec 7, 2016 • Take Practice Quiz 4. You can take this test as many times as you wish <p><i>Prepare for next session:</i></p> <ul style="list-style-type: none"> • Read Textbook, Chapter 10: Wide Area Networking and Cloud Computing • Review PPT, Chapter 10 • Answer Case Projects, Chapter 10 (located in the textbook) • Answer Class Participation, Chapter 10 (located on Canvas --> Modules tab)
14	Nov 7, 9	<ul style="list-style-type: none"> • Discuss Chapter 10 • Check/discuss answers Case Projects, Chapter 10 • Submit Case Projects, Chapter 10. <i>Due by 11:00 pm on 11/9! Only 1 report /Group. Only the indicated students will get the credit.</i> • Submit Class Participation, Chapter 10. <i>Due by 11:00 pm on 11/9! Individual submission.</i> • Continue Oral Presentations • Continue working on Research Paper due on Dec 7, 2016 • Continue working on Small Network Design due on Dec 7, 2016 • Take Quiz 4 –(Chapters 8 & 9). Open from 1100 to 1300. Time frame is 20 minutes. <p><i>Prepare for next session:</i></p> <ul style="list-style-type: none"> • Take Practice Midterm No. 2. You can take this test as many times as you

Session	Date	Topics, Readings, Assignments, Deadlines
		wish
15	Nov 14	<ul style="list-style-type: none"> • Continue Oral Presentations • Take Practice Midterm No. 2. You can take this test as many times as you wish
16	Nov 16	<ul style="list-style-type: none"> • Take Midterm 2 (Chapters 6 to 10). Open 1100 to 1300. Time frame is 50 minutes. <p><i>Prepare for next session:</i></p> <ul style="list-style-type: none"> • Read Textbook, Chapter 11: Network Operating System Fundamentals • Review PPT, Chapter 11 • Answer Case Projects, Chapter 11 (located in the textbook) • Answer Class Participation, Chapter 11 (located on Canvas --> Modules tab)
17	Nov 21, 23	<ul style="list-style-type: none"> • Discuss Chapter 11 • Check/discuss answers Case Projects, Chapter 11 • Submit Case Projects, Chapter 11. Due by 11:00 pm on 11/23! Only 1 report /Group. Only the indicated students will get the credit. • Submit Class Participation, Chapter 11. Due by 11:00 pm on 11/23! Individual submission. • Continue Oral Presentations • Continue working on Research Paper due on Dec 7, 2016 • Continue working on Small Network Design due on Dec 7, 2016 <p><i>Prepare for next session:</i></p> <ul style="list-style-type: none"> • Read Textbook, Chapter 12: Network Management and Administration • Review PPT, Chapter 12 • Answer Case Projects, Chapter 12 (located in the textbook) • Answer Class Participation, Chapter 12 (located on Canvas --> Modules tab)
18	Nov 28, 30	<ul style="list-style-type: none"> • Discuss 12 • Check/discuss answers Case Projects, Chapter 12 • Submit Case Projects, Chapter 12. Due by 11:00 pm on 11/30! Only 1 report /Group. Only the indicated students will get the credit. • Submit Class Participation, Chapter 12. Due by 11:00 pm on 11/30! Individual submission. • Continue Oral Presentations

Session	Date	Topics, Readings, Assignments, Deadlines
		<ul style="list-style-type: none"> • Continue working on Research Paper due on Dec 7, 2016 • Continue working on Small Network Design due on Dec 7, 2016 <p><i>Prepare for next session:</i></p> <ul style="list-style-type: none"> • Read Textbook, Chapter13: Troubleshooting and Support • Review PPT, Chapter 13 • Answer Case Projects, Chapter 13(located in the textbook) • Answer Class Participation, Chapter 13 (located on Canvas --> Modules tab)
19	Dec 5, 7	<ul style="list-style-type: none"> • Discuss Chapter 13 • Check/discuss answers Case Projects, Chapter 13 • Submit Case Projects, Chapter 13. <i>Due by 11:00 pm on 12/7! Only 1 report /Group. Only the indicated students will get the credit.</i> • Submit Class Participation, Chapter 13. <i>Due by 11:00 pm on 12/7! Individual submission.</i> • Continue Oral Presentations • Submit: Research Paper (PDF or WORD) via Canvas. • Submit Small Network Design
20	Dec 12	<ul style="list-style-type: none"> • Finish Oral Presentations • Take Practice Final Exam. You can take this test as many times as you wish.
Final Exam	Dec 14	Wednesday, 0945-1200

** Subject to change with fair notice via email through my.sjsu.

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Suggested Topics for the Research Paper/PowerPoint Presentation

1. Optical Networking
2. Network Hardware
3. Network Topologies
4. Network Technologies
5. Network Media
6. Network Protocols
7. IP Addressing
8. Network Reference Models and Standards
9. Network Hardware in Depth
10. Wide Area Networking
11. Cloud Computing
12. Network Management and Administration
13. The role of networking in Manufacturing
14. Network Troubleshooting and Support
15. Smarter Manufacturing
16. Serial communications in Integrated Manufacturing
17. Manufacturing Business Technology
18. Why are networks important in Manufacturing
19. Safety networks in auto manufacturing
20. The role of parallel communications in Manufacturing
21. Neural networks for manufacturing process control systems
22. Networking for Manufacturing Industries
23. Information Systems in Manufacturing Networks
24. Wireless device networking in process industry
25. Asynchronous Transfer Mode (ATM)
26. Fiber Distributed Data Interface (FDDI)
27. Network Architectures
28. Synchronous Optical Networking (SONET)
29. Switched Multimegabit Data Service (SMDS)
30. Virtual Private Networks
31. Microwave networking technologies
32. Devices and technologies for securing wired networks
33. Active Directory
34. Domain Name System (DNS)
35. Remote Access Service (RAS)
36. Smartphone technology
37. Other. (Request the instructor's approval first)