

Instructor John Mowry
Telephone 401-825-2138
E-mail jmowry@ccri.edu
Office Hours See Office Door
Class Sections 001 Monday & Wednesday 8:00 AM-9:50PM, starts 8/31 ends 12/21
Credit Hours 3 Credit Hours, 2 Lecture Hours & 2 Laboratory Hours per week (15 Week)

Instructional Material and Web Sites

- 1 CCRI Lesson Web Site www.netacad.com (Introduction to Networks 7.02)
- 2 Cisco Academy Assessment Web Site <http://netacad.com>
- 3 J Mowry @ CCRI https://www.ccri.edu/faculty_staff/comp/jmowry/

Grading Policies

Skills:

Journal-Entries	5%	Due December 14, 2022 @ 8:00 AM
Labs and Class Participation	10%	
Research Paper	10%	Due December 12, 2022 @ 8:00 AM
Practical Final	45%	

Academic:

Quizzes	10%
Final	20%

Mission of the Computer Science Department:

The mission of the Computer Studies and Information Processing Department at the Community College of Rhode Island is to provide high quality education in the areas of computer science and information technology to a diverse student population. We offer programs of study that provide our students with the skills necessary for transfer, career success, and lifelong learning. With programs in: Cybersecurity, Computer Support Specialist, Networking Technology, Computer Programming, and Web Technologies we offer a variety of options in the fields of computer science and information technology.

Course Description:

Introduction to Networks covers the architecture, structure, functions and components of the Internet and other computer networks. Students achieve a basic understanding of how networks operate and how to build simple Local Area Networks (LAN), perform basic configurations for routers and switches, and implement Internet Protocol

Course Outcomes:

As a result of this course, a student will be able to:

- describe the use of Open Systems Interconnection (OSI) and Transmission Control Protocol/Internet Protocol (TCP/IP) layered models
- explain how physical and data link layer protocols support the operation of Ethernet in a switched network
- explain how the upper layers of the OSI and TCP/IP model support network application
- configure and secure devices (switches, routers, and end devices) to provide access to local and remote network resources
- create Internet Protocol version 4 (IPv4) and Internet Protocol version 6 (IPv6) addressing schemes and verify network connectivity between device
- build simple LANs by applying cabling and addressing schemes with security best practices

Time Management

1. Course will meet for two (2) Lecture Hours and, two (2) laboratory hours per week of instruction. Based on a 15-week schedule. Shorter courses will meet respective to the number of class meetings
2. Course will meet for sixty (60) hours of combined instruction and laboratory exercises.
3. Students are expected to spend an equal amount of time (60 hours) in reading the curriculum, and studying related material in addition to the required lecture/laboratory.
4. All Packet Tracer lab activities are to be completed as homework assignments

Practical Exam

1. The practical exam will encompass a majority of concepts and procedures developed during the laboratory experiments and required readings.
2. The practical exam will be totally "hands-on" including routing and switching equipment as well as IP Addressing and programs specifically related to the remote configuration of networking devices.

Research Paper:

In a business environment, employees might be requested to deliver a presentation to prospective or current business partners, to outline services, projects, status of an ongoing project, or other presentations requested by management. The target group of this presentation might be knowledgeable in the technical aspects or possible not, such as presenting to management.

The research paper must detail how to prepare a professional presentation toward a target audience. The subject of the presentation is not the item to be discussed, but rather the development of a presentation, including tools such as PowerPoint or other presentation software, the use of colors, background, font size, etc.

This is a research paper, so all sources must be documented and footnoted. Use 12pt font single-sided and include a cover page.

Journal-Entries:

The Journal is your **Notebook**. The Notebook is to be Hand-Written and presented to your instructor on the date specified. The Notebook must have your name clearly printed on the front cover, either inside or outside, or if using a binder on the first page.

Examinations

1. All exams, excluding the practical exam, will be a combination of multiple choice, fill-in the blank, matching as well as simulations.

Other Policies

1. The student expected to complete the On-Line lessons outside of class time.
2. Late assignments, including labs, will be penalized 10%.
3. All assignments must be completed using a word processor.
4. Students are responsible to see the instructor about any work missed due to absence.
5. Students who miss a quiz must take the quiz within two classes of the original quiz date.
6. Students are expected to participate as a member of teams
7. Students must pass both the Skills based portion in addition to the Academic portion of the curriculum to pass the course.
8. Student's final grade can only raise one letter grade above the on-line final exam score based on other class assignments.
9. Students are allowed a **maximum** of three (3) re-takes of chapter quizzes per the semester.
10. All re-takes must be completed **prior** to the final exam, **without exception**.
11. Department policy is that if you miss the equivalent of two (2) weeks of classes your final grade will drop by one (1) letter grade.

Services for Students with Disabilities:

Any student with a documented disability may arrange reasonable accommodations. As part of this process, students are encouraged to contact the office of Disability Services for Students as early in the semester as possible (<http://www.ccri.edu/dss/index.shtml>).

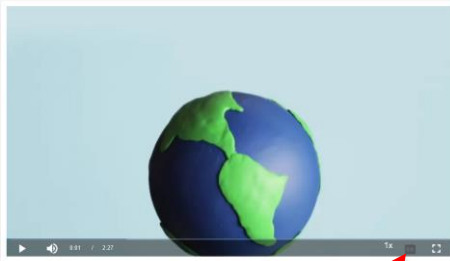
Enabling Closed Caption:

All embedded videos on the Cisco Academy website have the ability to display closed captioning in multiple languages. The procedure to enable this feature is as follows:

Video - The Cisco Networking Academy Learning Experience

World changers aren't born. They are made. Since 1997 Cisco Networking Academy has been working towards a single goal: the educating and skill building of the next generation of talent required for the digital economy.

Click Play to how Cisco Networking Academy to learn how we use technology to make the world a better place.



Closed Caption Option



When selected the user can choose what language they would like to see displayed from available languages.



After selecting "English" the appropriate text is now displayed. *This needs to be done for each embedded video individually.*

Exam Breakdown:

Module	Chapter/Section/Topic Titles	% Coverage
0.1.0	Explain the advances in modern network technologies.	13%
0.2.0	Implement initial settings including passwords, IP addressing, and default gateway parameters on a network switch and end devices.	46%
0.3.0	Explain how network protocols enable devices to access local and remote network resources.	41%
Module Group Exam	Basic Network Connectivity and Communications	100%
0.4.0	Explain how physical layer protocols, services, and network media support communications across data networks.	23%
0.5.0	Calculate numbers between decimal, binary, and hexadecimal systems.	0%
0.6.0	Explain how media access control in the data link layer supports communications across networks.	33%
0.7.0	Explain how Ethernet operates in a switched network.	44%
Module Group Exam	Ethernet Concepts	100%
0.8.0	Explain how routers use network layer protocols and services to enable end-to-end connectivity.	34%
0.9.0	Explain how ARP and ND enable communication on a network.	25%
0.10.0	Implement initial settings on a router and end devices.	41%
Module Group Exam	Communicating Between Networks	100%
0.11.0	Calculate an IPv4 subnetting scheme to efficiently segment a network.	38%
0.12.0	Implement an IPv6 addressing scheme.	43%
0.13.0	Use various tools to test network connectivity.	18%
Module Group Exam	IP Addressing	100%
0.14.0	Compare the operation of transport layer protocols in supporting end-to-end communication.	51%
0.15.0	Explain the operation of the application layer in providing support to end-user applications.	49%
Module Group Exam	Network Application Communications	100%
0.16.0	Configure switches and routers with device hardening features to enhance security.	44%
0.17.0	Troubleshoot connectivity in a small network.	56%
Module Group Exam	Building and Securing a Small Network	100%

Final Exam Breakdown:

Module	Chapter/Section/Topic Titles	% Coverage
0.1.0	Explain the advances in modern network technologies.	3%
0.2.0	Implement initial settings including passwords, IP addressing, and default gateway parameters on a network switch and end devices.	6%
0.3.0	Explain how network protocols enable devices to access local and remote network resources.	6%
0.4.0	Explain how physical layer protocols, services, and network media support communications across data networks.	7%
0.5.0	Calculate numbers between decimal, binary, and hexadecimal systems.	0%
0.6.0	Explain how media access control in the data link layer supports communications across networks.	8%
0.7.0	Explain how Ethernet operates in a switched network.	9%
0.8.0	Explain how routers use network layer protocols and services to enable end-to-end connectivity.	9%
0.9.0	Explain how ARP and ND enable communication on a network.	5%
0.10.0	Implement initial settings on a router and end devices.	6%
0.11.0	Calculate an IPv4 subnetting scheme to efficiently segment a network.	8%
0.12.0	Implement an IPv6 addressing scheme.	8%
0.13.0	Use various tools to test network connectivity.	5%
0.14.0	Compare the operation of transport layer protocols in supporting end-to-end communication.	5%
0.15.0	Explain the operation of the application layer in providing support to end-user applications.	5%
0.16.0	Configure switches and routers with device hardening features to enhance security.	6%
0.17.0	Troubleshoot connectivity in a small network.	6%

Introduction to Networks (ITN) 7.02

Class	Lesson	Module Group Exam	Subjects	Labs/Projects
Aug 31	1		Module 1: Networking Today Lab Due September 11, 2022 @ Midnight	Video 1.1.2 The Cisco Networking Academy Learning Experience Video 1.5.5 Download and Install Packet Tracer Video 1.5.6 Getting Started in Cisco Packet Tracer Video 1.7.5 Cisco WebEx for Huddles Lab 1.5.7 Packet Tracer - Network Representation
Sept 7			Laboratory Exercises	Binary, Decimal, Hexadecimal Numbering systems
Sept 12	2		Module 2: Basic Switch and End Device Configuration	Video 2.2.3 IOS CLI Primary Command Modes Video 2.2.5 Navigate Between IOS Modes Video 2.3.4 Context Sensitive Help and Command Syntax Check Video 2.3.6 Hot Keys and Shortcuts Video 2.4.6 Secure Administrative Access to a Switch Video 2.5.3 Alter the Running Configuration
Sept 14			Laboratory Exercises	Lab 2.3.8 Navigate the IOS Lab 2.9.2 Basic Switch and End Device Configuration
Sept 19	3		Module 3: Protocols and Models	Video 3.1.1 Devices in a Bubble
Sept 21			Laboratory Exercises	Lab 3.7.10 Use Wireshark to View Network Traffic
Sept 26	4	1 (1-3)	Module 4: Physical Layer Lab Due October 2, 2022 @ Midnight	Lab 4.7.1 Packet Tracer - Connect the Physical Layer
Sept 28			Laboratory Exercises	Lab 4.6.6 View Wired and Wireless NIC Information
Oct 3	5		Module 5: Number Systems	Video 5.1.2 Converting Between Binary and Decimal Numbering Systems Video 5.2.2 Converting Between Hexadecimal and Decimal Numbering Systems
Oct 5	6 & 7		Module 6: Data Link Layer Module 7: Ethernet Switching	Video 7.3.4 MAC Address Tables on Connected Switches Video 7.3.5 Sending the Frame to the Default Gateway
Oct 12			Laboratory Exercises	Lab 7.1.6 Use Wireshark to Examine Ethernet Frames Lab 7.2.7 View Network Device MAC Addresses Lab 7.3.7 View the Switch MAC Address Table

Class	Lesson	Module Group Exam	Subjects	Labs/Projects
Oct 17	8	2 (4-7)	Module 8: Network Layer	Video 8.2.3 Sample IPv4 Headers in Wireshark Video 8.3.5 Sample IPv6 Headers in Wireshark Video 8.5.5 IPv4 Routing Router Tables
Oct 19	9		Module 9: Address Resolution Labs Due October 25, 2022 @ Midnight	Video 9.2.3 ARP Operation - ARP Request Video 9.2.4 ARP Operation - ARP Reply Video 9.2.5 ARP Role in Remote Communications Video 9.3.1 IPv6 Neighbor Discovery Lab 9.1.3 Packet Tracer - Identify MAC and IP Addresses Lab 9.2.9 Packet Tracer - Examine the ARP Table Lab 9.3.4 Packet Tracer - IPv6 Neighbor Discovery
Oct 24	10		Module 10: Basic Router Configuration Labs Due October 30, 2022 @ Midnight	Video 10.4.1 A Network Device Differences: Part 1 Video 10.4.1 B Network Device Differences: Part 2 Lab 10.3.5 Packet Tracer - Troubleshoot Default Gateway Issues
Oct 26			Laboratory Exercises	Lab 10.4.4 Build a Switch and Router Network
Oct 31	11	3 (8-10)	Module 11: IPv4 Addressing	Video 11.1.5 Network, Host and Broadcast Addresses Video 11.3.5 The Subnet Mask Video 11.5.4 Subnet with the Magic Number Video 11.6.4 Subnet Across Multiple Octets Video 11.8.1 VLSM Basics Video 11.8.2 VLSM Example Activity 11.2.4 Unicast, Broadcast, or Multicast Activity 11.3.3 Pass or Block IPv4 Addresses Activity 11.3.7 Public or Private IPv4 Address
Nov 2			Laboratory Exercises	Lab 11.6.6 Calculate IPv4 Subnets Lab 11.10.2 Design and Implement a VLSM Addressing Scheme
Nov 7	12		Module 12: IPv6 Addressing	
Nov 14			Laboratory Exercises	Lab 12.7.4 Identify IPv6 Addresses Lab 12.9.2 Configure IPv6 Addresses on Network Devices
Nov 16	13		Module 13: ICMP	
Nov 21			Laboratory Exercises	Lab 13.3.2 Use Ping and Traceroute to Test Network Connectivity
Nov 23	14	4 (11-13)	Module 14: Transport Layer Lab Due November 29 2022 @ Midnight	Video 14.5.5 TCP 3- Handshake Video 14.6.2 TCP Reliability- Sequence Numbers and Acknowledgments Video 14.6.4 TCP Reliability - Reliability and Flow control Lab 14.8.1 Packet Tracer - TCP and UDP Communications

Class	Lesson	Module Group Exam	Subjects	Labs/Projects
Nov 28	15		Module 15: Application Layer	
Nov 30			Laboratory Exercises	Lab 15.4.8 Observe DNS Resolution
Dec 5	16	5 (14 & 15)	Module 16: Network Security Fundamentals	
Dec 7			Laboratory Exercises	Lab 16.4.7 Configure Network Devices with SSH Lab 16.5.2 Secure Network Devices
Dec 12	17		Module 17: Build a Small Network	Lab 17.7.7 Packet Tracer - Troubleshoot Connectivity Issues Lab 17.8.2 Packet Tracer - Skills Integration Challenge Research Paper Due
Dec 12-19		6 (16 & 17) On-Line Additionally: All Chapter Exams will be active until Wednesday December 14, 2022 @ 7:00 AM As a reminder, each student is allowed three (3) retakes total of all Chapter Exams.		
Dec 14	On-Line Final Exam (2 Hours)			
Dec 19	Two (2) Hour Practical			
Dec 21	Two (2) Hour Practical			

All items in this document are subject to change!