



COMMUNITY COLLEGE OF RHODE ISLAND

Networking 1

CNVT 1810 Section 120 Spring 2025

Instructor John Mowry
Telephone 401-825-2138

E-mail jmowry@ccri.edu If you put @my.ccri.edu, you will be sending an email to a student at CCRI and not to me. Any time you want to email me for this class, you **must** have **CNVT-1810-120** in the subject. If you do not do this, I may not give you a response within 24 hours. I do not answer emails between 9 pm and 8 am on Monday to Saturday; or on weekends at any time.

Office Hours See Office Door (Knight Campus Office 2126)

Class Sections 120 Friday 6:00 PM-9:50 PM, starts 1/23 ends 5/8

Credit Hours 3 Credit Hours, 2 Lecture Hours & 2 Laboratory Hours per week, based on a fifteen-week schedule.

Administrative Assistant Donna Scattone (825-2155)

Instructional Material and Web Sites

1 CCRI Lesson Web Site www.netacad.com (Introduction to Networks 7.02)
2 Cisco Academy Assessment <http://netacad.com>
Web Site

3 J Mowry CCRI Website https://www.ccri.edu/faculty_staff/comp/jmowry

4 Blackboard www.blackboard.ccri.edu **(To be developed)**
Material including PowerPoint slides and Grading will be also available here. Detailed material as well as full-instructional material will be available on the Cisco Netacad website listed above. All exams will be administered through the Netacad website.

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 Delivery Mode: The course is comprised of both Lecture and Laboratory. There will be both an on-line final as well as a Practical, Hands-On final. All exams will be taken In-Person.

Course Expectations: Students are to follow the rules and regulations as outlined in the Student Handbook, available on-line at:

http://www.ccri.edu/advising/student_services/handbook.html

Additional Learning Material:

Textbook, (Not Required) (All reading material is available on the Netacad website.)



Introduction to Networks Companion Guide (CCNAv7)

By Cisco Networking Academy

Published Jul 14, 2020 by Pearson. Part of the Companion Guide series.

- ISBN-10: 0-13-663366-8
- ISBN-13: 978-0-13-663366-2

Grading Policies

Skills:

| | | |
|-----------------|-----|-------------------------------------|
| Journal-Entries | 5% | Due: Day of assigned Practical Exam |
| Labs and Class | 10% | |
| Participation | | |
| Practical Final | 45% | |
| Research Paper | 10% | Due: April 25, 2025 @ 6:00 PM |

Academic:

| | |
|---------|-----|
| Quizzes | 10% |
| Final | 20% |

Final Grades: Final grades will be calculated using a mathematical scale utilizing statistical Standard-Deviation methods. **The following chart is for reference purposes only!** Your instructor reserves the right to evaluate and adjust final grades.

Grading Scale:

| Percentage | Letter Grade |
|---------------------|--------------|
| 94% - 100% | A |
| 90% - less than 94% | A- |
| 87% - less than 90% | B+ |
| 84% - less than 87% | B |
| 80% - less than 84% | B- |
| 77% - less than 80% | C+ |
| 70% - less than 77% | C |
| 67% - less than 70% | D+ |
| 60% - less than 67% | D |
| Below 60% | F |

Verification of Enrollment: Per federal financial aid regulations, CCRI is required to verify student enrollment. All faculty members are required to complete a verification of enrollment per the dates in the College Calendar. Students can confirm enrollment through attendance at any academically related activity, a sign-in sheet will be available each class, or by emailing me explaining why you have not attended class or completed the labs in the first week.

Incomplete Grade:

This temporary grade designation is awarded at the end of a course. It is awarded only when a student is **PASSING**, has completed at least 75 percent of the course and is unable to complete the course due to extenuating circumstances (e.g., illness, death, unforeseeable accident, unavoidable circumstance).

Late Assignments:

Since this course would meet 4-hours in person and have 8-hours of reading or homework per-week (based on a 15 week schedule), you are expected to be putting in 12-hours on this course per college policy. All assignments to be turned in to the instructor will have a due-date prescribed and late assignments will be graded at 75% accordingly at the discretion of your instructor.

Attendance:

Attendance is required and all physical labs will be completed in the CCRI laboratories without exception. In-person labs that are completed on any simulator and not on the physical networking equipment in the CCRI laboratories, will not be accepted. Students are expected to attend all class meetings in-person. **A maximum of three unexcused absences will result in the student receiving a withdrawal, either a WF or a WP, from the course! Students can inform the instructor prior to an absence that cannot be avoided.**

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

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 including a cover page.

Laboratory Exercises:

The In-Person Laboratory Exercise that will be completed on physical laboratory equipment during the **next class meeting**, will be constructed by the student, utilizing Packet Tracer simulation software, and uploaded to your instructor via the Netacad website, **prior to** the in-person meeting.

The in-person laboratory exercises **must** additionally be completed on laboratory equipment, either during class time or open laboratory times. If completed during open laboratory times, the exercise will also **require** the laboratory supervisor to sign and date the lab before submittal.

Ninety percent (90%) of the in-person labs must be completed and submitted for course completion.

Journal-Entries:

The Journal is your **Notebook**. The Notebook is to be **Hand-Written** and presented to your instructor on the date specified. No electronic method of taking notes will be accepted. 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.

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.
3. Absolutely no forms of electronic media or other forms of notes or assistance are permitted.

Other Policies

1. The student expected to complete the On-Line lessons outside of class time.
2. All quizzes must be taken in class and will not be available from the student web site
3. After the listed due date, late submissions (up to one week) will be graded at 75%
4. Assignments submitted more than one week after the listed due date will receive a grade of zero.
5. All assignments must be completed using a word processor.
6. Students are responsible to see the instructor about any work missed due to absence.
7. Students who miss a quiz must take the quiz within two classes of the original quiz date.
8. Students are expected to participate as a member of teams
9. Students must pass both the Skills based portion in addition to the Academic portion of the curriculum to pass the course.
10. Student's final grade can only raise one letter grade above the on-line final exam score based on other class assignments.
11. Students are allowed a **maximum** of three (3) re-takes of chapter quizzes per the semester.

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>).

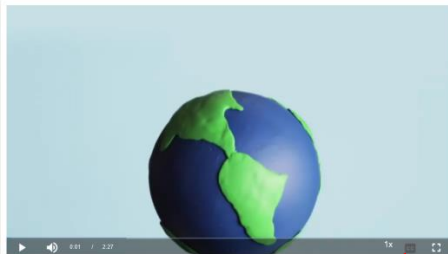
Enabling Closed Caption:

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.*

Netiquette Policy:

- Respect others and their opinions. In online learning, students from various backgrounds come together to learn. It is important to respect their feelings and opinions though they may differ from your own.
- Tone down your language. Given the absence of face-to-face clues, written text can easily be misinterpreted. Avoid the use of strong or offensive language and the

excessive use of exclamation points. Review before posting to remove any strong language.

- Keep personal discussions off the class discussion board.
- Do not type all capitals, which is difficult to read, and has come to be considered the electronic version of "shouting."
- Do be courteous, even when you disagree, with your instructors as well as your classmates, and always provide clear, logical support for your views.
- Avoid inappropriate material.
- Be forgiving. If someone states something that you find offensive, mention this directly to the instructor. Remember that the person contributing to the discussion might be new to this form of communication. What you find offensive may quite possibly have been unintended and can best be cleared up by the instructor.
- Think before you hit the send button. Think carefully about the content of your message before contributing it. Once sent to the group there is no taking it back. Grammar and spelling errors reflect on you and your audience might not be able to decode misspelled words or poorly constructed sentences. It can also adversely affect your grade.
- Escalate your issues privately via email versus discussion forums. Should you have a disagreement with an instructor or classmate it is best to send an individual email to that individual. Do not argue your case in the discussion forum.
- Brevity is best. Be as concise as possible when contributing to a discussion. Your points might be missed if hidden in a flood of text.

Avoid disciplinary action. Any type of online behavior that is perceived as disrespectful to a fellow student or instructor, or anything that has the potential to be perceived as less than courteous is unacceptable and can be subject to disciplinary action by the Chair of the department. Repetition of such behavior can result in expulsion from the class.

Technical Requirements:

Learning requires certain technical requirements to participate actively and be successful. At the minimum, students must have access to a computer and stable Internet connection. Many courses at CCRI require certain technical requirements to participate actively and be successful. View [Set Up Your Tech](#) to learn more about technical requirements.

CISCO Netacad:

Students need a stable Internet connection. Chrome, Firefox, or Edge web browsers can be used. You should clear your web browser cache, which is found in the settings of the web browser. If you do not do this, some of your labs will not work correctly. Chromebooks will not work for your labs. You must have a computer/laptop running Windows 10 or better or MAC.

CCRI Computer Labs:

The academic computer lab is available for CCRI students and allows access to computers with required software. Information regarding CCRI's academic computer labs is available at the following link: [Academic Computer Labs](#).

MS Office 365:

Microsoft Office 365 is available for all CCRI students to download. This version of Office will be accessible as long as you are actively enrolled at CCRI. It is recommended that students [download MS 365 to their computers](#) for access to MS Word, PowerPoint, and Excel offline. If you use other programs, I may not be able to open the files.

MS OneDrive:

[OneDrive](#) is a clouded-based storage system that lets CCRI students store, share and organize files, photos and favorites on Windows servers, and access them from any computer with an Internet connection. You will need and know how to use a computer or mobile device with Internet access. You will also need one of the following web browsers: Edge, Firefox, Chrome, or Safari (Mac only). However, if you put something into OneDrive, you must give me permission to access the file. Once I click on allow, you will get an email that you give permission again before I can view the data.

Academic Integrity:

Academic integrity is vital to an institution of higher education. The integrity of your work – that it represents your independent thought and effort and that it properly acknowledges the work of others – is essential to the awarding of credit and to the development of your academic potential. As such, instances of academic dishonesty – cheating, plagiarism, etc., – are extremely serious academic offenses that should not be overlooked. Students should be aware and regularly cautioned that violations of academic integrity may result in suspension or expulsion from the college. For more information, go to the CCRI's Policy on Academic Integrity.

Managing Life Crisis and Finding Support:

Should you encounter an unexpected crisis during the semester (i.e., securing food or housing, addressing mental health concerns, personal safety, managing a financial crisis, and/or dealing with a family emergency, etc.), please reach out to the office of [Community and Social Resources](#). If you are uncomfortable doing so on your own, please know that I can submit a referral on your behalf—just email me or schedule a meeting with me during my office hours.

Veteran Services:

[CCRI Veteran Services Office](#) is committed to being a resource to all VA education beneficiaries. Our mission is to assist veterans, service members, and dependents in the pursuit of their educational goals by maintaining up-to-date information on current programs and resources. Through a combination of experience with the educational system and contacts within the VA, we can help you with any aspect of your higher education.

Mental Health Services:

CCRI is committed to advancing the mental health and wellbeing of its students. If you or someone you know is feeling overwhelmed, depressed, and/or in need of support, services are available.

CCRI has partnered with MySSP (My Student Support Service) to provide 24/7 mental health and well-being support to students, including real-time and scheduled access to professional counselors. All services are confidential and 100% FREE to CCRI students! In addition to MySSP, the Advising and Counseling Center provides one-on-one and group counseling for a variety of problems ranging from typical difficulties students experience (e.g., adjustment to the college setting) to problems associated with acute or long-standing psychological disturbances. For a listing of mental health services on and off campus, visit [Mental Health Services](#).

Student Success Center:

[The Student Success Center](#) provides academic assistance through tutoring services; coordinate information and referrals to college resources; seek ways to improve student satisfaction and retention; and help students achieve their goals. Student Success Center staff members help students understand their individual learning needs, develop better study habits and behaviors, and create plans to achieve their goals. For more information about our services, email successcenter@ccri.edu or visit the [website](#). Watch this [video](#), to learn how to book Free CCRI tutoring appointments through Starfish.

Writing Center:

The Writing Center offers a variety of free services, including online and in-person help with prewriting, organization, thesis statements, topic sentences, research papers, revision/editing, and answers to questions. Online help at [Writing Center](#) includes:

- Zoom links for Writing Center Virtual Drop-in Tutoring Sessions
- Virtual Zoom appointments
- Email responses to questions and help with papers
- Website content, such as handouts, practice quizzes, literature analysis, PowerPoint presentations, reading resources, and information about research papers (MLA, APA, and Chicago systems)

In-person appointments can be made by contacting writingcenter@ccri.edu. The Writing Center is available at three of our four campuses to assist CCRI students, faculty, and staff members with different kinds of writing and revision tasks.

Religious & Cultural Observance:

Persons who have religious or cultural observances that coincide with this class should let me know in an email during the first two weeks of the semester. However, if I do not hear from you by the end of the second week of school, I will assume you plan on doing the work for the week.

Explicit Content:

If you are aware of cognitive or emotional triggers that could disrupt your intellectual or mental health, please let me know so that I can be aware in terms of course content.

Title IX and Gender Pronouns:

This course affirms equality and respect for all gendered identities and expressions. Please don't hesitate to correct me regarding your preferred gender pronoun and/or name if different from what is indicated on the official class roster. Likewise, I am committed to nurturing an environment free from discrimination and harassment. Consistent with Title IX policy, please be aware that I, as a responsible employee, am obligated to report information that you provide to me about a situation involving sexual harassment or assault.

Advising:

Your success is the primary focus of the [Advising Center](#). As such, all matriculated students are assigned a trained, professional advisor who will provide support, guidance, and resources to help you navigate your academic journey and maximize your educational experience during your entire time at the Community College of Rhode Island. Recognizing the diverse needs of our student body, your assigned advisor will provide personalized assistance to ensure that your academic, personal, and career goals are met. The services available to you include

academic planning and course selection; transfer planning; assistance in understanding college policies and procedures; and referrals to on-and-off-campus resources. Connecting with your assigned advisor is easy. Log in to your Starfish account (include instructions here). We look forward to partnering with you in your journey towards success at the Community College of Rhode Island.

Counseling:

CCRI offers short term and confidential counseling to help students with mental health concerns. The Personal Counseling and Wellness Office offers students a safe environment for one-on-one appointments, assisting with a variety of concerns related to anxiety, depression, or long-standing psychological obstacles. The Personal Counseling and Wellness Office also assists with connecting students with resources and outside agencies offering long-term counseling services. For a list of mental health services on and off campus, please visit [Personal Counseling and Wellness](#).

Finally, counseling services are offered at our four main campuses (Warwick, Lincoln, Providence, and Newport) M-F 8:00 am to 4 pm. To schedule an appointment, please email us at: counseling@ccri.edu

TELUS Health:

CCRI has also partnered with TELUS Health, a counseling service available to students 24/7, free of charge. TELUS Health offers virtual walk-in's and scheduled appointments, with access to professional counselors. To learn more about TELUS Health, please click the link here: [visit TELUS Health](#)

The Benefits Hub:

The Benefits Hub connects students to on and off campus resources. If students are couch surfing, need groceries, childcare, transportation, or some other form of assistance, please contact: 401.825-1024 (office), or BenefitsHub@ccri.edu If you are uncomfortable doing so on your own, please know that I can submit a referral on your behalf - just email me or schedule a meeting with me during office hours.

Tutoring Center:

Students use Starfish to schedule appointments to meet with CCRI tutors and academic coaches. Appointments are offered in-person and online with day, evening, and weekend availability. All services are at no cost to students.

Visit [The Tutoring Center](#) or email tutoring@ccri.edu to learn more about our services.

Connect with a Tutor:

CCRI employs tutors recommended by CCRI faculty to provide tutoring for their courses. Tutoring helps students learn course material for a specific class by clarifying course concepts and getting practice with course materials. Students do not have to be in jeopardy

of failing to get help from a tutor. Click [here to watch the video directions](#) on how to schedule appointments through Starfish.

Partner with An Academic Coach:

Academic coaching is a personalized student-coach partnership with appointments tailored to your individual needs. A coach can help you with organizational and study strategies. One-time appointments or a series of consultations throughout the semester are available. Click [here to watch the video directions](#) on how to schedule appointments through Starfish.

Pear Deck Tutor:

Pear Deck Tutor is a private online tutoring company that CCRI has partnered with to supplement our CCRI Tutoring program. It is available 24/7 and students are allowed up to three hours per week at no charge! Students access Pear Deck Tutor through their CCRI Blackboard account.

CCRI Library:

The CCRI Library provides a welcoming environment for individual and collaborative learning. Each campus has a library with access to print and online books, journals, and other resources.

Our catalog and databases can be accessed on campus or off campus. Librarians are available to assist students individually with research questions. We also work with faculty to provide specialized library instruction classes and offer [courses in information literacy and research skills](#).

Public Safety:

The CCRI College Police Department, also referred to as the Campus Police Department, is staffed with full-time, sworn police officers augmented with nonsworn public safety officers and dispatchers. We provide law enforcement services to all four CCRI campuses when the campuses are open and 24/7 services through our HQ's located at the Knight Campus in Warwick.

Our enforcement jurisdiction covers all four CCRI properties. The services we provide for the College community include responses to all emergencies; arrests for criminal violations; police reports; initial criminal investigations occurring on a campus or having a nexus to the College; referral services to outside law enforcement and social agencies; all Clery Act requirements; traffic enforcement, accident investigations and accident reporting on campus.

The College Police Department is also responsible for building and grounds security; College identification access control; lost and found; annual emergency exercises; educational training opportunities concerning public safety; and escorts per request. The CCRI College Police Department is an accredited law enforcement agency with the Rhode Island Police

Accreditation Commission and maintains solid, working relationships with all other law enforcement agencies throughout the State of Rhode Island.

Contact us at 401-825-2109 for routine business and 401-825-2000 for on-campus emergencies. 911 is always acceptable for any emergency and will be forwarded to our dispatch center for a quick response.

Civil Rights (Know Your Rights):

Pregnant and Parenting Students:

CCRI is proud to welcome and support pregnant and parenting students on their path to success. If you need an accommodation, excused absence, or other resource or campus support to successfully complete your time at CCRI while pregnant or parenting, please contact the Title IX Coordinator via email at titleixcoordinator@ccri.edu or by phone at (401) 825-1126.

Discrimination and Harassment:

CCRI prohibits students and employees from engaging in discrimination and harassment based on any individual's race, color, creed, national or ethnic origin, gender, gender identity or expression, religion, disability, age, sexual orientation, genetic information, marital status, citizenship status, veteran status, and any other legally protected characteristic.

If you believe you have been subjected to discrimination or harassment, you can report such behavior to the Title IX Coordinator via email at titleixcoordinator@ccri.edu, by phone at (401) 825-1126

[Nondiscrimination Policy and Complaint Procedures](#)

Sexual Harassment and Sexual Misconduct

CCRI prohibits all forms of unlawful sexual harassment and sexual misconduct, which includes (but is not limited to) dating/domestic violence and stalking. If you believe you have been subjected to sexual harassment or sexual misconduct, you can report such behavior to the Title IX Coordinator via email at titleixcoordinator@ccri.edu or by phone at (401) 825-1126.

[Title IX Sexual Harassment Policy and Procedures \(S-17\)](#)

[Nondiscrimination Policy and Complaint Procedures](#)

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 |
|--------|--------|-------------------|---|--|
| Jan 24 | 1 & 5 | | Module 1: Networking Today Module 5: Number Systems Lab Due January 30, 2025 @ Midnight In-Person Lab 1 Assigned, Packet Tracer Configuration due January 31, 2025 @ 6:00 PM | Video 1.0.3 Download and Install Packet Tracer Video 1.0.4 Getting Started in Cisco Packet Tracer Video 1.1.2 The Cisco Networking Academy Learning Experience Video 1.7.4 Video Communications Video 1.7.5 Cisco WebEx for Huddles Video 5.1.2 Converting Between Binary and Decimal Numbering Systems Video 5.2.2 Converting Between Hexadecimal and Decimal Numbering Systems Lab 1.5.7 Packet Tracer - Network Representation |
| Jan 24 | | | In-Person Laboratory Exercises | Binary, Decimal, Hexadecimal Numbering systems |
| Jan 31 | 10 | | Module 10: Basic Router Configuration | Video 10.4.1 A Network Device Differences: Part 1 Video 10.4.1 B Network Device Differences: Part 2 |
| Jan 31 | | | In-Person Laboratory Exercises | In-Person Lab 1 Configure a Basic Network |
| Feb 7 | 11 | | Module 11: IPv4 Addressing | Video 11.1.5 Network, Host and Broadcast Addresses Video 11.5.3 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 11.1.7 ANDing to Determine the Network Address 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 Activity 11.6.4 Subnet Across Multiple Octets Activity 11.6.5 Calculate the Subnet Mask Activity 11.7.4 Determine the Number of Bits to Borrow Activity 11.8.6 VLSM Practice |
| Feb 7 | | | In-Person Laboratory Exercises | Lab 11.6.6 Calculate IPv4 Subnets |
| Feb 14 | 12 | | Module 12: IPv6 Addressing In-Person Lab 2 Assigned, Packet Tracer Configuration due February 21, 2025 @ 6:00 PM | |
| Feb 14 | | | In-Person Laboratory Exercises | Lab 12.7.4 Identify IPv6 Addresses |

| Class | Lesson | Module Group Exam | Subjects | Labs/Projects |
|----------|--------|-------------------|---|--|
| Feb 21 | 2 & 3 | | Module 2: Basic Switch and End Device Configuration Module 3: Protocols and Models | 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 Video 2.8.1 Test the Interface Assignment Video 2.8.2 Test End-to-End Connectivity Video 3.1.1 Devices in a Bubble |
| Feb 21 | | | In-Person Laboratory Exercises | In-Person Lab 2 Configure a Two Router Network with Static Routing |
| Feb 28 | 4 | 1 (1-3) | Module 4: Physical Layer In-Person Lab 3 Assigned, Packet Tracer Configuration due March 7, 2025 @ 6:00 PM | |
| Feb 28 | | | In-Person Laboratory Exercises | Make a Crossover Cable |
| March 7 | 6 | | Module 6: Data Link Layer In-Person Lab 4.1 Assigned, Packet Tracer Configuration due March 21, 2025 @ 6:00 PM | |
| March 7 | | | In-Person Laboratory Exercises | In-Person Lab 3 Configure a Three Router Network with Static and Dynamic (RIP) Routing |
| March 21 | 7 | | Module 7: Ethernet Switching In-Person Lab 5.1 Assigned, Packet Tracer Configuration due March 28, 2025 @ 6:00 PM | Video 7.3.4 MAC Address Tables on Connected Switches Video 7.3.5 Sending the Frame to the Default Gateway |
| March 21 | | | In-Person Laboratory Exercises | In-Person Lab 4.1 Develop and configure an IPv4 and IPv6 addressing scheme for a four-router network including a static-default and dynamic (RIP) Routing |
| March 28 | 8 | 2 (4-7) | Module 8: Network Layer In-Person Lab 6 Assigned, Packet Tracer Configuration due April 4, 2025 @ 6:00 PM | 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 fault Gateway |
| March 28 | | | In-Person Laboratory Exercises | In-Person Lab 5.1 Develop and configure an IPv4 and IPv6 addressing scheme for a three-router network with dynamic (RIP) Routing |
| April 4 | 9 & 13 | | Module 9: Address Resolution Module 13: ICMP In-Person Lab 7 Assigned, Packet Tracer Configuration due April 11, 2025 @ 6:00 PM | 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 |
| April 4 | | | In-Person Laboratory Exercises | In-Person Lab 6 Configure a Router and Switch network and prepare for remote access utilizing Telnet and SSH |

| Class | Lesson | Module Group Exam | Subjects | Labs/Projects |
|------------------|---|---|---|---|
| April 11 | 14 & 15 | 3 (8-10) | Module 14: Transport Layer Module 15: Application Layer | 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 |
| April 11 | | | In-Person Laboratory Exercises | In-Person Lab 7 Configure a Router network to demonstrate the differences in routes using RIP and OSPF |
| April 25 | 16 & 17 | 4 (11-13) 5 (14-15) 6 (16-17) | Module 16: Network Security Fundamentals Module 17: Build a Small Network Review | Research Paper Due |
| April 25 - May 9 | | Additionally: All Chapter Exams will be active from April 24, 2025 @ 10:00 PM until May 8, 2025 @ 6:00 PM As a reminder, each student is allowed three (3) retakes total of all Chapter Exams. | | |
| May 2 | Two (2) Hour Practical / On-Line Final Exam (2 Hours) / Notebook | | | |
| May 9 | Two (2) Hour Practical / On-Line Final Exam (2 Hours) / Notebook | | | |

This Syllabus is subject to change!