COMMUNITY COLLEGE
OF RHODE ISLAND

Networking 1   CNVT 1810 Section 001 Spring 2024

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-1810-102** 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   001 Monday and Wednesday 12:00 PM-1:50 PM, starts 1/22 ends 5/8
Credit Hours   3 Credit Hours, 2 Lecture Hours & 2 Laboratory Hours per week, based on a fifteen-week schedule.

Administrative   Donna Scattone (825-2155)
Assistant

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%	<mark>Due: Day of assigned Practical Exam</mark>
Labs and Class Participation	10%	
Practical Final	45%	
Research Paper	10%	<mark>Due: April 24, 2024 @ 12:00 PM</mark>

Academic:

Quizzes	10%
Final	20%

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

<u>Grading Scale</u>:

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 <u>College Calendar</u>. 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;
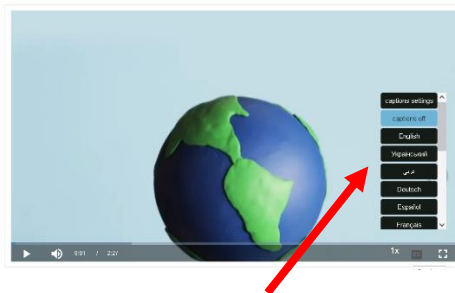

Closed Caption Option

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.

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 22	1 & 5		**Module 1:** Networking Today **Module 5:** Number Systems <mark>Lab Due January 28, 2024 @ Midnight</mark>	**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 **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 29	10		**Module 10:** Basic Router Configuration <mark>In-Person Lab 1 Assigned, Packet Tracer Configuration due January 31, 2024 @ 12:00 PM</mark>	**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 5	11		**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
Feb 7			**In-Person Laboratory Exercises**	**Lab 11.6.6** Calculate IPv4 Subnets
Feb 12	12		**Module 12:** IPv6 Addressing	
Feb 14			**In-Person Laboratory Exercises**	**Lab 12.7.4** Identify IPv6 Addresses
Feb 19	2		**Module 2:** Basic Switch and End Device Configuration <mark>In-Person Lab 2 Assigned, Packet Tracer Configuration due February 26, 2024 @ 12:00 PM</mark>	**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

Class	Lesson	Module Group Exam	Subjects	Labs/Projects
Feb 21	3		**Module 3:** Protocols and Models	**Video 3.1.1** Devices in a Bubble
March 26			**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 18, 2024 @ 12:00 PM	
March 4			**In-Person Laboratory Exercises**	**Make a Crossover Cable**
March 6	6		**Module 6:** Data Link Layer In-Person Lab 4 Assigned, Packet Tracer Configuration due March 25, 2024 @ 12:00 PM	
March 18			**In-Person Laboratory Exercises**	**In-Person Lab 3** Configure a Three Router Network with Static and Dynamic (RIP) Routing
March 20	7		**Module 7:** Ethernet Switching In-Person Lab 5 Assigned, Packet Tracer Configuration due April 1, 2024 @ 12:00 PM	**Video 7.3.4** MAC Address Tables on Connected Switches **Video 7.3.5** Sending the Frame to the Default Gateway
March 25			**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 27	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 fault Gateway
April 1			**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 3	9 & 13		**Module 9:** Address Resolution **Module 13:** ICMP In-Person Lab 6 Assigned, Packet Tracer Configuration due April 8, 2024 @ 12:00 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 8			**In-Person Laboratory Exercises**	**In-Person Lab 6** Configure a Router and Switch network and prepare for remote access utilizing Telnet and SSH
April 10	14 & 15	3 (8-10)	**Module 14:** Transport Layer **Module 15:** Application Layer In-Person Lab 7 Assigned, Packet Tracer Configuration due April 15, 2024 @ 12:00 PM	**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

Class	Lesson	Module Group Exam	Subjects	Labs/Projects
April 15			**In-Person Laboratory Exercises**	**In-Person Lab 7** Configure a Router network to demonstrate the differences in routes using RIP and OSPF
April 17	16 & 17	4 (11-13)	**Module 16:** Network Security Fundamentals **Module 17:** Build a Small Network	
April 22				**Make-up Lab**
April 24		5 (14-15) 6 (16-17)	**Review**	<mark>Research Paper Due</mark>
April 24 – May 8		**Additionally:** All Chapter Exams will be active from April 24, 2024 @ 2:00 PM until May 8, 2024 @ 11:00 AM As a reminder, each student is allowed three (3) retakes total of all Chapter Exams.		
April 29	**Two (2) Hour Practical / On-Line Final Exam (2 Hours) / <mark>Notebook</mark>**			
May 1	**Two (2) Hour Practical / On-Line Final Exam (2 Hours) / <mark>Notebook</mark>**			
May 6	**Two (2) Hour Practical / On-Line Final Exam (2 Hours) / <mark>Notebook</mark>**			
May 8	**Two (2) Hour Practical / On-Line Final Exam (2 Hours) / <mark>Notebook</mark>**			

<mark>This Syllabus is subject to change!</mark>