



TCN 4211

Telecommunication Networks

Section: RVC

Internet/Fully Online

Spring Term 2026

Course Time Zone | Eastern Time (ET). Course due dates are according to this time zone.

Professor Information

Yu Du

Roles: Primary Instructor

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Department or Academic Unit: Electrical and Computer Engineering

Course Prerequisites

Course prerequisites, if any, are listed below.

Prerequisites: (EEL2880 or COP2210 or permission of the instructor)

Course Description

Underlying engineering principles of computer and digital networks. Topics include physical, link and network layers; telecommunication and switching technologies.
(3 credits)

Textbook and Course Materials

COMPTIA NETWORK+N10-008...DELUXE ED.

Required/Recommended: Required

Authors: SEQUEIRA

Publisher: PEARSON

Publication Date: October 30, 2021

Copyright Date: October 30, 2021

ISBN 10: 0137585306

ISBN 13: 9780137585304

Chapters/Pages: Chapter 1~6, 9~13

Panther Book Pack

Get all required course materials for \$20.50 per undergrad credit hour through Panther Book Pack. You'll be charged automatically unless you opt out within 3 days after the add/drop deadline.

For more details, to compare costs, and to learn how to access your course materials, visit the [Panther Book Pack information page on FIU OneStop](#).

Readings, Materials, and Open Educational Resources (OER)

Hardware and Software Requirements

To successfully participate in this course, students are required to have access to the following hardware and software:

Hardware:

A computer running **Windows 10 or Windows 11 (required)**.

*Please note: **Mac computers and Chromebooks might not be compatible** with the software used in this course and cannot be used as substitutes.*

Reliable internet connection for accessing course materials, participating in virtual sessions, and submitting assignments.

A webcam and microphone for virtual meetings, presentations, and office hours.

Software:

Your Windows computer must be capable of installing CompTIA Network+ N10-008 Hands-on Lab Simulator.

Your Windows computer must be capable of installing **Wireshark**.

Zoom (or equivalent video conferencing tool) for virtual meetings.

Canvas (course management system) access.

Note:

Please ensure all necessary hardware and software are set up by the end of the first 3 weeks to avoid falling behind in coursework.

Wireshark: [1.2. System Requirements](#)

CompTIA Network+ N10-008 Hands-on Lab Simulator: [CompTIA Network+ N10-008 Hands-on Lab Simulator, Downloadable Version | Pearson IT](#)

[Certification](#) This product is a single-user license desktop software application.

Student Learning Outcomes/Objectives

- **Level I – Remembering (Knowledge):**
 - o Recall the basics of computer networking and its components.
 - o List the concepts related to telecommunication and networks.
 - o Identify the OSI layers and TCP/IP models.
 - o Recognize basic concepts in deploying a wireless network and its vulnerabilities.

- **Level II – Understanding:**
 - o Explain the composition and functionality of the OSI layers and TCP/IP models.
 - o Describe various networking topologies and technologies.
 - o Summarize the key principles behind network subnetting and IP address schemes.
 - o Explain the guidelines for developing and verifying security policies and procedures.

- **Level III – Applying:**
 - o Apply best practices for creating effective security policies and addressing threats and vulnerabilities.
 - o Utilize network management tools for configuration and deployment.
 - o Apply routing protocols in Local Area Networks (LANs).
 - o Implement techniques to improve network performance.
 - o Deploy wireless networks while addressing their common vulnerabilities.

- **Level IV – Analyzing:** o Analyze the suitability of different networking topologies and technologies for various scenarios. o Evaluate the effectiveness of the OSI layers and TCP/IP models in specific networking contexts. o Assess the impact of subnetting and IP address management on network performance. o Analyze the role of routing protocols in maintaining LAN efficiency.

- **Level V – Evaluating:** o Critique security goals, standards, and policy development strategies. o Evaluate the effectiveness of network management practices and their deployment. o Assess the challenges associated with wireless network deployment and its security.

- **Level VI – Creating:** o Design effective network subnetting schemes and IP address management strategies. o Propose improvements for network security policies and procedures. o Develop strategies for optimizing network configurations and performance. o Create plans for deploying secure and efficient wireless networks.

Expectations of this Course

This is an online course, which means most (if not all) of the course work will be conducted online. Expectations for performance in an online course are the same as a traditional course. In fact, online courses require a degree of self-motivation, self-discipline, and technology skills which can make these courses more demanding for some students.

Students are expected to:

- review the getting started page located in the course modules;

- **introduce yourself to the class during the first week by posting a self-introduction in the appropriate discussion;**
- **take the practice quiz to ensure that your computer is compatible with the learning management system, Canvas;**
- **interact online with instructor and peers;**
- **review and follow the course calendar and weekly outlines;**
- **log in to the course 4 times per week;**
- **respond to discussions by the due date specified. No late work will be accepted;**
- **respond to emails within 2 days;**
- **submit assignments by the corresponding deadline.**

The instructor will:

- **log in to the course 3 week;**
- **respond to emails within 72 hours;**
- **grade assignments and/or provide feedback within 5 days of the assignment deadline.**

Course Communication

Communication in this course will take place via the Canvas Inbox. Check out the [Canvas Conversations Tutorial](#) or [Canvas Guide](#) to learn how to communicate with your instructor and peers using Announcements, Discussions, and the Inbox. I will respond to all correspondences within 72 hours.

Policies & Resources

Before starting this course, please review the Policies & Resources Page in Canvas which includes comprehensive information on various University and Course Level Policies such as:

- **University Policies**
- **Accessibility and Accommodations**
- **Online Etiquette**
- **Technical Requirements and Skills**
- **Computer & Digital Literacy Skills**
- **Course Technology Accessibility Statements and Privacy Policies**
- **Academic Integrity**
- **Copyright Statement**
- **Core Principles of This Course**
- **Nondiscrimination Statement**
- **Panthers Care & Counseling and Psychological Services (CAPS)**
- **Fair Use Policy**

Assignments & Assessments

Discussion Forums

Keep in mind that your discussion forum postings will likely be seen by other members of the course. Care should be taken when determining what to post.

Discussion Forum Expectations:

Introduce Yourself Forum

- Please introduce yourself during the first week of class.
- Please follow the guidelines in the forum.

Report Discussion Forum

- This forum is for you to interact with your peers by posting and responding to general conversations/questions report assignments.
- You are encouraged, but not required to participate.
- Posts will not be graded.

Chapter Discussion Forums

- There will be two discussion topics posted by the professor every module except for the final exam week for a total of 14 weeks and 24 topics.
- The professor will review student discussion posts and grade them according to the grading criteria.
- Student discussion board posts will be part of the final course grade.
- Please follow the guidelines listed in the Discussion Participation Rubric posted in the course.
- The approximate length of a posting should be no less than 200 words, and a student response no less than 100 words.
- In discussion forum, you need 1 primary + 2 peer reviews to qualify a full credit.
- Your 2 peer reviews must be detailed.

Assessments

In order to mitigate any issues with your computer and online assessments, it is very important that you take the "Practice Quiz" from each computer you will be using to take your graded quizzes and exams. It is your responsibility to make sure your computer meets the minimum [hardware requirements](#).

Assessments in this course are not compatible with mobile devices and should not be taken through a mobile phone or a tablet. If you need further assistance please contact [FIU Online Support Services](#).

Quiz Expectations:

- This course consists of **6** quizzes
- Students will be given one attempt for each quiz.
- Students will be given 15-20 minutes to complete each quiz according to the number of questions comprising the quiz.
- Students will be able to see their score upon submission.
- There are no make-ups on quizzes.

Exam Expectations:

- Each exam is worth 100 points and consist of multiple-choice question and Q&A formats.
- **The Final Exam is available on 4/18 at 12:00 AM - 4/18 at 11:59 PM**
- Students will be given one attempt for each exam.
- Students will be given 100 minutes to complete each exam.
- Students will be able to see their score upon submission.
- There are no make-ups on exams.
- It is a closed book and notes exam.

Assignments

Assignment Expectations:

- Explicit instructions and grading criteria will be provided for all assignments.
- Unless specified otherwise, all assignments are to be completed by the individual student.
- Each student will submit their own original work. Any evidence of duplication, cheating or plagiarism will result at least a failing grade for the course.
- All work is to be submitted via Canvas. **DO NOT** send assignments by email.
- **All work submitted should display Panther ID number and should be signed, as the students' own work, and that no unauthorized help was obtained.**
- Assignments are due on the date specified. Once the module closes, so is the opportunity to submit the assignment.
- The grading criteria is that the assignments are complete so 0 or 100 – students are performing a simulation in which they are enhance the learning **EXPERIENCE**.
- Students are encouraged to ask questions and to discuss course topics with the instructor and with each other.
- To get assistance, try to see me by an appointment.
- It is imperative that you learn from the assignments, which include the simulations in order to pass the exam.

Group Research Project and Presentation:

- The course includes a substantial group project requiring the review and research on network related topics, like investigating industry appliances, techniques and protocols.

- The group contains 3 - 4 students working together throughout the semester. There are no smaller groups, then 3-4 members.
- The paper will be submitted through Turnitin, a high score will impact the paper's grade, so make sure to avoid plagiarism issues.
- Students may self-enroll in a group of their choice. Students who are not enrolled in a group by the end of the enrollment period will be enrolled into a group by the instructor. All students must be enrolled in a group. Once in a group a student cannot change groups, so make sure to enroll in the group you want to work.
- Students will submit the research paper and a presentation of the paper. The paper must be in IEEE format, be at least 5 pages long and in two column format, single spaced, font size 10-points Roman-Times, margins one inch and gap between columns 1/4 inch. The paper will require at least 10 reference, of which 5 must be academic papers. Any deviation form these formatting criteria will result on significant point deduction on your paper.
- The presentation should be a PowerPoint presentation of the sections that each member contributed in the paper. Please make sure to indicate which slides are associated with which member, in a slide footer.

Proctored Exams

Please note that the information contained in this section applies only if your course requires a proctored exam.

Through a careful examination of this syllabus, it is the student's responsibility to determine whether this online course requires proctored exams. Please visit our [Student Proctored Exam Instructions](#) webpage for important information concerning proctored exams, proctoring centers, and important forms.

About the final exam:

1. Review all contents, especially your homework, **chapter review questions**, memorization tables and PPT contents about each chapter.
2. Submit Final Exam **Available 4/18 (Saturday) - Due 4/18 (Saturday) (from 12:00 am to 11:59 pm)**
3. The exam duration is 100 minutes (10 minutes for you to prepare Honorlock and 90 minutes for you to finish your exam).

Please be advised that you must start the exam at 10:19 pm to make use of the full 100 minutes exam time. At 00:00 am, Canvas will automatically close any open final exam.

Zoom Video Conference

Zoom is a video conference tool that you can use to interact with your professor and fellow students by sharing screens, chatting, broadcasting live video/audio, and taking part in other interactive online activities.

Zoom meetings can be accessed via the Zoom link in the course navigation menu. Once you click on the Zoom link, it will route you to join the meeting for the respective class session. You will also be able to view upcoming meetings, previous meetings that you have already joined, and meeting recordings. Before joining an actual class session:

Reference the [Zoom Student Tutorials](#) to learn about the tool, how to access your meeting room, and share your screen.

Access the [Zoom Test Meeting Room](#) to test out the software before joining an actual session.

If you encounter any technical difficulties, please contact the [FIU Canvas Help Team](#). Please ensure you contact support immediately upon the issue occurring.

Grading

Course Grades Distribution Table

Course Requirements	
Quizzes	
Assignment/Lab (Simulator)	
Discussion and Participation	
Group Research Paper / Project	
Final Exam	
Total	

Letter Grade Distribution Table

Letter	Range%	Letter	Range%	Letter
A	94 - 100	B	83 - 85	C
A-	90 - 93	B-	80 - 82	D
B+	86 - 89	C+	74 - 79	F

Schedule of Topics

Module 1 - Network Basics | 3 weeks in this module | Jan 5~ Jan 25

Module 2 - Network Media Types and Common Ports and Protocols | 2 weeks in this module | Jan 26~ Feb 8

Module 3 - IP4 IP6 Network Addressing and Subnetting | 3 weeks in this module | Feb 9~Mar 1(Spring break Feb 23~ Mar 1)

Module 4 - Network Services and Devices | 2 weeks in this module | Mar 2 ~ Mar 15

Module 5 - Routing Technologies and Ethernet Switching | 2 weeks in this module | Mar 16 ~ Mar 29

Module 6 -Wireless and Network Availability | 2 weeks in this module | Mar 30~ Apr 12

Module7-Final Exam | Apr 13 ~ Apr 18 | Final exam day is Apr 18

Nondiscrimination Statement

The **Office of Civil Rights Compliance and Accessibility** (CRCA) is responsible for ensuring that FIU maintains a workplace and learning environment free from discrimination, where current and prospective faculty, staff, and students are treated equitably. If any student, employee, or applicant has a sincere and reasonable belief that they have been discriminated against or harassed based on age, color, disability, marital status, ethnic or national origin, race, religion, retaliation, sex, or any other protected category, they can report their concerns to the CRCA team through report.fiu.edu.