Point Loma Nazarene University

Mathematical, Information and Computer Sciences

School of STEM

CIT 3021 Network+ Exam Prep

Spring 2025 – Online (1 Credit Hour)

Time and Place: Online and anytime

Instructor: Maria Zack, Ph.D.

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Office Hours: Remote only: please email to make an appointment.

Text: Text is included as an electronic copy in the course.

If students would prefer a written copy of the textbook, they may purchase one at their own expense.

CompTIA Network+ Study Guide: Exam N10-009, 6th Edition
Author: Todd Lammle
Publisher: Wiley Sybex
ISBN: 978-1-394-23560-5

Needed Supplies:

Students will need access to a computer and a high-speed internet connection.

Course Description:

CIT 3021 is an independent study, self-paced, competency-based course designed for students who wish to prepare for the CompTIA's Network+ certification exam. The course is intended for students who have already completed the CIT 3014 – Networking course or equivalent network education. Students will be required to complete pre-assessment exams to determine which (if any) knowledge domains require review. Students will then review any required knowledge domains to prepare for the practice exams. Students will then take a series of practice tests, review deficient

content areas, and retake until all practice tests have been passed with an 80 or better. **A minimum score of 80 on all practice exams and the post-assessment exam is required to receive a voucher to take the certification exam.** A faculty adviser provides support and accountability in completing the course requirements. Although the course is self-paced, a minimum amount of progress must be made each week, and all course requirements must be completed within the assigned course time. Attempting the certification exam within the assigned course time is also required. Although passing the certification exam is not required to pass this course, the results of the certification exam will be used to determine the final grade in the course. Students already holding a current certification for this course are not eligible to take this course.

Philosophy and Approach:

Self-paced competency-based courses are designed to allow students to move through course material as quickly as they like while demonstrating a minimum level of competency on a given topic before they are permitted to move forward in the course. The course is divided into practice exams and other learning activities to help prepare students in the knowledge areas on the certification exams.

Although this is a self-paced course, students must complete all assignments before their due date to avoid any point deductions. Students must also complete all certification practice exams by the end of week 13 and attempt the Network+ certification exam by the end of week 14. Once students attempt the Network+ certification exams, no additional work in the course is required. However, if the student did not pass the certification exam on their first attempt, they can continue to study and retake the exam to improve their grade in the course until the end of week 15. Points will be deducted from the student's overall grade if activity due dates are not met. However, students are encouraged to move as quickly as they are able and complete all course requirements before the 15-week time limit.

Objectives:

The course is designed to help you:

- Acquire and reinforce knowledge and develop an understanding of the knowledge domains associated with the CompTIA Network+ certification exams.
- Prepare for and take the CompTIA Network+ certification exams.

Course Learning Outcomes

1. Students will be able to explain basic networking concepts and the OSI networking model and how it relates to the TCP/IP networking stack.
2. Students will be able to determine network names, broadcast addresses, subnet masks and host address ranges given a network address and subnet value.
3. Students will be able to determine the routing path and method of information as it passes through an IP network.
4. Students will be able to program routers and switch information to create an IP-based LAN/WAN.
5. Students will be able to explain network security risks and be able to analyze and determine appropriate network risk mitigation techniques.
6. Students will be able to utilize network troubleshooting techniques to solve common communication problems.

Program Learning Outcomes:

Graduates will have a coherent and broad-based knowledge of the discipline of Computer Information Technology.

1. Students will be able to identify and evaluate information technology infrastructure necessary to meet an organization's business needs.
2. Students will be able to develop, plan and evaluate appropriate processes for managing information systems and information technology projects.
3. Students will be able to design, develop, and evaluate software solutions to meet an organization's business needs.
4. Students will be able to apply their technical knowledge to solve problems.
5. Students will be able to speak about their work with precision, clarity and organization (Oral Communication).
6. Students will be able to write about their work with precision, clarity and organization (Written Communication).
7. Students will collaborate effectively in teams.
8. Students will be able to identify, locate, evaluate, and effectively and responsibly use and cite information for the task at hand (Information Literacy).
9. Students will be able to gather relevant information, examine information and form a conclusion based on that information (Critical Thinking).
10. Students will be able to understand and create arguments supported by quantitative evidence, and they can clearly communicate those arguments in a variety of formats (Quantitative Reasoning).
11. Students will understand the professional, ethical, legal, security and social issues and responsibilities with the implementation and use of information technology.

12. Computer Information Technology graduates will be adequately prepared for entry into graduate school or jobs in the computing profession.

Program Learning Outcomes Assessed in this Course:

Outcome: Students will be able to identify and evaluate information technology infrastructure necessary to meet an organization's business needs.

Assessment Tool: Certification Exam

Outcome: Students will be able to apply their technical knowledge and critical thinking to solve problems (Critical Thinking).

Assessment Tool: Certification Exam

Grading:

Students must earn 420 points on the certification exam and have no more than 60 points missing for late work from the final course points to earn 60% in the course to pass the course with a "D-".

Your grade for the course is based on the points earned by the following criteria at the end of the course:

- Exam score of 720 or more and the exam – 1000 points (100% or "A")
- Exam score between 620 and 719 and practice exams complete with 80+ - 860 points (86% or "B")
- Exam score between 520 and 619 and practice exams complete with 80+ - 760 points (76% or "C")
- Exam score between 420 and 519 and practice exams complete with 80+ - 660 points (66% or "D")
- Exam score below 420 or all quizzes and exams not complete with 80+ - zero points (0% or "F")

Grading Scale:

The grading scale for the course, in percentages of the maximum points in class is:

A	92.50 - 100%	**C**	72.50 - 77.49%
A-	90.00 - 92.49%	**C-**	70.00 - 72.49%

B+	87.50 - 89.99%	**D+**	67.50 - 69.99%
B	82.50 - 87.49%	**D**	62.50 - 66.49%
B-	80.00 - 82.49%	**D-**	60.00 - 62.49%
C+	77.50 - 79.99%	**F**	0 - 59.99%

Note: 25 points will be deducted from a student's overall point total for each assessment exam and practice exam that is not completed with a score of 80% or better by their respective due dates. 10 points per day will be deducted for each day the exam appointment confirmation and exam result is not submitted.

Late Work Policy

There will be overall course point deductions for each due date that is not met.

Credit Hour:

In the interest of providing sufficient time to accomplish the stated course learning outcomes, this class meets the PLNU credit hour policy for a 1-unit class delivered over 15 weeks. It is anticipated that you will spend a minimum of 37.5 participation hours per credit hour in your course. The estimated time expectations for this course are shown below:

Knowledge Domain Review	20
Practice Exams	12
Certification Exams	6
TOTAL	**38**

Tests and Learning Activities:

All chapter tests, practice exams and learning activities can be redone as often as needed to achieve the desired score. **A minimum score of 80% on all practice exams are required to pass the course if a passing score on the certification exams is not achieved.**

Final Exam: Date and Time:

The final in the course is the CompTIA Network+ certification exam and can be taken any time before its due dates. All students are required to attempt the certification exam at least once before the end of week 15. The cost of the first attempt on the exam is included as part of this course. Students may retake the certification exam if they do not pass on their first attempt but must purchase their own vouchers for any subsequent attempts.

Technical Support:

Please contact IT Services (ITS) at 619-849-2222 for technical support if your account gets locked out or you need a password reset. If you call after hours (between 6 pm and 11 pm), and the matter is urgent, you may leave a voice mail message and mark the message as urgent. The on-call technician will respond to you within 30 minutes.

University Mission:

To Teach ~ To Shape ~ To Send

Point Loma Nazarene University exists to provide higher education in a vital Christian community where minds are engaged and challenged, character is modeled and formed, and service becomes an expression of faith. Being of Wesleyan heritage, we aspire to be a learning community where grace is foundational, truth is pursued, and holiness is a way of life.

Department Mission:

The Mathematical, Information, and Computer Sciences department at Point Loma Nazarene University is committed to maintaining a curriculum that provides its students with the tools to be productive, the passion to continue learning, and Christian perspectives to provide a basis for making sound value judgments.

Academic Accommodations:

PLNU is committed to providing equal opportunity for participation in all its programs, services, and activities in accordance with the Americans with Disabilities Act (ADA). Students with disabilities may request course-related accommodations by contacting the Educational Access Center (EAC), located in the Bond Academic Center (EAC@pointloma.edu or 619-849-2486). Once a student's eligibility for an accommodation has been determined, the EAC will work with the student to create an Accommodation Plan (AP) that outlines allowed accommodations. The EAC makes accommodations available to professors at the student's request.

PLNU highly recommends that students speak with their professors during the first two weeks of each semester/term about the implementation of their AP in that particular course. Accommodations are not retroactive so clarifying with the professor at the outset is one of the best ways to promote positive academic outcomes.

Students who need accommodations for a disability should contact the EAC as early as possible (i.e., ideally before the beginning of the semester) to ensure appropriate accommodations can be provided. It is the student's responsibility to make the first contact with the EAC. Students cannot assume that because they had accommodations in the past, their eligibility at PLNU is automatic. All determinations at PLNU must go through the EAC process. This is to protect the privacy of students with disabilities who may not want to disclose this information and are not asking for any special accommodations.

Students wishing to receive accommodations for the official CompTIA certification exam, must contact CompTIA and request the accommodation themselves through PersonVue at https://home.pearsonvue.com/test-taker/Test-accommodations.aspx. Links to an external site.This process can take several weeks so students must begin the process early to seek an accommodation. The university can not assist in the CompTIA accommodation request, it is the student's responsibility to apply directly with PersonVue and to provide the required paperwork.

Artificial Intelligence (AI) Policy:

You are allowed to use Artificial Intelligence (AI) tools (e.g, ChatGPT, iA Writer, Marmot, Botowski) to generate ideas, but you are not allowed to use AI tools to generate content (text, video, audio, images) that will end up in any work submitted to be graded for this course. If you have any doubts about using AI, please gain permission from the instructor.

E-mail and Messages:

It is expected that students regularly use e-mail. The instructor will periodically send you information and updates via e-mail and/or via canvas. In the first week of class you must activate your PLNU e-mail account if you are not currently using it. Please send questions about specific problems or course details to the instructor by posting them in Canvas so that all members of the class can see the response.

Some Tips About This Class:

- Set aside at least one to two hours each week to complete learning sessions.
- Quizzes and assignments can be redone as many times as you like. Maximize your points by redoing assignments that do not receive full credit.
- If you have a question, ***ASK***.

Recommended Class Schedule:

Week 1	Take the pre-assessment exam and review knowledge domains where the score is below 80.
Week 2	Review chapter 18, complete chapter 18 labs and the chapter 18 quiz with a score better than 80%
Week 3	Review chapter 19, complete chapter 19 labs and the chapter 19 quiz with a score better than 80%
Week 4	Review chapter 20, complete chapter 20 labs and the chapter 20 quiz with a score better than 80%
Week 5	Review chapter 21, complete chapter 21 labs and the chapter 21 quiz with a score better than 80%
Week 6	Complete practice exam A with a score better than 80%

Week 7	Review chapters, labs, and quizzes from areas indicated on the practice exam.
Week 8	Complete practice exam B with a score better than 80%
Weeks 9	Review chapters, labs, and quizzes from areas indicated on the practice exam.
Week 10	Complete practice exam C with a score better than 80%
Week 11	Review chapters, labs, and quizzes from areas indicated on the practice exam.
Week 12	Complete the post-assessment exam with a score better than 80%
Week 13	Submit the exam appointment confirmation
Week 14	Review chapters, labs, and quizzes from areas indicated on the practice exam.
Week 15	Take the Network+ Certification exam and submit exam results
Week 16	Retake certification exam(s) if needed

Additional Course Information:

Additional PLNU policies and practicesLinks to an external site. that apply to this course can be found at the following link: https://docs.google.com/document/d/1RcF7S-KrVqgSVzclL1SnUjTIaIcySL8I/edit?usp=sharing&ouid=116164865489739533893&rtpof=true&sd=trueLinks to an external site.

Course Summary:

Date	Details	Due
Sun Jan 19, 2025	Assignment Pre-Assessment Exam	due by 11:59pm
Sun Jan 26, 2025	Assignment Chapter 18 - Labs	due by 11:59pm
	Assignment Chapter 18 - Network Troubleshooting Methodology	due by 11:59pm
	Assignment Chapter 18 - Quiz (80% or better)	due by 11:59pm
Sun Feb 2, 2025	Assignment Chapter 19 - Labs	due by 11:59pm
	Assignment Chapter 19 - Network Software Tools and Commands	due by 11:59pm
	Assignment Chapter 19 - Quiz (80% or better)	due by 11:59pm
Sun Feb 9, 2025	Assignment Chapter 20 - Labs	due by 11:59pm
	Assignment Chapter 20 - Network Security Concepts	due by 11:59pm
	Assignment Chapter 20 - Quiz (80% or better)	due by 11:59pm
Sun Feb 16, 2025	Assignment Chapter 21 - Common Types of Attacks	due by 11:59pm
	Assignment Chapter 21 - Labs	due by 11:59pm
	Assignment Chapter 21 - Quiz (80% or better)	due by 11:59pm
Sun Feb 23, 2025	Assignment Practice Exam A	due by 11:59pm

Date	Details	Due
Sun Mar 9, 2025	Assignment Practice Exam B	due by 11:59pm
Sun Mar 30, 2025	Assignment Practice Exam C	due by 11:59pm
Sun Apr 13, 2025	Assignment Post Assesment Exam	due by 11:58pm
Tue Apr 15, 2025	Assignment Exam Appointment Confirmation - Network+ N10-009	due by 11:59pm
Sun May 4, 2025	Assignment Exam Results	due by 11:59pm
	Assignment Official Course Evaluation	due by 11:59pm
	Assignment Chapter 01 - Introduction to Networks	
	Assignment Chapter 02 - The Open Systems Interconnection (OSI) Reference Model	
	Assignment Chapter 03 - Networking Connectors and Wiring Standards	
	Assignment Chapter 04 - The Current Ethernet Specifications	
	Assignment Chapter 05 - Networking Devices	
	Assignment Chapter 06 - Introduction to the Internet Protocol	
	Assignment Chapter 07 - IP Addressing	
	Assignment Chapter 08 - IP Subnetting, Troubleshooting IP, and Introduction to NAT	

Date	Details	Due
	Assignment Chapter 09 - Introduction to IP Routing	
	Assignment Chapter 10 - Routing Protocols	
	Assignment Chapter 11 - Switching and Virtual LANs	
	Assignment Chapter 12 - Wireless Networking	
	Assignment Chapter 13 - Remote Network Access	
	Assignment Chapter 14 - Using Statistics and Sensors to Ensure Network Availability	
	Assignment Chapter 15 - Organizational Documents and Policies	
	Assignment Chapter 16 - High Availability and Disaster Recovery	
	Assignment Chapter 17 - Data Center Architecture and Cloud Concepts	
	Assignment Deductions	
	Assignment Exam Results Points	