Networking Essentials INFO-1400 Course Syllabus Spring 2026

"Responsibility for learning belongs to the student, regardless of age" Robert Martin

Contents

Keys to Success: Show Up, Work Hard, Ask for Help

Your Instructor

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"There are no stupid questions. Ask questions whenever something isn't completely clear. You can't remember what you don't understand."

Tolerate chaos, uncertainty, and vagueness. "Figuring it out" is part of learning.

Class Meeting Times

- **Face to Face Class Location:** Scottsbluff Campus, Room D1
- **Scheduled Online Location:** Zoom link in Blackboard
- **Time:** Mon & Wed, 12:00-1:00 pm

Catalog Description

This course is a study of the fundamentals of current networking technology. Students will learn to design, plan, implement, and support computer networks. The course introduces the full range of computer networking from local-area networks to wide-area networks. The student is encouraged to take the Computing Technology Industry Association (CompTIA) Network+ certification exam. A current CompTIA Network+ certification is accepted as equivalent to this class. Please contact the instructor for details.

3.0 semester hours

(3/45/0/0/0/0) See Figure 1

Course Objectives/Competencies

At the completion of this course the student will be able to:

1. Explain the role of network media and topologies
2. Implement and explain protocols and standards
3. Install and configure a network
4. Maintain and troubleshoot a network
5. Design, write, and present an Information Technology business proposal in a clear, logical and understandable way [GE 1 & 2]
6. Self-direct their learning while gaining an ongoing interest in learning more about networking [GE 5]

Instructional Materials

Network+ Guide to Networks, 10th Ed, 2025, West Andrews Dean, Cengage Learning

The materials required for this course are included in Cengage Unlimited, a subscription service providing access to ALL Cengage ebooks and digital learning products. One Cengage Unlimited subscription can be used across all courses where Cengage products are assigned, at no additional cost.

Required MindTap Access Code (Includes the eBook and labs)

9780357700037 Cengage Unlimited (4 month access)

9780357700044 Cengage Unlimited (12 month access)

The textbook can be purchased at: Cougar Bookstore, Scottsbluff Campus, (308) 635-6066, or online at http://bookstore.wncc.edu

Other Materials

- Computer with ability to run Hyper-V, VirtualBox, or other virtualization software

Network+ Certification Test

There is a PearsonVue testing center at the Harms Center in Scottsbluff. WNCC is a CompTIA Authorized Academic Academy and receives a 50% discount on test vouchers.

- CompTIA Network+ Exam # JK0-019 Network+ Certification Exam

If you pass the Network+ test, you will receive an A+ for the class.

Course Schedule

Course content and schedule may change.

Week	Learning Activities	Assignments
Week 1 01/13 - 01/19	Introduction Discussion Introduction to Course Chapter 1 Introduction to Networking	Ninja Notes Getting Started Activities Getting Started Quiz

	MWF 12:00-1:00 pm: In Person & Online Classroom	Professional Communication Network+ Pre-Assessment Lab 1.1 Create Password Manager Account Lab 1.2 Smartphone Networking
Week 2 01/20 - 01/26	Chapter 1 Introduction to Networking MWF 12:00-1:00 pm: In Person & Online Classroom	Ninja Notes Lab Simulation 2-1 Zenmap (nmap) Lab Simulation 2-2 Install and Use Wireshark Windows 11 Virtualization OSI Model Character-based Names Used on a Network Cisco Getting Started with Packet Tracer Chapter 1 Quiz
Week 3 01/27 - 02/02	Chapter 2 Infrastructure and Documentation MWF 12:00-1:00 pm: In Person & Online Classroom Exit Ticket Tutorial	Ninja Notes ZenMap Enumerate a Network Wireshark Installation and Use NIC Manufacturer Identification Network Diagram Creation Windows Server Virtualization Chapter 2 Quiz
Week 4 02/03 - 02/09	Chapter 3 Addressing MWF 12:00-1:00 pm: In Person & Online Classroom	Ninja Notes Lab 3-2: DNS Cache NIC Manufacturer Identification DNS Management

		Wireshark View Ethernet Frames Wireshark View Ethernet Frames Quiz 7-2 Build a Packet Tracer Network Windows Server Part 1
Week 5 02/10 - 02/16	Chapter 3 Addressing MWF 12:00-1:00 pm: In Person & Online Classroom Exit Ticket Tutorial	Ninja Notes Kali Linux Virtualization Wireshark Decode a TCP Segment SYN ACK FIN Analysis Windows Server Part 2 Chapter 3 Quiz
Week 6 02/17 - 02/23	Chapter 4 Protocols MWF 12:00-1:00 pm: In Person & Online Classroom	Ninja Notes Lab 4-1: Repair a Duplicate IP Address Lab 4-2: Use Remote Desktop Configure Firewall DNS Testing Linux TCP/IP Utilities Redirect Command Output to a Text File Latency Around the World Windows Server Part 3 Semester Project Skype and Zoom
Week 7 02/24 - 03/02	Chapter 4 Protocols MWF 12:00-1:00 pm: In Person & Online Classroom Exit Ticket Tutorial	Ninja Notes Packet Tracer Routing Windows Server Part 4

		Chapter 4 Quiz Semester Project Team Process
Week 8 03/03 - 03/07	Chapter 5 Cabling MWF 12:00-1:00 pm: In Person & Online Classroom	Ninja Notes Lab 5.1 Latency around the World Lab 5.2 Decode a TCP Segment in a Wireshark Capture Semester Project Physical Wiring Map Chapter 5 Quiz
03-10 – 03-16	Spring Break	
Week 10 03/17 – 03/23	Chapter 6 Wireless Networking MWF 12:00-1:00 pm: In Person & Online Classroom Exit Ticket Tutorial	Ninja Notes Simulation 6.1: Configure a SOHO Router Simulation 6-2: Modify OHO Router Wireless Settings Windows Wireless netsh Commands Wireless Network Scanning Nslookup and ARP Semester Project Logical Network Diagram Chapter 6 Quiz
Week 11 03/24 – 03/30	Chapter 7 Network Architecture MWF 12:00-1:00 pm: In Person & Online Classroom	Ninja Notes 7-2 Build a Packet Tracer Network Semester Project Outline Chapter 7 Quiz

Week 12 03/31 – 04/06	Chapter 8 Network Segmentation MWF 12:00-1:00 pm: In Person & Online Classroom Exit Ticket Tutorial	Ninja Notes Simulation 8-1: Test Subnet Boundaries in Packet Tracer Simulation 8-2: Configure VLANs Using a Switch's GUI Binary Calculations 8-2 Create VLANs Using IPv4 in Packet Tracer Semester Project Budget Chapter 8 Quiz
Week 13 04/07 – 04/13	Chapter 9 Wide Area Networking MWF 12:00-1:00 pm: In Person & Online Classroom	Ninja Notes Lab 9.2: Create a Path MTU Black Hole Hash a Text String Password Creation Semester Project Rough Draft Chapter 9 Quiz
Week 14 04/14 – 04/20	Chapter 10 Risk Management MWF 12:00-1:00 pm: In Person & Online Classroom Week 13 IT Career Discussion	Ninja Notes Simulation 10-1: Scan a Network with Nmap Live Virtual Machine Lab 10.1: General Network Attacks 10-1 Configure RADIUS in Packet Tracer Linux iptables Semester Project Network Documentation Chapter 10 Quiz

Week 15 04/21 – 04/27	Chapter 11 Access Control MWF 12:00-1:00 pm: In Person & Online Classroom Lessons Learned Discussion	Ninja Notes 10-2 Secure a Basic Wireless Network in Packet Tracer 10-3 Configure ACLs in Packet Tracer Semester Project PowerPoint Presentation Chapter 11 Quiz
Week 16 04/28 – 05/04	Chapter 12 Performance and Recovery MWF 12:00-1:00 pm: In Person & Online Classroom Semester Project Presentation Discussion	Ninja Notes Simulation 12-1: Test Network Throughput with iPerf Simulation 12-2: Use PRTG to Monitor Network Devices WiFi Analyzer
Finals 05/05 - 05/09		Ninja Notes Group Project: Final Submission CompTIA Network+ Post-Assessment Final Exam

Academic Integrity

The academic integrity policy for this course includes the Institutional Academic Integrity Policy listed at the end of this document.

1. Do your own work.
2. You can ask for help if you get stuck. It is OK to have a study buddy to help with problems or issues. It is not OK to turn in the same assignment as someone else.
3. If you use someone else's work for a small quote or reference, cite the source.
4. Use your own words.
5. Do your own work. We are here to learn. You can't learn without doing the work.

Artificial Intelligence (AI)

AI is best used ethically and responsibly.

1. AI (ChatGPT, etc.) is a tool, just like a pencil, a computer, or Google. All work submitted must be your own. You may not submit any work generated by an AI program as your own.
2. You will be working with AI in the workplace. Certain homework assignments will involve the use of AI technologies. The aim of these assignments is to familiarize you with practical AI applications.
3. If an assignment permits AI: Include the AI name, the prompt and the result.
4. Do not pass AI work off as your own.

NOTE: If an assignment seems out of character or not in the style we have been using in class: you will receive a 0 until you contact the instructor to explain how you arrived at this code.

AI use indicators:

 No AI use: It is important for acquiring skills that you are able to do this assignment on your own.

 AI can be used as a debugger or tutor. Include the prompt and results.

 AI can be used as a code helper. Include the prompt and results.

Minor Violations: First offense: Grade of 0 for the assignment.

Major Violations: Second offense: Grade of F for the class.

Do your own work.

Assignment Creativity

As long as your assignment submission meets the requirements of the tutorial or assignment, you are free to embellish the resulting work as much as you wish before submission. This is where the real learning starts.

Attendance

In addition to the WNCC Attendance policy (in the WNCC Master Syllabus Contents) you are required to turn in your weekly notes to be considered attending this class.

WNCC Master Syllabus Contents

This link contains the common WNCC Syllabus policies.