North Central State College

MASTER SYLLABUS	2026-2027

A. Academic Division: Engineering Technology, Business & Criminal Justice Division

B. Discipline: Information Technology - Networking

C. Course Number and Title: ITEC1640 – Introduction to Networks CCNA1

D. Assistant Dean: Brooke Miller, M.B.A.

E. Credit Hours: 2
Lecture: 1 hour
Laboratory: 2 hours

F. Prerequisites: None

G. Last Course/Curriculum Revision Date: Fall 2026 Origin date: 11/28/2017

H. Textbook(s) Title:

- Cisco Online Curriculum
- External USB 3.0 Solid State Drive
- ISBN: 8780000191138

I. Workbook(s) and/or Lab Manual:

J. Course Description: This is the first course in a series of three. The curriculum provides a comprehensive introduction to the networking field and in-depth exposure to fundamental networking, LAN switching, wireless LANs, basic routing, Cybersecurity, WAN concepts, VPNs, QoS, virtualization, and network automation. Threaded throughout the course are security concepts and skills including threat mitigation through LAN security, ACLs, and IPsec. Through hands-on lab activities, students learn how to implement network technologies and troubleshoot common issues. This course, together with ITEC 1645 and ITEC 1665, prepares students for Cisco's CCNA certification exam. CTAG: CTIT007

K. College-Wide Learning Outcomes:

College-Wide Learning Outcome	Assessments - - How it is met & When it is met
Communication – Written	
Communication – Speech	
Intercultural Knowledge and Competence	
Critical Thinking	
Information Literacy	
Quantitative Literacy	

L. Course Outcomes and Assessment Methods:

Upon successful completion of this course, the student shall:

Outcomes	Assessments – How it is met & When it is met
1. Implement initial settings including passwords, IP addressing, and default gateway parameters on a network switch and end devices.	Week 1 tests, labs, practice and final exams
2. Explain how network protocols enable devices to access local and remote network resources.	Week 2 tests, labs, practice and final exams
3. Explain how physical layer protocols, services, and network media support communications across data network.	Week 3 tests, labs, practice and final exams
4. Explain how media access control in the data link layer supports communication across networks.	Week 4 tests, labs, practice and final exams
5. Explain how Ethernet operates in a switched network.	Week 5 tests, labs, practice and final exams
6. Explain how routers use network layer protocols and services to enable end-to-end connectivity.	Week 6 tests, labs, practice and final exams
7. Explain how ARP and ND enable communication on a local area network.	Week 7 tests, labs, practice and final exams
8. Implement initial settings on a router and end devices.	Week 7 tests, labs, practice and final exams
9. Compare the operations of transport and application layer protocols in supporting end-to-end communication.	Week 8 tests, labs, practice and final exams

M. Recommended Grading Scale:

NUMERIC	GRADE	POINTS	DEFINITION
93–100	A	4.00	Superior
90–92	A-	3.67	Superior
87–89	B+	3.33	Above Average
83–86	B	3.00	Above Average
80–82	B-	2.67	Above Average
77–79	C+	2.33	Average
73–76	C	2.00	Average
70-72	C-	1.67	Average
67–69	D+	1.33	Below Average
63-66	D	1.00	Below Average
60-62	D-	0.67	Below Average
00-59	F	0.00	Failure

N. College Procedures/Policies:

North Central State College believes that every student is a valued and equal member of the community.* Every student brings different experiences to the College, and all are important in enriching academic life and developing greater understanding and appreciation of one another. Therefore, NC State College creates an inclusive culture in which students feel comfortable sharing their experiences. Discrimination and prejudice have no place on the campus, and the College takes any complaint in this regard seriously. Students encountering aspects of the instruction that result in barriers to their sense of being included and respected should contact the instructor, assistant dean, or dean without fear of reprisal.

* *Inclusive of race, color, religion, gender, gender identity or expression, national origin (ancestry), military status (past, present or future), disability, age (40 years or older), status as a parent during pregnancy and immediately after the birth of a child, status as a parent of a young child, status as a foster parent, genetic information, or sexual orientation*

Important information regarding College Procedures and Policies can be found on the syllabus supplement located at https://ncstatecollege.edu/documents/President/PoliciesProcedures/PolicyManual/Final%20PDFs/14-081b.pdf

North Central State College

SYLLABUS ADDENDUM

Academic Division:	Engineering Technology, Business & Criminal Justice Division	**Discipline:**	Information Technology
Course Coordinator:	Daniel Foss		
Course Number:	ITEC-1640-921	**Course Title:**	Introduction to Networks CCNA1
Semester / Session:	Fall 2026	**Start / End Date:**	8/17/2026 thru 10/9/2026

Instructor Information

Name:	Daniel Foss	**Credentials:**	M.Ed., Curriculum and Instruction – Computer B.S., Education
Phone Number:	419-755-4728	**E-Mail Address:**	dfoss@ncstatecollege.edu
Office Location:	Kehoe Room 141 and Online via Zoom: https://tinyurl.com/ITEC-Office-Hours	**Office Hours:**	Mondays 10:00am - 1:00pm online at https://tinyurl.com/ITEC-Office-Hours Wednesdays, 8:00-10:00am at Kehoe 139 Other days/times by appointment

I. Topical Timeline / Course Calendar (Subject to Change – refer to Canvas for schedule):

Week	Modules Covered	Assignments (Specific)	Due Date
1	Modules 1–3: Networking Today; Basic Switch & End Device Configuration; Protocols & Models	- Labs: Research IT & Networking Jobs; Basic Switch and End Device Configuration - Simulations: Packet Tracer – Logical/Physical Mode Exploration; Network Representation; Navigate IOS; Implement Basic Connectivity; Basic Switch & End Device Config; Investigate TCP/IP & OSI Models - Quizzes: Module 1 Quiz, Module 2 Quiz, Module 3 Quiz, Check Your Understanding quizzes (Network Components, Network Trends, IOS Navigation, Protocols, Protocol Suites, Data Access) - Exam: Checkpoint – Basic Network Connectivity & Communications	21-Aug-26
2	Modules 4–5: Physical Layer; Number Systems	- Labs: View Wired/Wireless NIC Info - Simulations: Packet Tracer – Connect Wired/Wireless LAN; Physical Layer Exploration; Connect the Physical Layer - Quizzes: Module 4 Quiz, Module 5 Quiz, Check Your Understanding (Physical Layer Standards, Copper Cabling, Fiber, Wireless Media, Binary, Hexadecimal)	28-Aug-26
3	Modules 6–7: Data Link Layer; Ethernet Switching	- Labs: Use Wireshark to Examine Ethernet Frames; View Device MAC Addresses; View Switch MAC Table - Simulations: Packet Tracer – Ethernet Switch MAC Table; Switch Speeds/Forwarding Methods - Quizzes: Module 6 Quiz, Module 7 Quiz, Check Your Understanding (Layer 2 Functions, Topologies, Data Link Frame, Ethernet Switching, MAC Address Table, Switching Methods) - Exam: Checkpoint – Ethernet Concepts	4-Sep-26
4	Modules 8–10: Network Layer; Address Resolution; Basic Router Configuration	- Labs: Build a Switch/Router Network - Simulations: Packet Tracer – IPv4/IPv6 Packet Headers; Identify MAC & IP; Examine ARP Table; IPv6 Neighbor Discovery; Configure Initial Router Settings; Troubleshoot Default Gateway - Quizzes: Module 8 Quiz, Module 9 Quiz, Module 10 Quiz, Check Your Understanding (IP Characteristics, ARP, IPv6 ND, Router Interfaces, Default Gateway) - Exam: Checkpoint – Communicating Between Networks	11-Sep-26

5	Modules 11–12: IPv4 & IPv6 Addressing	- Labs: Calculate IPv4 Subnets; Design & Implement VLSM Scheme; Identify IPv6 Addresses; Configure IPv6 Addresses on Devices - Simulations: Packet Tracer – Subnet IPv4 Network; Subnetting Scenario; VLSM Practice; Configure IPv6 Addressing; Implement IPv6 Subnet Scheme - Quizzes: Module 11 Quiz, Module 12 Quiz, Check Your Understanding (IPv4 Address Structure, Subnetting, VLSM, IPv6 Address Types, Static/Dynamic IPv6 Config, IPv6 Subnetting)	18-Sep-26
6	Modules 13–15: ICMP; Transport Layer; Application Layer	- Labs: Use Ping/Traceroute to Test Connectivity; Observe DNS Resolution - Simulations: Packet Tracer – Verify IPv4/IPv6 Addressing; Use ICMP to Test/Fix Connectivity; TCP/UDP Communications - Quizzes: Module 13 Quiz, Module 14 Quiz, Module 15 Quiz, Check Your Understanding (ICMP Messages, Ping/Traceroute, TCP/UDP, Port Numbers, HTTP/HTTPS, Email Protocols, DNS, DHCP, FTP, SMB) - Exam: Checkpoint – Network Application Communications	25-Sep-26
7	Modules 16–17: Network Security Fundamentals; Build a Small Network	- Labs: Research Security Threats; Configure Devices with SSH; Secure Network Devices; Troubleshoot Connectivity Issues; Design/Build Small Business Network - Simulations: Packet Tracer – Configure SSH & Secure Passwords; Skills Integration Challenge; Troubleshooting Challenge - Quizzes: Module 16 Quiz, Module 17 Quiz, Check Your Understanding (Security Threats, Mitigation, Device Security, Small Network Devices, Applications, Protocols, Troubleshooting) - Exam: Checkpoint – Building & Securing a Small Network All graded labs, simulations, and quizzes due this week	2-Oct-26
8	Finals Week	- Exams: ITN Final Skills Exam (PTSA); Equipment Skills Exam; CCNA 1 Course Final Exam	9-Oct-26

II. Grading and Testing Guidelines:

Category	Count	Points	Weight (%)
Labs	14	1,400	20 %
Simulations	31	3,100	25 %
Quizzes	58	5,800	25 %
Exams	11	1,100	30 %

- Grading scale is the college grading scale:

NUMERIC	GRADE	POINTS	DEFINITION
93–100	A	4.00	Superior
90–92	A-	3.67	Superior
87–89	B+	3.33	Above Average
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77–79	C+	2.33	Average
73–76	C	2.00	Average
70-72	C-	1.67	Below Average
67–69	D+	1.33	Below Average
63-66	D	1.00	Below Average
60-62	D-	0.67	Poor
00-59	F	0.00	Failure

III. Examination Policy:

- All exams must be submitted through the Cisco Networking Academy LMS and/or Canvas.
- You may reference the online curriculum, official CCNA documentation, and other reputable sources.
- Collaboration on exams is not permitted unless explicitly authorized.
- AI tools (e.g., Copilot, ChatGPT) are not allowed during quizzes or exams.
- Free Tutoring Service is available: https://ncstatecollege.edu/student-services/tutoring/

Assignment Policy:

- All assignments must be completed using the Cisco Networking Academy LMS and/or Canvas.
- AI Tools like Copilot and ChatGPT may be used for feedback or clarification, but final submissions must reflect your own independent work.
- Use of the online curriculum for reference is encouraged.
- You may consult documentation, tutorials, and forums for guidance.
- Download, complete, and upload your own work. All submitted project files must be your own original work.
- Plagiarism or submission of work not your own is a serious offense and may result in course failure.
- If you need assistance with the course assignments, contact the Tutoring Department or the Instructor. Tutoring Information (free) can be found at: https://ncstatecollege.edu/student-services/tutoring/

IV. Course Attendance and Late Assignment Policy:

- Class attendance is recorded by completion of weekly assignments and activities.
- Assignments are due before midnight every Friday.
- Early submissions are encouraged.
- Except for the final project, all assignments are allowed to be submitted late.
- Each assignment builds on previous work, do not skip assignments. If it is late, submit as soon as possible.
- If you anticipate missing a deadline, contact the instructor in advance to discuss possible accommodation.
- Excused absences include:

  a. Hospitalization
  b. Death in the family
  c. Personal illness or illness in immediate family
  d. Military leave
  e. Travel for employment

V. Course Expectations:

- All students are expected to demonstrate professional behavior and use language appropriate for the learning experience, both written and orally.
- For online classes, students are required to have access to an internet connection and a laptop or desktop computer. Chromebooks are not adequate for this course.
- MacBooks are acceptable, however, there may be some assignments that can only be completed on a Windows computer.
- The college provides free computer labs - https://ncstatecollege.edu/student-services/computer-labs/ and loaner laptops - https://ncstatecollege.edu/advocacy-and-resources/ - select Technology Resources