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: ITEC1645 – Switching, Routing, and Wireless Essentials CCNA2

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

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

F. Prerequisites: ITEC 1640 (minimum grade C-)

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

H. Textbook(s) Title:

None.

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

J. Course Description: This is the second 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 1640 and ITEC 1665, prepares students for Cisco's CCNA certification exam. CTIT008

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. Configure devices using security best practices for a given set of conditions.	tests, labs, practice and final exams
2. Explain how routers use information in packets to make forwarding decisions.	tests, labs, practice and final exams
3. Configure IPv4 and IPv6 floating static routes.	tests, labs, practice and final exams
4. Implement VLANs and trunking in a switched network	tests, labs, practice and final exams
5. Explain how Layer 2 switches forward data.	tests, labs, practice and final exams
6. Implement DHCPv4 to operate across multiple LANs.	tests, labs, practice and final exams
7. Configure switch security to mitigate LAN attacks for a given set of conditions.	tests, labs, practice and final exams
8. Explain the operation of dynamic address allocation in IPv6 networks.	tests, labs, practice and final exams
9. Explain how WLANs enable network connectivity	tests, labs, practice and final exams
10. Implement a WLAN using a wireless router and WLC	tests, labs, practice and final exams
11. Explain how to troubleshoot static and default route configurations.	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-1645-921	**Course Title:**	Switch/Route/Wireless CCNA2
Semester / Session:	Fall 2026	**Start / End Date:**	8/17/2026 thru 12/11/2026

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 https://ncsc.zoom.us/j/88982241963	**Office Hours:**	Mondays 10:00am - 1:00pm Wednesdays, 8:00-10:00am at Kehoe 139 https://tinyurl.com/ITEC-Office-Hours 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 (Friday)
1	Modules 1–2: Basic Device Configuration; Switching Concepts	**Labs:** Configure Basic Router Settings – Physical Mode; Implement a Small Network. **Simulations:** Packet Tracer – Logical/Physical Mode Exploration; Configure SSH; Configure Router Interfaces; Verify Directly Connected Networks. **Quizzes:** Module 1 Quiz, Module 2 Quiz	10/16/2026
2	Modules 3–4: VLANs; Inter-VLAN Routing	**Labs:** Implement VLANs and Trunking; Configure Router-on-a-Stick; Troubleshoot Inter-VLAN Routing. **Simulations:** Packet Tracer – VLAN Configuration; Configure Trunks; Configure DTP; Layer 3 Switching; Inter-VLAN Routing Challenge. **Quizzes:** Module 3 Quiz, Module 4 Quiz **Exam:** Checkpoint – Switching Concepts, VLANs, and Inter-VLAN Routing	10/23/2026
3	Modules 5–6: STP Concepts; EtherChannel	**Labs:** Implement EtherChannel. **Simulations:** Packet Tracer – Investigate STP Loop Prevention; Configure EtherChannel; Troubleshoot EtherChannel. **Quizzes:** Module 5 Quiz, Module 6 Quiz **Exam:** Checkpoint – Redundant Networks	10/30/2026
4	Modules 7–9: DHCPv4; SLAAC and DHCPv6; FHRP Concepts	**Labs:** Implement DHCPv4; Configure DHCPv6. **Simulations:** Packet Tracer – Configure DHCPv4; Configure DHCPv6 Relay. **Quizzes:** Module 7 Quiz, Module 8 Quiz, Module 9 Quiz **Exam:** Checkpoint – Available and Reliable Networks (Midterm)	11/6/2026
5	Modules 10–11: LAN Security Concepts; Switch Security	**Labs:** Switch Security Configuration. **Simulations:** Packet Tracer – HSRP Configuration; Implement Port Security. **Quizzes:** Module 10 Quiz, Module 11 Quiz	11/13/2026
6	Modules 12–13: WLAN Concepts; WLAN Configuration	**Labs:** Configure a Wireless Network; Configure WPA2 Enterprise WLAN. **Simulations:** Packet Tracer – WLAN Configuration; Configure Basic WLAN on WLC; Troubleshoot WLAN Issues. **Quizzes:** Module 12 Quiz, Module 13 Quiz **Exam:** Checkpoint – L2 Security and WLANs	11/27/2026

Week	Modules Covered	Assignments (Specific)	Due Date (Friday)
7	Modules 14–16: Routing Concepts; IP Static Routing; Troubleshoot Static and Default Routes	**Labs:** Configure IPv4/IPv6 Static and Default Routes; Troubleshoot Static and Default Routes. **Simulations:** Packet Tracer – Configure Static Routes; Configure Floating Static Routes; Troubleshoot Routing Issues. **Quizzes:** Module 14 Quiz, Module 15 Quiz, Module 16 Quiz **Exam:** Checkpoint – Routing Concepts and Configuration	12/4/2026
8	Finals Week	**Exams:** SRWE Final Skills, Course Feedback; CCNA 2 Course Final Exam	9-Dec-26

II. Grading and Testing Guidelines:

Category	Count	Points	Weight
Labs	13	1300	20 %
Simulations	33	3300	25 %
Quizzes	16	1600	25 %
Exams	11	1100	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
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	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