

Class of '26-'27

Tom P. Haney Technical College
Enterprise Network and Server Support Technology (ENSST)
Program Type: Career Preparatory - Information Technology
Program Number: Y300500
Program Length: 750 hours

Instructor: Mr. Jim Spring
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(850) 767-5500 ext. 212-3218

Monday through Friday; 7am to 12pm

OCP B.2 – Interconnecting Cisco Networking Devices (CTS0094 - 600 Hours)

Cisco CCNA2: Switching, Routing, and Wireless Essentials - Ver. 7.0

COURSE DESCRIPTION

The courses in the CCNA Version 7.0 curriculum help students develop a comprehensive foundation for designing, securing, operating, and troubleshooting modern computer networks, on the scale from small business networks to enterprise networks, with an emphasis on hands-on learning and essential career skills like problem solving and collaboration.

The second course in the CCNA curriculum focuses on switching technologies and router operations that support small-to-medium business networks and includes wireless local area networks (WLANs) and security concepts. Students learn key switching and routing concepts. They can perform basic network configuration and troubleshooting, identify, and mitigate LAN security threats, and configure and secure a basic WLAN.

GRADING SCALE

A = 90-100%
B = 80-89%
C = 70-79%
F = 0-69%

OCP A WEIGHTED GRADE CALCULATION

Canvas Lab Assignments and Skills Assessment = 35%
NetAcad Module Quizzes (Formative) = 10%
NetAcad CheckPoint and Final Exams (Summative) = 40%
Employability Skills = 15%

NOTE: Your weighted grade in each OCP must be greater than or equal to 80% to pass this course.

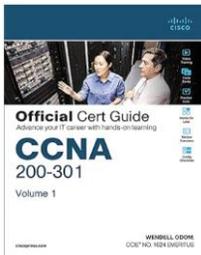
COURSE ORGANIZATION

This instructor-led course utilizes online course materials via *haney.instructure.com* (Canvas) and Cisco's *NetAcad.com* meaning that most activities are completed online. This course is designed to prepare the student to take the Cisco Certified Network Associate

(CCNA) certification exam. All email correspondence with students will take place via their student email account. Students need to check this email daily for information from the instructor and the college. Students will also need to log into Canvas daily to check for new announcements regarding any changes or information about instructional material and activities and to upload their completed lab assignments. After every couple of NetAcad course chapters, students will complete the CheckPoint Exam Assessments. These assessments have been set up in NetAcad in quiz format for easier grading. These assessments will have a time limit and allow for two submissions. Once a student has submitted their assessment, they will be able to view their grade and decide whether they would like to attempt the assessment a second time. Students will not be able to view the answers to the assessments until after the due date has passed for the assessment. The highest grade between the two attempts counts. Students will also complete hands-on labs to practice the skills learned in the lesson. Students will be assigned to a Cisco "pod" consisting of two Cisco switches, two Cisco routers and two computer workstations which are used to complete hands-on labs. Students will also use Cisco's Packet Tracer virtual environments to complete virtual lab assignments. The provided lab worksheets MUST be completed along with each lab and must be submitted via Canvas. A final exam *and* a final skills assessment will also be administered that covers all topics covered in class.

REQUIRED TEXTS:

No textbook is required for this class. Below is a list of recommended reference books that can help you in class and/or study for your certification exam.



CCNA 200-301 Official Cert Guide, Volume 1 by Wendell Odom

CCNA 200-301 Official Cert Guide, Volume 2 by Wendell Odom, et. al.

ATTENDANCE POLICY

Students are required to attend class Monday through Friday, 7 AM to 12 PM. Class will begin at 7 AM with morning announcements and chapter reviews. It is important to be on time each day. College policy requires that a student be present 90% of the enrollment period designated hours. For ENSST, an enrollment period is 375 hours (one semester), therefore a student is allowed to miss 37.5 hours per semester. If a student exceeds 37.5 hours absence in an enrollment period, the student will be withdrawn from the ENSST program. This

policy is not negotiable. Withdrawal exceptions cannot and will not be made for any student exceeding their allowed 10% absences. Students will be responsible for any missed work or assignments. NOTE: Military veterans or dependents using VA assistance have a different attendance policy. Please refer to the Tom P. Haney Student Handbook for more information on Haney's attendance policy.

ACADEMIC INTEGRITY

Tom P. Haney Technical College is committed to providing an honest and fair learning environment and to preparing students for academic and career success. Students are expected to recognize and uphold standards of intellectual and academic integrity. Integrity means being honest, responsible, respectful, and ethical, and applies whether working independently or collaboratively, regardless of the level of supervision. Integrity and honesty are a part of professionalism and demonstrate employability skills. The College will not tolerate any dishonest practices, including plagiarism, in the academic environment.

ELECTRONIC DEVICE POLICY

- Cell phones are not allowed to be used in the classroom. Students will be able to store their cell phones in a cell phone locker in the back of the classroom. Students are allowed to use their cell phones outside of class when on breaks or at lunch. Please refer to Haney's Student Handbook for more information on our cell phone policy.
- Personal laptops and tablets are not allowed to be used in the classroom. If laptops are required in this course, the college will provide one per student. Students are not allowed to take their assigned laptops home for any reason and must be placed in the laptop cart at the end of the day.

FOOD AND DRINK POLICY

Food is not allowed in the classroom. Snacks and lunches are to be eaten in the Bldg 3 atrium or outside while on breaks. Water is allowed in class provided you use a container with a secured top such as water bottles, Tervis or Stanley tumblers. Fast food cups and aluminum cans are not considered secure containers. If you doubt your drink container is allowed, then ask your instructor.

STUDENTS WITH DISABILITIES STATEMENT

If you have a disability that may affect your academic performance and are seeking accommodations, it is your responsibility to inform the Student Services (Bldg 1). You may contact Ms. Sandy Johnson at (850) 767-5500 ext. 767-5527 if you have any questions concerning accommodations and services. You may visit the Disability Services webpage or the Disability Services section of the Student Handbook to learn more about accommodations and special services. It is important to request accommodations early enough to give the Counseling Services office adequate time to consider your request and recommend reasonable accommodations. Students are encouraged to initiate the request process as soon as possible at the beginning of a semester or class. Accommodations are not

retroactive and only become active after all required documents are submitted. Instructors will provide necessary accommodations based solely on the recommendations of the Disability Services office.

COURSE MODULES AND OBJECTIVES

Listed below are the current set of modules and their associated competencies outlined for this course. Each module is an integrated unit of learning that consists of content, activities and assessments that target a specific set of competencies. The size of the module will depend on the depth of knowledge and skill needed to master the competency.

Module 1 – Basic Device Configuration	<p>Configure initial settings on a Cisco switch.</p> <p>Configure switch ports to meet network requirements</p> <p>Configure secure management access on a switch.</p> <p>Configure basic settings on a router, using CLI, to route between two directly-connected networks.</p> <p>Verify connectivity between two networks that are directly connected to a router.</p>
Module 2 – Switching Concepts	<p>Explain how frames are forwarded in a switched network.</p> <p>Compare a collision domain to a broadcast domain.</p>
Module 3 – VLANs	<p>Explain the purpose of VLANs in a switched network.</p> <p>Explain how a switch forwards frames based on VLAN configuration in a multi-switch environment.</p> <p>Configure a switch port to be assigned to a VLAN based on requirements.</p> <p>Configure a trunk port on a LAN switch.</p> <p>Configure Dynamic Trunking Protocol (DTP).</p>
Module 4 – Inter-VLAN Routing	<p>Describe options for configuring inter-VLAN routing.</p> <p>Configure router-on-a-stick inter-VLAN routing.</p> <p>Configure inter-VLAN routing using Layer 3 switching.</p> <p>Troubleshoot common inter-VLAN configuration issues</p>

CheckPoint Exam: Switching Concepts, VLANs, and Inter-VLAN Routing	
Module 5 – STP	<p>Explain common problems in a redundant, L2 switched network.</p> <p>Explain how STP operates in a simple, switched network.</p> <p>Explain how Rapid PVST+ operates.</p>
Module 6 – Etherchannel	<p>Describe EtherChannel technology.</p> <p>Configure EtherChannel.</p> <p>Troubleshoot EtherChannel.</p>
CheckPoint Exam: Redundant Networks	
Module 7 – DHCPv4	<p>Explain how DHCPv4 operates across multiple LANs.</p> <p>Configure a router as a DHCPv4 server.</p> <p>Configure a router as a DHCPv4 client.</p>
Module 8 – SLAAC and DHCPv6	<p>Explain how an IPv6 host can acquire its IPv6 configuration.</p> <p>Explain the operation of SLAAC.</p> <p>Explain the operation of DHCPv6.</p> <p>Configure a stateful and stateless DHCPv6 server.</p>
Module 9 – FHRP Concepts	<p>Explain the purpose and operation of first hop redundancy protocols.</p> <p>Explain how HSRP operates.</p>
CheckPoint Exam: Available and Reliable Networks	
Module 10 – LAN Security Concepts	<p>Explain how to use endpoint security to mitigate attacks.</p> <p>Explain how AAA and 802.1x are used to authenticate LAN endpoints and devices.</p> <p>Identify Layer 2 vulnerabilities.</p>

	<p>Explain how a MAC address table attack compromises LAN security.</p> <p>Explain how LAN attacks compromise LAN security.</p>
Module 11 – Switch Security Concepts	<p>Implement port security to mitigate MAC address table attacks.</p> <p>Explain how to configure DTP and native VLAN to mitigate VLAN attacks.</p> <p>Explain how to configure DHCP snooping to mitigate DHCP attacks.</p> <p>Explain how to configure ARP inspection to mitigate ARP attacks.</p> <p>Explain how to configure Portfast and BPDU Guard to mitigate STP attacks.</p>
Module 12 – WLAN Concepts	<p>Describe WLAN technology and standards.</p> <p>Describe the components of a WLAN infrastructure.</p> <p>Explain how wireless technology enables WLAN operation.</p> <p>Explain how a WLC uses CAPWAP to manage multiple APs.</p> <p>Describe channel management in a WLAN.</p> <p>Describe threats to WLANs.</p> <p>Describe WLAN security mechanisms.</p>
Module 13 – WLAN Configuration	<p>Configure a WLAN to support a remote site.</p> <p>Configure a WLC WLAN to use the management interface and WPA2 PSK authentication.</p> <p>Configure a WLC WLAN to use a VLAN interface, a DHCP server, and WPA2 Enterprise authentication.</p> <p>Troubleshoot common wireless configuration issues.</p>
CheckPoint Exam: L2 Security and WLANs	
Module 14 – Routing Concepts	<p>Explain how routers determine the best path.</p> <p>Explain how routers forward packets to the destination.</p> <p>Configure basic settings on a Cisco IOS router.</p> <p>Describe the structure of a routing table.</p> <p>Compare static and dynamic routing concepts.</p>

Module 15 – IP Static Routing	Describe the command syntax for static routes. Configure IPv4 and IPv6 static routes. Configure IPv4 and IPv6 default static routes. Configure a floating static route to provide a backup connection. Configure IPv4 and IPv6 static host routes that direct traffic to a specific host.
Module 16 – Troubleshoot Static and Default Routes	Explain how a router processes packets when a static route is configured. Troubleshoot common static and default route configuration issues.
CheckPoint Exam: Routing Concepts and Configuration	
CCNA: Switching, Routing, and Wireless Essentials Practice Final Exam	
CCNA: Switching, Routing, and Wireless Essentials Final Exam	
CCNA: Switching, Routing, and Wireless Essentials Practice Final Skills Assessment	
CCNA: Switching, Routing, and Wireless Essentials Final Skills Assessment	

NOTE: This syllabus may change at the instructor's discretion. It is the responsibility of the student to record changes.