

CCNA 7: Switching, Routing and Wireless Essentials

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Course Description

Switching, Routing, and Wireless Essentials (SRWE) covers the architecture, components, and operations of routers and switches in small networks and introduces wireless local area networks (WLAN) and security concepts. Students learn how to configure and troubleshoot routers and switches for advanced functionality using security best practices and resolve common issues with protocols in both IPv4 and IPv6 networks.

Course Objectives

By the end of the course, students will be able to:

- Configure VLANs and Inter-VLAN routing applying security best practices.
- Troubleshoot inter-VLAN routing on Layer 3 devices.
- Configure redundancy on a switched network using STP and EtherChannel.
- Troubleshoot EtherChannel on switched networks.
- Explain how to support available and reliable networks using dynamic addressing and first-hop redundancy protocols.
- Configure dynamic address allocation in IPv6 networks.
- Configure WLANs using a WLC and L2 security best practices.
- Configure switch security to mitigate LAN attacks.
- Configure IPv4 and IPv6 static routing on routers.

Course Outline

Module 1: Basic Device Configuration	Module 10: LAN Security Concepts
Module 2: Switching Concepts	Module 11: Switch Security Configuration
Module 3: VLANs	Module 12: WLAN Concepts
Module 4: Inter-VLAN Routing	Module 13: WLAN Configuration
Module 5: STP	Module 14: Routing Concepts
Module 6: EtherChannel	Module 15: IP Static Routing
Module 7: DHCPv4	Module 16: Troubleshoot Static and Default Routes
Module 8: SLAAC and DHCPv6 Concepts	
Module 9: FHRP Concepts	

Curriculum & Useful URLs

Students can access the curriculum on the Internet at [cisco.netacad.net](https://www.cisco.netacad.net) (there is no paper textbook). A screen name and password will be used to login into Cisco Network Academy which is Cisco's on-line learning environment.

Other Useful URLs:

🔗 Moodle: <https://moodle.helenaschools.org/>



Classroom Expectations

BE RESPONSIBLE

- ☞ Be seated when bell rings (5 or more minutes tardy = absent)
- ☞ No food or drinks except for those listed in handbook
- ☞ Take care of the equipment & clean up after yourself

BE INVOLVED

- ☞ **You have to be able to read the curriculum and complete on-line assessments, activities and labs to do well in this class. If you are unable to do this, this is not the class for you.**
- ☞ Stay awake
- ☞ Work hard on Cisco work the whole period
 - ☞ Don't use Cisco time to work on other classes.
 - ☞ Internet is only for Cisco work (see HHS AUP)
- ☞ **Cellphones and headphones are not allowed** – both interfere with being able to get the most out of the class

BE RESPECTFUL

- ☞ Compliment people instead of putting them down
- ☞ Don't be disruptive (out of seat, talking when I am talking, etc.)

BE A GRADUATE

- ☞ Don't cheat – all parties involved will receive a 0 if caught

GRADE CALCULATION

- ☞ Assignments 70%
- ☞ Quizzes/Tests 30%
- ☞ Semester Grade = Q1/Q3 40%, Q2/Q4 40% & Final 20%

GRADING Scale

- ☞ 100-92 = A 91-90 = A- 89-88 = B+ 87-82 = B 81-80 = B-
- ☞ 79-78 = C+ 77-72 = C 71-70 = C- 69-68 = D+ 67-62 = D
- ☞ 61-60 = D- 59 & below = F

LATE WORK

- ☞ 20% off on any assignment that is turned in late

ABSENCES

- ☞ Check assignments on my webpage
- ☞ New assignments: 2 days for 1st day missed; 1 for all others
 - ☞ Previously assigned work will be due on original due date
 - ☞ Previously scheduled tests will be taken on return to class