

Cisco CCNA R&S: Routing and Switching Essentials

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Course Description

Routing and Switching Essentials is the second course in the CCNA Routing and Switching curriculum teaching students how to configure a router and a switch for basic functionality. By the end of this course, students will be able to configure and troubleshoot routers and switches and resolve common issues with RIPv1, RIPv2, single-area and multi-area OSPF, virtual LANs, and inter-VLAN routing.

Course Objectives

By the end of this course, you should be able to:

1. Understand and describe basic switching concepts and the operation of Cisco switches
2. Understand and describe the purpose, nature, and operations of a router, routing tables, and the route lookup process
3. Understand and describe how VLANs create logically separate networks and how routing occurs between them
4. Understand and describe dynamic routing protocols, distance vector routing protocols, and link-state routing protocols
5. Configure and troubleshoot static routing and default routing (RIP and RIPv2)
6. Configure and troubleshoot an Open Shortest Path First (OSPF) network
7. Understand, configure, and troubleshoot access control lists (ACLs) for IPv4 and IPv6 networks
8. Understand, configure, and troubleshoot Dynamic Host Configuration Protocol (DHCP) for IPv4 and IPv6 networks
9. Understand, configure, and troubleshoot Network Address Translation (NAT) operations

Course Outline

Chapter 1:	Intro to Switched Networks	Chapter 6:	Static Routing
Chapter 2:	Basic Switching Concepts and Configuration	Chapter 7:	Routing Dynamically
Chapter 3:	VLANs	Chapter 8:	Single-Area OSPF
Chapter 4:	Routing Concepts	Chapter 9:	Access Control Lists
Chapter 5:	Inter-VLAN Routing	Chapter 10:	DHCP
		Chapter 11:	NAT for IPv4

Curriculum & Useful URLs

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

Other Useful URLs:

☞ My web page: (Assignments/Syllabi)

<http://hhs.helenaschools.org/teachers/busmith/>



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

- ☞ Daily Work 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 lesson plans
- ☞ 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