Welcome to CNET 261 - Router Theory and Technology

Welcome to the Router Theory and Technology course and the Cisco Networking Academy. My name is Alan Ross, and I will be your instructor for this course. This introduction is to inform you of some important details prior to the start of the class. Please read this page carefully.

Class Requirements

The advisory for this course is CNET 260 Networking Fundamentals. If you have registered for or taken that course, then you already know that you do not need to purchase a textbook. Once you have registered for either of these courses you will become a member of the Cisco Networking Academy. This is the largest, best supported, and most widely recognized networking technology educational program in the world. As a member you will have access to the Networking Academy website 24/7. In addition to the comprehensive online curriculum in networking technology, this site contains: interactive exercises, online labs, detailed device schematics and documentation, dynamic demonstrations and simulations, and hyperlinks to other sites on the Internet that cover the topic in even more depth and detail. The site also contains sophisticated network performance analysis, design, and configuration software that is usually only available to networking professionals at a very high price. This is all free to academy members. You can explore these features and many other academy benefits and resources as soon as you obtain your academy account.

Computer Requirements

Web Browser: Microsoft Edge or Google Chrome, or Firefox
Computer Specs: PC with at least a 2 GHz processor, and 4 GB of RAM.
Operating System: at least Windows 7, Mac IOS, or a recent version of LINUX.

Mandatory Meetings and Online Orientation

There are no mandatory in-person orientation or class meetings. The course will be set up at the Cisco Networking Academy website, where the student is encouraged to take the Online Curriculum Tutorial explaining all of the features of the site and how to use them. Students that are Networking Academy members should already have their Cisco Networking Academy username and password. After you have registered for this course, you will be enrolled in the Cisco Networking Academy (if you are not already a member) and added to the student roster at the Cisco Networking Academy website at: cisco.netacad.net where you can logon and access the course.

Your initial Cisco Networking Academy username and password will be sent to you **a few days before the start date for the course**. You will then log on to the Cisco Networking Academy website at: cisco.netacad.net and register as a Cisco Networking Academy student member. After successfully completing CNET 261 you can register as an **alumni member** and have permanent access to the Cisco Networking Academy website.

Registration

Please return to the Cuesta College home page www.cuesta.edu in order to register for this course.

Alan Ross,
Professor Engineering and Technology
Phone: (805) 546-3100 x2727
email: aross@cuesta.edu

Syllabus

Course Overview:

This course will study the critical role routers and switches play in enabling communication across the Internet, with emphasis on router configuration, dynamic routing protocols, virtual local area networks (vlans), wireless local area networks (wlans), and network security.

Instructor: Alan Ross
Telephone: 546-3100 x2727
email: **aross@cuesta.edu**
Webpage: myCuesta (Links to an external site.)
Office Hour*: Friday, 5:00 PM - 6:00 PM, Online
Holidays: None that affect this course.

* *Please note the instructor's office hours above. If you have any problems accessing the curriculum, taking an assessment exam, or navigating the course website, just send me an email. If necessary, we will setup a Zoom session where we can work out the problem together.*

Student Learning Outcomes:

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

1. Configure advanced functionality in routers and switches.
2. Troubleshoot these components using security best practices.
3. Resolve common protocol issues in both IPv4 and IPv6 networks.

Course Modules:

To complete the required work for this course, students will work through the material contained in 16 modules (chapters) of curriculum, grouped into 5 Module Group Exams (see **Module Group Exams** section on the course home page). Each of the 5 Module Group Exams covers 2 to 4 modules (chapters) of the curriculum. The curriculum modules are accessed by clicking the **Switching, Routing, and Wireless Essentials Course** link under the **Course Content** section of the home page.
Before you access the **Switching, Routing, and Wireless Essentials Course** modules, make sure you start out by thoroughly studying the material contained in both entries in the **Course Introduction** section: **First Time in This Course** and **Student Resources**. These links explain how to access and navigate the course chapters (modules), and where to find and install the **Packet Tracer** software.

As mentioned above, the curriculum modules (chapters) are accessed by clicking the Switching, Routing, and Wireless Essentials Course link under the Course Content section of the home page. The chapters will open in a new window on your browser. The chapters (modules) consist of reading, demonstration videos, interactive activities and exercises, quizzes (at the end of each section and at the end of each chapter), and most importantly, there will be Packet Tracer Labs at the end of the sections in most chapters. There will also be instructions for "Hands-on Labs". This is an online course, so these labs will NOT be covered (see Packet Tracer Lab Activities below). None of these quizzes, Packet Tracer labs, or interactive exercises will count towards your grade (see Grading below).

Packet Tracer Lab Activities:

The curriculum takes full advantage of **Packet Tracer,** the powerful network design, configuration, simulation, and performance analysis software developed for the Cisco Networking Academy. This interactive network design and analysis tool will allow us to perform all our lab exercises for this course **online**.

The Packet Tracer lab activities are located at the end of many of the chapter sections. In the following example, the Packet Tracer exercise is the **7**th entry under Section **4**, in Module **1**.

1.4.7 Packet Tracer - Configure Router Interfaces

As mentioned above the "hands-on labs" will not be performed as part of this online course. Hands-on labs with networking hardware infrastructure are covered in the companion course, CNET 219 – Network Infrastructure Fundamentals.

To perform the Packet Tracer labs, the Packet Tracer software must be downloaded from the course website (consult the material under the **Student Resources** link under the **Course Introduction** section of the home page). **The scores for these Packet Tracer lab assignments will not be recorded**, but students will take a graded **Skills Exam** covering some of the material presented in these exercises during the final week of the course (see Skills Exam below).

Module Group Exams:

A Module Group Exam covering the material presented in a group of (two, three, or four) chapters in the curriculum will be taken online every one or two weeks. The Module Group Exams will be available **starting** on the Saturday following the week/weeks the chapters should have been completed (see **Schedule**). However, these exams will remain available until **1:00 PM on the Monday of the 9th week of the class**.

Warning! ***If you fall more than one exam behind, you will have great difficulty completing all 5 of the Module Group Exams before the above deadline.***
For dates and details on when these exams will become available, see the Schedule section in this Syllabus.

Final Exam:

The **Final Exam** will be taken online on **Thursday,** of the **9th week** of the class, between **3:00 PM and 11:00 PM**. If a student cannot take the final at that time, they must notify the instructor in advance to make other arrangements. The questions will be based on the material in the online curriculum including the integrated Packet Tracer lab exercises.

Skills Exam:

Note that the **Skills Exam** for the online nine-week version of this course will not be “Hands-On”. Instead, students will be required to take the **SRWE Practice PT Skills Assessment (PTSA) - Parts 1&2** exams using Packet Tracer. The **Skills Exam** (*SRWE Practice PT Skills Assessment Parts 1&2 exams*) will be made available on Tuesday of the 9th week of the course and will be due the same day and time as the final. The **PTSA** exams are located under the **Skills Exam** section of the course home page.

Grading:

Module Group Exams (5 x 10%) 50%, Final Exam 35%, Skills Exam 15%.

Course Schedule:

Students will take an online Module Group Exam for each of the Module Groups listed below:

Week 1&2: Modules (Chapters) 1-4: Switching Concepts VLANs, and InterVLAN Routing

Week 3&4: Modules (Chapters) 5-6: Redundant Networks

Week 5&6: Modules (Chapters) 7-9: Available and Reliable Networks

Week 7: Modules (Chapters) 10-13: L2 Security and WLANS

Week 8: Modules (Chapters) 14-16: Routing Concepts and Configuration

Week 9: Skills Exam and **Final Exam**