SYLLABUS

ITCC 2477

Cisco Semester 4
Connecting Networks

Spring 2016

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Course Number: ITCC 2477
Section Number: 63400
Class Meeting Time: INET M T W R F S U
Credit Hours: Four (4)
Drop Date:
PREREQUISITES: Cisco Semester 3.

COURSE DESCRIPTION:
An introduction to advanced Cisco router configuration for connection to wide area networks. Topics include router configuration of various industry standard wide area network (WAN) protocols, Network Address Translation (NAT) operation, and virtual private networks (VPN) protocols. Licensing/Certification Agency: Cisco Corporation.

This is the fourth of a four semester Cisco Networking Academy curriculum. The semester 4 curriculum is designed to provide the student with a review of the semesters 1 and 3 information and develop the knowledge and skills needed to implement a WAN in a small-to-medium business. A multi-network system that is interfaced with routers and switches will be designed, IP addresses assigned, wired, initial programmed, tested and repaired as necessary.

Advanced topics cover include:
- Understand and describe different WAN technologies and their benefits.
- Understand and describe the operations and benefits of virtual private networks (VPNs) and tunneling.
- Understand, configure, and troubleshoot serial connections.
- Understand, configure, and troubleshoot broadband connections.
- Understand, configure, and troubleshoot tunneling operation.
- Understand, configure, and troubleshoot Network Address Translation (NAT) operations.
- Monitor and troubleshoot network operations using syslog, SNMP, and NetFlow.
- Understand and describe network architectures:
  - Borderless networks
  - Data centers and virtualization
  - Collaboration technology and solutions

The four semester program is designed to teach students the skills needed to design, build and maintain small to medium sized networks, to interconnect networks and WAN’s, and to program inter and intranetworking devices. This program provides the student with the opportunity to enter the workforce and/or further their education and training in the computer-networking field. The program prepares students for industry standard career certifications such as the Cisco Certified Networking Associate (CCNA).

Credit Hours
This course includes three hours of classroom work (lecture and discussion) and 4 hours of practical experience in the laboratory per week for 4 credit hours.

Lab Safety: Electrical and electronic labs are inherently dangerous. For obvious safety reasons, no one will be permitted to work in the labs unless an instructor is present. Unsafe lab practices
will not be tolerated.
COURSE LEARNING OUTCOMES:

The student will configure and manage routers and subnets utilizing TCP/IP IPv4 protocol and router protocols OSPF and EIGRP.

Learning outcomes/objectives are determined by local occupational need and business and industry trends. The outcomes in this course are related specifically to Semester 2 of the Cisco Systems Networking Academy program.

SPECIFIC COMPETENCIES

- Configure and troubleshoot DHCP and DNS operations for IPv4
- Describe the operations and benefits of the Spanning Tree Protocol (STP)
- Configure and troubleshoot STP operations
- Describe the operations and benefits of link aggregation and Cisco VLAN Trunk Protocol (VTP)
- Configure and troubleshoot VTP, STP, and RSTP
- Configure and troubleshoot basic operations of routers in a complex routed network for IPv4 and IPv6
- Configure and troubleshoot advanced operations of routers and implement RIP, OSPF, and EIGRP routing protocols for IPv4 and IPv6
- Manage Cisco IOS® Software licensing and configuration files

Design a system of interconnected networks using given parameters, build the system, program the initial setup of the system from memory, and perform operational tests on the system. Evaluate the results of the tests, and repair and reconfigure the system as necessary.

COURSE OBJECTIVES:

The general course objectives are to provide the student with a thorough review of the semesters 1 and 2 information and an introduction to the Cisco internet operating system. The student will learn how to interface a multi-networked system with routers and switches, assign IP addresses, wire and initially program, test, evaluate and repair and reconfigure as necessary a networked system. Also networking concepts such as the TCP protocol, the IP routed protocol, and the EIGRP and OSPF routing protocols as they relate to the OSI layers will be applied in the creation, setup and testing of an operational system.

For specific objectives and the level at which you are expected to perform to demonstrate your
competence, you are encouraged to refer to the chapter introduction and objectives sections of each chapter in the text and the online materials and the chapter review questions in the text and engineering journal and workbook. Please take the time to read through these objectives before starting a new lesson or lab. It is so much easier to learn something if you know up front what it is that you are expected to learn.

In your written exams, you will be given questions of the same type and level of difficulty as the review questions. If you can answer questions of this type and level within a reasonable period of time and without the use of additional notes or reference material, your success in this course is assured and your competence will be so demonstrated.

Conversely, if you cannot answer the questions, your failure is assured. You are expected to read every sentence in every paragraph of the online materials, view all of the graphics, listen to all of the audio topics, take the pretests for each lesson, complete all of the review questions for each lesson of the online materials and chapter in the text and journal before taking a test on any lesson. If you cannot answer the review questions, you are expected to notify your instructor before testing. If you give the instructor sufficient notification, an attempt will be made to help you. However, it is very difficult to justify your inability to work the problems because of an unexcused absence.

**Credit by Exam:** Cisco does not provide credit by exam options for any semester except Semester 1.

**Articulation:** Those who have completed an equivalent course in high school should ask the instructor for a package of materials describing the articulation process.

**COURSE CALENDAR**

<table>
<thead>
<tr>
<th>Topic</th>
<th>Online Chapter References</th>
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<tbody>
<tr>
<td>Hierarchical Design</td>
<td>Chap. 1</td>
</tr>
<tr>
<td>Connecting to the WAN</td>
<td>Chap. 2</td>
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<tr>
<td>Point-to-Point Connections</td>
<td>Chap. 3</td>
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<tr>
<td>Frame Relay</td>
<td>Chap. 4</td>
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<tr>
<td>Network Address Translation for IPv4</td>
<td>Chap. 5</td>
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<tr>
<td>Broadband Solutions</td>
<td>Chap. 6</td>
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<tr>
<td>Securing Site-to-Site Connections</td>
<td>Chap. 7</td>
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<tr>
<td>Monitoring the Network</td>
<td>Chap. 8</td>
</tr>
<tr>
<td>Troubleshooting the Network</td>
<td>Chap. 9</td>
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<tr>
<td>Review and Final Exam</td>
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</tbody>
</table>
The course calendar will vary from course to course to meet the special topic and time requirements of the course and students.

Online examinations will be made available either at the instructor’s discretion or by the email request of the students. The material contained within this chapter will be testable on the final examination. These online examinations must be completed by the end of week 7.

The course calendar will vary from course to course to meet the special topic and time requirements of the course and students.

Please note that this calendar is tentative and may vary dependent upon the progress of the class.

**PRINTED and ONLINE MATERIALS:**
Online Materials: Cisco Networking Academy Semester 4 Online program

Because the primary sources of information for the Cisco courses is online, a personal computer at home, an email address and an internet connection are required.

**GRADING PROCEDURES/SCALE/EXAMS AND ASSIGNMENTS:**
To receive a passing grade in this course, all lab assignments, all weekly assignments, and special individual and group assignments and a semester journal must be completed. A decrease of one letter grade of the semester grade for each non-completion will be assessed when final grades are assigned.

**Discussion Topic Requirements:** Students will be required to actively participate in the discussion forum located on the class page within eCampus. Participation will include posting a comment or question for each chapter and posting a response to a different student's post. This activity will be monitored and graded as class participation.

If all labs and special assignments are completed, the final grade will be determined by averaging the average end of chapter online exams with the final course online exam. A final grade will be assigned as described below.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>A</td>
<td>90 - 100</td>
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<tr>
<td>B</td>
<td>80 - 89</td>
</tr>
<tr>
<td>C</td>
<td>70 - 79</td>
</tr>
<tr>
<td>F</td>
<td>Below 70</td>
</tr>
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For example: if the average of the end of chapter online exams is 78 and the online final grade is 84, the average of the two grades is 81, and the final grade will be a B.

Because retesting may be permitted on the chapter tests and a minimum proficiency is expected, there are also limitations on component grades. Specifically, a minimum average of 70 must be obtained on the chapter exams, and a minimum score of 60 on the final exam is acceptable.
The final exam schedule is published in the calendar of the schedule for the current semester. For flex entry courses, the professor will inform you of the final exam time and date.

**ATTENDANCE POLICY**

Class attendance is very important in the Cisco curriculum. Attendance at the first class meeting is mandatory. (Online students exempt) Among other important topics, the guidelines for using the equipment are discussed with the class at this time. The equipment used in the classroom and lab is expensive. Misuse of the equipment on the job could result in being fired. Misuse of the equipment in the classroom or lab is grounds for dismissal from the Cisco class. Also keep in mind that missing the first class meeting could result in losing your position to someone waiting for a slot in the class.

Being on time is also very important. Most of the lectures will be given at the beginning of the class periods.

It is absolutely necessary that you complete assignments in a timely manner. If your testing schedule is not current, you may not be able to take some chapter exams.

Lab equipment is limited. If you miss your assigned lab periods, your may not be able to complete some lab assignments, and that could result in a failing course grade.

The attendance policy published in the catalog for the current year is the official attendance policy for this course. You should be aware that it is your responsibility to drop on or before the official last date to withdraw if you do not plan to complete this course. Otherwise, you may expect a grade of F.

The drop date is published in the calendar of the current catalog and in the schedule of the current semester. For flex entry courses, the instructor will notify you of this date the first week of classes.

It has been the experience of the instructors that the students who regularly attend class and complete their lab and problem set assignments on time have an excellent chance of completing this course satisfactorily. We also have a high failure and drop rate among students who do not attend class. The choice is yours.

We also view regular class attendance and completion of assignments on time as a very positive commitment on the part of the student toward completion of the course. We are always ready to provide help as needed for these students.

Please review the Withdrawal Policy and Drop Date section later in this syllabus.

**MAKEUP WORK/RETESTS**

All assignments are due no later than the final exam date. Of course, uncompleted work has a value of 0 points. Retests are at the discretion of the professor.

**PLEASE REQUEST IMMEDIATE CLARIFICATION ON ANY PART OF THE SYLLABUS THAT YOU DO NOT UNDERSTAND**
Disclaimer Reserving the Right to Change Syllabus
The instructor reserves the right to amend this syllabus as necessary.

Withdrawal Policy (with drop date)
If you are unable to complete this course, it is your responsibility to withdraw formally. The withdrawal request must be received in the Registrar’s Office by the semester’s drop date. Failure to do so will result in your receiving a performance grade, usually an “F.”

If you drop a class or withdraw from the college before the official drop/withdrawal deadline, you will receive a “W” (withdraw) in each class dropped.

The official drop date will be listed in the college schedule and on the receipt that you received at registration. Please enter this date on the front page of this syllabus.

Repeating this Course
Effective for Fall Semester 2005, the Dallas County Community Colleges will charge additional tuition to students registering the third or subsequent time for a course. This class may/may not be repeated for the third or subsequent time without paying the additional tuition. Third attempts include courses taken at any of the Dallas County Community Colleges since the Fall 2002 semester. More information is available at: https://www1.dcccd.edu/cat0506/ss/oep/third_attempt.cfm

Financial Aid
If you are receiving financial aid grants or loans, you must begin attendance in all classes. Do not drop or stop attending any class without consulting the Financial Aid Office. Changes in your enrollment level and failing grade may require that you repay financial aid funds.

The Texas Success Initiative (TSI)
The Texas Success Initiative (TSI) is a statewide program designed to ensure that students enrolled in Texas public colleges and universities have the basic academic skills needed to be successful in college level course work. The TSI requires assessment, remediation (if necessary), and advising of students who attend a public college or university in the state of Texas. The program assesses a student’s basic academic skills in reading, writing, and math. Passing the assessment is a prerequisite for enrollment in many college level classes. Students who do not meet assessment standards may complete prerequisite requirements by taking developmental courses in the deficient area and passing them with a grade of C or higher. Additional information is available at https://www1.dcccd.edu/cat0506admiss/tsi_requirements.cfm

Academic Honesty
Academic honesty is expected and integrity is valued in the Dallas County Community Colleges.
Scholastic dishonesty is a violation of the Code of Student Conduct. Scholastic dishonesty includes, but is not limited to, cheating on a test, plagiarism, and collusion. As a college student, you are considered a responsible adult. Your enrollment indicates acceptance of the DCCCD Code of Student Conduct published in the DCCCD catalog. More information is available at https://www1.dcccd.edu/cat04006/ss/code.cfm.

**ADA Statement**

If you are a student with a disability and/or special needs who requires accommodations, please contact the college Disability Services Office.

**Religious Holidays**

Absences for observance of a religious holy day are excused. A student whose absence is excused to observe a religious holy day is allowed to take a make-up examination or complete an assignment within a reasonable time after the absence.

**Inclement Weather Statement**

If weather conditions are extreme, please listen to local radio stations, listen to your local television stations or check the DCCCD web site at http://www.dcccd.edu for campus closings.

**STOP BEFORE YOU DROP**

For students who enrolled in college level courses for the first time in the fall of 2007, Texas Education Code 51.907 limits the number of courses a student may drop. You may drop no more than 6 courses during your entire undergraduate career unless the drop qualifies as an exception. Your campus counseling/advising center will give you more information on the allowable exceptions. Remember that once you have accumulated 6 non-exempt drops, you cannot drop any other courses with a “W”. Therefore, please exercise caution when dropping courses in any Texas public institution of higher learning, including all seven of the Dallas County Community Colleges. For more information, you may access: https://www1.dcccd.edu/coursedrops