

University of New Mexico Valencia Information Technology (IT) Department

COURSE SYLLABUS Fall 2017

Course Name: IT 293: Topics II, Cisco Concentration - Scaling and Connecting Networks	CRN# 57114	
Class Days/Time/Location: TTh/10:30 – 12:45/ B127 or B123A	Section Number: 501	
Course Credits: 4.0		
Instructor: James Hart	Email: hart56@unm.edu	Phone: 239-3435
Office Hour/Location: MW 1:00 -3:00, TTh 1:00 4:30, or ARR in B123A or B127	Course Prerequisite:	

Texts & Supplies

Required: 8 Gig flash drive

Course Description & Pre- or Co-requisites

IT 293: Cisco Concentration – Scaling and Connecting Networks (4). Scaling Networks describes the architecture, components, and operations of routers and switches in large and complex networks. Students learn how to configure routers and switches for advanced functionality. By the end of Scaling Networks, students will be able to configure and troubleshoot routers and switches and resolve common issues with OSPF, EIGRP, and STP in both IPv4 and IPv6 networks. Students will also develop the knowledge and skills needed to implement a WLAN in a small-to-medium network. Connecting Networks focuses on the WAN technologies and network services required by converged applications in a complex network. By the end of Connecting Networks, students will be able to configure PPPoE, GRE, single-homed eBGP, extended IPv4 and IPv6 ACLs. Students will also develop the knowledge and skills needed to implement a WLAN in a small-to-medium network. For LANs, students will be able to configure SNMP and Cisco SPAN. Students will also develop knowledge about QoS and the trends in networking including Cloud, virtualization, and SDN.

Student Learning Outcomes

Students who complete the Scaling Networks course will be able to perform the following functions:

- Determine how a router will forward traffic based on the contents of a routing table.
- Implement EIGRP.
- Implement OSPF.
- Implement VLANs.
- Implement enhanced switching technologies and first hop redundancy protocols.
- Design a small multi-site business network.
- Implement access control lists (ACLs) to filter traffic.
- Configure Ethernet switch ports.
- Design a small multi-site business network.
- Select WAN access technologies.
- Configure a serial interface to enable WAN communication.
- Configure an Ethernet interface to enable broadband communication given service provider requirements.
- Implement remote access and site-to-site VPNs.
- Use monitoring tools and network management protocols to troubleshoot data networks.
- Configure monitoring tools available for small to medium-sized business networks.
- Configure initial settings on a network device.
- Explain how quality of service (QoS) mechanism support network communication requirements

Course Outline

- LAN Design
- Scaling VLANs
- STP
- Etherchannel and HSRP
- Dynamic Routing
- EIGRP
- EIGRP Tuning and Troubleshooting
- Single-Area OSPF
- Multiarea OSPF
- OSPF Tuning and Troubleshooting
- WAN Concepts
- Point-to-Point Connections
- Branch Connections
- Access Control Lists
- Network Security and Monitoring
- Quality of Service
- Network Evolution
- Network Troubleshooting

Grading

The following will be used to determine your grade in this course:

	%
Chapter Tests	30
Practice Finals / Certs	30
Labs	30
Final Exam	10
Total	100

The following scale is used to assign course grades:

Percentile Range	Grade
90-100	A
80-89	B
70-79	C
60-69	D
Below 60	F

Note: A final grade of “D” or “F” is not acceptable for this course if it is required for graduation or as a prerequisite for other courses. A final grade of “D” or “F” requires repeating this course.

Attendance

Students are expected to be on time. If you are running late please call or email. You will be contacted and dropped due to excessive unexcused absences.

Students with Disabilities

Special Services is a department that can provide students with documented disabilities and the accommodations they might need. It is also a department that can help students who think they might have a disability. Please let me know as soon as possible so I can ensure that arrangements are made to accommodate your needs. If you have a disability and prefer not to register, please discuss this with me.

Computer Lab Responsibility

Please be advised that use of computer labs on UNM properties is governed by “Policy 2500: Acceptable Computer Use” which can be found at

<http://policy.unm.edu/university-policies/2000/2500.html>.

Food and drink are also prohibited in any computer lab on campus. Anyone violating these policies is subject to possible suspension and loss of computer lab privileges.

Title IX

In an effort to meet obligations under Title IX, UNM faculty, Teaching Assistants, and Graduate Assistants are considered “responsible employees” by the Department of Education (see pg.15 - <http://www2.ed.gov/about/offices/list/ocr/docs/qa-201404-title-ix.pdf>). This designation requires that any report of gender discrimination which includes sexual harassment, sexual misconduct and sexual violence made to a faculty member, TA, or GA must be reported to the Title IX Coordinator at the Office of Equal Opportunity (oeo.unm.edu). For more information on the campus policy regarding sexual misconduct, see:

<https://policy.unm.edu/university-policies/2000/2740.html>

Academic Dishonesty

<https://policy.unm.edu/regents-policies/section-4/4-8.html>

Each student is expected to maintain the highest standards of honesty and integrity in academic and professional matters. The University reserves the right to take disciplinary action, including dismissal, against any student who is found responsible for academic dishonesty. Any student who has been judged to have engaged in academic dishonesty in coursework may receive a reduced or failing grade for the work in question and/or for the course. Academic dishonesty includes, but is not limited to, dishonesty in quizzes, tests or assignments; claiming credit for work not done or done by others; hindering the academic work of other students; and misrepresenting academic or professional qualifications within or outside the University.

Late/Make-up/Re-take Policies

Late homework or lab assignments will be penalized unless prior arrangements have been made and approved by the instructor. Make-up exams will be allowed in case of verifiable emergencies or prior arrangements are approved by the instructor.

Syllabus & Class Schedule:

The syllabus and class schedule are subject to change by the instructor. Changes will be made with as much advance notice as possible.

Electronic Devices in Class:

All mobile telephones must be turned off or switched to silent or vibrate mode.