

SYLLABUS
PART I
EDISON STATE COMMUNITY COLLEGE
CYB 248S SECURITY AND AUTOMATION
3 CREDIT HOURS

COURSE DESCRIPTION

Continuation of configuring networks from a security and automation perspective. Focuses on various network concepts, including network security, access control lists (ACL), network address translation (NAT), wide area networks (WAN), virtual private networks (VPN), IPsec, and quality of service (QoS) implementations. Network management, design, troubleshooting, virtualization, and automation are also explored. Prepares students for the Cisco Certified Network Associate (CCNA) certification exam.

Prerequisite: CYB 247S with a grade of “C” or better. Lab fee.

COURSE GOALS

The student will:

Bloom's Level		Program Outcomes
5	1. Explain the operation and characteristics of OSPFv2, ACLs, WAN access technologies, VPNs and IPsec, QoS, scalable network architectures, and network virtualization.	5, 6
3	2. Implement single-area OSPFv2, IPv4 ACLs, NAT services, and network management protocols.	3, 6, 7, 8
5	3. Explain how vulnerabilities, threats, and exploits can be mitigated to enhance network security.	5, 6, 8
4	4. Troubleshoot enterprise networks.	3, 6, 8
5	5. Explain how network automation is enabled through RESTful APIs and configuration management tools.	3, 5, 6

CORE VALUES

The Core Values are a set of principles that guide in creating educational programs and environments at Edison State. They include communication, ethics, critical thinking, human diversity, inquiry/respect for learning, and interpersonal skills/teamwork. The goals, objectives, and activities in this course will introduce/reinforce these Core Values whenever appropriate.

TOPIC OUTLINE

1. Single-Area OSPFv2 Concepts and Configuration
2. Network Security Concepts
3. ACL Concepts
4. ACLs for IPv4 Configuration
5. NAT for IPv4
6. WAN Concepts
7. VPN and IPsec Concepts
8. QoS Concepts
9. Network Management
10. Network Design
11. Network Troubleshooting
12. Network Virtualization
13. Network Automation