

Montgomery County Community College  
 CIS 170  
 Introduction to Networks (Cisco Semester 1)  
 3-2-2

**COURSE DESCRIPTION:**

This course prepares the student to understand and apply basic concepts of networking technology. The OSI model, industry standards, network topologies, IP addressing, subnet masking, networking components, cabling techniques and basic network design are introduced and discussed.

**PREREQUISITE(S):**

Any Quantitative Reasoning Core Course or MAT100/MAT100A or permission of the instructor or coordinator

**CO-REQUISITE(S):**

Any Quantitative Reasoning Core Course or MAT100/MAT100A or permission of the instructor or coordinator

Upon successful completion of this course, the student will be able to:

LEARNING OUTCOMES	LEARNING ACTIVITIES	EVALUATION METHOD(S)
1. Use network protocol models to explain the layers of communications in data networks.	Lecture Discussion Extensive Hands-On Lab Exercises Homework Assignments Quizzes / Tests	Skills Based Assessment Final (performance) Final Exam (online)
2. Design, calculate and apply subnet addresses and masks.	Lecture Discussion Extensive Hands-On Lab Exercises Homework Assignments Quizzes / Tests	Skills Based Assessment Final (performance) Final Exam (online)
3. Build a simple Ethernet network using routers and switches.	Lecture Discussion Extensive Hands-On Lab Exercises Homework Assignments Quizzes / Tests	Skills Based Assessment Final (performance) Final Exam (online)
4. Employ basic cabling and network designs to connect devices.	Lecture Discussion Extensive Hands-On Lab Exercises Homework Assignments Quizzes / Tests	Skills Based Assessment Final (performance) Final Exam (online)

LEARNING OUTCOMES	LEARNING ACTIVITIES	EVALUATION METHOD(S)
5. Use CISCO CLI commands to perform basic router and switch configuration and verification.	Lecture Discussion Extensive Hands-On Lab Exercises Homework Assignments Quizzes / Tests	Skills Based Assessment Final (performance) Final Exam (online)
6. Analyze the operation and features of the transport, application and network layer protocols and services.	Lecture Discussion Extensive Hands-On Lab Exercises Homework Assignments Quizzes / Tests	Skills Based Assessment Final (performance) Final Exam (online)
7. Build a small network.	Lecture Discussion Hands-On Lab	Project

At the conclusion of each semester/session, assessment of the learning outcomes will be completed by course faculty using the listed evaluation method(s). Aggregated results will be submitted to the Director of Educational Effectiveness. The benchmark for each learning outcome is that *70% of students will meet or exceed outcome criteria.*

#### SEQUENCE OF TOPICS:

##### 1. Networking Today

- How Networks Affect Our Lives
- Network Components
- Network Representations and Topologies
- Common Types of Networks
- Internet Connections
- Reliable Network
- Network Trends
- Network Security
- The IT Professional

##### 2. Basic Switch and Device Configuration

- Cisco IOS Access
- IOS Navigation
- The Command Structure
- Basic Device Configuration
- Save Configurations
- Ports and Addresses
- Configure IP Addressing



## 10. IPv4 Addressing

Security Threats and  
Vulnerabilities  
Network Attacks  
Network Attack Mitigation  
Device Security

**16. Build a Small Network**

Devices in a Small Network  
Small Network Applications and  
Protocols  
Scale to Larger Networks  
Verify Connectivity  
Show Commands  
Host and IOS Commands  
Troubleshooting Methodologies  
Troubleshooting Scenarios

**LEARNING MATERIALS:**

Online curriculum and assessments from Cisco Academy web portal. Provided to students with no additional charge.

**COURSE APPROVAL:**

Prepared by: Alan Evans

Date: 3/2001

Revised by: Karon Crickmore

Date: 3/2009

Revised by: Marie Hartlein

Revised by: Marie Hartlein / R.A. Date: 04/2010

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*on. It was developed, approved and will be delivered in full compliance with the policies and procedures established by the College.*