

**Course Outline**

**COURSE:** CSIS 175A      **DIVISION:** 50      **ALSO LISTED AS:**

**TERM EFFECTIVE:** Fall 2011      **Inactive Course**

**SHORT TITLE:** NETWORKNG ESSENTIAL

**LONG TITLE:** Networking Essentials

<u>Units</u>	<u>Number of Weeks</u>	<u>Type</u>	<u>Contact Hours/Week</u>	<u>Total Contact Hours</u>
4	18	Lecture:	4	72
		Lab:	0	0
		Other:	0	0
		Total:	4	72

**COURSE DESCRIPTION:**

This course introduces network standards, concepts, topology and terminology including LANs, WANs, the OSI model, cabling, IP addressing, network hardware and various protocols. The content of this course aligns itself with the first course in the Cisco Systems Networking Academy (CCNA 1) and the Microsoft MCSE series. This course has the option of a letter grade or pass/no pass. Previously CSIS 91A. **ADVISORY:** Mathematics 205, CSIS 1 or CSIS 2 and CSIS 181.

**PREREQUISITES:**

**COREQUISITES:**

**CREDIT STATUS:** D - Credit - Degree Applicable

**GRADING MODES**

- L - Standard Letter Grade
- P - Pass/No Pass

**REPEATABILITY:** N - Course may not be repeated

**SCHEDULE TYPES:**

- 02 - Lecture and/or discussion
- 72 - Dist. Ed Internet Delayed

**STUDENT LEARNING OUTCOMES:**

1. Identify and describe the functions of each of the seven layers Of the OSI model.

ILO: 7,3,2,1

Measure: Homework, projects, lab exercises.

2. Define and describe data link and network addresses and identify

ILO: 3,7,2,1

Measure: Homework, projects

3. Describe the different classes of IP addresses and perform subnetting.

ILO: 3,7,2

Measure: Homework, lab exercises, projects

4. Identify and recognize the primary network architectures, identify their major characteristics, and determine which is most appropriate for a proposed network.

ILO: 3,7,2

Measure: Homework, projects, tests, quizzes.

## **CONTENT, STUDENT PERFORMANCE OBJECTIVES, OUT-OF-CLASS ASSIGNMENTS**

Inactive Course: 09/26/2011

WEEK HOURS CONTENT

Two hours of work is required for each one hour of lecture.

1-2 8 LECTURE: Networking, LANs, WANs. The OSI Reference Model. The seven OSI layers.

Peer-to-peer communications. The physical layer, networking media. The data link layer.

EXERCISES/READING/HOMEWORK:

Read these chapters and do the homework exercises.

3-4 8 LECTURE: Networking devices. Filtering traffic and reducing collisions. Nodes, repeaters, signals, and hubs. Filters, ports, domains, bridges, and routers.

EXERCISES/READING/HOMEWORK:

Read these chapters and do the homework exercises.

5-6 8 LECTURE: LANs and WANs. Ethernet and LAN standards. LANs and the physical layer. LANs and the data link layer. LANs and the network layer.

WAN devices and standards. WAN physical and data link layer.

EXERCISES/READING/HOMEWORK:

Read these chapters and do the homework exercises.

7 & 8 8 LECTURE: IP addressing. Addressing overview and reserved IP addresses. Classes of IP addresses.

Subnetworks and subnet addressing. Subnet masking and planning.

EXERCISES/READING/HOMEWORK:

Read these chapters and do the homework exercises.

9 & 10 8 LECTURE: Introduction to ARP and RARP devices.

ARP requests, replies, and tables. Introduction to RARP. RARP requests and replies. Introduction to

topologies. Bus, star, and extended star topologies.

**EXERCISES/READING/HOMEWORK:**

Read these chapters and do the homework exercises.

11 & 12 8 LECTURE: Structured cabling and electricity.

Networking media standards. EIA/TIA-568B Standards.

Wiring: tools, cabling, patch panel. Cable testing.

Electricity.

**EXERCISES/READING/HOMEWORK:**

Read these chapters and do the homework exercises.

13 & 14 8 LECTURE: The four upper layers of the OSI model.

The application layer. The presentation layer.

The session layer. The transport layer.

**EXERCISES/READING/HOMEWORK:**

Read these chapters and do the homework exercises.

15 & 16 8 LECTURE: TCP/IP. An overview of TCP/IP.

TCP/IP and the application layer. TCP/IP and the

transport layer. TCP/IP and the Internet layer.

**EXERCISES/READING/HOMEWORK:**

Read these chapters and do the homework exercises.

17 2 FINAL EXAM

**FINAL PROJECTS DUE**

**STUDENT PERFORMANCE OBJECTIVES:**

**WEEKS 1 & 2**

Students can describe networking, protocol, and networking hardware/software. Students can describe and understand the types of LANs and WANs. Students can list and describe the seven OSI layers. Students can identify and describe the physical layer. Students can identify and describe the data link layer.

**WEEKS 3 & 4**

Students can describe the different networking devices. Students can describe how and why repeaters are used. Students can describe how and why hubs are used. Students can describe how and why bridges and routers are used.

**WEEKS 5 & 6**

Students can describe the functionality of local area networks. Students can identify and pick hardware necessary for a LANs. Students can describe the flow of traffic on a LAN. Students can identify the major components of a WAN. Students can explain the physical and data link layers.

**WEEKS 7 & 8**

Students understand IP addresses. Students can describe classes of addresses. Students can describe local and reserved IP addresses. Students can set up a subnet addressing system.

**WEEKS 9 & 10**

Students can describe ARP, ARP requests, tables, replies, and frames. Students can describe RARP, RARP servers, requests, reply

frames. Students can identify which internetworking devices have ARP tables. Students can describe bus, star, and extended star topologies. Students can list advantages and disadvantages of the different topologies.

#### WEEKS 11 & 12

Students can identify and describe specific networking standards. Students can Category 5 cable, RJ45 jack, and how they are used and installed. Students can describe a wiring closet, patch panel, and cable testing. Students can describe backbone cabling, grounding, causes of surges.

#### WEEKS 13 & 14

Students can describe the application, presentation, session and transport layers. Students can describe the process of establishing a connection with a peer system. Students can describe how to use flow control and windowing.

#### WEEKS 15 & 16

Students can describe the function of the application layer in TCP/IP. Students can describe the function of the transport layer in TCP/IP. Students can describe the function of the network layer in TCP/IP. Students can describe ICMP, ARP, and RARP. Students can

### **METHODS OF INSTRUCTION:**

Lecture, computer demonstration, work on web

### **METHODS OF EVALUATION:**

The types of writing assignments required:

Written homework

Reading reports

Lab reports

The problem-solving assignments required:

Homework problems

Field work

Lab reports

Quizzes

Exams

The types of skill demonstrations required:

Class performance

Performance exams

The types of objective examinations used in the course:

Multiple choice

True/false

Matching items

Completion

Other category:

None

The basis for assigning students grades in the course:

Writing assignments: 10% - 40%

Problem-solving demonstrations: 30% - 50%

Skill demonstrations: 10% - 50%  
Objective examinations: 5% - 20%  
Other methods of evaluation: 0% - 0%

**REPRESENTATIVE TEXTBOOKS:**

Required Text:

^uCISCO Systems Networking Academy: First-Year Companion Guide,^s  
Vito Amato, Series Editor, Cisco Press, 2001, or other  
appropriate college level textbook.

Reading level of text: 11 grade Verified by: dvt

**ARTICULATION and CERTIFICATE INFORMATION**

Associate Degree:

CSU GE:

IGETC:

CSU TRANSFER:

Transferable CSU, effective 200630

UC TRANSFER:

Not Transferable

**SUPPLEMENTAL DATA:**

Basic Skills: N

Classification: I

Noncredit Category: Y

Cooperative Education:

Program Status: 2 Stand-alone

Special Class Status: N

CAN:

CAN Sequence:

CSU Crosswalk Course Department: CSIS

CSU Crosswalk Course Number: 175A

Prior to College Level: Y

Non Credit Enhanced Funding: N

Funding Agency Code: Y

In-Service: N

Occupational Course: C

Maximum Hours:

Minimum Hours:

Course Control Number: CCC000366136

Sports/Physical Education Course: N

Taxonomy of Program: 070810