Course Outline

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

TERM EFFECTIVE: Fall 2011          Inactive Course

SHORT TITLE: NETWORK NG ESSENTIAL

LONG TITLE: Networking Essentials

<table>
<thead>
<tr>
<th>Units</th>
<th>Number of Weeks</th>
<th>Type</th>
<th>Contact Hours/Week</th>
<th>Total Contact Hours</th>
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<td>4</td>
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<td>Lecture: 4</td>
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<td></td>
<td>Lab: 0</td>
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<td>0</td>
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<td></td>
<td>Other: 0</td>
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<td></td>
<td>Total: 4</td>
<td></td>
<td>72</td>
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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 ARP 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 describe 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:
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

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

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