GAVILAN COLLEGE

5055 Santa Teresa Blvd
Gilroy, CA 95023

Course Outline

COURSE: CSIS 178   DIVISION: 50   ALSO LISTED AS:

TERM EFFECTIVE: Fall 2015   CURRICULUM APPROVAL DATE: 03/23/2015

SHORT TITLE: APPLIED NETWORKING

LONG TITLE: Applied Networking

Units	Number of Weeks	Type	Contact Hours/Week	Total Contact Hours
4	18	Lecture:	3	54
		Lab:	3	54
		Other:	0	0
		Total:	6	108

COURSE DESCRIPTION:

This course covers fundamental networking concepts and develops the skills and knowledge to set up and maintain small business/home networks. The course is not hardware or vendor specific. It helps students prepare for the "Network +" certification exam, an industry- wide, vendor-neutral certification program developed and sponsored by the Computing Technology Industry Association (CompTIA). This course has the option of a letter grade or pass/no pass. ADVISORY: CSIS 124

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
        03 - Lecture/Laboratory
        04 - Laboratory/Studio/Activity
        05 - Hybrid
        72 - Dist. Ed Internet Delayed

STUDENT LEARNING OUTCOMES:

1. Define and describe what a network is.
ILO: 1,2,7
Measure: written exam, demonstration
2. Identify and explain networking protocols
ILO: 1,2,7
Measure: written or oral exam, demonstration
3. Set up and explain network security
ILO: 1,2,7
Measure: written exam, demonstration

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

Curriculum Approval Date: 03/23/2015
Students repeating this class will learn features of new software and
hardware under guidance of an instructor.
WEEK 1-2
12 HOURS
Lecture:
Introduction,
Defining Networking
The Goal of Networking
Servers and Clients
Making Shared Resources Usable
Building a Network with OSI
NICs
Network software
OSI Seven Layer Model
Defining Networking
Homework/Lab:
Read the chapters covered in the class lectures, and do the homework at
the end of the chapters.
Do homework and projects assigned in lecture on these chapters
Performance objectives:
Explain what a network is and what its goals are. Describe the OSI
model.
WEEK 3-4
12 HOURS
Lecture
Hardware Concepts
Hybrid topologies
Cabling
Networking Industry Standards-IEEE
Ethernet Basics
How Ethernet Works
CSMA/CD
Ethernet Cabling Systems
Extending the Network: Repeaters and Bridges
Homework/Lab:

Read the chapters covered in the class lectures, and do the homework at the end of the chapters.

Do homework and projects assigned in lecture on these chapters

Performance objectives::

Describe the role of the IEEE. Explain how Ethernet and CSMA/CD work. Explain the difference between repeaters and bridges.

WEEK 5-6

12 HOURS

Lecture

Modern Ethernet

10BaseT Topology

Connecting Ethernet Segments

High-Speed Ethernet

Non-Ethernet Networks

Logical Token Ring

LAN to WAN - FDDI and ATM

Homework/Lab:

Read the chapters covered in the class lectures, and do the homework at the end of the chapters.

Do homework and projects assigned in lecture on these chapters

Performance objectives::

Compare various types of Ethernet. Compare and contrast Ethernet and non-Ethernet networks.

WEEK 7-8

12 HOURS

Lecture

Installing a Physical Network

Structured Cabling

Testing the Cable Runs

Beyond the Basic Star

NICs

Diagnostics and Repair of Physical Cabling

Wireless Networking

Wireless Networking Basics

Wireless Networking Standards

Configuring Wireless Networking

Troubleshooting Wireless Networks

Homework/Lab:

Read the chapters covered in the class lectures, and do the homework at the end of the chapters.

Do homework and projects assigned in lecture on these chapters

Performance objectives: Demonstrate testing a cable. Demonstrate configuring a wireless network.:

WEEK 9-10

12 HOURS

Lecture

Protocols

Network Protocols

Implementing Protocols
NetBIOS/NetBEUI
IPX/SPX
TCP/IP
Also Ran Protocols
TCP/IP
IP Address Basics
IP Address Format
Local vs. Remote
Subnet Masks and Subnetting
Other Critical TCP/IP Settings
IP Ports
IPv6
Homework/Lab:
Read the chapters covered in the class lectures, and do the homework at
the end of the chapters.
Do homework and projects assigned in lecture on these chapters
Performance objectives:
Explain the role of network protocols and compare several different
network protocols. Explain the IP addressing scheme and demonstrate
subnetting a network.:
WEEK 11-12
12 HOURS
Lecture
Network Operating Systems
Categorizing Operating Systems
Client/Server vs. Peer-to-Peer
The Major Network Operating Systems
Creating Servers and Clients
Sharing Resources
Resource Naming
Permissions
Sharing Resources
Accessing Shared Resources
Homework/Lab:
Read the chapters covered in the class lectures, and do the homework at
the end of the chapters.
Do homework and projects assigned in lecture on these chapters
Performance objectives:
Compare various network operating systems. Explain the difference
between a client and a server. Demonstrate sharing a resource across
the network.
WEEK 13-14
12 HOURS
Lecture
Going Large with TCP/IP
DNS
DHCP

WINS

Diagnosing TCP/IP Networks

TCP/IP and the Internet

Real World Routers

Connecting to the Internet

TCP/IP Applications

Homework/Lab:

Read the chapters covered in the class lectures, and do the homework at the end of the chapters.

Do homework and projects assigned in lecture on these chapters

Performance objectives:

Explain the roles of DHCP and DNS in a TCP/IP network. Explain the role of routers in connecting a network to the internet.:

WEEK 15-16

12 HOURS

Lecture

Interconnecting Network Operating systems

Connecting to Windows

Connecting to NetWare

Connecting to Macintosh

Connecting to UNIX/Linux

The Perfect Server

Protection of Data-Fault Tolerance

Speed

Reliability

Homework/Lab:

Read the chapters covered in the class lectures, and do the homework at the end of the chapters.

Do homework and projects assigned in lecture on these chapters

Performance objectives::

Explain how different network operating systems can be interconnected.

Describe the ideal server.

WEEK 17

6 HOURS

Lecture

The Art of Network Support

Troubleshooting Tools

The Troubleshooting Process

Troubleshooting Scenarios

Homework/Lab:

Read the chapters covered in the class lectures, and do the homework at the end of the chapters.

Do homework and projects assigned in lecture on these chapters

Performance objectives::

Demonstrate the proper troubleshooting procedure when tracking down common network problems.

WEEK 18

2 HOURS

Final
ASSIGNMENTS:
Included in content section.

METHODS OF INSTRUCTION:

Self-paced learning, online research, lab work, one-on-one or small group instruction.

METHODS OF EVALUATION:

The types of writing assignments required:
Lab reports
The problem-solving assignments required:
Lab reports
The types of skill demonstrations required:
Class performance
Performance exams
The types of objective examinations used in the course:
None
Other category:
None
The basis for assigning students grades in the course:
Writing assignments: 20% - 40%
Problem-solving demonstrations: 20% - 40%
Skill demonstrations: 30% - 70%
Objective examinations: 0% -   0%
Other methods of evaluation: 0% -   0%

REPRESENTATIVE TEXTBOOKS:

Required:
Glen Clarke, "CompTIA Network+ Certification", McGraw-Hill Osborne, 2009
ISBN: 0071615385
Reading Level of Text: 12, Verified by: dvt

ARTICULATION and CERTIFICATE INFORMATION

        Associate Degree:
        CSU GE:
        IGETC:
        CSU TRANSFER:
                Transferable CSU, effective 200570
        UC TRANSFER:
                Not Transferable

SUPPLEMENTAL DATA:

Basic Skills: N
Classification: Y
Noncredit Category: Y
Cooperative Education:

Program Status: 1 Program Applicable
Special Class Status: N
CAN:
CAN Sequence:
CSU Crosswalk Course Department: CSIS
CSU Crosswalk Course Number: 178
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: CCC000026694
Sports/Physical Education Course: N
Taxonomy of Program: 070810