CIS 51.15 Course Outline as of Spring 2008

CATALOG INFORMATION

Dept and Nbr: CIS 51.15   Title: NETWORKING THEORY
Full Title: Networking Essentials - Theory and Concepts
Last Reviewed: 3/19/2001

Units			Course Hours per Week		Nbr of Weeks	Course Hours Total	
Maximum	1.50		Lecture Scheduled	2.00	13	Lecture Scheduled	26.00
Minimum	1.50		Lab Scheduled	2.00	3	Lab Scheduled	26.00
			Contact DHR	1.50		Contact DHR	19.50
			Contact Total	5.50		Contact Total	71.50
			Non-contact DHR	0		Non-contact DHR	0

Total Out of Class Hours: 52.00   Total Student Learning Hours: 123.50

Title 5 Category: AA Degree Applicable
Grading: Grade or P/NP
Repeatability: 00 - Two Repeats if Grade was D, F, NC, or NP
Also Listed As:
Formerly: CIS 84.31B

Catalog Description:
Designed for the serious computer user who intends to pursue certification as a Linux Certified
Engineer, Microsoft Certified Systems Engineer, or Novell Certified Engineer. This course will
introduce the student to the basic theory and concepts of operation of telecommunications and
networking systems. Completion of the course will provide a good basic working knowledge of
essential networking concepts and fundamentals including: LAN/WAN technologies,
Baseband/Broadband transmission, modulation techniques, copper and fiber transmission media,
network topologies and protocols, error detection and correction methodologies, and other
essential topics.

Prerequisites/Corequisites:
Course Completion or Current Enrollment in CIS 51.13 (or CIS 84.17)

Recommended Preparation:
Eligibility for ENGL 100 or ESL 100

Limits on Enrollment:

Schedule of Classes Information:
Description: Designed for the serious computer user who intends to pursue certification. This

course will introduce the student to the basic theory and concepts of operation of telecommunications and networking systems. Completion of the course will provide a good basic working knowledge of essential networking concepts and fundamentals.   (Grade or P/NP)
Prerequisites/Corequisites: Course Completion or Current Enrollment in CIS 51.13 (or CIS 84.17)
Recommended: Eligibility for ENGL 100 or ESL 100
Limits on Enrollment:
Transfer Credit:
Repeatability: Two Repeats if Grade was D, F, NC, or NP

ARTICULATION, MAJOR, and CERTIFICATION INFORMATION:

AS Degree:	**Area**		Effective:	Inactive:
CSU GE:	**Transfer Area**		Effective:	Inactive:
IGETC:	**Transfer Area**		Effective:	Inactive:
CSU Transfer:		Effective:	Inactive:	
UC Transfer:		Effective:	Inactive:	

CID:

Certificate/Major Applicable:
Certificate Applicable Course

COURSE CONTENT

Outcomes and Objectives:
1. Define Telecommunications
2. Describe three ways in which telecommunications are important to society today
3. Define protocol
4. Describe the differences between network architectures
5. Analyze the security and privacy constraints on network transmission
6. Compare and contrast analog and digital networks
7. Identify the issues of reliable transmission of information in the network
8. Compare and contrast two network protocols
9. Differentiate between Ethernet LAN, Tokin Ring LAN and Fiber LAN
10. Describe the function of:
    a. Repeaters
    b. Bridges
    c. Routers
    d. Gateways

Topics and Scope:

1. Introduction to Telecommunications and Networks
    a. What is Telecommunications

3) Fiber LAN
　c. Internetworking
　　　1) Repeaters
　　　2) Bridges
　　　3) Routers
　　　4) Gateways
9. Digital Communications
　a. Digital Customer-Premises Equipment
　b. Integrated Services Digital Network
　c. Asynchronous Transfer Mode
10. Network Management
　a. Service Levels
　　　1) Availability
　　　2) Reliability
　　　3) Response Time
　　　4) Throughput
　b. Network Management Approaches
　c. Diagnostic Methods
　d. Test Equipment

Assignment:

1. Individual hands-on exercises to demonstrate each topic.
2. Reading approximately 30 pages weekly from the textbook.
3. Participate in class discussion topics.

Methods of Evaluation/Basis of Grade:

Writing: Assessment tools that demonstrate writing skills and/or require students to select, organize and explain ideas in writing.

Written homework	Writing 10 - 20%

Problem Solving: Assessment tools, other than exams, that demonstrate competence in computational or non-computational problem solving skills.

Homework problems, Quizzes, Exams, Hands-on computer exercises	Problem solving 20 - 50%

Skill Demonstrations: All skill-based and physical demonstrations used for assessment purposes including skill performance exams.

None	Skill Demonstrations 0 - 0%

Exams: All forms of formal testing, other than skill performance exams.

Multiple choice, True/false, Matching items, Completion, Performance exam(s)		Exams 40 - 70%

Other: Includes any assessment tools that do not logically fit into the above categories.

None		Other Category 0 - 0%

Representative Textbooks and Materials:
1. "Data Communications, From Basics to Broadband" by William J. Beyda - Prentice Hall, 2nd edition 1999
2. "Understanding Data Communications" by Gilbert Held - Sam's Publishing, 5th edition 1999