COURSE OUTLINE OF RECORD

Dept., Number	CSC 3351	**Course Title**	Data Communications
Semester Hours	3		
Year	2006	**URL (if any):**	

Current Catalog Description:

This course is an introduction to data communications. Topics include asynchronous and synchronous communication models, telephone switching systems, error detection, protocols, packet switching, information transmission systems, modulation systems, and computer network technology. Prerequisite: CSC 2320.

Textbook:

Data and Computer Communications, Seventh Edition, William Stallings, Prentice-Hall Inc.

Reference:

Business Data Communications, Fourth Edition, 1994; David A. Stampler, The Benjamin/Cummings Publishing Company

Course Goals:

1. To provide a unified view of the broad field of data and computer communications.
2. To emphasize basic principles and topics of fundamental importance concerning the technology and architecture of data and computer communications.

Prerequisites by Topic:

1. Basic concepts about computers and data processing.
2. The experience for high-level language programming.
3. Concepts in computer hardware architecture.

Major Topics Covered in the Course (number of weeks):

1. Introduction (5)
2. Data Transmission and Media (8)
3. Communications and Control (8)
4. Wide Area Networks (8)
5. Local Area Networks (5)
6. Communication Architecture and Protocols (3)

Laboratory Projects:

1. Fiber Optics communications
2. Local Area Network (LAN)
3. Integrated Service Digital Network (ISDN)
4. Novell Network Systems
5. Information Superhighway
6. Internet and Web Browsers
7. Client/Server Computing
8. Dial-up Networks (America On-line, CompuServe)

Note: Each student will do a project, submit a report and do a presentation for their project.

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Estimate Curriculum Category Content (Semester hours)

Area	Core	Advanced	Area	Core	Advanced
Algorithms	1		Data Structures		
Software Design			Prog. Languages		
Comp. Arch.	2				

Oral and Written Communication:

Every student is required to submit at least 1 written report (not including exams, tests, quizzes, or commented programs) of typically 8 pages and to make 1 oral presentation of typically 10-15 minutes in duration.

Social and Ethical Issues:

Students are required to read at least two different articles for class review and discussion. Open class discussion is lead by instructor and all students are required to give input.

Theoretical Content:

Analog and digital signaling concepts, data Encoding techniques, circuit multiplexing methods, circuit and packet switching concepts, network systems and data routing, protocols and architectures.

Problem Analysis:

Students are asked to analyze the differences between asynchronous and synchronous communication models, circuit and packet switching systems, data encoding methods, error detection and correction methods, protocols, transmission media, and basic computer network technology.

Open-Ended Design:

None is required for this course.