



DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Computer Networks 900222 (OC)

COURSE OBJECTIVES

- Build an understanding of the fundamental concepts of computer networking.
 - Familiarize the student with the basic taxonomy and terminology of the computer networking area.
 - Introduce the student to advanced networking concepts, preparing the student for entry Advanced courses in computer networking.
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Unit-I

Introduction: Computer Network, Types- LAN, MAN & WAN, Data transmission modes- Serial & Parallel, Simplex, Half duplex & full duplex, Synchronous & Asynchronous transmission, Transmission medium- Guided & Unguided, Cables- Twisted pair, Coaxial cable & Optical fiber, Networking devices-Repeaters, Hub, Switch, Bridge, Router, Gateway, Modem, Proxy Server, Wireless router, & Wireless Access Point (WAPs). Performance Criteria- Bandwidth, Throughput, Latency (Delay), Propagation Time, Transmission time & Queuing Time, Network Standardization- OSI Reference Model & TCP/IP Reference Mode.

Unit-II

Physical Layer: Network topologies- Bus, Ring, Star Topology & Mesh, Switching- Circuit switching, Message switching & Packet switching, Multiplexing; FDM – Frequency division multiplexing, WDM – Wavelength division multiplexing & TDM – Time division multiplexing, Wireless transmission- Electromagnetic spectrum, Radio transmission & Microwave transmission.

Unit-III

Data Link Layer: Introduction, Design issues, Services, Framing, Error control, Flow control, ARQ Strategies, Error Detection and correction, Parity bits, Cyclic Redundant Code (CRC),



Hamming codes, MAC Sub Layer- The channel allocation problem, Pure ALOHA ,Slotted ALOHA, CSMA ,CSMA/CD,CSMA/CA,IEEE 802.3 frame format.

Unit-IV

Network Layer& Transport Layer: Introduction, Design issues, Services, Routing- Distance vector routing, Hierarchical routing, Link state routing, Shortest path algorithm- Dijkstra's Algorithm & Floyd–Warshall's Algorithm, Flooding, Congestion Control- Open Loop & Closed Loop Congestion Control, Leaky Bucket & Token bucket Algorithm. Connection Oriented & Connectionless Service, Port addressing basics.

Unit-V

Presentation, Session& Application Layer: Introduction, Design issues, Presentation layer- Translation, Encryption & Compression. Session Layer – Dialog Control, Synchronization. Application Layer- Remote login, File transfer & Electronic mail.

RECOMMENDED BOOKS

- Behrouz A. Forouzan “Data Communication and Networking”, McGraw – Hill Publications. Andrew Tanenbaum – Computer Networks, PHI
- Peterson and Davie, “Computer Networks, A systems Approach”, 5th ed., Elsevier, 2011.
- Ying-Dar Liu, Ren-Hwang, Fred Baker, “Computer Networks: An open Source Approach”, McGraw – Hill, 2001.

COURSE OUTCOMES

After completion of the course students would be able to:

- CO1. Explain** the Basic networking concepts and components of data communication system
- CO2. Describe** the different types of network topologies, protocols, networks devices, transmission media
- CO3. Describe** the functions of Network Layer and Transport Layer functions i.e. Routing Mechanism, Port addressing, Connection Management, Congestion control mechanism.
- CO4. Explain** the functions offered by session, presentation, and application layer and their Implementation.
- CO5. Summarize** the basic protocols of computer networks, and how they can be used to assist in network design and implementation.



Course Articulation Matrix

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	1								1		1	3	-	
CO2	1					1					1	3	3	
CO3	1		1	2					2		2	3	3	2
CO4	1				1	1				1	2	3	3	
CO5	1	2	2	2	1				2	1	2	3	-	3

1 - Slightly; 2 - Moderately; 3 – Substantially



DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

WEB TECHNOLOGIES

COURSE OBJECTIVES:

- To learn about the communication model and web architecture.
 - To impart the design, development and implementation of Web Pages.
 - To develop programs for Web using Scripting Languages.
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Unit – I:

Introduction to the Internet: The World Wide Web, Web Browsers, Web Servers, Uniform Resource Locators, Domains, Protocols, Hypertext Transfer Protocol, Internet Protocol, IP address, MAC Address, 3-Tier web architecture, Brief Overview of OSI models, web browser, Static and Dynamic web pages.

Unit – II:

HTML: Basic Syntax of HTML, Elements, Attributes, heading, paragraph, styles, formatting, comments, colors, links, images, tables, lists, forms, media.

Unit – III:

Cascading Style Sheets: Introduction to CSS, Syntax, Selectors, Box Model, Inline, internal and External CSS, colors, borders, margin, padding z-index.

Unit – IV:

The Basics of JavaScript: Introduction to javascript, syntax, comments, variables, constants, operators, data types, objects, strings, arrays, if else, switch, loops, function.

Unit – V:

PHP&MYSQL: Introduction to php, syntax, comments, variables, echo, datatypes, strings, operators, if else, switch, loops, function, arrays, Introduction to MySQL, clauses and simple query using select, where, order by, min max, count, avg, sum, like, alias, in., How to create website using menu icon, tabs, navigations, search bar etc.



RECOMMENDED BOOKS:

1. Developing Web Applications, Ralph Moseley and M. T. Savaliya, Wiley-India
Efficient
2. Web Technologies, Black Book, dreamtech Press
3. Web Technologies, Achyut Godbole, Atul Kahate, Tata McGraw-Hill
4. Principles of Web Design, Joel Sklar, Cengage Learning

COURSE OUTCOMES: After completing the course, the student will be able to:

CO1: Distinguish among various web designing technologies for website development

CO2: Construct webpages using HTML and CSS

CO3: Model website using JavaScript and PHP

CO4: Design Static and Dynamic website

CO5: Explain the working of web pages and data retrieval

Course Articulation Matrix

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	2	3	2	2	2	1	1	1	1	1	1	2	3	-
CO2	3	2	2	2	1	1	1	1	1	1	1	1	3	3
CO3	2	2	2	2	3	1	1	1	1	1	1	2	3	3
CO4	2	2	3	2	2	2	1	1	1	1	1	3	3	3
CO5	3	2	2	2	1	1	1	1	1	1	1	3	3	-

1 - Slightly; 2 - Moderately; 3 – Substantially