

ECMC2T2: WIRELESS COMMUNICATIONS AND NETWORKS

UNIT I

WIRELESS COMMUNICATIONS & SYSTEM FUNDAMENTALS: Introduction to wireless communications systems, examples, comparisons & trends. Cellular concepts-frequency reuse, strategies, interference & system capacity, trucking & grade of service, improving coverage & capacity in cellular systems.

UNIT II

MULTIPLE ACCESS TECHNIQUES FOR WIRELESS COMMUNICATION: FDMA, TDMA, SSMA (FHMA/CDMA/Hybrid techniques), SDMA technique (AS applicable to wireless communications). Packet radio access-protocols, CSMA protocols, reservation protocols, capture effect in packet radio, capacity of cellular systems.

UNIT III

WIRELESS NETWORKING: Introduction, differences in wireless & fixed telephone networks, traffic routing in wireless networks –circuit switching, packet switching X.25 protocol.

UNIT IV

Wireless data services – cellular digital packet data (CDPD), advanced radio data information systems, RAM mobile data (RMD). Common channel signaling (CCS), ISDN-Broad band ISDN & ATM, Signaling System no. 7 (SS7)-protocols, network services part, user part, signaling traffic, services & performance.

UNIT V

MOBILE IP AND WIRELESS APPLICATION PROTOCOL: Mobile IP Operation of mobile IP, Co-located address, Registration, Tunneling, WAP Architecture, overview, WML scripts, WAP service, WAP session protocol, wireless transaction, Wireless datagram protocol.

UNIT VI

WIRELESS LAN TECHNOLOGY: Infrared LANs, Spread spectrum LANs, Narrow band microwave LANs, IEEE 802 protocol Architecture, IEEE802 architecture and services, 802.11 medium access control, 802.11 physical layer.

UNIT VII

BLUE TOOTH : Overview, Radio specification, Base band specification, Links manager specification, Logical link control and adaptation protocol. Introduction to WLL Technology.

UNIT VIII

MOBILE DATA NETWORKS : Introduction, Data oriented CDPD Network, GPRS and higher data rates, Short messaging service in GSM, Mobile application protocol.

TEXTBOOKS

Wireless Communication and Networking – William Stallings, PHI, 2003.

1. Wireless Communications, Principles, Practice – Theodore, S. Rappaport, PHI, 2nd Edn., 2002.

2. Principles of Wireless Networks – Kaveh Pah Laven and P. Krishna Murthy, Pearson Education, 2002.

REFERENCES

1. Wireless Digital Communications – Kamilo Feher, PHI, 1999.