19CSE342	WIRELESS AND MOBILE COMMUNICATION	L-T-P-C: 3-0-0-3

Pre-Requisite(s): 19CSE301 Computer Networks

Course Objectives

- This course provides an overview on the dynamics of wireless environment and means of communication across heterogeneous networks.

Course Outcomes

CO1: Understand the principles of mobile and wireless systems
CO2: Understand multiple access schemes of wireless and mobile networks
CO3: Analyze the working of various transport layer protocols in heterogeneous networks
CO4: Analyze routing aspects of mobile hosts in wireless systems

CO-PO Mapping

PO/ PSO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	2		2		2	2	2					3	2
CO2	3	2		2			2	2		2			3	2
CO3	3	2	3	2	3								3	2
CO4	3	2	3	2	3	2	2			2			3	2
CO5	3	3	3	3	2								3	2

Syllabus

Unit 1
Introduction to wireless communications: Evolution of mobile radio communications. Cellular telephone system, Modern wireless communication systems: 2G, 3G, 4G wireless system and standards, Bluetooth and wireless personal area networks. Basic wireless propagation mechanisms-Reflection, diffraction and scattering.

Unit 2
Digital Cellular Transmission, Spread Spectrum , Multiple Access techniques - frequency division multiple access (FDMA), time division multiple access (TDMA), code division multiple access (CDMA), space division multiple access (SDMA), Diversity and multiplexing -Time diversity, frequency diversity and space diversity, Evolution of wireless LAN, IEEE802.11,physical layer, MAC sub-layer, CSMA/CA, Adhoc networks: Characteristics – performance issues.

Unit 3
Cellular Concept: Frequency reuse, channel assignment strategies, handoff strategies, improving coverage and capacity in cellular systems, routing in mobile hosts. Mobile IP – DHCP – Mobile transport layer – Indirect TCP – Snooping TCP – Transmission/time-out freezing – selective retransmission –Transaction oriented TCP.

Text Book(s)

Stallings W. Wireless Communications & Networks. Pearson Education India; 2009.

Reference(s)

Jochen.S. Mobile Communications, Pearson Education Limited;2004.

Lee W C Y. Wireless and Cellular Communications, Third Edition, Tata McGraw Hill Publishing Company Limited; 2006.

Rappaport T.S. Wireless Communication: Principles and Practice, Second Edition, Pearson Education;2009.

Pahlavan K, Krishnamurthy P. Networking Fundamentals: Wide, Local and Personal Area Communications. John Wiley & Sons; 2006.

Evaluation Pattern

Assessment	Internal	External
Periodical 1 (P1)	15	
Periodical 2 (P2)	15	
*Continuous Assessment (CA)	20	
End Semester		50

*CA – Can be Quizzes, Assignment, Projects, and Reports