CS417: Wireless and Mobile Computing	L	T	P	
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Course Objective: To understand the concept of wireless communication, mobile computing paradigm, its novel applications and limitations.

S. No.	Course Outcomes (CO)
CO1	Explain GSM, cellular systems, and digital cellular standards.
CO2	Understand wireless networking, IEEE 802.11, Bluetooth, and mobile IP.
CO3	Analyze data management, replication, and clustering in mobile networks.
CO4	Explore mobile agents, security techniques, and transaction processing.
CO5	Discuss ad hoc network routing protocols, localization, and quality of service.

S. No	Contents	Contact Hours
UNIT 1	Introduction, issues in mobile computing, overview of wireless telephony: cellular concept, GSM: air-interface, channel structure, location management: HLR, VLR, hierarchical, handoffs, channel allocation in cellular systems, Cellular telephone, Digital Cellular Standards, Call Routing in GSM, Satellite Technology, FDMA, TDMA, CDMA and GPRS.	6

UNIT 2	Wireless Networking, Wireless LAN Overview: MAC issues, PCF, DCF , Frame types, addressing, IEEE 802.11 standards, Blue Tooth: Architecture , Layers and protocols, Wireless multiple access protocols, TCP over wireless, Wireless applications, data broadcasting, Mobile IP, WAP: Architecture, protocol stack, application environment, applications, WAP application environment(WAE), WML, WSP, WTP and WTLS	**10**
UNIT 3	Data management issues, data replication for mobile computers, Replication through data allocation, User profile replication scheme, optimistic replication and active replication, adaptive clustering for mobile wireless networks, File system, Disconnected operations.	**8**
UNIT 4	Mobile Agents computing: Introduction, Advantages, Application Domains; security and fault tolerance: Protecting server, code signalling, Firewall approach; security techniques and algorithms: DES, 3DES, AES, Diffie-Hellman, RSA ; transaction processing in mobile computing environment: Structure, properties, Data consistency, Transaction relation, Recovery and wireless data Dissemination.	**10**
UNIT 5	Ad Hoc networks, localization, Routing protocols: Global state routing (GSR), Destination sequenced distance vector routing (DSDV), Fisheye state routing(FSR), Dynamic source routing (DSR), ABR, Route Discovery, Route Repair/Reconstruction, Establishment, Maintenance, Ad Hoc on demand distance vector routing (AODV). File Directories, File Sharing, Implementation Issues	**10**
UNIT 6	Temporary ordered routing algorithm (TORA), Quality of Service in Ad Hoc Networks, and applications.	**4**
	Total	**48**