

# GUJARAT TECHNOLOGICAL UNIVERSITY

## MASTER OF COMPUTER APPLICATIONS (MCA)

### Semester: V

Subject Name: **Wireless Communication & Mobile Programming (WC-MP)**  
**(Elective III)**

Subject Code: **650016**

[w.e.f. June 2012]

Sr. No.	Course Contents	Total Hrs
1.	<p><b>Mobile Computing Introduction</b></p> <p>History of Wireless Communications, Types, propagation modes Wireless network architecture, Applications, Security, Concerns and Standards, Benefits, Future. Evolution of mobile computing, What mobile users need, SOC and AOC client, Mobile computing OS, Architecture for mobile computing, Three tier architecture, design considerations for mobile computing, mobile computing through internet, making existing applications Mobile-Enabled.</p>	11
2.	<p><b>Mobile Technologies</b></p> <p>Bluetooth, Radio frequency identification(Rfid),Wireless Broadband, Mobile IP: Introduction, Advertisement, Registration, TCP connections, two level addressing, abstract mobility management model, performance issue, routing in mobile host, Adhoc networks, Mobile transport layer: Indirect TCP, Snooping TCP, Mobile TCP, Time out freezing, Selective retransmission, transaction oriented TCP. ,IPv6</p> <p>Global system for mobile communication, Global system for mobile communication, GSM architecture, GSM entities, call routing in GSM,PLMN interface, GSM addresses and identifiers, network aspects in GSM,GSM frequency allocation, authentication and security, Short message services, Mobile computing over SMS,SMS, value added services through SMS, accessing the SMS bearer</p>	15
3.	<p><b>General packet radio service(GPRS)</b></p> <p>GPRS and packet data network, GPRS network architecture, GPRS network operation, data services in GPRS, Applications of GPRS, Billing and charging in</p>	10

	GPRS	
4.	<p><b>Wireless Application Protocol(WAP) WAP,MMS,GPRS application CDMA and 3G</b></p> <p>Spread-spectrum Technology, CDMA versus GSM, Wireless data, third generation networks, applications in 3G Wireless LAN, Wireless LAN advantages,IEEE802.11 standards ,Wireless LAN architecture, Mobility in Wireless LAN, Deploying Wireless LAN, Deploying Wireless LAN, Mobile ad hoc networks and sensor networks, wireless LAN security, WiFi v/s 3G</p> <p>Voice over Internet protocol and convergence, Voice over IP,H.323 framework for voice over IP,SIP, comparison between H.323 ad SIP, Real time protocols, convergence technologies, call routing, call routing, voice over IP applications, IMS, Mobile VoIP, Security issues in mobile</p> <p>Information security, security techniques and algorithms, security framework for mobile environment</p>	18

### **Text Books:**

1. Mobile Computing , Asoke K Telukder, Roopa R Yavagal, TMH
2. The complete reference J2ME, TMH
3. Programming for Mobile and Remote Computers, G. T. Thampi, dreamtech
4. Handbook of Wireless Networks and Mobile Computing, Ivan Stojmenovic ,Wiley

### **Reference Books:**

1. Principles of Mobile Computing, - Hansmann, Merk, Nicklous and Stober, Springer
2. Mobile Communications, Jochen Schiller, Pearson
3. Mobile Computing, Raj Kamal, Oxford
4. Mobile Computing, Wandra & Wandra, Akshat Pub.
5. Android Wireless Application Development, Shane Conder, Lauren Darcey, Pearson
6. Professional Android 2 Application development, Reto Meier, Wrox, Wiley India