

GUJARAT UNIVERSITY
K. S. SCHOOL OF BUSINESS MANAGEMENT
[Five Years' (Full-time) Integrated Degree Course]
Semester-8 [M.Sc. (CA & IT)]

Subject Code: KS_C_CC-484
Subject Name: Mobile Computing
Credit: 3

Objective:

This course is introduction to wireless communication with focus on digital mobile communication system and digital data transfer from computer science point of view. It shows integration of services and applications from fixed networks into networks supporting mobility of end user and wireless access. It emphasizes both on technology and standards of mobile communication and shows merging of classical data transmission technologies and extension of today's Internet applications onto mobile and wireless devices.

Unit No.	Course Content	Weightage (%)
1	<ul style="list-style-type: none"> • What Wireless Communication? :- Definition, types, applications and history of wireless communication Systems • Wireless Transmission: - frequencies for radio transmission, signals, Antennas, signal propagation, multiplexing, modulation, spread spectrum, Introduction to cellular systems. • Medium Access Control: - Motivation for specialized MAC: hidden and exposed terminals, near and far Terminals. SDMA, FDMA, TDMA: Fixed TDM, DAMA, PRMA, Reservation TDMA, MACA, Polling, ISMA. Introduction to CDMA systems, Spread spectrum in CDMA systems (DSSS and FHSS), coding methods in CDMA. 	(20%)
2	<ul style="list-style-type: none"> • Telecommunication systems: - GSM: architecture, radio interface, protocols, localization and calling, handover, Security, GSM, GPRS Mobile services, system 	(20%)
3	<ul style="list-style-type: none"> • Types of wireless networks:- WLAN, WMAN, WWAN, WPAN and assisting technologies. • Wireless LAN:- Infrastructure vs Adhoc LAN- IEEE 802.11, HIPERLAN, Bluetooth. 	(20%)

4	<ul style="list-style-type: none"> • Mobile network layer:-Mobile IP, Dynamic host configuration protocol, mobile adhoc networks, Wireless sensor networks. • Mobile Transport layer:- Traditional TCP, Classical TCP improvements, TCP over 2.5/3G wireless Networks 	(20%)
5	<ul style="list-style-type: none"> • Mobile Internet connectivity:- WAP1.1, Layers of WAP, WAE, WML and WML script, WTA, PUSH Architecture, PUSH/PULL services • Phone gap [mobile development framework]:-History, Design and rationale, Supported platforms, Phone gap Applications. 	(20%)

Recommended Lecture Scheme: Approximately 35 To 40 lectures

Recommended Practical Scheme: Not Applicable

Assignment: Minimum two assignments

Reference Books:

1. Mobile Communications, Addison Wesley..
By J. Schiller
2. GSM System Engineering
By A. Mehrotra
3. Mobile Computing, TMH
By Asoke K Talukder, Roopa R Yavgal
4. Mobile and Personal Communication system and services” Prentice Hall By Rajpandya