SARDAR RAJA COLLEGE OF ENGINEERING

DEPARTMENT OF COMPUTER APPLICATIONS

Subject Name	:	**MOBILE COMPUTING**
Subject Code	:	**MC9283**
Year	:	**III – MCA**
Semester	:	**V**

Mrs. K.SASIKALA

Asst.Prof / MCA

MC9283 MOBILE COMPUTING   **L T P C 3 0 0 3**

UNIT I WIRELESS COMMUNICATION FUNDAMENTALS   9
Introduction – Wireless transmission – Frequencies for radio transmission – Signals – Antennas – Signal Propagation – Multiplexing – Modulations – Spread spectrum – MAC SDMA – FDMA – TDMA – CDMA – Cellular Wireless Networks.

UNIT II TELECOMMUNICATION SYSTEMS   11
GSM – System Architecture – Protocols – Connection Establishment – Frequency Allocation – Routing – Handover – Security – GPRS

UNIT III WIRELESS NETWORKS   9
Wireless LAN – IEEE 802.11 Standards – Architecture – services – HIPERLAN – AdHoc Network – Blue Tooth.

UNIT IV NETWORK LAYER   9
Mobile IP – Dynamic Host Configuration Protocol – Routing – DSDV – DSR – AODV – ZRP – ODMR.

UNIT V TRANSPORT AND APPLICATION LAYERS   7
TCP over Wireless Networks – Indirect TCP – Snooping TCP – Mobile TCP – Fast Retransmit / Fast Recovery – Transmission/Timeout Freezing – Selective Retransmission – Transaction Oriented TCP – WAP – WAP Architecture – WDP – WTLS – WTP – WSP – WML – WML Script – WAE – WTA.

                                              TOTAL = 45 HOURS

TEXT BOOKS:
1. Jochen Schiller, "Mobile Communications", Second Edition, Prentice Hall of India / Pearson Education, 2003.
2. William Stallings, "Wireless Communications and Networks", Second Edition, Prentice Hall of India / Pearson Education, 2004.

REFERENCES:
1. Kaveh Pahlavan, Prasanth Krishnamoorthy, "Principles of Wireless Networks", Pearson Education, 2003.
2. Uwe Hansmann, Lothar Merk, Martin S. Nicklons and Thomas Stober, "Principles of Mobile Computing", Springer, New York, 2003.
3. C.K.Toh, "AdHoc Mobile Wireless Networks", Prentice Hall Inc., 2002.

DESCRIPTION:

- **Wireless network** is a network set up by using radio signal frequency to communicate among computers and other network devices.
- **First Generation Mobile System**: A trial mobile communication was introduced in 1978 which was known as AMPS – Advanced Mobile Phone System operating at 800 MHz band.
- Although, there was a good measure of success in first generation mobile systems, it also brought the weakness of the system. Limited capacity was the predominant limitation of the first generation systems.
- **Second Generation Mobile System**: The second generation technology used digital technology with great advantage such as increased capacity, greater security and other advanced services etc. Interim Standard IS –136 TDMA, IS-95 CDMA and GSM are the three different types that were most successful second generation systems.
- GSM was rechristened as Global System for Mobile Communication. Most of the system use the frequency band at 800 MHz band. However, in UK, the technology was developed at 1800 MHz band and it was known as DCS 1800. Currently it is known as GSM 1800.
- Signals are physical representation of data. Data exchanged between two different nodes through the transmission of signals. Signals are function of time and location. An **antenna** (or **aerial**) is a transducer that transmits or receives electromagnetic waves. In other words, antennas convert electromagnetic radiation into electrical current, or vice versa.
- AODV ,DSR and DSDV are various routing protocols that are used for data transmission.

OBJECTIVES:

- To Study the fundamentals of wireless communications and to know the wireless networks.

- To understand the Architecture of telecommunications.

- To study Routing concepts of Network Layer and about TCP.

- To know about the WAP Architecture.

MICRO LESSON PLAN

Hours	Lecture Topics	Text Book
UNIT I WIRELESS COMMUNICATION FUNDAMENTALS		
1	Introduction ,Wireless transmission	T1
2	Frequencies for Radio Transmission	
3	Signals and Antennas	
4	Signal Propagation	
5	Multiplexing and Modulations	
6	Spread Spectrum	
7	MAC,SDMA,FDMA	
8	TDMA and CDMA	
9	Cellular Wireless Networks	
UNIT II TELECOMMUNICATION SYSTEMS		
10	GSM	T1
11	System Architecture	
12	System Architecture	
13	Protocols	
14	Connection Establishment	
15	Frequency Allocation	
16	Routing	
17	Routing	
18	Handover	
19	Security	
20	GPRS	
UNIT III WIRELESS NETWORKS		
21	Wireless LAN	T1
22	IEEE 802.11 Standards	
23	Architecture	
24	Services	
25	Services	
26	HIPERLAN	
27	AdHoc Network	
28	Bluetooth	
29	Bluetooth	
UNIT IV NETWORK LAYER		
30	Mobile IP	T2
31	Mobile IP	
32	Dynamic Host Configuration Protocol	
33	Routing	

34	DSDV	
35	DSR	
36	AODV	
37	ZRP	
38	ODMR	
UNIT V Transport and Application Layers		
39	TCP over Wireless Networks	
40	Indirect TCP, Snooping TCP, Mobile TCP	
41	Fast Retransmit / Fast Recovery, Transmission/Timeout Freezing	T2
42	Selective Retransmission,Transaction Oriented TCP	
43	WAP, WAP Architecture	
44	WDP,WTLS,WTP,WSP	
45	WML,WML Script,WAE,WTA	