CS-702: WIRELESS & MOBILE COMPUTING

Teaching and Examination Scheme:

Teaching Scheme			Credits	Marks			Duration of End Semester Examination
L	T	P/D	C	Sessional	End Semester Exams	Total	
2	2	0	3	40	60	100	3Hrs

COURSE OBJECTIVE:

To enable the students to synthesis and analyze wireless and mobile cellular communication systems, understanding the concept of GSM, different network components and wireless adhoc networks in detail.

COURSE CONTENT:

UNIT	CONTENT	No. of Hrs.
I	Mobile communication, mobile computing, mobile computing architecture, mobile devices, mobile system network, mobility management, GSM services and architecture, radio interfaces of GSM, protocols of GSM, 2G,3G,4G	7
II	Cellular network and frequency reuse, handheld device, limitation of mobile device, wireless switching technology, wireless communication problem, wireless network reference model, wireless networking issue, wireless network standards, wireless body area network architecture and component, design issue, network protocols, WBAN technologies. Mobile IP network layer: IP and mobile IP network layer, packet delivery and handover management, tunneling and encapsulation.	8
III	Network components, design requirements of WLAN, network architecture, WLAN standards, WLAN protocols, IEEE 802.11p, WLAN applications, WMAN network architecture, network protocols, broadband wireless networks, WMAN applications.	6
IV	Wireless Ad Hoc networks, mobiles Ad Hoc networks (MANET), routing protocols of MANET, wireless sensor networks, wireless mesh networks, vehicular Ad Hoc networks (VANETs).	5

Following practicals are to be performed in tutorials:

1. Getting in Touch: Basics of WSN programming using TinyOS.
2. Gathering Data: Sensing data using WSN motes.
3. To implement code division multiple acces (CDMA).
4. To study frequency reuse.
5. To study Choice Group class and its implementation in J2ME.
6. To study Canvas class and its implementation in J2ME.
7. Write WML page using various tags such as select and option tags.
8. Write a WML page to display an image and to accept input from the user.
9. Study Assignment: Detailed study of Bluetooth.

Text Books:

1. Manvi & Kakkasageri , ***"Wireless and Mobile networks"***, Wiley India Publication.

2. Raj Kamal , ***"Mobile Computing"***, Oxford university press.
3. Sandeep K. S. Gupta, Frank Adelstein, Golden G. Richard III, Loren Schwiebert, ***"Fundamentals of Mobile and Pervasive Computing"***, TMH
4. D P Aggarwal, "***Introduction to Wireless and Mobile Systems"***, Cengage Learning

Reference Books:

1. Theodore S. Rappaport , ***"Wireless Communication"*** , Pearsons.
2. W.C.Y.Lee , ***"Mobile Cellular Telecommunication"***, McGraw Hill.
3. W. Stallings, ***"Wireless Communications and Network"***, Pearson Education