

COURSE CODE	COURSE TITLE	L	T	P	C
1152CS106	MOBILE COMPUTING	3	0	0	3

Course Category: Program Elective

A. Preamble :

Communication technologies in this era become one of the dominant fields. Especially handheld devices growth such as PDA, Mobile Phones, Tablet, makes use of GSM or 3G for both voice and data. It is must for the computer science engineer to learn the Basics of Wireless and data Communication Technologies. About the various Satellites Networks and WirelessLAN Standards. To known about the various Mobile computing algorithms and Wireless application protocol to Develop mobile content applications.

B. Prerequisite Courses:

SI No	Course Code	Course Name
1	1151CS111	Computer Networks

C. Related Courses:

SI No	Course Code	Course Name
1	1152CS107	Mobile Adhoc and Sensor Networks

D. Course Educational Objectives :

Students undergoing this course are exposed to

- The basics of Wireless voice and data communications technologies.
- Build working knowledge on various telephone and satellite networks.
- The working principles of wireless LAN and its standards.
- Build knowledge on various Mobile Computing algorithms.
- Build skills in working with Wireless application Protocols to develop mobile content applications.

E. Course Outcomes :

Upon the successful completion of the course, students will be able to:

CO Nos.	Course Outcomes	Knowledge Level (Based on revised Bloom's Taxonomy)
CO1	Explain the basics of wireless communication systems.	K2
CO2	Explain the concepts of Telecommunication networks	K2
CO3	Discuss wireless LAN standards.	K2
CO4	Describe various routing protocols algorithm standards	K2
CO5	Illustrate Wireless application Protocols to develop mobile content application and to appreciate the social and ethical issues of mobile computing, including privacy.	K3

F. Correlation of Cos with Pos :

Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	M				L			M					M		L
CO2	M		L		M			M					M	M	L
CO3	M		M		M			M					M	M	L
CO4	M		M		M			M					M	M	L
CO5	M	L	L	L	M			M	H				M	M	M

H- High; M-Medium; L-Low

G. Course Content :

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 Networks 9

Telecommunication systems – GSM – GPRS – DECT – UMTS – IMT-2000 – Satellite Networks - Basics – Parameters and Configurations – Capacity Allocation – FAMA and DAMA – Broadcast Systems – DAB – DVB.

UNIT III WIRELESS LAN 9

Wireless LAN – IEEE 802.11 – Architecture – services – MAC – Physical layer – IEEE 802.11a – 802.11b standards – HIPERLAN – Blue Tooth.

UNIT IV Mobile Network Layer 9

Mobile IP – Dynamic Host Configuration Protocol – Routing – DSDV – DSR – Alternative Metrics.

UNIT V Transport And Application Layers 9

Traditional TCP – Classical TCP improvements – WAP, WAP 2.0.

Total : 45 Hours

H. Learning Resources:

1. Text Books

- Jochen Schiller, “Mobile Communications”, PHI/Pearson Education, Second Edition, 2003.
(UNIT I Chap 1,2 &3- UNIT II chap 4,5 &6-UNIT III Chap 7.UNIT IV Chap 8-UNIT V Chap 9&10.)
- William Stallings, “Wireless Communications and Networks”, PHI/Pearson Education, 2002. (UNIT I Chapter – 7&10-UNIT II Chap 9)

4. Reference Books:

- KavehPahlavan, PrasanthKrishnamoorthy, “Principles of Wireless Networks”, PHI/Pearson Education, 2003.
- Uwe Hansmann, LotharMerk, Martin S. Nicklons and Thomas Stober, “Principles of Mobile Computing”, Springer, New York, 2003.
- HazysztofWesolowshi, “Mobile Communication Systems”, John Wiley and Sons Ltd, 2002.

iii. Online resources

- <http://www.tutorialspoint.com/Mobile Networks>