Course Title : Mobile Computing			
Course Code : P18CS643	**Semester : 6**	**L :T:P : 2:0:0**	**Credits: 3**
Contact Period: Lecture: 52 Hrs, Exam: 3 Hrs		**Weightage: CIE:50%, SEE:50%**	

Course Content

Unit–1

Mobile Computing Architecture: Architecture for Mobile Computing, 3-tier Architecture, Design Considerations for Mobile Computing. Emerging Technologies: Wireless broadband (WiMAX), Mobile IP: Introduction, discovery, Registration, Tunneling, Cellular IP, Wireless Networks : Global Systems for Mobile Communication (GSM): GSM Architecture, Entities, Call routing in GSM, PLMN Interface, Network Aspects in GSM, Mobility Management, GSM Frequency allocation. Short Service Messages (SMS): Introduction to SMS, SMS Architecture, SMMT, SMMO, SMS as Information bearer, applications.

Self Study Component**:** Mobile IP with IPv6, GSM Addresses and Identities.

10 Hours

Unit-2

GPRS and Packet Data Network, GPRS Network Architecture, GPRS Network Operations, Data Services in GPRS, Applications for GPRS, Billing and Charging in GPRS.IS-95, CDMA versus GSM, Wireless Data, Third Generation Networks, Applications on 3G, Mobile Client: Moving beyond desktop, Mobile handset overview, PDA, Design Constraints in applications for handheld devices.

Self Study Component**:** Spread Spectrum technology, Mobile phones and their features.

10 Hours

Unit-3

Mobile OS and Computing Environment: Smart Client Architecture, The Client: User Interface, Data Storage, Performance, Messaging. The Server: Enterprise Data Source, Messaging. Mobile Operating Systems: WinCE, Palm OS, Symbian OS, Linux, Proprietary OS Client Development: The development process, Need analysis phase, Design phase, Implementation and Testing phase, Deployment phase, Development Tools, Device Emulators.

Self Study Component**:** Data Synchronization.

10 Hours

Unit-4

Building Wireless Internet Applications: Thin client overview: Architecture, the client, Middleware, messaging Servers, Processing a Wireless request, Protocol (WAP) Overview, Wireless Languages: Markup Languages, HDML, WML, HTML, cHTML, XHTML, Voice XML.

Self Study Component**:** Wireless Applications.

10 Hours

Unit-5

J2ME: Introduction, CDC, CLDC, MIDP; Programming for CLDC, MIDlet model, Provisioning, MIDlet life-cycle, Creating new application, MIDlet event handling, Low level GUI Components, Communication in MIDP, Security Considerations in MIDP.

Self Study Component**:** GUI in MIDP, Multimedia APIs.

10 Hours

Text Books:

1. Ashok Talukder, Roopa Yavagal, Hasan Ahmed: Mobile Computing, Technology, Applications and Service Creation, 2nd Edition, Tata McGraw Hill, 2010.
2. Martyn Mallik: Mobile and Wireless Design Essentials, Wiley India, 2003

Reference Books:

1. Raj Kamal: Mobile Computing, Oxford University Press, 2007.
2. Iti Saha Misra: Wireless Communications and Networks, 3G and Beyond, Tata McGraw Hill, 2009

Course Outcomes: The student will be able to :

1. Explain architecture of Mobile Computing, GSM,SMS.
2. Explain state of art techniques in wireless communication.
3. Describe Mobile OS and Data Synchronization.
4. Discover CDMA, Mobile IP, WImax.
5. Demonstrate program for CLDC, MIDP let model and security concerns

CO-PO Mapping

	Semester: 6th	**Course code : P18CS643**						**Title : Mobile Computing**							
CO	**Statement**	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO 10**	**PO 11**	**PO 12**	**PS 01**	**PS 02**
CO1	Explain architecture of Mobile computing GSM, SMS.	2	2											2	
CO2	Explain state of art techniques in wireless communication.	2	2											2	
CO3	Describe Mobile OS and Data Synchronization	1	2	2											
CO4	Discover CDMA, Mobile IP, WImax.	1	2	2										1	
CO5	Demonstrate program for CLDC, MIDP let model and security concerns	2	3	2							2			2	