

MOBILE COMPUTING
(Effective from the academic year 2018 -2019)
SEMESTER – VIII

Course Code	18CS821	CIE Marks	40
Number of Contact Hours/Week	3:0:0	SEE Marks	60
Total Number of Contact Hours	40	Exam Hours	03

CREDITS –3

- Course Learning Objectives:** This course (18CS821) will enable students to:
- Define concepts of wireless communication.
 - Compare and contrast propagation methods, Channel models, capacity calculations multiple antennas and multiple user techniques used in the mobile communication.
 - Explain CDMA, GSM, Mobile IP, Wimax and Different Mobile OS
 - Illustrate various Markup Languages CDC, CLDC, MIDP; Programming for CLDC, MIDlet model and security concerns

Module 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, Mobile IP with IPv6. Wireless Networks : Global Systems for Mobile Communication (GSM): GSM Architecture, Entities, Call routing in GSM, PLMN Interface, GSM Addresses and Identities, 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
Textbook1: 2.4 - 2.6, 4.4 - 4.6, 5, 6.
RBT: L1, L2

Contact Hours
08

Module 2

GPRS and Packet Data Network, GPRS Network Architecture, GPRS Network Operations, Data Services in GPRS, Applications for GPRS, Billing and Charging in GPRS. Spread Spectrum technology, IS-95, CDMA versus GSM, Wireless Data, Third Generation Networks, Applications on 3G, Mobile Client: Moving beyond desktop, Mobile handset overview, Mobile phones and their features, PDA, Design Constraints in applications for handheld devices.
Textbook 1: 7.9.2 - 9.7, 12.2 - 12.6
RBT: L1, L2

08

Module 3

Mobile OS and Computing Environment: Smart Client Architecture, The Client: User Interface, Data Storage, Performance, Data Synchronization, Messaging. The Server: Data Synchronization, 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
Textbook 2: 7, 8.
RBT: L1, L2

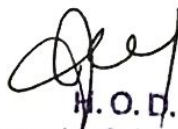
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Module 4

Building Wireless Internet Applications: Thin client overview: Architecture, the client, Middleware, messaging Servers, Processing a Wireless request, Wireless Applications

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Protocol (WAP) Overview, Wireless Languages: Markup Languages, HDML, WML, 10 Hours HTML, cHTML, XHTML, VoiceXML. Textbook 2: 11, 12, 13 RBT: L1, L2	
Module 5 J2ME: Introduction, CDC, CLDC, MIDP; Programming for CLDC, MIDlet model, Provisioning, MIDlet life-cycle, Creating new application, MIDlet event handling, GUI in MIDP, Low level GUI Components, Multimedia APIs; Communication in MIDP, Security Considerations in MIDP. Textbook 1: 15.1 - 15.10 RBT: L1, L2	08
Course Outcomes: The student will be able to :	
The students shall able to:	
<ul style="list-style-type: none"> • Explain state of art techniques in wireless communication. • Discover CDMA, GSM, Mobile IP, Wimax • Demonstrate program for CLDC, MIDP let model and security concerns 	
Question paper pattern:	
The question paper will have ten questions.	
There will be 2 questions from each module.	
Each question will have questions covering all the topics under a module.	
The students will have to answer 5 full questions, selecting one full question from each module.	
Text Books:	
<ol style="list-style-type: none"> 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:	
<ol style="list-style-type: none"> 1. Raj kamal: Mobile Computing, Oxford University Press, 2007. 2. Iti Saha Misra: Wireless Communications and Networks, 3G and Beyond, Tata McGraw Hill, 2009. 	


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