

WIRELESS NETWORKS AND MOBILE COMPUTING [As per Choice Based Credit System (CBCS) scheme] (Effective from the academic year 2017 -2018) SEMESTER – VI			
Subject Code	17CS663	IA Marks	40
Number of Lecture Hours/Week	3	Exam Marks	60
Total Number of Lecture Hours	40	Exam Hours	03
CREDITS – 03			
Module – 1			Teaching Hours
Mobile Communication, Mobile Computing, Mobile Computing Architecture, Mobile Devices Mobile System Networks, Data Dissemination, Mobility Management, Security Cellular Networks and Frequency Reuse, Mobile Smartphone, Smart Mobiles, and Systems Handheld Pocket Computers, Handheld Devices, Smart Systems, Limitations of Mobile Devices Automotive Systems			8 Hours
Module – 2			
GSM-Services and System Architecture, Radio Interfaces of GSM, Protocols of GSM Localization, Call Handling Handover, Security, New Data Services, General Packet Radio Service High-speed Circuit Switched Data, DECT, Modulation, Multiplexing, Controlling the Medium Access Spread Spectrum, Frequency Hopping Spread Spectrum (FHSS), Coding Methods, Code Division Multiple Access, IMT-2000 3G Wireless Communication Standards, WCDMA 3G Communications Standards ,CDMMA2000 3G Communication Standards, I-mode, OFDM, High Speed Packet Access (HSPA) 3G Network Long-term Evolution, WiMaxRel 1.0 IEEE 802.16e, Broadband Wireless Access, 4G Networks, Mobile Satellite Communication Networks			8 Hours
Module – 3			
IP and Mobile IP Network Layers, Packet Delivery and Handover Management Location Management, Registration, Tunnelling and Encapsulation, Route Optimization Dynamic Host Configuration Protocol, VoIP, IPsec Conventional TCP/IP Transport Layer Protocols, Indirect TCP, Snooping TCP Mobile TCP, Other Methods of Mobile TCP-layer Transmission ,TCP over 2.5G/3G Mobile Networks			8 Hours
Module – 4			
Data Organization, Database Transactional Models – ACID Rules, Query Processing Data Recovery Process, Database Hoarding Techniques , Data Caching, Client-Server Computing for Mobile Computing and Adaptation Adaptation Software for Mobile Computing, Power-Aware Mobile Computing, Context-aware Mobile Computing			8 Hours
Module – 5			
Communication Asymmetry, Classification of Data-delivery Mechanisms, Data Dissemination Broadcast Models, Selective Tuning and Indexing techniques, Digital Audio Broadcasting (DAB), Digital Video Broadcasting Synchronization, Synchronization Software for Mobile Devices, Synchronization Software for Mobile Devices SyncML-Synchronization Language for Mobile Computing, Sync4J (Funambol), Synchronized Multimedia Markup Language (SMIL)			8 Hours
Course outcomes: The students should be able to:			

- Understand the various mobile communication systems.
- Describe various multiplexing systems used in mobile computing.
- Explain the use and importance of data synchronization in mobile computing

Question paper pattern:

The question paper will have TEN questions.

There will be TWO questions from each module.

Each question will have questions covering all the topics under a module.

The students will have to answer FIVE full questions, selecting ONE full question from each module.

Text Books:

1. Raj kamal: Mobile Computing, 2ND EDITION, Oxford University Press, 2007/2012
2. MartynMallik: Mobile and Wireless Design Essentials, Wiley India, 2003

Reference Books:

1. Ashok Talukder, RoopaYavagal, Hasan Ahmed: Mobile Computing, Technology, Applications and Service Creation, 2nd Edition, Tata McGraw Hill, 2010.
2. ItiSahaMisra: Wireless Communications and Networks, 3G and Beyond, Tata McGraw Hill, 2009.