CSH 616: Mobile Computing	
Teaching Scheme Lectures: 3 hrs/Week Tutorials: 1 hr/Week Credits: 4	**Examination Scheme** Class Test -12Marks Teachers Assessment - 6Marks Attendance – 12 Marks End Semester Exam – 70 marks

Pre-requisites: Mobile communication and Computer Network, INTERNET, Router

Course Objectives:

1. To introduce the characteristics, basic concepts and systems issues in mobile and pervasive computing.
2. Describe and designing of GSM architecture and HLR/VRL .So that it can be able to solve the mobile connective problems
3. To design successful mobile and pervasive computing applications and services.
4. To analyze the strengths and limitations of the tools and devices for development of pervasive computing systems
5. To introduce wireless communication and networking principles, that support connectivity to cellular networks, wireless internet and sensor devices.
6. Creatively analyze mobile and wireless networks.

Detailed Syllabus

Unit-1 Introduction to mobile communication and computing, Generations of mobile computing, Issues and Applications of mobile computing, Cellular concept and cellular architecture, Frequency reuse, handoff in mobile computing.
Unit-2 GSM: GSM architecture, HLR, VLR, protocol, Call flow sequence in GSM, Security in GSM.CDMA, IS-95 the North American CDMA, Service aspects, radio aspects.
Unit-3 Wireless LAN, Architecture, IEEE-802.11, Hidden and Exposed Terminal Problems. Bluetooth, Bluetooth Architecture, Mobile IP, Terminologies.
Unit-4 Location Management- Motivation, Network Architecture, Location Management in Cellular Network, Static and Dynamic Location Management, Location Management in Wireless Data Networks.
Unit-5 Data Management- Data Management Issues, Mobile Databases, Impact of Mobile Computing in the Area of Data Management, Data Replication, Asynchronous and Synchronous Replication.
Unit-6 File System: CODA File System. Adaptive Clustering: Adaptive Clustering for Mobile Wireless Networks, Architecture, Algorithm, Cluster Maintenance.

Text and Reference Books

1. Ashok K Talukdar: Mobile Computing-Technology, Applications and Service Creation, 1st Edition,TMH Publication, 2006.
2. J Schillar: Mobile Communications, 2nd Edition, Pearson Education, 2009.
3. Vishnu Sharma- Mobile computing , 4th Edition, Pearson Eduction, 2010.

Course Outcomes:

After completing the course, students will be able to:

1. Apply the fundamental design paradigms and technologies to mobile computing applications.
2. Demonstrate the different wireless technologies such as CDMA, GSM, and GPRS etc.
3. To design and considerations for deploying the wireless network infrastructure
4. To easily understand and design network architecture
5. Evaluate network protocols, routing algorithms, connectivity methods and characteristics
6. To understand and evaluate CODA File System and Adaptive Clustering for mobile computing