RAJIV GANDHI PROUDYOGIKI VISHWAVIDYALAYA, BHOPAL
Credit Based Grading System
Computer Science and Engineering VI-Semester
CS-6005 Elective-II (2) Mobile Application Development

RATIONALE:-

The purpose of this subject is to cover the underlying concepts and techniques used in Mobile Communication. This syllabus provides a comprehensive introduction to Mobile Application development on various platforms.

PREREQUISITE:-

The students should have thorough exposure in Analog and Digital Communication and Data Communications. Knowledge of Computer network will be useful.

Unit-I Mobile Communication Fundamentals

Introduction, issues in mobile communications, Wireless telephony: cellular concept, GSM: air-interface, channel structure, location management: HLR-VLR, handoffs, channel allocation in cellular systems, CDMA, GPRS, Wireless LAN Overview: MAC issues, IEEE 802.11, Blue Tooth, Wireless multiple access protocols, TCP over wireless, Wireless applications, Mobile IP, WAP: Architecture, protocol stack, applications.

Unit-II Mobile Applications Development Frameworks and Tools

Introduction of Mobile Applications, Types and Benefits of a Mobile App, Mobile Platforms, deployment on Apple iOS with versions, Android, Windows phone application using development platforms: worklight, kendo, Appcon, Xcode, Xpage, Architecture of Mobile Software Applications, N-Tier Client–Server Frameworks and Tools, Java, BREW, Windows CE, WAP, Symbian EPOC, Publishing Frameworks, Mobile User Interface Design, Building Generic User Interfaces, mobile apps in the cloud.

Unit-III Mobile Agents and Peer-to-Peer Architectures for Mobile Applications

Mobile Agents for Mobile Computing, Applications of Mobile Agents to Mobile Applications and Implementation Tools, Techniques for Agent-Based Software, Peer-to-Peer Applications for Mobile Computing, security and fault tolerance.

Unit-IV Synchronization and Replication of Mobile Data

Taxonomy of Replication and Synchronization, Data Replication and Synchronization for Mobile Applications, SyncML, WebDAV, Mobile Agents, Replication, and Synchronization, Location Information Modeling, Problems with Building Location-Based Applications, Utilizing Location-Based Services with Mobile Applications, UML-Based Development Cycle for Mobile Applications, Architectural Patterns for Mobile Applications.

Unit-V Testing Mobile Applications, Validating the Mobile Use Cases before Development, The Effect of the Dimensions of Mobility on Software Testing, Stress Testing and Scalability Issues, Testing Location-Based Functionality, Android as your mobile platform, installation, Configuring of Eclipse and the Android SDK, Additional SDK Components, application layout and Android app development, Android user interface elements, Android Virtual Device, Connection to Google play.

References :

1.Reza b'far, Mobile computing Principles Designing and developing Mobile applications with Uml and xml, Cambridge University press.
2.Jeff Mcwherter, Scott Gowell, Professional Mobile application development, Wrox, John Wiley & Sons, Inc..
3.Richard Rodger, Beginning mobile application Development in the cloud, John Wiley & Sons, Inc.
4.J. Schiller, Mobile Communication , Addison Wesley.