

Objective(s)

The course is an overview to the essentials of mobile computing. The ubiquity of wireless communication technologies and the spread of portable computing devices have made possible a mobile computing time in which users, on the move, can seamlessly access network services and resources, from any-where, at any-time. We shall effort to contemporary the challenges faced to professionally enable such access along with state of the art solutions.

UNIT- I**Introduction**

Wireless Communication, Mobile Computing Functions & Devices, Ad-hoc Networks, Architecture for Mobile Computing, 3-Tier Architecture, Multiple Access Procedures – FDMA, TDMA, CDMA, SDMA, Blue-Tooth Protocol Stack, Radio-Frequency Identification (RFID), Mobile IP

UNIT- II**Global System for Mobile Communications (GSM)**

GSM Architecture, GSM Entities, Call Routing in GSM, PLMN Interfaces, GSM Addresses and Identifiers, GSM Frequency Allocation

Short Message Service (SMS)

Short Message Service, Strength of SMS, SMS Architecture, Value Added Services through SMS

GPRS

Packet Data Network, GPRS Network Architecture, Network Operations, Applications for GPRS

UNIT- III**J2ME**

Java 2 Micro Edition (J2ME), Programming for CLDC, GUI in MIDP, Multimedia, Record Management System, Jar management

Introduction to Android

The Android Platform, Android SDK, Building a sample Android application, Anatomy of an Android applications, Application Context, Activities, Services, Intents, Receiving and Broadcasting Intents, Android Manifest File and its common settings, Using Intent Filter, Permissions, Managing Application resources in a hierarchy Working with different types of resources

UNIT- IV**Android User Interface Design Essentials**

User Interface Screen elements, Designing User Interfaces with Layouts, Drawing and Working with Animation

Unit V**Using Common Android APIs**

Using Android Data and Storage APIs, Managing data using SQLite, Sharing Data Between Applications with Content Providers, Using Android Networking APIs, Using Android Web APIs, Using Android Telephony APIs

Deploying Android Application to the World

Selling your Android application

Reference Book(s):

1. Mobile Computing , Asoke Telukder, Roopa Yavagal, TMH
2. Lauren Darcey and Shane Conder, “Android Wireless Application Development”, Pearson Education, 2nd ed. (2011)
3. The complete reference J2ME, TMH
4. Principles of Mobile Computing, - Hansmann, Merk, Nicklous and Stober, Springer
5. Reto Meier, “Professional Android 2 Application Development”, Wiley India Pvt Ltd (2011)
6. Mark L Murphy, “Beginning Android”, Wiley India Pvt Ltd(2009)

Practical(s):

1. Various WML tags, WML Script.
2. Design a web page using WML.
3. Study of J2ME, Write various programs with J2ME.
4. Hello ANDROID.
5. Creating Applications and Activities.
6. Creating User Interfaces, Intents.
7. Broadcast Receivers, Adapters, and the Internet.
8. Data Storage, Retrieval, and Sharing.
9. Working in the Background.
10. Peer-to-Peer Communication.