MC5402 MOBILE COMPUTING

DETAILED SYLLABUS

OBJECTIVES:

- To learn the basic concepts, aware of the GSM, SMS, GPRS Architecture.
- To have an exposure about wireless protocols -WLN, Bluetooth, WAP, ZigBee issues.
- To Know the Network, Transport Functionalities of Mobile communication.
- To impart knowledge about Mobile Application Development Platform
- To impart the knowledge about basic components needed for Mobile App development

UNIT I WIRELESS COMMUNICATION FUNDAMENTALS, ARCHITECTURE

Frequency Spectrum- Multiplexing- Spread spectrum-GSM vs CDMA - -Comparison of 2G, 3 G, 4G - GSM Architecture-Entities-Call Routing- Address and identifiers- GSM Protocol Architecture-Mobility Management-Frequency Allocation- Security –GPRS Architecture (entity and Protocol).

UNIT II MOBILE WIRELESS SHORT-RANGE NETWORKS

Introduction-WLAN Equipment-WLAN Topologies-WLAN Technologies-IEEE 802.11Architecture-WLAN MAC-Security of WLAN, Power Management-Standards- WAP Architecture- Bluetooth enabled Devices Network-Layers in Bluetooth Protocol-Security in Bluetooth- IrDA- ZigBee.

UNIT III MOBILE IP NETWORK LAYER, TRANSPORT LAYER

IP and Mobile IP Network Layer- Packet delivery and Handover Management-Location Management- Registration- Tunneling and Encapsulation-Route Optimization- Mobile Transport Layer-Conventional TCP/IP Transport Layer Protocol-Indirect, Snooping, Mobile TCP.

UNIT IV MOBILE APPLICATION DEVELOPMENT USING ANDROID

Mobile Applications Development - Understanding the Android Software Stack – Android Application Architecture –The Android Application Life Cycle – The Activity Life Cycle Creating Android Activity -Views- Layout -Creating User Interfaces with basic views- linking activities with Intents.

UNIT V MOBILE APPLICATION DEVELOPMENT USING ANDROID

Services-Broadcast Receivers – Adapters – Data Storage, Retrieval and Sharing-Location based services- Development of simple mobile applications.

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2. Barry A. Burd, "Android Application Development for Dummies All in One", Wiley, 2015.

3. Ed Burnette,"Hello, Android: Introducing Google"s Mobile Development Platform" third edition" Pragmatic Programmers,2012.

4. Jochen Schillar "Mobile Communications" Pearson Education second Edition.

5. Jerome (J.F) DiMarzio "Android A programmer"s Guide" Tata McGraw-Hill 2010 Edition.

6. Maritn Sauter, —From GSM to LTE: An Introduction to Mobile Networks and Mobile

Broadbandǁ, John Wiley and Sons, 2011.

7. Raj Kamal "Mobile Computing" Oxford Higher Education, Second Edition, 2012.

8. Reto Meier, Professional Android 2 Application Development, Wrox's Programmer to Programmer series.