IT6601 MOBILE COMPUTING SYLLABUS   **L T P C 3 0 0 3**

OBJECTIVES:

The student should be made to:

 Understand the basic concepts of mobile computing

 Be familiar with the network protocol stack

 Learn the basics of mobile telecommunication system

 Be exposed to Ad-Hoc networks

 Gain knowledge about different mobile platforms and application development

UNIT I INTRODUCTION 9

Mobile Computing – Mobile Computing Vs Wireless Networking – Mobile Computing Applications – Characteristics of Mobile computing – Structure of Mobile Computing Application. MAC Protocols – Wireless MAC Issues – Fixed Assignment Schemes – Random Assignment Schemes – Reservation Based Schemes.

UNIT II MOBILE INTERNET PROTOCOL AND TRANSPORT LAYER 9

Overview of Mobile IP – Features of Mobile IP – Key Mechanism in Mobile IP – route Optimization. Overview of TCP/IP – Architecture of TCP/IP- Adaptation of TCP Window – Improvement in TCP Performance.

UNIT III MOBILE TELECOMMUNICATION SYSTEM 9

Global System for Mobile Communication (GSM) – General Packet Radio Service (GPRS) – Universal Mobile Telecommunication System (UMTS).

UNIT IV MOBILE AD-HOC NETWORKS 9

Ad-Hoc Basic Concepts – Characteristics – Applications – Design Issues – Routing – Essential of Traditional Routing Protocols –Popular Routing Protocols – Vehicular Ad Hoc networks (VANET) – MANET Vs VANET – Security.

UNIT V MOBILE PLATFORMS AND APPLICATIONS 9

Mobile Device Operating Systems – Special Constrains & Requirements – Commercial Mobile Operating Systems – Software Development Kit: iOS, Android, BlackBerry, Windows Phone – MCommerce – Structure – Pros & Cons – Mobile Payment System – Security Issues.

TEXT BOOK:

1. Prasant Kumar Pattnaik, Rajib Mall, "Fundamentals of Mobile Computing", PHI Learning Pvt. Ltd, New Delhi – 2012.

REFERENCES:

1. Jochen H. Schller, "Mobile Communications", Second Edition, Pearson Education, New Delhi, 2007.

2. Dharma Prakash Agarval, Qing and An Zeng, "Introduction to Wireless and Mobile systems", Thomson Asia Pvt Ltd, 2005.

3. Uwe Hansmann, Lothar Merk, Martin S. Nicklons and Thomas Stober, "Principles of Mobile Computing", Springer, 2003.

4. William. C.Y. Lee, "Mobile Cellular Telecommunications-Analog and Digital Systems", Second Edition, Tata Mc Graw Hill Edition ,2006.

5. C.K. Toh, "AdHoc Mobile Wireless Networks", First Edition, Pearson Education, 2002.

6. Android Developers: http://developer.android.com/index.html

7. Apple Developer: https://developer.apple.com/

8. Windows Phone Dev Center: http://developer.windowsphone.com

9. BlackBerry Developer: http://developer.blackberry.com/