IT6601 MOBILE COMPUTING L T P C 3 0 0 3

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| 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 | OUTCOMES:At the end of the course, the student should be able to:• Explain the basics of mobile telecommunication system • Choose the required functionality at each layer for given application • Identify solution for each functionality at each layer • Use simulator tools and design Ad hoc networks • Develop a mobile application |

UNIT I INTRODUCTION 9Mobile 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 9Overview 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 9Global System for Mobile Communication (GSM) – General Packet Radio Service (GPRS) –  
Universal Mobile Telecommunication System (UMTS).  
UNIT IV MOBILE AD-HOC NETWORKS 9Ad-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 9Mobile 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.  
 TOTAL: 45 PERIODS.  
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/