18CSPE804	MOBILE COMPUTING	L	T	P	C
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Course Objectives:

1.	To understand the basic concepts of mobile computing
2.	To familiarize with the network protocol stack
3.	To acquire the basics of mobile telecommunication system
4.	To expose theAdhoc networks
5.	To gain the knowledge about different mobile platforms and application development

UNIT I	INTRODUCTION	9	+	0

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	+	0

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	+	0

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

UNIT IV	MOBILE ADHOC NETWORKS	9	+	0

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

UNIT V	MOBILE PLATFORMS AND APPLICATIONS	9	+	0

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

Total (L)= 45 Periods

Course Outcomes:

At the end of the course students will be able to

CO1	:	Explain the basics of mobile telecommunication system
CO2	:	Decide the required functionality at each layer for given application
CO3	:	Identify solution for each functionality at each layer
CO4	:	Use simulator tools and design Adhoc networks
CO5	:	Develop a mobile application.

Text Books:	
1.	Prasant Kumar Pattnaik, Rajib Mall, “Fundamentals of Mobile Computing”, PHI Learning Pvt. Ltd, New Delhi – 2012.
Reference Books:	
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/