

MANGALORE UNIVERSITY

DEPARTMENT OF M.Sc. COMPUTER SCIENCE

MASTER OF COMPUTER APPLICATIONS (MCA) PROGRAMME

MCAS407:MOBILE COMPUTING		
Hours/Week: 4 Credits : 4		I.A. Marks: 30 Exams. Marks: 70
<u>Course Outcomes:</u> CO1: Grasp the concepts and features of mobile computing technologies and applications; CO2: Have a good understanding of how the underlying wireless and mobile communication networks work, their technical features, and what kinds of applications they can support; CO3: Identify the important issues of developing mobile computing systems and applications; CO4: Organize the functionalities and components of mobile computing systems into different layers and apply various techniques for realizing the functionalities; CO5: Develop mobile computing applications by analyzing their characteristics and requirements, selecting the appropriate computing models and software architectures, and applying standard programming languages and tools; CO6: Organize and manage software built for deployment and demonstration. CO7: Analyze requirements and solve problems using systematic planning and development approaches. CO8: Search for and read critically the information required in solving problems		
	UNIT-I	12 Hours
Introduction: 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	12 Hours
Mobile Internet Protocol And Transport Layer: 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. Mobile Telecommunication System: Global System for Mobile Communication (GSM) – General Packet Radio Service (GPRS) – Universal Mobile Telecommunication System (UMTS).		

	UNIT-III	12 Hours
Mobile Ad-Hoc Networks: 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-IV	12 Hours
Mobile Platforms And Applications: 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.		
REFERENCE BOOKS 1. Prasant Kumar Pattnaik, Rajib Mall, “Fundamentals of Mobile Computing”, PHI Learning Pvt. Ltd, New Delhi – 2012. 2. Jochen H. Schller, “Mobile Communications”, Second Edition, Pearson Education, New Delhi, 2007. 3. Dharma Prakash Agarval, Qing and An Zeng, "Introduction to Wireless and Mobile systems", Thomson Asia Pvt Ltd, 2005. 4. UweHansmann, LotharMerk, Martin S. Nicklons and Thomas Stober, “Principles of Mobile Computing”, Springer, 2003. 5. William.C.Y.Lee,“Mobile Cellular Telecommunications-Analog and Digital Systems”, Second Edition,TataMcGraw Hill Edition,2006. 6. C.K.Toth, “AdHoc Mobile Wireless Networks”, First Edition, Pearson Education, 2002.		