

## MOBILE COMPUTING

Semester	Subject Code	Category	Lecture Hrs		Theory Hrs		Practical		Credits
			Per week	Per Sem	Per week	Per Sem	Per week	Per Sem	
III		COREPAPER -8	5	75	5	75	0	0	4

### COURSE OBJECTIVE

- The course provides the overview of mobile development, and tools for the development, back-end integration, security, and management of cross-platform mobile applications.
- To develop system and application level software for small, battery powered terminals equipped with the wireless network connection.

### COURSE OUTCOME

Successful completion of the course, students will be able to

CO Number	CO Statement	Knowledge Level (K1-K4)
<b>CO1</b>	Apply the fundamental design paradigms and technologies to mobile computing applications.	<b>K2</b>
<b>CO2</b>	Develop consumer and enterprise mobile applications using representative mobile devices and platforms using modern development methodologies.	<b>K2</b>
<b>CO3</b>	Evaluate the role of mobile applications in software intensive systems.	<b>K3</b>
<b>CO4</b>	Assess and implement security principles in mobile computing.	<b>K4</b>
<b>CO5</b>	Synthesize new knowledge in the area of mobile computing by using appropriate research methodologies and techniques.	<b>K4</b>

Knowledge Level – K1-Remember, K2- Understand, K3-Apply, K4-Analyze

### MAPPING WITH PROGRAMME OUTCOME

COS	PO1	PO2	PO3	PO4	PO5	PO6
CO1	S	S	S	M	S	M
CO2	S	S	M	S	S	M
CO3	S	S	S	M	S	S
CO4	M	S	S	S	M	S
CO5	M	S	S	M	M	S

**S- Strong;**

**M- Medium;**

**L- Low**

### SYLLABUS

#### UNIT-I Introduction

**17 hrs**

Introduction- Applications-vehicles- Mobile and Wireless devices- History of wireless communications- The role of IETF in mobile networking-: Motivation for Specialized MAC - SDMA - FDMA - TDMA - CDMA - Comparison of Access mechanisms - Multiplexing – Spread Spectrum and Cellular Systems- Medium Access Control – Comparisons.

#### UNIT-II Wireless Networks

**15 hrs**

Wireless LAN: Infrared Vs Radio Transmission - Infrastructure Networks - Ad hoc Networks - IEEE 802.11- Medium Access Control – motivation for a MAC- MANET Vs VANET – Security. wireless delivery technology and switching methods- cellular communication concepts: Wireless transmission – Multiplexing –Modulation – Spread Spectrum – Cellular system – GSM architecture – protocols.

#### UNIT-III Mobile Network Layer

**16 hrs**

Mobile Network Layer: Mobile IP: Goals - Assumptions and Requirement - Entities - IP packet Delivery- Broad cast Systems – Overview – Cyclic Repetition of data – Digital Video and Audio

Broadcasting-Mobile data internetworking standards- cellular data communication protocols- mobile computing applications.

#### **UNIT-IV Data Grams and Route Optimizations**

**14 hrs**

Tunneling overview and terminology- Encapsulation – Routing failures – Tunnel management – Decapsulation – Dynamic Host Configuration Protocol – ad hoc networks – Traditional TCP- Indirect TCP- Snooping TCP.

#### **UNIT-V Mobile Platforms And Applications**

**13 hrs**

Mobile Device Operating Systems – Special Constrains & Requirements – Commercial Mobile Operating Systems – Software Development WAP: Architecture - Transport Layer Security - Transaction Protocol - Session Protocol.

**Distribution of Marks: Theory 80% and Problem 20%**

#### **TEXT BOOKS**

<b>S.N O</b>	<b>AUTHORS</b>	<b>TITL E</b>	<b>PUBLISHERS</b>	<b>YEAR OF PUBLICATIO N</b>
1	JOCHE N SCHILE R	Mobile Communication	Addison Wesley	2000
2	J. Schiller	Mobile Communications,2n d edition	Pearson Education, Delhi.	2003
3	Charles E.Perkins	Mobile IP: Design Principles and Practices	Addison Wesley, USA	1999

#### **REFERENCE BOOKS**

<b>S.NO</b>	<b>AUTHORS</b>	<b>TITLE</b>	<b>PUBLISHERS</b>	<b>YEAR OF PUBLICATI ON</b>
1	Hansmann, Merk, Nicklous, Stober	Principles of Mobile Computing	2nd Edition, Springer	2004

2	Dharma Prakash Agarval, Qing and An Zeng	Introduction to Wireless and Mobile Systems	Thomson Asia Pvt Ltd,	2005.
3	C.K.Toh,	AdHoc Mobile Wireless Networks	First Edition, Pearson Education	2002.
4	V.Jayasri Arokiomary	Mobile Computing	Technical Publications	2004
5	Sipra Dasbit	Mobile Computing	PHI Learning Pvt Ltd	2009
6	Kumkum Garg	Mobile Computing	Pearson Education India	2010
7	Yu-Kwong Ricky Kwok	Wireless in Internet and Mobile Computing	Wiley	2007
8	Mazlilza Othman	Principles of Mobile Computing and communications	CRC Press	2007

## WEB RESOURCES

1. <http://developer.blackberry.com/>

## TEACHING METHODOLOGY

- Power point presentation
- seminar by students
- Assignment to students
- Lecture through video.
- Discussion and interaction in class room

## SYLLABUS DESIGNER

- 1.Mrs.G.SANGEETHA LAKSHMI,Head & Assistant Prof, Dept of

Computer Applications. 2.Ms.D.SARANYA, Assistant Prof, Dept of  
Computer Applications.

3.Mrs.N.SAVETHA, Assistant Prof, Dept of Computer Applications.