Faculty of Engineering & Technology
Master of Technology (M. Tech)
(W. E. F.: 2023-24)
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Name of Faculty	:	Faculty of Engineering & Technology
Name of Program	:	Master of Engineering (M. Tech)
Course Code	:	1MSE03
Course Title	:	Mobile Computing & Application Development
Type of Course	:	Professional Core (PC)
Year of Introduction	:	2023-24

Prerequisite	:	Computer Network
Course Objective	:	Wireless communication provides mobility, flexibility, convenience. Wireless communication devices are used in various areas including healthcare. Wireless communication has opened many areas for research also.
Course Outcomes	:	At the end of this course, students will be able to:
	CO1	Classify the fundamental concepts of Wireless Networks and its access techniques
	CO2	Understand the concepts and features of mobile computing technologies and applications
	CO3	Be able to distinguish between and write mobile programs that use the following: Resources, Activities, Views (Buttons, Edit Text, etc), Layouts, Intents, Adapters
	CO4	Identify the important issues of mobile computing devices, systems and applications
	CO5	To gain knowledge about different mobile platforms and application development

Teaching and Examination Scheme

Teaching Scheme (Contact Hours)			Credits	Examination Marks				
				Theory Marks		Practical Marks		Total Marks
L	T	P	C	SEE	CIA	SEE	CIA	
4	0	2	5	70	30	30	20	150

*Legends: **L**-Lecture; **T**–Tutorial/Teacher Guided Theory Practice; **P** – Practical, **C** – Credit, **SEE** – Semester End Examination, **CIA** - Continuous Internal Assessment (It consists of Assignments/Seminars/Presentations/MCQ Tests, etc.))*

Course Content

Unit No.	Topics	Teaching Hours	Weightage	Mapping with CO
1	**Wireless transmission** Frequencies for radio transmission , signals, Antennas, Signal propagation, Multiplexing, Modulation, Spread spectrum , Cellular system	5	05**%**	CO1
2	**Telecommunication systems** GSM, Digital enhanced cordless telecommunications (DECT)	`10	19**%**	CO4
3	**Medium access control** Wireless Medium Access control and CDMA- based communication – Medium access control, Introduction to CDMA-based systems, Spread spectrum in CDMA	5	09%	CO2
4	**Wireless LAN** Infrared vs radio transmission, infrastructure and ad hoc networks, IEEE 802.11, Bluetooth	10	22%	CO2
5	**Mobile network layer** Mobile IP, Dynamic host configuration protocol, Mobile ad-hoc networks, Wireless sensor networks	10	11%	CO3
6	**Mobile transport layer** Traditional TCP, Classical TCP improvements, snooping TCP, Mobile TCP, TCP over 2.5/3G wireless networks.	10	22%	CO3
7	**Android Programming** Architecture of Android, Android application life cycle, Activities, Fragments, Intent, Layout Design, View and View-group, Menu, Action Bar. Location Based Services, Publishing Android Application.	10	22%	CO5

Suggested Distribution of Theory Marks Using Bloom's Taxonomy						
Level	Remembrance	Understanding	Application	Analyse	Evaluate	Create
Weightage	**40**	**20**	**20**	**10**	**-**	**10**

NOTE: This specification table shall be treated as a general guideline for the students and the teachers. The actual distribution of marks in the question paper may vary slightly from above table.

Suggested List of Experiments/Tutorials

Sr. No.	Name of Experiment/Tutorial	Teaching Hours
1	Write a wml program to call two cards from same deck.	2
2	Write a wml program to call two cards from same deck.	2
3	Write a wml program to display simple table & link other table from that table.	2
4	Develop an android app which displays "hello world!" Message	2
5	Develop an android app which displays a form to get basic information from user.	2
6	Develop Simple Calculator Android Application.	2
7	Create an application which activates and deactivates Bluetooth; find the paired Bluetooth devices and scans for discovered Bluetooth devices.	2
8	Create an application which enable and disable wifi service.	2
9	Create an android app which has one activity to Fahrenheit or Celsius. On pressing "Convert" button it shows the result will be displayed on TextView of activity.	2
10	Create an android Application for using Camera.	2

Reference Books

Sr. No.	Name of Reference Books
1	"Mobile Communications" by John Schiller, Pearson Edition, ISBN:81-7808- 170-9.
2	"Mobile Computing: Technology, Applications and Service Creation" by Asoke K Talukder and Roopa R Yavagal, TMH,ISBM: 0-07-058807-4
3	"Beginning Android 4 Application Development" Wei-Meng Lee, Wrox
4	"Any Time, Any Where Computing: Mobile Computing Concepts and Technology" by Richard Brice, Darrell Woelk, Kluwer Academic Publishers, ISBN:0-7923-8610-8