MOBILE APPLICATIONS AND SERVICES

III Semester: CSE

Course Code	Category	Hours / Week			Credits	Maximum Marks		
		L	**T**	**P**	**C**	**CIA**	**SEE**	**Total**
BCSB22	**Elective**	3	0	0	3	30	70	100

Contact Classes: 45	Total Tutorials: Nil	Total Practical Classes: Nil	Total Classes: 45

OBJECTIVES:

The course should enable the students to :
I. Understand the three main mobile platforms and their ecosystems, namely Android, iOS, and Phone Gap / Web OS and designing and develop mobile applications using a chosen application development framework
II. Explores emerging technologies and tools used to design and implement.
III. Explore the techniques for deploying and testing mobile applications, and for enhancing their performance and scalability account of communications via network by wireless connectivity.
IV. Prepare mobile application for multimedia and learn about additional issue like security, hacking etc.,

COURSE OUTCOMES (COs):
I. Understand the mobile platforms and their ecosystems with frameworks, tools.
II. Understand more on mobile computing UIS and synchronization and replication of mobile data
III. Prepare a well -structured network connectivity and notifications with wireless connectivity
IV. Explore on various multimedia agents of architecture, models and design
V. Understand the security and hacking issues while active transactions in processed

COURSE LEARNING OUTCOMES (CLOs):

BCSB22.01	Understand the concept of mobile computing in terms of knowledge.
BCSB22.02	Analyze the frameworks and tools for Android development
BCSB22.03	Identify generic UI development android user.
BCSB22.04	Estimate the VUIs and mobile apps of development
BCSB22.05	Identify the state machine, correct communications model, android networking and web
BCSB22.06	Explain about the synchronization and replication of mobile data
BCSB22.07	Understand the database issues of android applications
BCSB22.08	Classify the Android telephony notifications and alarms
BCSB22.09	Develop the Android field service app for runtime environment
BCSB22.10	Understand and develop packaging and deploying
BCSB22.11	Examine the performance best practices of applications
BCSB22.12	Apply the Android multimedia on additional issues
BCSB22.13	Differentiate the mobile agents and peer-to-peer architecture, Android multimedia
BCSB22.14	List out the platforms and additional issues like security, hacking
BCSB22.15	Understand active transactions and provide security from development hurdles

UNIT-I	INTRODUCTION TO MOBILE COMPUTING	Classes: 09

Introduction: Introduction to Mobile Computing, Introduction to Android Development Environment, Factors in Developing Mobile Applications, Mobile Software Engineering, Frameworks and Tools, Generic UI Development Android User

UNIT-II	MOBILE COMPUTING -MORE ON UIS	Classes: 09

More on UIs: VUIs and Mobile Apps, Text-to-Speech Techniques, Designing the Right UI, Multichannel and Multimodal UIs, . Storing and Retrieving Data, Synchronization and Replication of Mobile Data, Getting the Model Right, Android Storing and Retrieving Data, Working with a Content Provider.

UNIT-III	NETWORK AND THE WEB:STATE MACHINE	Classes: 09

Communications via Network and the Web: State Machine, Correct Communications Model, Android Networking and Web, Telephony Deciding Scope of an App, Wireless Connectivity and Mobile Apps, Android Telephony Notifications and Alarms: Performance, Performance and Memory Management, Android Notifications and Alarms, Graphics, Performance and Multithreading, Graphics and UI Performance, Android Graphics

UNIT-IV	PUTTING IT ALL TOGETHER AND MULTIMEDIA	Classes: 09

Putting It All Together : Packaging and Deploying, Performance Best Practices, Android Field Service App, Location Mobility and Location Based Services Android
Multimedia: Mobile Agents and Peer-to-Peer Architecture, Android Multimedia

UNIT-V	PLATFORMS AND ADDITIONAL ISSUES ,SECURITY AND HACKING	Classes: 09

Platforms and Additional Issues: Development Process, Architecture, Design, Technology Selection, Mobile App Development Hurdles, Testing, Security and Hacking , Active Transactions, More on Security, Hacking Android.

Text Books:

1. Wei-Meng Lee, "Beginning Android™ 4 Application Development", 2012 by John Wiley & Sons

Reference Books:

1. http://www.sctie.iitkgp.ernet.in/
2. http://www.rkala.in/softcomputingvideos.php
3. http://www.sharbani.org/home2/soft-computing-1
4. http://www.myreaders.info/html/soft_computing.html

E-Text Books:

1. https://www.books.google.co.in/books?id=bVbj9nhvHd4C

2. https://www.books.google.co.in/books?id=GrZHPgAACAAJ&dq=1.+J.S.R.Jang,+C.T.Sun+and+E. Mizutani,+Neuro,+Fuzzy+and+Soft+Computing,+PHI,+2004,Pearson+Education.