

MOBILE APPLICATIONS AND SERVICES

III Semester: CSE																										
Course Code	Category	Hours / Week			Credits	Maximum Marks																				
BCSC26	Elective	L	T	P	C	CIA	SEE	Total																		
		3	0	0	3	30	70	100																		
Contact Classes: 45	Total Tutorials: Nil	Total Practical Classes: Nil			Total Classes: 45																					
<p>I. COURSE OVERVIEW: This course is concerned with the development of applications on mobile and wireless computing platforms. It covers the basics of mobile computing, Android development security and hacking. It uses tools and frameworks required to develop applications for current and emerging mobile computing devices.</p> <p>II. COURSE OBJECTIVES: The students will try to learn:</p> <ol style="list-style-type: none"> I. The mobile platforms and their ecosystems like Android, OS, and Phone Gap. II. The techniques for deploying and testing mobile application. III. The different platforms of mobile development about additional issue like security, hacking etc. IV. The methodology to develop mobile applications using a chosen application development framework. <p>III. COURSE OUTCOMES: After successful completion of the course, students will be able to:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;">CO</th> <th style="width: 70%;">Description</th> <th style="width: 20%;">Action</th> </tr> </thead> <tbody> <tr> <td>CO 1</td> <td>Create, test and debug Android application by setting up Android development environment</td> <td style="text-align: center;">Apply</td> </tr> <tr> <td>CO 2</td> <td>Implement adaptive, responsive user interfaces that work across a wide range of devices.</td> <td style="text-align: center;">Apply</td> </tr> <tr> <td>CO 3</td> <td>Infer long running tasks and background work in Android applications</td> <td style="text-align: center;">Understand</td> </tr> <tr> <td>CO 4</td> <td>Prepare mobile application for multimedia and learn about additional issue like security, hacking</td> <td style="text-align: center;">Apply</td> </tr> <tr> <td>CO 5</td> <td>Calculate performance of android applications and understand the role of permissions and security</td> <td style="text-align: center;">Apply</td> </tr> </tbody> </table> <p>IV. SYLLABUS:</p> <p>MODULE-I: INTRODUCTION TO MOBILE COMPUTING (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.</p> <p>MODULE-II: MOBILE COMPUTING -MORE ON UIS (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.</p> <p>MODULE-III: NETWORK AND THE WEB:STATE MACHINE (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.</p>									CO	Description	Action	CO 1	Create, test and debug Android application by setting up Android development environment	Apply	CO 2	Implement adaptive, responsive user interfaces that work across a wide range of devices.	Apply	CO 3	Infer long running tasks and background work in Android applications	Understand	CO 4	Prepare mobile application for multimedia and learn about additional issue like security, hacking	Apply	CO 5	Calculate performance of android applications and understand the role of permissions and security	Apply
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MODULE-IV: PUTTING IT ALL TOGETHER AND MULTIMEDIA (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.

MODULE-V: PLATFORMS AND ADDITIONAL ISSUES ,SECURITY AND HACKING (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.

V. TEXT BOOKS:

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

VI. REFERENCE BOOKS:

1. Sandeep Singhal, “The Wireless Application Protocol: Writing Applications for the Mobile Internet”, Addison Wesley Longman, 2000.

VII. WEB REFERENCES:

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

VIII. 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.M.izutani,+Neuro,+Fuzzy+and+Soft+Computing,+PHI,+2004,Pearson+Education.>