INSTITUTE OF AERONAUTICAL ENGINEERING
(Autonomous)
Dundigal - 500 043, Hyderabad, Telangana

COURSE CONTENT

MOBILE APPLICATION DEVELOPMENT							
I Semester: CSE							
Course Code	**Category**	**Hours / Week**			**Credits**	**Maximum Marks**		
BCSE06	**Elective**	**L**	**T**	**P**	**C**	**CIA**	**SEE**	**Total**
		3	0	0	3	40	60	100
Contact Classes: 45	**Total Tutorials: Nil**	**Total Practical Classes: Nil**				**Total Classes: 45**		

I. COURSE OVERVIEW:

. This course focuses on the java API'S and tools necessary for developing mobile applications. It covers the necessary language features for mobile programming and focuses particularly on the Mobile Information Device Profile used in mobile phone application development. This course is used to build a mobile application interface using J2ME, connecting via HTTP to the web tier interface of a Java application.

II. COURSE OBJECTIVES:
The students will try to learn:

I   The fundamentals of Android operating systems.
II   The skills of using Android software development tools
III How to deploy mobile applications with reasonable complexity on mobile platform
IV   The programs running on mobile devices.

III. COURSE OUTCOMES:
After successful completion of the course, students should be able to

CO1   Select suitable software tools and APIs for the development of a particular mobile application.

CO2   Use Intents to dial a number to send SMS Broadcast Receivers
CO3   Demonstrate creating a file and reading data from files using Persistent Storage

CO4   Use a content provider for inserting, deleting, retrieving and updating data using SQLite
CO5   Develop mobile applications with good design and interactive features for mobile devices.

MODULE-I: INTRODUCTION TO ANDROID OPERATING SYSTEM (9)
Android OS design and Features – Android development framework, SDK features, Installing and running applications on Android Studio, Creating AVDs, Types of Android applications, Best practices in Android programming, Android tools Android application components – Android Manifest file, Externalizing resources like values, themes, layouts, Menus etc, Resources for different devices and languages, Runtime Configuration Changes Android Application Lifecycle – Activities, Activity lifecycle, activity states, monitoring state changes.

MODULE-II: ANDROID USER INTERFACE (9)
Measurements – Device and pixel density independent measuring UNIT – s Layouts – Linear, Relative, Grid and Table Layouts User Interface (UI) Components – Editable and non editableTextViews, Buttons, Radio and Toggle Buttons, Checkboxes, Spinners, Dialog and pickers Event Handling – Handling clicks or changes of various UI components Fragments – Creating fragments, Lifecycle of fragments, Fragment 79|Page states, Adding fragments to Activity, adding, removing and replacing fragments with fragment transactions, interfacing between fragments and Activities, Multi-screen Activities.

MODULE-III: INTENTS AND BROADCASTS (9)
ntents and Broadcasts: Intent – Using intents to launch Activities, Explicitly starting new Activity, Implicit Intents, Passing data to Intents, Getting results from Activities, Native Actions, using Intent to dial a number or to send SMS Broadcast Receivers – Using Intent filters to service implicit Intents, Resolving Intent filters, finding and using Intents received within an Activity Notifications – Creating and Displaying notifications, Displaying Toasts.

MODULE-IV: STORAGE (9)
Persistent Storage: Files – Using application specific folders and files, creating files, reading data from files, listing contents of a directory Shared Preferences – Creating shared preferences, saving and retrieving data using Shared Preference.

MODULE-IV: SQ Lite (9)
The Web and HTTP, File Transfer: FTP, Electronic Mail in the Internet, Domain Name System (DNS), P2P File Sharing, Socket Programming with TCP and UDP, Building a Simple Web Server Creating simulated networks and passing packets through them using different routing techniques. Installing and using network monitoring tool Database – Introduction to SQLite database, creating and opening a database, creating tables, inserting retrieving and etindelg data, Registering Content Providers, Using content Providers (insert, delete, retrieve and update).

V TEXT BOOKS:
1. Reto Meier, "Professional Android 4 Application Network Development", Wiley India, (Wrox), 2012.
2. James C Sheusi, "Android Application Development for Java Programmers", Cengage Learning, 2013.

VI. REFERENCE BOOKS:
1. Wei-Meng Lee, "Beginning Android 4 Application Development", Wiley India (Wrox), 2013

VII. Web References:
1. https://www.udemy.com/course/learn-android-application-development-y/
2. https://www.tutorialspoint.com/android/index.htm
3. https://www.geeksforgeeks.org/android-app-development-fundamentals-for-beginners/

VIII. E-BOOKS:
1. https://web.stanford.edu/class/cs231m/lectures/lecture-2-android-dev.pdf

IX. MATERIALS ONLINE

1. Course template
2. Tutorial question bank
3. Tech talk topics
4. Open,Ended experiments
5. Definitions and terminology
6. Assignments
7. Model question paper, I
8. Model question paper, II
9. Lecture notes
10. Power Point presentation
11. E-Learning Readiness Videos (ELRV)