# CSS106: ANDROID PROGRAMMING

Hours/Week: 4                                                  I.A. Marks: 30

Credits: 4                                                     Exam. Marks: 70

**Course Learning Objectives: Students will try to learn,**

1. Fundamentals of Android Operating systems, android application components and android development framework.
2. Designing of Android User Interfaces using various components like buttons, text views, toggle buttons, check boxes, spinners etc.
3. How to develop software's with reasonable complexity and deploying software to mobile devices.
4. The concept of intents and broadcasts, persistent storage and database connectivity concepts.

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**Course Outcomes: After completing the course, the students will be able to,**

CO1: Demonstrate their understanding of the fundamentals of Android operating systems

CO2: Show their skills of using Android software development tools

CO3: Develop software with reasonable complexity and their design aspects.

CO4: Deploy software to mobile devices and debug the programs

CO5: Understands the working of Android OS Practically and able to develop, deploy and maintain the Android Applications.

CO6: Understands the concept of persistent storage and develop User Interface.

CO7: Recognizes basics of SQLlite database and perform various possible operation on database.

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## UNIT-I                                                     12Hrs.

Introduction to Android Operating System: Introduction to Mobile applications, What is Android,Android OS design and Features – Android development framework, SDK features, Installing and running applications on Eclipse platform, Creating AVDs, Types of Android applications, Android tools Android application components – Android Manifest file, Externalizing resources like values, themes, layouts, Menus, Resources for different devices and languages, Runtime Configuration Changes Android Application Lifecycle – Activities, Activity lifecycle, activity states, monitoring state changes.

## UNIT-II                                                    12Hrs.

Android User Interface: Measurements – Device and pixel density independent measuring units Layouts – Linear, Relative, Grid and Table Layouts User Interface (UI) Components – Editable and non-editable Text Views, 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 states, Adding fragments to Activity, adding, removing and replacing fragments with fragment transactions, interfacing between fragments and Activities, Multi-screen Activities.

## UNIT-III                                                   12Hrs.

Intents 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.

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**UNIT-IV**                                                    **12Hrs.**

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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 Database

Introduction to SQLLite database, creating and opening a database, creating tables, inserting retrieving and deleting data, Registering Content Providers, Using content Providers (insert, delete, retrieve and update). Connecting to internet resource, using download manager Location Based Services – Finding Current Location and showing location on the Map, updating location.

**REFERENCE BOOKS:**

1. RetoMeier,,Wiley India, (Wrox) , Professional Android 4 Application Development, 2012.
2. James C Sheusi, Android Application Development for Java Programmers, Cengage Learning, 2013.
3. Wei-MengLee, Beginning Android 4 Application Development ,Wiley India (Wrox), 2013.