

24MCAS201: ANDROID PROGRAMMING

Hours/Week: 4

Credits: 4

I.A. Marks: 30

Exam. Marks: 70

Course Learning Objectives:

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

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

- Demonstrate their understanding of the fundamentals of Android operating systems
- Show their skills of using Android software development tools
- Develop software with reasonable complexity and their design aspects.
- Deploy software to mobile devices and debug the programs
- Understands the working of Android OS Practically and able to develop, deploy and maintain the Android Applications.
- Understands the concept of persistent storage and develop User Interface.
- Recognizes basics of SQLite database and perform various possible operation on database.

UNIT-I

12Hrs.

Introduction to Android Operating System: Introduction to Mobile applications, 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.

UNIT-IV

12Hrs.

Android capabilities: flutter framework, Introduction-including libraries future, asynch and wait, including files in application shared preferences, Introduction to **SQLite 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.
4. Rap Payne, Beginning App Development with Flutter: Create Cross-Platform Mobile Apps -

