Program: B.Sc.- Computer Science				Semester : IV	
Course: Android Developer Fundamentals				Course Code: USMACS404	
Teaching Scheme				Evaluation Scheme	
Lecture (Hours per week)	Practical (Hours per week)	Tutorial (Hours per week)	Credit	Continuous Assessment and Evaluation (CAE) (Marks - 25)	Term End Examinations (TEE) (Marks-75 in Question Paper)
02	02	-	2+1=3	25	75

Learning Objectives:

To provide the comprehensive insight into developing applications running on smart mobile devices and demonstrate programming skills for managing task on mobile. To provide systematic approach for studying definition, methods and its applications for Mobile-App development.

Course Outcomes:

CO1 : Understand the requirements of Mobile programming environment.
CO2 : Learn about basic methods, tools and techniques for developing Apps
CO3 : Explore and practice App development on Android Platform
CO4 : Develop working prototypes of working systems for various uses in daily lives.

Outline of Syllabus: (per session plan)

Module	Description	No of hours
1	**Android, Activities and Intents**	10
2	**User Input Controls**	10
3	**Data, ContentProviders**	10
	Total	**30**
PRACTICALS		**30**

Module	Android Developer Fundamentals	No. of Hours/Credits 30/2
1	**Android, Activities and Intents**	**10**
	What is Android? Obtaining the required tools, creating first android app, understanding the components of screen, adapting display orientation, action bar, Activities and Intents, Activity Lifecycle and Saving State, Basic Views: TextView, Button, ImageButton, EditText, CheckBox, ToggleButton, RadioButton, and RadioGroup Views, ProgressBar View, AutoCompleteTextView, TimePicker View, DatePicker View, ListView View, Spinner View	
2	**User Input Controls**	**10**
	User Input Controls, Menus, Screen Navigation, RecyclerView, Drawables, Themes and Styles, Material design, Providing resources for adaptive layouts, AsyncTask and AsyncTaskLoader, Connecting to the Internet, Broadcast receivers, Services, Notifications, Alarm managers, Transferring data efficiently	
3	**Data, ContentProviders**	**10**
	Data - saving, retrieving, and loading: Overview to storing data, Shared preferences, SQLite primer, store data using SQLite database, ContentProviders, loaders to load and display data, Permissions, performance and security, Firebase and AdMob, Publish your app	

PRACTICALS	
Sr. No.	**Topic.**
1	Install Android Studio and Run Hello World Program
2	Create an android app with Interactive User Interface using Layouts
3	Create an android app that demonstrates working with TextView Elements
4	Create an android app that demonstrates Activity Lifecycle and Instance State.
5	Create an android app that demonstrates the use of Keyboards, Input Controls, Alerts, and Pickers
6	Create an android app that demonstrates the use of an Options Menu
7	Create an android app that demonstrate Screen Navigation Using the App Bar and Tabs
8	Create an android app to Connect to the Internet and use BroadcastReceiver
9	Create an android app to show Notifications and Alarm manager
10	Create an android app to save user data in a database and use of different queries

RECOMMENDED READING:

Text Books:

1) "Beginning Android 4 Application Development", Wei-Meng Lee, March 2012, WROX.

Reference Books

1) https://developers.google.com/training/courses/android-fundamentals
2) https://www.gitbook.com/book/google-developer-training/android-developer-fundamentals-course-practicals/details