

Subject Code: 2ET4040604	Subject Title: ANDROID PROGRAMMING
Pre-Requisite	Knowledge of programming language like core java, c, c++ , Database Technology or Sql and XML

RATIONALE:

The use of mobile communication and android based applications are increasing day by day. It is therefore necessary for students to know that how mobile communication works and how to build mobile apps for android operating system. This course covers the necessary concepts which are required to understand mobile communication and to develop Android Applications. Thus it is key course for computer engineers, who want to work in the area of communication.

COURSE OBJECTIVE:

The course content should be taught and implemented with the aim to develop required skills in the students so that they are able to acquire knowledge in functioning of android technology, development process of open source mobile application.

TEACHING AND EVALUATION SCHEME:

Teaching Scheme (Hours per week)				Evaluation Scheme (Marks)			
Lecture	Tutorial	Practical	Credit	Theory		Practical	
				University Assessment	Continuous Assessment	University Assessment	Continuous assessment
3	-	4	5	60	40	40	60

DETAILS OF COURSE CONTENTS:

Sr. NO.	TOPIC	Total Hrs.	WEIGHTAGE
UNIT - I	Introduction to Android Overview of Android Android run On – Android Internals? Use Android for mobile apps development Differentiate Environment setup for Android apps Development Framework - Android- SDK, Eclipse Emulators – What is an Emulator / Android AVD? Android Emulation – Creation and set up First Android Application	07	16%
UNIT - II	Android Activities and GUI Design concepts Design criteria for Android Application: Hardware Design Consideration, Design Demands for Android application, Intent, Activity, Activity Lifecycle and Manifest Creating Application and new Activities	12	29%

	Simple UI -Layouts and Layout properties: Introduction to Android UI Design, Introducing Layouts XML Introduction to GUI objects viz.: EditText, TextView, Button, ToggleButton, Padding etc		
UNIT - III	Advanced UI Programming Event driven Programming in Android (Text Edit, Button clicked etc.) Activity Lifecycle of Android	09	21%
UNIT - IV	Toast, Menu, Dialog, List and Adapters Menu :Basics, Custom v/s System Menus, Create and Use Handset menu Button (Hardware) Dialog : Creating and Altering Dialogs Toast : List & Adapters Demo Application Development and Launching	08	20%
UNIT - V	Working with Database(SQLite) Basic operation of SQLite Database Android Application Priorities	06	14%

COURSE OUTCOME:

The course content should be taught and implemented with an aim to develop different skills leading to the achievement of the following competencies and course learning outcomes:

1. To understand Android activities life cycle.
2. To develop operations on GUI objects.
3. To implement Event driven programming.
4. To apply various techniques on working with menu.
5. Install and configure Android Studio.
6. Deploy the application on Google Play.

The practical should be carried out in such a manner that students are able to acquire different learning outcomes in cognitive, psychomotor and affective domain to demonstrate course learning outcomes.

LIST OF PRACTICAL:

Sr. No.	Experiments
1	Installation and setup of java development kit(JDK),setup android SDK,setup eclipse IDE,setup android development tools (ADT) plugins,create android virtual device
2	To Create "Hello World" application. That will display "Hello World" in the middle of the screen using TextView Widget in the red color
3	To Create application for demonstration of android activity life cycle
4	To Create Registration page to demonstration of Basic widgets available in android.
5	To Create sample application with login module.(Check username and password) On successful login, ChangeTextView "Login Successful". And on failing login, alert user using Toast "Login fail"
6	To Create login application where you will have to validate username and passwords Till the username and password is not validated, login button should remain

	disabled.
7	To Create and Login application as above. Validate login data and display Error to user using setError() method.
8	To Create an application for demonstration of Relative and Table Layout in android.
9	To Create an application for demonstration of Scroll view in android
10	To Create an application for demonstration of Explicitly Starting New Activity using Intent.
11	To Create an application that will pass two number using TextView to the next screen , and on the next screen display sum of that number.
12	To Create spinner with strings taken from resource folder(res >> value folder). On changing spinner value, change background of screen.
13	To Create an application that will get the Text Entered in Edit Text and display that Text using toast (Message).
14	To Create an application that will Demonstrate Button onClick() Event and change the TextViewColor based on button Clicked
15	To Create an UI such that, one screen have list of all the types of cars. On selecting of any car name, next screen should show Car details like: name, launched date, company name
16	To Create an application that will Demonstrate Dialog Box Control In Android
17	To Create an android application that will perform insert, update, delete and select operation on Student table using SQLite Database

LIST OF REFERENCES:

Sr.no.	Title	Author	Publication
1	Professional Android 2 Application Development	Reto Meier	Wiley India Pvt Ltd
2	Building Android Apps	IN EASY STEPS	McGraw-Hill Education
3	Pro Android	Sayed Y Hashimi and SatyaKomatineni	Wiley India Pvt Ltd
4	Beginning Android	Mark L Murphy	Wiley India Pvt Ltd

LINK OF LEARNING WEB RESOURCE:

1	http://www.tutorialspoint.com/android/
2	http://www.tutorialspoint.com/android/android_overview.htm
3	http://www.codelearn.org/android-tutorial/android-introduction
4	https://mkyong.com/tutorials/android-tutorial/

Mapping of CLO with PO and PSO

Course Learning Outcomes	Program Outcomes (POs)												Program Specific Outcomes (PSOs)			
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4
CLO1	M												L	H		
CLO2	H													M		
CLO3	H						M							H		
CLO4	M					L							M	H		
CLO5	H	M					H							H		
CLO6	M	L		L								L		H		

H: High, M: Medium, L: Low