

Branch Name:	Information and Communication Technology
Semester/Year:	Semester VIII / Fourth Year
Subject Title:	Android Programming(Elective-IV)
Subject Code:	1ET1070807
Pre-requisite:	Java programming and Object-oriented programming, Knowledge of RDBMS and OLTP

Course Objective:

The objectives of this course are:

- To provide students with contemporary knowledge in Android Programming.
- To equip students with skills to explore real-world software development challenges with Android Programming

Teaching Scheme (Hours per week)				Evaluation Scheme (Marks)				
Lecture	Tutorial	Practical	Credit	Theory		Practical		Total
				University Assessment	Continuous Assessment	University Assessment	Continuous Assessment	
3	-	2	4	70	30	30	20	150

Subject Contents				
Sr. No	Topic	Total Hours	Weight (%)	
1	Basic Fundamentals: OOPS, Software Engineering, SQL Queries, Basics of Designing	4	10%	
2	Introduction Android OS: Introduction to Java And Android, Introducing Development Framework, Dalvik Virtual Machine – DVM, Developing with Eclipse, Android Virtual Device and SDK Manager, Android Architecture and OOPS, Android Development Tools, Android Asset Packaging Tool (AAPT), Android Debug Bridge, Types of Android Applications, Android Architecture and OOPS, Activity Lifecycle, Activity Classes, Introduction to Application Manifest, Installing Android, Component Lifecycle	12	30%	
3	Building mobile applications with android: Android Layouts, Android UI and Advance Java, Android GUI Architecture, Layouts, Android Widget Toolbox, WebView, GridView, Understanding Android Menus, Intents and Processes, Graphics Animation and Multimedia, Bitmaps, Introduction to Audio on Android, Introduction to Video, Android Persistence, Android Preferences, Using File system, Accessing SD cards, Location and maps, Using GEOCoder, Creating and Using Overlays, Projections, Using Wake Locks, Android Text To Speech, Interprocess Communication, Paranoid Android, Internet Services, Broadcast receivers, Using Camera, Sensor Manager, Bluetooth, Network, Wi-Fi, AIDL and IPC, XML Parsing, Dom Parsing, SAX Parsing, JSON Parsing, SQLite Databases, Services and Content Providers, Introduction to Android NDK	16	40%	
4	Database Connectivity: SQLite Database, SQLite Data Types, Cursors and Content Values, SQLite Open Helper, Adding, Updating and Deleting Content	5	10%	
5	Applicability to industrial projects: Project Scope, Database Dictionary, Flow Chart, High Level Requirements, Using Bluetooth and NFC in Android ,device, Localization in Android, Configuration changes, Security and permissions, Web Services Integration, Deployment	4	10%	

Course Outcome:

- The main objectives to give the subject Mobile Application Development in Android are:
- To introduce basic concepts of Android Programming
- To introduce Android OS
- To introduce Building Mobile Application With Android
- To introduce cutting edge technology to the students

List of References:

1. Android Developer Tools Essentials by Mike Wolfson - O'Reilly Media Publications
2. Learn Java for Android Development, 2nd Edition - Jeff Friesen - Apress Publications
3. OpenGL ES 2 for Android - Kevin Brothaler- The Pragmatic Programmers

E-Resources:

1. VideoTutorials: <http://www.youtube.com/watch?v=SUOWNXGRc6g&list=PL2F07DBCDCC01493A>
2. Study Tutorial: <https://developer.android.com/sdk/index.html>

List of Experiments:

1. Create "Hello World" application. That will display "Hello World" in the middle of the screen in the red color with white background.
2. To understand Activity, Intent
3. Create sample application with login m(Check username and password)
4. On successful login, go to next screen. And on failing login, alert user using Toast. c. Also pass username to next screen.
5. 1.Create an application to call specific entered number by user in the EditText
6. Create an application that will show List of Countries in One fragment, and on selecting one country, second fragment should be displayed with name selected country and its flag.
7. Understanding of UI:
8. Create an UI such that, one fragment of screen has list of all the types of ca
9. On selecting of any car name, second fragment of screen should show Car details like: name, launched date, company name, images(using gallery) if available, show different colors in which it is available.
10. Understand resource folder & Adapter:
11. Create spinner with strings taken from resource folder (res >> value folder). b. On changing spinner value, change image.
12. Create an application that parses given XML File.
13. Create an application that fetches foreground and background colors from User. Save it as preference. On the next screen change background color and font color based on values passed by user. If no preferences are set then use Black and White as default background and foreground color respectively.
14. Create an application that will create database with table of User credential.
15. Create an application to make Insert, update, Delete and retrieve operation on the database.
16. Understanding content providers and permissions:
17. Read phonebook contacts using content providers and display in list.
18. Create application that works like an alarm.
19. Understand Menu option.
20. Create an application that will change color of the screen, based on selected options from the
21. Create an application that will have spinner with list of animation names. On selecting animation name , that animation should effect on the images displayed below.
22. Create an application that will play a media file from the memory card.
23. Create an application to take picture using native application.
24. Create an application to pick up any image from the native application gallery and display it on the screen.
25. Read messages from the mobile and display it on the screen.
26. Create an application to send message between two emulators.