SILVER OAK UNIVERSITY

College of Technology (01)

Bachelor of Technology in Computer Engineering/Information Technology

Subject Name: Android Programming

Subject Code: 1010043364

Semester: 6th

Prerequisite: Basic Knowledge of OOPS concept and Core java

Objective:

There are a growing number of people who uses smartphones and tablets and hence mobile app development has ability to access a large segment. Android has an advantage of being open source. This course will enable the students to develop mobile application using Android.

Teaching and Examination Scheme:

Teaching Scheme					Evaluation Scheme				Total Marks
					Theory		Practical		
L	T	P	Contact Hours	Credit	CIE (TH)	ESE (TH)	CIE (PR)	ESE (PR)	
4	0	2	6	5	40	60	20	30	150

Content:

Unit No.	Contents	Teaching Hours	Weightage %
1	**Android OS:** Introduction to Android, Android System with Architecture, Android Architecture, Development with Android – Platforms, Tools, Versions, Setup Android Environment, Say Hello to Android Application, Building Blocks of Android Application, Work with Activity, Activity Lifecycle, Intents Fragments, Fragment Lifecycle	6	15%
2	**Android UI And Component using Fragments** Create Android UI, Working with Layout, Create Custom Layouts, Work with UI Components and Events, Material Design Toolbar, Tab Layout, Recycler View and Card View, Android Menus	8	20%
3	**Database Connectivity:** Storage in Android, Shared Preferences, Shared Preferences	7	20%

	Layout, Android Requesting Permission at run time (Android 6.0), Work with SD Card and Files, Database in Android, Realm-No SQL Database		
4	**Applicability to Industrial Projects:** Web services and Parsing, JSON Parsing, Access web data with JSON, Connect to Web Services, Using Async Task & Third Party Library : Retrofit	5	15%
5	**Location Services and Maps:** Google Map, Location Service and GPS, Creating Google Map, Work with Location, Location service with Location Manager, Find Current Location, Geo coding	3	5%
6	**Graphics and Animation:** Graphics and Animation, Work with 2D Graphics, Bitmap, Animation, Frame Animation, Tween Animation, View Animation, Multimedia in Android, Play Audio Files, Play Video Files	4	10%
7	**Web Application Scanning tools:** Work in Background, Services, Notification Services, Broadcast Receiver Introduction to Firebase with simple CRUID Operation, Text to Speech, Camera, Taking Picture with Camera, Manage Bluetooth Connection, Monitor and Manage Wi-Fi, Accelerometer Sensor & Gyroscope.	6	10%
8	**Publishing and Distributing Android Application:** Signing the Android Application, Versioning the Android Application, Publishing the Android Application	3	5%

Course Outcome:

Sr. No.	CO statement	Unit No
CO-1	Understand Android architecture, activities and their life cycle	1
CO-2	Apply the knowledge to design user interface using Android UI And Component	2
CO-3	Manage system database, remote database operations using web services and Firebase	3,4,7
CO-4	Apply knowledge of map, location services, Graphics, android system and background services	5,6
CO-5	Publish and distribute Android Application	8

Teaching & Learning Methodology: -

The various methods or tools follows by the faculties to teach the above subject are:

1. PPT
2. Video Lectures etc.

List of Tutorials:

The students will have to solve at least five examples and related theories from each topic as an assignment/tutorial.

1. Android studio installation and study of architecture of Android.
2. Create "Hello World" application. That will display "Hello World" in the middle of the screen using Text View Widget in the red color.
3. Create android application that demonstrates the android activity life cycle.
4. Design an android application for simple calculator.
5. Create Activities & implement following:
    1. Implicit intent
    2. Explicit Intent
    3. StartActivityForResult
6. Create android applications that demonstrate the concept of fragments.
7. Design Login activity and implement control events: Use EditText, Checkbox and Buttons. Implement using following layouts:
    1. Linear Layout
    2. Relative Layout
    3. Table Layout
8. Create android applications that demonstrate the concept of menu with navigation.
9. Develop an application demonstrating Internal Storage to store private data on the device memory.
10. Create an application that shows your current location.
11. Develop an application for working with graphics and animation.
12. Create registration application to store data in database.

Major Equipment/ Instrument (Hardware/Software):

1. Latest configured Computer systems
2. Android Studio Software

Books Recommended: -

1. Android Application Development Black Book by Pradeep Kothari, DreamTech
2. Beginning Android 4 Application Development by Wei Meng Lee, Wrox
3. Android Wireless Application Development By Lauren Darcey, Shane Conder, Pearson

List of Open Source Software/learning website:

- http://silveroakuni.ac.in/video-lecture
- https://nptel.ac.in/
- http://www.coursera.org/
- https://developer.android.com/