SILVER OAK UNIVERSITY
College Of Computer Application
Bachelor of Computer Application
Subject Name: Android Application Development
Subject Code: 2040233242
Semester: IV

Prerequisite: Basic Knowledge of OOPS concept and Core Java
Objective:
1. To Understand and describe the principles of Android Application Development Environment.
2. To acquaint students with the concepts of Android Programming.
3. To develop an application that runs under the Android Operating System.
4. To work with the Android File System.

Teaching and Examination Scheme:

Teaching Scheme			Credits	Evaluation Scheme				Total Marks
L	T	P	C	Internal		External		
				Th	Pr	Th	Pr	
3	0	2	4	40	20	60	30	150

Course Content:

Unit No.	Course Contents	Teaching Hours	Weightage %

1	**Introduction to Mobile Operating System**
	● Introduction
	● Additional requirement for Mobile OS
	● Constrained of smart Mobile OS
	● Type of Mobile OS
	  ○ IOS
	  ○ Android
	  ○ Black Berry
	  ○ Microsoft
	  ○ Symbian
	● Generalize Architecture of Mobile OS
	● Comparison of Mobile OS
	Android Operating System
	● Introduction
	● History of Android OS
	● Versions of Android OS
	● Architecture of Android OS
	● Building Blocks of Android Application
	● Work with Activity
	● Activity Lifecycle
		06	16

2	**Android Fundamentals**	09	21

	● Android Development Tools
	    ○ Eclipse
	    ○ Kony
	    ○ Xamarin
	    ○ Android Studio
	● Setting up Android Development Environment o Configuration of Android Environment.
	● Exploring the Android SDK
	● First Android Application
	    o Creating an Android Virtual Device (AVD)
	    o Creating and Configuring a New Android Project
	    o Core Files and Directories of the Android Application
	    o Crating a Launch Configuration for new Project
	    o Running Android Application in the Emulator
	    o Debugging Android Application in the Emulator
	    o Adding Logging, Media support to Android Application
	
	● Mastering the Android Development Tools
	    o Using the Android Documentation
	    o Leveraging the Android Emulator
	    o Viewing Application with DDMS
	    o Using Android Debug Bridge (ADB)
	    o Using Resource Editors and UI Designer
	    o Using the Android Hierarchy Viewer		

3	**Android Application Basics**	09	21
	● Anatomy of an Android Application		

Android Application Basics
- Anatomy of an Android Application
  - o Mastering Important Android Terminology
  - o Using the Application Context
  - o Performing Application Tasks with Activities of Organizing Activity Components with Fragments o Managing Activity Transitions with Intents
  - o Working with Service o Receiving and Broadcasting Intents

- Android Manifest File

  - o   Configuring Android Application Using the Android Manifest File
  - o   Managing Application Identity
  - o   Enforcing Application System Requirements Registering Activities in the Android Manifest
  - o   Working with Permissions
  - o   Exploring other Manifest File Settings

- Managing Application Resources
Storing Application Resources
  o Resource Value Types
  o Accessing Resources Programmatically
  o Setting Simple Resource Values
    Using Eclipse o Working with
    Different Types of Resources
    ▪ String
    ▪ String Arrays
    ▪ Boolean
    ▪ Integer
    ▪ Colors
    ▪ Dimensions
    ▪ Drawables
    ▪ Images
    ▪ Animation
    ▪ Menus and Scroll view
    ▪ XML Files
    ▪ Raw File
  o Working with Layout
  o Referencing System Resources

4	**Android User Interface Design Essentials**	09	21
	● Exploring Interface Screen Elements o Introducing Android Views and Layout		
	o Displaying Text to Users with Text View		
	o Retrieving Data from Users with Edit Text		
	o Spinner controls		
	o Button		
	o Check Boxes & Toggle Button		
	o Switches		
	o Radio Groups & Radio Button		
	o Date and Times		
	o Progress Bar		
	o Seek Bar		
	o Rating Bar		
	o Chronometer		
	● User Interfaces with Layouts		
	o Creating Layouts Using XML Resources		
	o Creating Layouts Programmatically		
	o Organizing User Interface using ViewGroup and View		
	o Using Built in Layout Classes		
	▪ Frame Layout		
	▪ Linear Layout		
	▪ Relative Layout		
	▪ Table Layout		
	▪ Grid Layout		
	Using Container Control Classes		
5	**Working with Fragments, Dialogs & Android Preferences**	09	21
	● Fragments		
	o Understanding Fragments		
	o Using the Android Support Package for Fragments		
	o Using the Android Support Package for Fragments		
	● Dialogs		
	o Exploring the Different Types of Dialogs		
	▪ Simple Dialog		
	▪ Alert Dialog		
	▪ Character Picker Dialog		
	▪ Date Picker Dialog		
	▪ Progress Dialog		
	▪ Time Picker Dialog		
	▪ Working with Dialog with Legacy & Fragment Method of Working with android preferences		

Course Outcome:

Sr. No.	Co statement	Unit No
CO-1	Understand the mobile application development history and introduction to mobile application development.	1
CO-2	Learn the basic android fundamentals for developing the android application.	2
CO-3	Learn the basic concept of resources, manifest file and android application basic resources for developing the application and troubleshoot the structural errors.	3
CO-4	Application of user control and creating basic applications.	4
CO-5	Creating dialogs, working with fragments and android preferences and applying the concepts in android application.	5

List of Tutorials:

No.	Practical
1	Create a "Hello World" application. That will display "Hello World" in the middle of the screen using TextView Widget in the red color.
2	Create an android application that demonstrates the android activity life cycle.
3	Design an android application for a simple calculator.
4	Create Activities & implement following: 1. Implicit intent 2. Explicit Intent 3. StartActivityForResult
5	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
6	Design registration form using different interface screen elements like button, checkbox, spinners etc.
7	Create android applications that demonstrate the concept of menu with navigation.
8	Create android application that demonstrates the concepts of following dialogs: 1.Simple Dialog 2.Alert Dialog 3.Character Picker Dialog

9	Create an android application that demonstrates the concepts of date picker dialog and progress dialog.
10	Create an android application that demonstrates the concept of fragments.
11	Create an application that demonstrates the use of android shared preferences.

Books Recommended: -

1. Android –Wireless Application Development, Volume -1 by Lauren Darcey, Shane Conder Pearson
2. Android Application Development Cookbook by Wei-Meng Lee, Wrox - Wiley
3. Learning Android by Marko Gargenta, O'REILLY
4. Android Application Development in 24 Hours by Lauren Darcey, Pearson
5. Android Application Development Black Book by Pradeep Kothari, DreamTech