

**GOVT. POLYTECHNIC, HAMIRPUR (H.P.)**  
**Lesson Planning and Coverage**

**Branch:** Information Technology

**Semester:** 6<sup>th</sup>

**Subject:** Android Programming


**Session:** Jan 2024

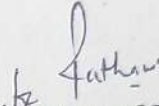
**Teacher:** Pratibha Thakur

**Laboratory:** PL lab

| Sr. No. | No of Lectures | Chapter/Unit Description                     | Detailed contents   | Reference Resources | Remarks |
|---------|----------------|--|---|---------------------|---------|
| 1       | 06             | Android Platform and Development Environment | Intoduction to Android OS and its versions, Android Platform, Linux kernel, libraries, Android Runtime : core libraries and Dalvik Virtual Machine, Application Framework and Applications; Android Development Environment: Android SDK and JDK, Android Studio IDE, Android Emulator, Debugging Android applications.                   | R1, R2,R3,R4,R5     |         |
| 2       | 10             | Fundamentals of Android Application          | Components of android application: activity, service, broadcast receiver and content provider, fragments, views, layouts and intents; Manifest : role, declaring components and component capabilities; Creating Android application: define resources, implement application classes, package application and install & run application. | R1, R2,R3,R4,R5     |         |
| 3       | 10             | The Activity Class                           | Activity class, task backstack; activity states and life cycle, activity callback methods: onCreate, onStart(), onResume(), onPause(), onRestart(), onStop() and onDestroy(); Starting Activities; Handling Configuration Changes; Configuring the Manifest: declaring activities, intent filters and permissions.                        | R1, R2,R3,R4,R5     |         |
| 4       | 10             | Intents, Permissions and Fragments           | Use of intent, Intent class, intent types, building an intent, intent filter, intent resolution; Android permissions, defining & using application permissions, Component permissions; fragment, fragment life cycle and its states, fragment callback methods, adding fragments to activities.   | R1, R2,R3,R4,R5     |         |
| 5       | 10             | Android User Interface                       | Views: TextView, EditText, AutoCompleteTextView, Button, ImageButton, CheckBox, ToggleButton, RadioButton, RatingBar; View Groups: RadioGroup, TimePicker, DatePicker, WebView, MapView, Gallery, Spinner; AdapterViews:  | R1, R2,R3,R4,R5     |         |

|   |    |  |  |                 |  |
|---|----|--|--|-----------------|--|
|   |    |  | ListView, Spinner, Gallery; View Events : view event sources, handling view events, common view operations; Layouts: Constrained Layout, Linear Layout, Relative Layout, Table Layout, Absolute Layout, Frame Layout, Grid View. |                 |  |
| 6 | 10 | Android User Notification and Broadcast Receiver | Toast, creating toast notification, notification area, broadcast receiver, create and register broadcast receiver, broadcasting custom intents, broadcast receiver event handling.   | R1, R2,R3,R4,R5 |  |

  
 (Pratibha Thakur)  
 Signature of Teacher with Date  
 Date : 27-01-24

  
 Signature of HOD

#### References:

R1: Android Application Development for Dummies By Donn Felker, Wiley Publishing Inc.

R2: Android Programming: the Big Nerd Ranch Guide By Bill Phillips et al., Pearson Publication

R3: <https://developer.android.com/guide/>

R4: <https://www.tutorialspoint.com/android/index.html>

R5: <https://www.javatpoint.com/android-tutorial>

#### COURSE OUTCOMES:

**After completing this course students will be able to:**

- CO-4.5.1 Understand the basic terminology associated with Android Programming.
- CO-4.5.2 Explain various versions of android operating systems.
- CO-4.5.3 To understand the android architecture and various tools available in android studio.
- CO-4.5.4 To understand app development using Android studio.

**GOVT. POLYTECHNIC, HAMIRPUR (H.P.)**  
**Practical Planning**

**Branch:** Information Technology

**Semester:** 6<sup>th</sup>

**Subject:** Android Programming

**Session:** Jan-Jul 2024

**Teacher:** Pratibha Thakur

**Lab:** PL Lab

| Sr. No. | No of Practical hours planned | Aim of the Practical  | Reference for Procedure/ Writeup | Remarks |
|---------|-------------------------------|---|----------------------------------|---------|
| 1       | 06                            | To install the Java Development Kit (Latest Version) and Android Studio (Latest Version).   | R1, R2                           |         |
| 2       | 08                            | To explore the Android Studio (Toolbar, Navigation Bar, Editor Window, Editor Tabs, Project Explorer, Tool Window Bar, Tool Windows, Status Bar etc.)   | R1, R2                           |         |
| 3       | 08                            | To create an Android project to display the message "Hello World!", run it on Android Virtual Device (AVD) and deploy the application on a real Android device.   | R1, R2                           |         |
| 4       | 10                            | To develop an Android application CapQuiz that tests the user's knowledge of country's capital. The name of a random country, a capital and TRUE/FALSE buttons should be displayed on the screen. The application should evaluate the user response and provide the instant pop-up message. | R1, R2                           |         |
| 5       | 08                            | To modify the application developed in experiment-4 to add the provision of navigation to 'Next' and 'Previous' questions and evaluate the response only after user presses the 'Submit' image button.  | R1, R3                           |         |
| 6       | 08                            | To develop an Android application to implement a basic arithmetic calculator.   | R1, R2, R3                       |         |
| 7       | 08                            | To develop an Android application to demonstrate the working of BroadcastReceiver.  | R1, R2, R3                       |         |

**References:**

R1: Lab Manual

R2: <https://developer.android.com/guide/>

R3: <https://www.tutorialspoint.com/android/index.html>

**COURSE OUTCOMES:**

**After completing this course students will be able to:**

- CO-6.1.1 Understand building blocks and characteristics of Android Studio.
- CO-6.1.2 Explain android architecture.
- CO-6.1.3 Understand various components of app development.
- CO-6.1.4 Develop and run program using Android studio.

*Pratibha Thakur*  
(Pratibha Thakur)

Date :- 27/01/24