

- 1. Introduction to Android** **2H**
 - a. What is Android?
 - b. Setting up development environment
 - c. History of Android & .apk file extension
 - d. Architecture of android
 - e. Fundamentals:
 - i. Basic Building blocks - Activities, Services, Broadcast Receivers & Content providers
 - ii. UI Components - Views & notifications
 - iii. Components for communication - Intents & Intent Filters
 - f. Android API levels (versions & version names)
 - g. Lifecycle Methods
- 2. Application Structure (in detail)** **1H**
 - a. AndroidManifest.xml
 - b. uses-permission & uses-sdk
 - c. Resources & R.java
 - d. Assets
 - e. Layouts & Drawable Resources
 - f. Activities and Activity lifecycle
 - g. First sample Application
- 3. Emulator-Android Virtual Device** **1H**
 - a. Launching emulator
 - b. Editing emulator settings
 - c. Logcat usage
 - d. Second App:- (switching between activities)
-Develop an app for demonstrating the communication between Intents
- 4. Basic UI design** **3H**
 - a. Form widgets
 - b. Text Fields
 - c. Spinner
 - d. Layouts
 - e. [dip, dp, sip, sp] versus px
 - f. Splash Screen
 - g. Examples

5. Preferences	1H
a. SharedPreferences	
b. Preferences from xml	
c. Examples	
6. Menu	2H
a. Option menu	
b. Context menu	
c. Sub menu	
d. PopUpMenu	
e. menu from xml	
f. menu via code	
g. Examples	
7. Intents (in detail)	2H
a. Explicit Intents	
b. Implicit intents	
c. Examples	
8. UI design	4H
a. Time and Date	
b. Images and media	
c. Composite	
d. AlertDialogs & Toast	
e. Floating Action Button & Snackbar	
f. Popup	
g. Examples	
9. Tabs and Tab Activity	2H
a. Fixed Tabs	
b. Scrollable Tabs	
c. Tabs with Icon & Text	
d. Tabs with only Icon	
e. Custom Tab View with Icon & Text	
f. Examples	
10. Styles & Themes	1H
a. styles.xml	
b. drawable resources for shapes, gradients (selectors)	
c. style attribute in layout file	
d. Applying themes via code and manifest file	
e. Examples	

11. Working with WebView – Building a Simple In-App Browser	1H
12. Content Providers	6H
<ul style="list-style-type: none"> a. SQLite Programming b. SQLiteOpenHelper c. SQLiteDatabase d. Cursor e. Room Database f. Crud operations with room g. Example : -Develop an App to demonstrate database usage. CRUD operations must be implemented. 	
13. Adapters and Widgets	5H
<ul style="list-style-type: none"> a. Adapters:- <ul style="list-style-type: none"> i. ArrayAdapter ii. BaseAdapters b. ListView and ListActivity c. Custom listview d. MultiLevel ListView e. GridView using adapters f. Gallery using adapters g. Expandable ListView h. Horizontal & Vertical ListView i. CardView & RecyclerView j. Adding Search functionality in ListView k. Examples 	
14. Notifications	1H
<ul style="list-style-type: none"> a. Services and Push notifications b. Toast c. Examples 	
15. Android Working with Marshmallow (M) Runtime Permissions	1H
16. Build Intro Slider for your App	2H
17. Create apk/app bundle and upload on play store	2H
18. Projects	8H

Advanced Android

1. Refreshing Kotlin	2H
♣ OOPs Concepts	
♣ Inheritance in detail	
♣ Exception handling	
♣ Collection	
♣ List	
♣ Set	
♣ Map	
2. Parsing data	2H
◆ JSON Parsing	
◆ Xml Parsing	
3. Location and Maps	4H
❖ Location API	
❖ Google Map	
❖ Geo Coding	
❖ Reverse Geocoding	
4. Accessing Phone services (Call, SMS, MMS)	1H
5. Creating slideshow	1H
6. Firebase	4h
• Firebase Authentication	
• Realtime Database	
• Cloud Messaging/Push Notification	
7. web services Integration	2H
8. Sliding menu using navigation drawer	1H
9. Fingerprint Authentication	2H
10. Play Youtube Video in app	1H

11. Localization- Creating App for multiple language support	2H
12. Various integration 3H	
<ul style="list-style-type: none">• facebook integration• Google integration• Twitter integration	
13. App monetization(google Admob)	2H
<ul style="list-style-type: none">• Banner Ads• Interstitial Ads• Rewards Ads	
14. Payment Gateway for Ecommerce app	3H
<ul style="list-style-type: none">• Paypal integration• Razorpay Integration	
15. Android Jetpack	5H
<ul style="list-style-type: none">• Data Binding• Life Cycles• Live Data• Navigations	
16. <u>Project Offered:</u>	10h
<ul style="list-style-type: none">• Tour Guide of Bihar• Pay For Indian Army• Quiz App• Image Gallery App• Flashlight App• Ecommerce App	