

## **SYLLABUS OF Android**

### **Introduction to Android**

- ✓ Overview of Android
- ✓ Java Editions and comparison with Android
- ✓ Android Apps – Design, Vendor, Behavioral Classification

### **Android Architecture Overview**

- ✓ Android Architecture
- ✓ Application Frameworks
- ✓ Android Libraries, Run time, Dalvik Virtual Machine

### **Setup of Android Development Environment**

- ✓ System Requirements
- ✓ Java, Eclipse and Android SDK Installation
- ✓ Android SDK and Tools
- ✓ Android Virtual Devices & Device Definitions

### **Your Android Application**

- ✓ Android Application Design
- ✓ Using PhotoShop for Graphic Designing
- ✓ Android Application Wireframes (screens)

### **Your First Android Application**

- ✓ Creating Android Application
- ✓ Creating Configurations
- ✓ Testing the app: AVD, Active Device
- ✓ Android Project Structure and Manifest file

### **Publishing to the Play Store**

- ✓ Release process and Release build of Android Application
- ✓ Signing the .apk file
- ✓ Preparing the Store Listing page
- ✓ Content Rating
- ✓ Distributing the Application
- ✓ Merchant Registration for Paid Applications

### **Activities**

- ✓ About XML – approach to design layouts
- ✓ Views and Layouts
- ✓ View properties
- ✓ Linear Layout vs. Relative Layout vs. Frame Layout vs. Absolute Layout

- ✓ **Localization of UI**
- ✓ **Best practices for targeting various form factors: phone, tablet, TV**
- ✓ **Best practices when working designing Android UI**

### **Android Testing**

- ✓ **Creating a Test Project for Android project**
- ✓ **Working with Test Packages**
- ✓ **Writing test cases**

### **Fragments**

- ✓ **Designing fragments**
- ✓ **Fragments life cycle**
- ✓ **Fragment management and integration**

### **User Interfaces**

- ✓ **Creating the Activity**
- ✓ **XML versus Java UI**
- ✓ **Selection Widgets, Using fonts**
- ✓ **Common UI components**
- ✓ **Handling UI events: a bit about listeners**

### **Advanced UI**

- ✓ **Adapters**
- ✓ **Complex UI components**
- ✓ **Menus and Dialogs**
- ✓ **Tabbed Activities**
- ✓ **Navigation Drawer**
- ✓ **Animations**
- ✓ **Create activity layouts programmatically**
- ✓ **Testing and optimizing UI**

### **Android Material Design**

- ✓ **What is material ?**
- ✓ **Material properties and Styling / Animations**
- ✓ **Material Patterns**

### **Resources**

- ✓ **Overview of Android Resources**
- ✓ **Creating Resources**
- ✓ **Using Resources**
- ✓ **Drawable Resources**
- ✓ **Animation Resources**

### **Broadcast Receivers**

- ✓ **Broadcast receiver usage patterns: when and why to use them**
- ✓ **Implementing a broadcast receiver**
- ✓ **Registering a broadcast receiver via the manifest file and Programmatically**

## **Background Services**

- ✓ **Overview of Android services**
- ✓ **Service lifecycle**
- ✓ **Declaring a service**
- ✓ **Registering a service**
- ✓ **Starting and stopping a service**
- ✓ **Threads and other concurrency considerations with services**
- ✓ **Bound versus unbound services**
- ✓ **Remote versus local services**

## **Intents**

- ✓ **Working with Intents**
- ✓ **Explicit and implicit intents**
- ✓ **Using Intents as messaging objects**
- ✓ **Intents to start components expecting results**

## **Storing and Retrieving Data**

- ✓ **Storage Model selection criteria**
- ✓ **Shared preferences**
- ✓ **Internal Storage – Files**
- ✓ **External Storage – SD Card**
- ✓ **Testing the created files, tools**

## **SQLite Database**

- ✓ **Introducing SQLite**
- ✓ **SQLiteOpenHelper and creating a database**
- ✓ **Opening and closing a database**
- ✓ **Working with cursors**
- ✓ **Inserts, updates, and deletes**

## **Native Content Providers**

- ✓ **Content provider types**
- ✓ **Searching for content**
- ✓ **Adding, changing, and removing content**
- ✓ **Native Android Content Providers**
- ✓ **Accessing Contact Book, Calendar**

## **Custom Content Providers**

- ✓ **Custom Content Provider classes**
- ✓ **Publishing content providers**

## **Web Services**

- ✓ **Understanding Web Services**
- ✓ **Web Services Architecture**
- ✓ **Building Server side components**
- ✓ **Publishing web services**
- ✓ **REST based web services**

- ✓ **Accessing Web Services**
- ✓ **Integrating Web Services with mobile client**
- ✓ **Overview of networking**
- ✓ **Checking the network status and web service status**
- ✓ **Working with HTTP to access the web services**

### **Parsing, Parsers**

- ✓ **Document Object Model ( DOM )**
- ✓ **Simple API for XML ( SAX )**
- ✓ **JavaScript Object Notation ( JSON )**
- ✓ **Parsing XML and JSON**

### **Location Based Services**

- ✓ **Using Location Manager, Location Provider**
- ✓ **GPS and Network based tracking**
- ✓ **Testing the application using KML files**
- ✓ **Simulation of the locations on the active device**
- ✓ **Location Listeners and Proximity Alerts**

### **Integrating Google Maps**

- ✓ **API Version 2 of Google Maps**
- ✓ **User Interface – MapFragments**
- ✓ **API key generation**
- ✓ **Registrations in the manifest file**
- ✓ **Google Map, Camera Positions**
- ✓ **Adding Markers, Circles, Polylines**
- ✓ **Google Maps Directions API**

### **Telephony**

- ✓ **Telephony background**
- ✓ **Accessing telephony information**
- ✓ **Monitoring data activity and connectivity**
- ✓ **Working with messaging SMS**

### **Multimedia in Android**

- ✓ **Playing Audio & Video**
- ✓ **Recording Audio & Video**
- ✓ **Customizing Camera & Capturing Photos**
- ✓ **Voice Recognition**
- ✓ **Text To Speech**

### **Bluetooth**

- ✓ **Controlling local Bluetooth device**
- ✓ **Discovering and bonding with Bluetooth devices**
- ✓ **Managing Bluetooth connections**
- ✓ **Communicating with Bluetooth**

### **Social Networking Integrations**

- ✓ **Facebook Integration**

## **Debugging and Testing Android Apps**

- ✓ **Logcat**
- ✓ **Debugger**
- ✓ **Traceview**
- ✓ **HierarchyViewer**
- ✓ **Monkey Runner**
- ✓ **UIAutomator**