



## **ANDROID APPLICATION DEVELOPMENT – COURSE STRUCTURE**

### **Introduction to Mobile Applications**

- Need of Mobile Application
- Types of Mobile Apps
- Native Apps Vs Hybrid Apps Vs Cross Platform Mobile Apps.

### **Introduction to Android**

- What is Android?
- History of Android.
- Installing and setting the environment
- Dalvik Virtual machines & .apk file extensions

## **Android Architecture**

- Overview of Android stacks
- Android Features.
- Android API Levels.
- Android Libraries.

## **Application Framework / Structure**

- AndroidManifest.xml
- Uses-permission & SDK
- Resources and R.Java
- Assets
- Layouts & Drawable Resources
- Activities and Life cycle

## **Android Fundamentals- Brief overview**

- Basic building blocks
  - Activities, Intents, Receivers, Content Providers
- UI Components
- Components for Communication – Intent and Intent filters

## **Creating First Application**

- Helloworld application
- Debugging application
- Executing project on Android screen
- The Manifest file
- Layout resources
- Running the app

## **Building UI with Activities**

- Activities
- Form widgets
- Text fields
- Views ,layouts
- Creating UI components through code and XML
- Activity life cycle
- Intents and communication with activities
- Examples

## **Advanced UI**

- Gridview, Listview, Spinner
- Date , time
- Complex UI components

- Adapters, Custom Adapters
- Custom and Compound views
- Examples

### **Menus**

- Option Menu
- Content Menu
- Sub menu
- Menu through xml and code
- Examples

### **Style and Themes**

- Creating and applying simple styles
- Using style as theme
- Examples

### **Notifications**

- Toast, custom Toast
- Dialogs and Popups
- Status notifications
- Tab and Tab Activity
- Examples

## **Intents**

- What is Intent
- Types of Intents
  - Explicit Intent
  - Implicit Intent
- Examples

## **Preferences**

- Shared Preference
- Preferences in XML
- Examples

## **Adapters and Widgets**

- Adapters
- Base and Array
- Listview and List Activity
- Grid View Adapters
- Gallery using adapters
- Examples

## **Multimedia in Android**

- Audio formats – support
- Media Playback
- Video formats
- Video playback
- Examples

## **Broadcast Sender and Receiver**

- Broadcast sender and Receiver
- Broadcast action, category
- Registering Broadcast Receiver
- Broadcast Sender
- Examples

## **Data Storage**

- Android File System
- Internal Storage
- External Storage
- Examples

## **Services**

- Android Services
- Implementing Service
- Lifecycle of Service
- Interprocess communication Service
- Examples

## **Location Based Services**

- Current location tracking
- Listening for changes in location
- Working with google maps
- Displaying route on map
- Examples

## **Web Services**

- What is web Service
- Parsing JSON and XML
- Using Web view
- Examples

## **Sensors**

- What are Sensors
- How Sensors work
- Using Orientation and Accelerometer
- Examples

## **Network connectivity**

- Wifi service
- Managing active connections
- Mobile Network connections
- Managing networks
- Examples

## **SD cards -Implementation and usage**

## **Telephony Services**

- Making calls
- Monitoring data connection
- Phone properties and status
- Messages
- Examples

## **Camera**

- Using Camera in Android
- Taking Picture
- Taking Video
- Storing it in sd card
- Rendering Previews
- Examples



## **Bluetooth**

- Controlling the device
- Discovering bluetooth device
- Managing Connection
- Communication with device
- Examples

## **Deploying Application**

- Deploying the Apps in Android device
- Publishing it in Android Market
- Examples

## **CASE STUDIES**