



## Android Application Development

**Duration:** 5 days

### Course Description

This course is designed to provide essential skills and experience with developing applications on Android mobile platform. Throughout the course, the students will develop a real-life application, which can serve as a basis for their future Android projects. Eclipse and Android SDK are used as the development environment throughout the class.

### Course topics:

#### **Understanding the development environment**

- Running and debugging apps using Eclipse and ADT
- Using the emulator, gui builder and android debug bridge (adb)

#### **Writing Android Apps and Activities**

- An introduction to activities and the activity lifecycle
- Using XML resources
- Handling configuration changes and interacting with other apps
- Understanding intents and the Android manifest

#### **Saving, retrieving and sharing data**

- Save and retrieve data from files on the device or from SD card
- Saving application preferences
- Using sql lite databases
- Accessing other apps data through content providers
- Designing your own content provider



## Designing user interfaces

- Using the standard widgets
- Use buttons, text views, lists, dialogs etc
- Layout your views using layout managers
- Developing custom views
- Writing your own views, efficiently

## Running background application services

- Starting and stopping services
- Understanding the service lifecycle
- Local and remote services
- Broadcast receivers, starting on system boot
- Using notifications, buzzers, flashing led

## Creating graphics, animations and visual effects

- Using Android's pre-defined graphics routines
- How to draw shapes, gradients, bitmaps etc
- Frame by frame animation & transitions
- Writing custom graphics routines
- Drawing to a canvas
- Animating from a separate thread
- 3D graphics using OpenGL

## Using the media framework

- Recording and playing back audio and video
- Accessing the camera
- Media playback of audio & video
- Using the on-device sensors

## Location based applications

- Using Maps & Overlays



## Bluetooth & Network Connectivity

- Monitoring Wifi & Network Connectivity
- Using Bluetooth
- Using HttpComponent classes to access the internet

## Telephony

- Testing sim card, line number and call monitoring
- Text messaging

## Releasing Android Apps

- Unit testing & publishing
- User Interface Testing with the Monkey
- Using the Android Junit test frameworks
- Signing, publishing and releasing apps