

## Kick-Start Your Android Development

During this two-day hands-on course learn the fundamentals of Android development using the latest available tools and techniques. With over two billion Android devices in the world, ranging from phones, tablets, wearables and automotive apps the demand for Android applications is growing rapidly. Development of all of these applications will need to be done using the open source Android operating system, and for developers learning how to use this system, it is imperative. This course covers everything you need to kickstart your Android development. Activities, Intents, view layer widgets and fragments, networking, services, and more. Also, there will be an overview of how the Gradle build system is applied to Android. During this course you will create applications using Android Studio; the only officially supported Android IDE.

- Learn the fundamentals of Android Development
- Create Android applications using the Android Studio IDE
- Understand how to use Gradle to build Android applications
- Get hands-on experience using the latest development tools and techniques

During this two-day hands-on course learn the fundamentals of Android development using the latest available tools and techniques. With over two billion Android devices in the world, ranging from phones, tablets, wearables and automotive apps the demand for Android applications is growing rapidly. Development of all of these applications will need to be done using the open source Android operating system, and for developers learning how to use this system, it is imperative.

This course covers everything you need to kickstart your Android development. Activities, Intents, view layer widgets and fragments, networking, services, and more. Also, there will be an overview of how the Gradle build system is applied to Android. During this course you will create applications using Android Studio; the only officially supported Android IDE.

The course is hands-on and requires that students be comfortable with writing general Java code at an intermediate level.

## Skills Gained:

- Create Android applications using the Android Studio IDE
- Understand activities and intents
- Save data in files and the included Sqlite database
- Use asynchronous tasks for multithreaded processing
- Access RESTful web services over the net
- Process JSON data
- Work with preferences

This is a hands-on workshop. If you plan to participate in the hands-on coding activities, you need to come prepared with a laptop that has the Android Studio IDE installed. Detailed instructions for installing for Android Studio on different platforms are listed at [developer.android.com/studio](https://developer.android.com/studio) [1]. Note that the software works for Windows, Mac OS X, and Linux, so any of those operating systems are acceptable for this course and should be downloaded before class.

## Course Outline:

### Introducing Android

- Android versions and capabilities
- The Android Studio IDE
- The SDK Manager
- Creating an emulator

### A Simple Application

- Extending the Activity and AppCompatActivity classes
- Creating the XML layout
- Accessing widgets with findViewById
- Implementing listeners
- Updating the user interface

### The Manifest and Gradle Build Files

- Multi-project Gradle builds
- Top-level and application level Gradle build files
- The Android plugin for Gradle
- Repositories and dependencies
- Setting Android properties
- The AndroidManifest.xml file

### Dialogs

- Toast and Snackbar
- Modal dialogs
- Interacting with activities

### Fragments

- Creating fragments
- Implementing interfaces
- Adding fragments to activities
- The fragment lifecycle
- The back stack
- ListFragment

### Menus and the Action Bar

- Menu XML files
- Adding items
- Using the Action Bar
- Reacting to menu selections

### Implicit Intents

- Built-in intents
- Adding intents to the manifest
- Registering for intents
- Intent filters
- Broadcast receivers

## The Activity Lifecycle

- Logging events
- The Activity callback methods
- Back button, going home, and aspect changes
- Preserving data using saved instance state

## Explicit Intents

- Moving from one activity to another
- Creating explicit intents
- Passing data through intents
- Retrieving data

## Resources

- Resource folders
- Strings, colors, and layouts
- The R.java file
- Styles
- Other resources

## Widgets

- Buttons and listeners
- TextView and EditText
- Customizing the input type
- Checkboxes and toggle buttons
- Date and time pickers

## Asynchronous Tasks

- Operating off of the UI thread
- Extending AsyncTask
- Implementing background tasks
- Updating the UI

## Layouts

- LinearLayout
- RelativeLayout
- FrameLayout
- Other layouts

## Data Storage

- Internal storage in files
- External storage
- Shared preferences
- Preference activities and fragments
- The Sqlite database
- Sqlite helpers and adapters

## List Activities

- Using a list adapter
- Populating lists
- Responding to click events

## Flavors and Variants

- Defining flavors
- Using build types
- Changing resources in variants
- Building APKs

## Testing

- Testing non-Android parts of an app
- The Android Testing Support Library
- Functional testing with Robotium
- Activity testing with Espresso

## Publishing Your Application

- Signing your app
- Registering with Google Play
- Generating release APKs
- Uploading and customizing your app

**Class Schedule:**

Sign-In/Registration 7:30 - 8:30 a.m.

Morning Session 8:30 a.m. - 12:00 p.m.

Lunch 12:00 - 1:00 p.m.

Afternoon Session 1:00 - 5:00 p.m.

*Times represent the typical daily schedule. Please confirm your schedule at registration.*

**Price:**

\$1545

**Course Fee Includes:**

- Tuition
  - Course notebook
  - Continental breakfasts and refreshment breaks
  - Lunches
  - Letter of completion
-