

Professional Android development agenda

•Android Architecture

- System architecture of Android
 - Android Components
 - Android configuration files
 - The ART runtime
-

•Android 5.x and material design

- Overview of the latest Android 5.x release
 - Material design and implications for the Android developer
-

•Android Development Tools

- IntelliJ based tooling (Android Studio)
 - Eclipse based tooling (AndMore and Android Development Tools)
 - Defining devices and Android emulators
-

•Android user interfaces development

- Views and Layouts
 - View interaction
 - Component lifecycle
-

•Component communication via Intents

- Intents and intent filter
 - Android component integration via intents
-

•Using Gradle as the Android build system

- What is Gradle?
 - Running a headless Gradle build
 - Defining Gradle dependencies
-

•Using Libraries

- Using libraries as JAR files
 - Using Android libraries (Android ARchive -AAR)
 - Using the support library
 - Targeting Android 2.x with compatibility libraries
-

•Multi-screen development

- Screen sizes and densities
 - Resource selectors
-

•Multi-pane layout with fragments

- Multi-pane layouts with fragments
 - Designing layouts for tablets and phones
-

•ActionBar

- User interaction concepts
 - Defining and using actions
 - Using the Toolbar
-

•Displaying lists and grids

- Using RecyclerView
 - Using ListView
-

•Styling and Themes

- Using existing styles and themes

- Creating own themes
 - Using the Holo theme
 - Material design
-

•Security

- Android security concept
 - Using and defining permissions
-

•Asynchronous processing in Android

- Multitasking in Android
 - Using Handler for message communication
 - Using AsyncTask
-

•Network Communication

- Accessing the Internet via http
 - Processing JSON
 - Processing XML
 - Using GSON for JSON to Java object mapping
 - Using OkHttp
-

•Webservice integration into Android

- Accessing REST based webservices with Retrofit
 - Outlook: Using SOAP based webservices
-

•File based Persistence

- Preferences
 - File and Access restrictions
 - Permissions
-

•SQLite and ContentProvider

- Using the SQLite database
 - Using and defining ContentProvider
 - Outlook: Loader
-

•Services

- Using Android system services
 - Defining local services
 - Communicating with services
 - Outlook: Definition cross component communication
-

•Event processing via broadcast receiver

- Androids event system
 - Registering broadcast receiver for system events
 - Registering and triggering custom events
-

•Notifications

- Using the notification manager
 - Building rich notifications
 - Outlook: Notifications and Google Wear
-

•The Android lifecycle

- Application lifecycle
 - Activity lifecycle
 - Fragments lifecyle
 - Service lifecyle
-

•Custom widgets and the canvas API

- Defining custom widgets
- Compound widgets

- Canvas API
 - View state persistence
-

•Google Play services and Google Maps

- Using Google Play services
 - Location based services and Geocoding
 - Using Google Maps
 - Enhancing Google Maps with custom overlays
-

•Deployment

- Deployment to Google Play
 - Deployment Options
 - Markets (Google Play / Amazon)
-

• Outlook: Application design with dependency injection

- The concept of dependency injection
- Using Dagger 2 for dependency injection in Android