**BAIT2073 Mobile Application Development**

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| Week | Lecture | Practical |
| 1 | Chapter 1: Introduction to Mobile Application Development | [**Android Basics: Introduction to Kotlin**](https://developer.android.com/courses/pathways/android-basics-kotlin-one) An introduction to Android Kotlin fundamentals.  [**Android Basics: Create your first Android app**](https://developer.android.com/courses/pathways/android-basics-kotlin-two)  Learn how to install Android Studio. |
| 2 | Chapter 2.1: User Interfaces   * UI layouts * UI components * Input events | [**Android Basics: Build a basic layout**](https://developer.android.com/courses/pathways/android-basics-kotlin-three) Learn how to add images and text to your Android apps.  [**Android Basics: Add a button to an app**](https://developer.android.com/courses/pathways/android-basics-kotlin-four)  Learn how to use classes, objects, and conditionals to create an interactive app for your users. |
| 3 | Chapter 2.2: User Interfaces   * Menus * Dialogues and notifications | [**Get user input in an app**](https://developer.android.com/courses/pathways/android-basics-kotlin-unit-2-pathway-1) Create a tip calculator app by building the layout first and then implementing the logic to calculate the tip from the user input.  [**Display a scrollable list**](https://developer.android.com/courses/pathways/android-basics-kotlin-unit-2-pathway-2)  Create an app that displays a scrollable list of inspiring text and images using the RecyclerView widget in Android. Along the way, you’ll learn about using lists in Kotlin to store a collection of data. |
| 4 | Chapter 2.3: User Interfaces   * Fragment * Navigation * Design for everyone | [**Create a fragment**](https://developer.android.com/codelabs/kotlin-android-training-create-and-add-fragment/)   * Learn to create a Fragment inside an Activity   [**Navigate between screens**](https://developer.android.com/courses/pathways/android-basics-kotlin-unit-3-pathway-1)  Add another screen to an app by adding a second activity, and use an intent to navigate to it. Also, learn the basics of the activity lifecycle as you navigate into and out of different activities. |
| 5 | Chapter 3: Mobile Applications Models | **Prototype Presentation**  (Students shall do the following practical exercises at home)  [**Introduction to the Navigation component**](https://developer.android.com/courses/pathways/android-basics-kotlin-unit-3-pathway-2)  Learn about the Navigation Architecture Component in Android Jetpack, which provides a framework for building in-app navigation.  [**Lifecycles and logging**](https://developer.android.com/codelabs/kotlin-android-training-lifecycles-logging/)  Learn to trace an app execution life cycles using the log tag that is displayed in the Logcat.  [**Complex lifecycle situations**](https://developer.android.com/codelabs/kotlin-android-training-complex-lifecycle/)  Learn to set up various lifecycle callback methods. Learn to save and restore data automatically when an app is closed by the user. |
| 6 | Chapter 4.1: Resources and Data Storage   * Architecture components | [**Architecture components**](https://developer.android.com/courses/pathways/android-basics-kotlin-unit-3-pathway-3)  Learn how to use Android Jetpack Architecture components, a collection of libraries that help you design robust, testable, and maintainable apps.  [**Advanced navigation app examples**](https://developer.android.com/courses/pathways/android-basics-kotlin-unit-3-pathway-4)  Combine everything you've learned in this unit about navigation, ViewModel, data binding, and LiveData by building a more advanced app that also includes custom back stack behavior. |
| 7 | Chapter 4.2: Resources and Data Storage   * Database * ViewModel and LiveData * Coroutines | [**Create a Room database**](https://developer.android.com/codelabs/kotlin-android-training-room-database/)  Create a Room database with an interface for nightly sleep data. Test the database using the provided tests.  [**Coroutines and Room**](https://developer.android.com/codelabs/kotlin-android-training-coroutines-and-room/)  Learn how to use coroutines with Room  [**Record quality and button states**](https://developer.android.com/codelabs/kotlin-android-training-quality-and-states/) |
| 8 | Chapter 4.2: Resources and Data Storage   * RecyclerView Fundamentals | [**RecyclerView fundamentals**](https://developer.android.com/codelabs/kotlin-android-training-recyclerview-fundamentals/)  [**Android Login with FirebaseUI**](https://developer.android.com/codelabs/advanced-android-kotlin-training-login) |
| 9 | Chapter 4.3: Resources and Data Storage   * Network Connection | [**GridLayout with RecyclerView**](https://developer.android.com/codelabs/kotlin-android-training-grid-layout/)  [**Interacting with RecyclerView items**](https://developer.android.com/codelabs/kotlin-android-training-interacting-with-items/)  [**Headers in RecyclerView**](https://developer.android.com/codelabs/kotlin-android-training-headers/)  [**Repository**](http://developer.android.com/codelabs/kotlin-android-training-repository/)  [**WorkManager**](http://developer.android.com/codelabs/kotlin-android-training-work-manager/) |
| 10 | Chapter 5: Location-based Services   * Maps * Adding Geofencing | [**4.1 Android Google Maps**](https://developer.android.com/codelabs/advanced-android-kotlin-training-maps)  [**4.2 Adding Geofencing to Your Map**](https://developer.android.com/codelabs/advanced-android-kotlin-training-geofencing) |
| 11 | Connecting to the internet | [**Getting data from the internet**](https://developer.android.com/codelabs/kotlin-android-training-internet-data/)  [**Loading and displaying images from the internet**](http://developer.android.com/codelabs/kotlin-android-training-internet-images/)  [**Filtering and detail views with internet data**](http://developer.android.com/codelabs/kotlin-android-training-internet-filtering/) |
| 12 | Chapter 6.1: Specialised Instruments and Devices   * Camera | [Using the Camera2](https://codelabs.developers.google.com/codelabs/camerax-getting-started#3) |
| 13 | Chapter 6.2: Specialised Instruments and Devices   * Audio capture * Media playback | [13.1 Dealing with media files](https://developer.android.com/codelabs/advanced-android-training-video-view?hl=en&continue=https%3A%2F%2Fcodelabs.developers.google.com%2F#0) |
| 14 | Chapter 7: Mobile Application Packaging and Publication   * Preparing for publishing * Publishing on the market * Updating application | **Assignment Presentation** |