

**BAIT2073 Mobile Application Development – Course Plan 202109**

Session	Type	Topics	Practical
1	Lecture	1.Introduction to Mobile Application Development <ul style="list-style-type: none"><li>- Mobile operating systems and ecosystem</li><li>- Development tools</li><li>- Mobile devices</li><li>- Mobile application software architecture and framework</li></ul>	<a href="#">1.0: Install Android Studio</a> <a href="#">1.1: Get started</a> <a href="#">1.2: Anatomy of Basic Android Project</a> <a href="#">1.3 Image resources and compatibility</a> <a href="#">1.4 Learn to help yourself</a>
2	Lecture	2.1 User Interfaces (Part 1) <ul style="list-style-type: none"><li>- UI Layouts</li><li>- UI Components</li><li>- View Binding</li></ul>	<a href="#">2.1 Linear layout using the Layout Editor</a> <a href="#">2.2 Add user interactivity</a> <a href="#">2.3 Constraint layout using the Layout Editor</a>
3	Lecture	2.1 User Interfaces (Part 2) <ul style="list-style-type: none"><li>- Data Biding</li><li>- Style and Theme</li></ul> 2.2 User Interfaces (Part 1) <ul style="list-style-type: none"><li>- Fragment</li></ul>	<a href="#">2.4 Data-binding basics</a> <a href="#">10.1 Styles and themes</a>
4	Lecture	2.2 User Interfaces (Part 2) <ul style="list-style-type: none"><li>- Dialog</li><li>- Navigation Drawer</li><li>- Tabs</li></ul>	<a href="#">10.2 Material Design, dims, and colors</a> <a href="#">3.1 Create a fragment</a>
5	Lecture	2.3 User Interfaces <ul style="list-style-type: none"><li>- Menus</li><li>- Toast and Notification</li><li>- Design for everyone</li><li>- Accessibility</li></ul>	<a href="#">3.2 Define navigation paths</a> <a href="#">3.3 Start an external activity</a>

6	Lecture	Mobile Applications Models - Activities and event handling - Linking activities - Application life cycle	<b>Assignment Presentation (Part 1)</b>  <a href="#">4.1 Lifecycles and logging</a> <a href="#">4.2 Complex lifecycle situations</a>
7	Lecture	Resources and Data Storage (Part 1) - Providing and accessing to resources - Shared preferences	<a href="#">5.1 ViewModel and ViewModelProvider</a> <a href="#">5.2 LiveData and LiveData observers</a>
8	Lecture	Resources and Data Storage (Part 2) - Internal Storage - External Storage	<b>Practical Test</b>  <a href="#">5.3 DataBinding with ViewModel and LiveData</a> <a href="#">5.4 LiveData transformations</a>
9	Lecture	Resources and Data Storage (Part 3) - Database	<a href="#">6.1 Create a Room database</a> <a href="#">6.2 Coroutines and Room</a> <a href="#">6.3 Record quality and button states</a>  <a href="#">7.1 RecyclerView fundamentals</a> <a href="#">7.2 DiffUtil and data binding with RecyclerView</a> <a href="#">7.3 GridLayout with RecyclerView</a> <a href="#">7.4 Interacting with RecyclerView items</a>
10	Lecture	Resources and Data Storage (Part 4) - Network and Background Operation	<a href="#">8.1 Getting data from the internet</a> <a href="#">8.2 Loading and displaying images from the internet</a> <a href="#">8.3 Filtering and detail views with internet data</a>
11	Lecture	Location-based Services - Maps - Getting location data	<a href="#">9.1 Repository</a> <a href="#">9.2 WorkManager</a>  <a href="#">4.1: Android Google Maps</a>
12	Lecture	Specialised Instruments and Devices (Part 1) - Camera	<a href="#">Getting Started with CameraX</a> <a href="#">Scan Barcodes with ML Kit on Android</a> <a href="#">Detect Facial Features in Photos</a> <a href="#">Recognition Text in Images</a>

13	Lecture	Specialised Instruments and Devices (Part 2) <ul style="list-style-type: none"> <li>- Audio capture</li> <li>- Media playback</li> </ul>	<b>Assignment Presentation (Part 2)</b>
14	Lecture	Mobile Application Packaging and Publication <ul style="list-style-type: none"> <li>- Preparing for publishing</li> <li>- Publishing on the market</li> <li>- Updating application</li> <li>- Monetising methods</li> </ul>	<b>Assignment Presentation (Part 2)</b>