**Session 1 – Android Studio Development**

**Intended outcomes**

At the end of this session, you should be able to:

1. Explain software development environment for Android
2. Analyse, identify and modify tools for mobile Android software development.
3. **System Requirements**

If a system doesn’t meet the minimum requirements of Android Studio, the application cannot be installed onto the system. If a system meets the minimum requirements it will run the application however the user may find that the certain tasks will take long to load and process. If a system meets or exceeds the recommended requirements to run Android Studio, the application will run smoothly and tasks shouldn’t take too long to load.

**Windows**

* Microsoft® Windows® 7/8/10 (32- or 64-bit)
* 3 GB RAM minimum, 8 GB RAM recommended; plus 1 GB for the Android Emulator
* 2 GB of available disk space minimum,  
  4 GB Recommended (500 MB for IDE + 1.5 GB for Android SDK and emulator system image)
* 1280 x 800 minimum screen resolution

**Mac**

* Mac® OS X® 10.10 (Yosemite) or higher, up to 10.13 (macOS High Sierra)
* 3 GB RAM minimum, 8 GB RAM recommended; plus 1 GB for the Android Emulator
* 2 GB of available disk space minimum,  
  4 GB Recommended (500 MB for IDE + 1.5 GB for Android SDK and emulator system image)
* 1280 x 800 minimum screen resolution

**Linux**

* GNOME or KDE desktop
* 64-bit distribution capable of running 32-bit applications
* GNU C Library (glibc) 2.19 or later
* 3 GB RAM minimum, 8 GB RAM recommended; plus 1 GB for the Android Emulator
* 2 GB of available disk space minimum,  
  4 GB Recommended (500 MB for IDE + 1.5 GB for Android SDK and emulator system image)
* 1280 x 800 minimum screen resolution

1. **Android SDK Manager**

The Android SDK Managers purpose it to help the developer download the SDK (Software Development Kit) tools, platforms and other components needed to develop Android applications.

1. **Virtual Device Manager**

The Virtual Device Managers role is to run an emulation of an Android Application so the developer can see how the app will run on desired devices.

1. **Android Project Structure**

**build/** - Contains build outputs.

**libs/** - Contains private libraries.

**src/** - Contains all the code and resources files for the module with the following sub-directories:

**androidTest/** - Contains code for instrumentation tests that run on an Android device.

**main/** - Contains the “main” source files: The Android code and resources shared by all build variants (files for the other build variants reside in sibling directories, such as src/debug/ for the debug build type).

**AndroidManifest.xml** – Describes the nature of the application and each of its components.

**java/** - Contains Java code sources.

**jni/** - Contains native code using the Java Native Interface (JNI).

**gen/** - Contains the Java files generated by Android Studio, such as R.java files and interfaces created from AIDL (Android Interface Definition Language) files.

**res/** - Contains application resources, such as drawable files, layout files and UI string (strings in the interface, which can be translated into other languages).

**assests/** - Contains file that should be compiled into. apk file as-is. This is a good location for textures and game data.

**test/** - Contains code for local tests that run on your host JVM (Java Virtual Manchine).

**build.gradle (module)** – This defines the module-specific build configurations.

**build.gradle (project)** – This defines your build configuration that apply to all modules.

