

# **Skills for Employment Investment Project (SEIP)**

**Standards/ Curriculum Format**

**For**

**Mobile Application Development (Android)**

**Course Duration: Three Months**

## Course Structure and Requirements

### Course Title: Mobile Application Development (Android)

#### Course Objectives:

- a) This course is specially designed to provide technical knowledge and skills to cope with the requirement of Android Developer occupations of the Mobile sector. The course will be implemented to ensure at least 80% of total contact hours on practical/hands on skills training or practice and 20% trade/ occupations related theory including OHS and soft modules;
- b) The course is designed to enable trainees to acquire a range of technical and vocational, practical, personal and organizational skills valued and utilized both within and beyond the workplace;
- c) The course is designed to meet the required competencies of the occupations needed in the labor market in and outside the country;

#### Course Outline

<b>Name of the Course</b>	<b>Duration of Course</b>	<b>Entry Qualification</b>
<b>Mobile Application Development (Android)</b>	1. Three days per week 2. 4 Hours per day	1. Education = Graduation from Computer Science or any equivalent subject

## Module 1: Android Overview & Quick Start

SI No	Unit Code	Unit of Competency (UoC) Title
<b>Generic- Compulsory</b>		
1	AAD-M1-GC-01	An Overview of Android Apps Development
2	AAD-M1-GC-02	Discuss the history of Apps Development
3	AAD-M1-GC-03	Technology stack needed for android apps development
<b>Occupation Specific Knowledge(trade theory) –Compulsory</b>		
4	AAD-M1-SK-01	Configure your computer for setting up android application development environment
<b>Occupation Specific Skills(practical/demonstration)- Compulsory</b>		
5	AAD-M1-SS-01	Setup Android Apps Development Environment in your computer

## Module 2: Main Building Blocks

SI No	Unit Code	Unit of Competency (UoC) Title
<b>Occupation Specific Knowledge(trade theory) –Compulsory</b>		
1	AAD-M2-SK-01	Understand main building block of Android apps
<b>Occupation Specific Skills(practical/demonstration)- Compulsory</b>		
2	AAD-M2-SS-01	Create an activity
3	AAD-M2-SS-02	Understand Intents and Service
4	AAD-M2-SS-03	Understand Content Providers, Broadcast receivers and Application context

## Module 3: Java Basics

SI No	Unit Code	Unit of Competency (UoC) Title
<b>Generic- Compulsory</b>		
1	AAD-M3-GC-01	Understand basic anatomy of a java program for android application
2	AAD-M3-GC-02	Data types in Java
<b>Occupation Specific Knowledge(trade theory) –Compulsory</b>		
3	AAD-M3-SK-01	Create hello world application in java
4	AAD-M3-SK-02	Work with java variables: integer, string, double
5	AAD-M3-SK-03	Understand conditional statement, looping
<b>Occupation Specific Skills(practical/demonstration)- Compulsory</b>		
6	AAD-M3-SS-01	Create an application where user will provide a his/her name and

		view will see the name in an main activity
7	AAD-M3-SS-02	See the list of number in display
8	AAD-M3-SS-03	Show all even number from 2 to 10
9	AAD-M3-SS-04	Methods in java
10	AAD-M3-SS-05	User defined type

## Module 4: OOP Basics

Sl No	Unit Code	Unit of Competency (UoC)Title
<b>Generic- Compulsory</b>		
1	AAD-M4-GC-01	Encapsulate your data and its functionality
2	AAD-M4-GC-01	Define association relationship
3	AAD-M4-GC-01	Understand the essence of inheritance relationship
<b>Occupation Specific Knowledge(trade theory) –Compulsory</b>		
4	AAD-M4-GC-01	Keep some field, property, method inside a class
5	AAD-M4-GC-01	Create a class with the collection of another class in its field
6	AAD-M4-GC-01	Define one-to-one, one-to-many association relationship between objects
7	AAD-M4-GC-01	Define static class and method from real life example
<b>Occupation Specific Skills(practical/demonstration)- Compulsory</b>		
8	AAD-M4-GC-01	Create user defined type and create object from it
9	AAD-M4-GC-01	Create association relationship between two classes
10	AAD-M4-GC-01	Create inheritance relationship between classes

## Module 5: Android User Interface

Sl No	Unit Code	Unit of Competency (UoC)Title
<b>Occupation Specific Knowledge(trade theory) –Compulsory</b>		
1	AAD-M5-SK-01	What is activity life cycle
2	AAD-M5-SK-02	Understand View and Layout
3	AAD-M5-SK-03	Familiar with UI Widgets
<b>Occupation Specific Skills(practical/demonstration)- Compulsory</b>		
4	AAD-M5-SS-01	Design a simple activity layout for some basic user operation
5	AAD-M5-SS-02	Design UI with Fragments and ActionBar

## Module 6: SQLite Database

SI No	Unit Code	Unit of Competency (UoC) Title
<b>Generic- Compulsory</b>		
1	AAD-M5-GC-01	Overview on SQLite and Database design
<b>Occupation Specific Knowledge(trade theory) –Compulsory</b>		
2	AAD-SK-GC-01	How to manage SQLite database
3	AAD-SK-GC-02	Doing CRUD operation in database
<b>Occupation Specific Skills(practical/demonstration)- Compulsory</b>		
4	AAD-SS-GC-01	Create a table in SQLite
5	AAD-SS-GC-02	Save and select data from database using Android Application

## Module 7: Broadcast receivers

SI No	Unit Code	Unit of Competency (UoC) Title
<b>Generic- Compulsory</b>		
1	AAD-M7-GC-01	Understand event receiving.
2	AAD-M7-GC-02	How to start a service by using broadcast receiver
<b>Occupation Specific Skills(practical/demonstration)- Compulsory</b>		
3	AAD-M7-SS-01	Receive an event
4	AAD-M7-SS-01	Start a service

## Module 8: Services

SI No	Unit Code	Unit of Competency (UoC) Title
<b>Occupation Specific Knowledge(trade theory) –Compulsory</b>		
1	AAD-M8-SK-01	Lifecycle of services
2	AAD-M8-SK-02	Implement different types of service
<b>Occupation Specific Skills(practical/demonstration)- Compulsory</b>		
3	AAD-M8-SS-03	Generate notification using service
4	AAD-M8-SS-04	How to play music as a background service

## Module 9: Content Providers

SI No	Unit Code	Unit of Competency (UoC)Title
<b>Occupation Specific Knowledge(trade theory) –Compulsory</b>		
1	AAD-M9-SK-01	How to create content provider
2	AAD-M9-SK-02	Use content provider
<b>Occupation Specific Skills(practical/demonstration)- Compulsory</b>		
3	AAD-M9-SS-01	Pass data from one process to another
4	AAD-M9-SS-02	Simplify database operation

## Module 10: Lists and Adapters

SI No	Unit Code	Unit of Competency (UoC)Title
<b>Generic- Compulsory</b>		
1	AAD-M10-GC-01	What is list
2	AAD-M10-GC-02	Use of list
3	AAD-M10-GC-03	Use Adapter for custom list
<b>Occupation Specific Knowledge(trade theory) –Compulsory</b>		
4	AAD-M10-SK-01	Working with list in Android
<b>Occupation Specific Skills(practical/demonstration)- Compulsory</b>		
5	AAD-M10-SS-01	Show collection of items using list
6	AAD-M10-SS-02	Create custom list using adapter

## Module 11: Preferences & File System

SI No	Unit Code	Unit of Competency (UoC)Title
<b>Occupation Specific Knowledge(trade theory) –Compulsory</b>		
1	AAD-M11-SK-01	Understand basic concept of Shared Preferences and File System in android
<b>Occupation Specific Skills(practical/demonstration)- Compulsory</b>		
2	AAD-M11-SS-02	Save and get data in shared preference

## Module 12: APIs

SI No	Unit Code	Unit of Competency (UoC) Title
<b>Occupation Specific Knowledge(trade theory) –Compulsory</b>		
1	AAD-M12-SK-01	Understand Location API
2	AAD-M12-SK-02	Working with Map API
3	AAD-M12-SK-03	Maps issues
4	AAD-M12-SK-04	Retrieve telephony network information
5	AAD-M12-SK-05	Access phone call state
6	AAD-M12-SK-06	Introduction to sensor
<b>Occupation Specific Skills(practical/demonstration)- Compulsory</b>		
7	AAD-M12-SS-01	Finding users location
8	AAD-M12-SS-02	Drawing routes on Map
9	AAD-M12-SS-03	Access call state
10	AAD-M12-SS-04	Switch on/off of display using proximity sensor

## Module 13: HTTP & Web Services

SI No	Unit Code	Unit of Competency (UoC) Title
<b>Occupation Specific Knowledge(trade theory) –Compulsory</b>		
1	AAD-M13-SK-01	What is Web service
2	AAD-M13-SK-02	Understand Json based web service
<b>Occupation Specific Skills(practical/demonstration)- Compulsory</b>		
3	AAD-M13-SS-01	Consume open weather Map API and display weather information.

## Module 14: Application Signing & Deployment

SI No	Unit Code	Unit of Competency (UoC) Title
<b>Occupation Specific Skills(practical/demonstration)- Compulsory</b>		
1	AAD-M14-SS-01	Generate key store file to make signed apk

## Module 15: Google Cloud Messaging (GCM)

Sl No	Unit Code	Unit of Competency (UoC)Title
<b>Occupation Specific Knowledge(trade theory) –Compulsory</b>		
1	AAD-M15-SK-01	Understand GCM in Android
2	AAD-M15-SK-02	What are client and server in GCM
<b>Occupation Specific Skills(practical/demonstration)- Compulsory</b>		
3	AAD-M15-SS-01	Implement GCM client
4	AAD-M15-SS-02	Implement GCM server
5	AAD-M15-SS-03	Work with user notification