

Course Description**COP2660 | Android Application Development 1 | 4.00 credits**

This course teaches the principles of Android application development for majors in Computer Science, Computer Information Systems, and related disciplines. Students will learn how to create mobile applications for deployment to Android smartphones, tablets or simulators utilizing open source software (Java, Eclipse IDE, Android PlugIn and Android SDK) for development. Emphasis will be placed on the underlying Android framework to create quality applications. Prerequisite: COP2800.

Course Competencies:

Competency 1: The student will demonstrate understanding of the Android framework by:

1. Defining the Android Software Stack and listing the different layers involved
2. Describing the Dalvik Virtual Machine used to run Android applications
3. Listing the services involved with the Android Application Architecture (ex. Activity Manager, Views, Notification Manager, Content Providers, Resource Manager)

Competency 2: The student will demonstrate an understanding of a modern Integration Development Environment (IDE) by:

1. Utilizing the Eclipse IDE and Android Plug-In tools necessary to create new project files and settings
2. Creating an Android Launch Configuration that will start a virtual device used for debugging

Competency 3: The student will demonstrate how to create applications and activities by:

1. Describing the Android application life cycle
2. Creating activities and applying the Android activity life cycle
3. Creating and modifying the Android application manifest

Competency 4: The student will apply and synthesize knowledge of user interface design by:

1. Creating a graphical user interface (GUI) that features mobile interface design
2. Using various views (ex., buttons, text boxes, check boxes) and layouts to create intuitive user activities that form the mobile user interface
3. Creating an intuitive Android menu system for use with a specific mobile application

Competency 5: The student will demonstrate knowledge of intents by:

1. Starting new activities and sub-activities using implicit and explicit intents
2. Using intent filters and intent resolution to register activities, services, and broadcast receivers

Competency 6: The student will demonstrate knowledge of creating and using dialogs by:

1. Using the Android dialog class or its extensions to display a dialog box
2. Implementing dialog-themed activities to create a dialog box

Competency 7: The student will demonstrate knowledge of broadcast receivers by:

1. Broadcasting intents anonymously between system components
2. Registering a broadcast receiver within the system manifest
3. Listening for native Android broadcast actions (ex. boot completed, time zone changed)

Competency 8: The student will demonstrate knowledge of adapters by:

1. Utilizing adapters to create child views that represent each of the items within the parent view
2. Binding data to child views for modification or viewing by the user

Competency 9: The student will demonstrate knowledge of data persistence by:

1. Saving activity instance data between sessions
2. Creating preference screens and managing application preferences
3. Saving and loading files and managing the local file system

Learning Outcomes:

- Use quantitative analytical skills to evaluate and process numerical data
- Formulate strategies to locate, evaluate, and apply information
- Use computer and emerging technologies effectively