

## **CUMBERLAND COUNTY COLLEGE**

Course: CS 222 Intro to Android Programming in JAVA

Credits: 4

Prerequisites: CS 112 or permission of instructor

### Description:

This course will introduce beginner and intermediate Java programming students to the development of applications for Android devices such as cell phones and tablet computers. Students will use an Integrated Development environment such as the Android Studio to develop simple java applications. The class will explore a variety of development strategies, then explore concepts in hands-on laboratory sessions Each student will complete an application development project independently using a mix of Android services and features.

### Learning Outcomes

At the completion of this course, students will be able to:

- Differentiate between different versions of Android and identify key features and tradeoffs
- Use an Integrated Development environment such as the Android Studio to develop simple java applications for Android devices
- Deploy completed Android application programs on a target device such as a cell phone or a tablet computer
- Complete an application development project independently using a mix of Android services and features

### Topical Outline

#### **Chap 1: Intro to Course**

- Given an Android Studio project for an app, use Android Studio to open the project, view the layout and the source code for an activity, and run the app on an emulator or physical device

#### **Chap 2: First Android App**

- Use Android Studio to create a new project for an app.
- Given a user interface that uses the widgets described in this chapter, use Android Studio to develop the layout for the user interface.

### **Chap 3: Completing First Android App**

- Writing the Java code for the app
- Using the Android API
- Understand the Gradle Build Script and Android Manifest

### **Chap 4: Testing and Debugging**

- Distinguish between testing and debugging.
- Distinguish between syntax, runtime, and logic errors.
- List two ways to trace code execution without using a debugger and describe the difference between the two.
- Describe how method chaining works and describe two of its advantages.
- Explain what a stack trace is and how to use one when you are debugging.
- Explain why emulators are often necessary to test and debug an app.

### **Chap 5: Layouts and Widgets**

- Understand the layout types
- Understand basic widgets

### **Chap 6: Event Handling**

- Distinguish between high-level and low-level events.
- Name the four types of classes that can be used to listen for events and distinguish between each technique.

### **Chap 7: Themes and Styles**

- Distinguish between a style and a theme.
- Distinguish between a title bar and an action bar.
- Name and describe at least two built-in themes.

### **Chap 8: Menus and Preferences**

- Given the specifications for a menu that contains one or more items, define the menu and its items and handle the events that occur when users select those items.
- Given the specifications for the preferences for an app, use a fragment to allow the user to set those preferences.

### Text:

Murach's Android Programming  
Joel Murach  
Murach Publishing, 2015  
ISBN 978-1-890774-93-6

### Student Assessment

(Assessment may be accomplished through projects, portfolios, exams, presentations and/or papers).

## Academic Integrity

Plagiarism is cheating. Plagiarism is presenting in written work, in public speaking, and in oral reports the ideas or exact words of someone else without proper documentation.

Whether the act of plagiarism is deliberate or accidental [ignorance of the proper rules for handling material is no excuse], plagiarism is, indeed, a “criminal” offense.

As such, a plagiarized paper or report automatically receives a grade of **ZERO** and the student may receive a grade of **F** for the semester at the discretion of the instructor.

## Tutoring & Project Assist

If you are having difficulty with work in this class tutoring is available through the Center for Academic & Student Success. If you think that you might have a learning disability, contact Project Assist at 856.691.8600 x 1282 for information on assistance that can be provided to eligible students.

## **Before Withdrawing From This Course**

If a student experiences adverse circumstances while enrolled in this course and considers withdrawing, s/he should see an advisor (division or advisement center) **BEFORE** withdrawing from the class. A withdrawal may cause harmful repercussions to completion rate standards and overall GPA which can limit or eliminate future financial aid in addition to causing academic suspension.