CIS 399 Android Application Development
Syllabus Summer 2018

Instructor: Brian Bird
E-mail: bbird@uoregon.edu
Office: 162 Deschutes Hall
Office hours: 1:00 to 1:50 Monday through Friday

Course Description

This course introduces students to mobile application programming concepts and mobile application development methodology using the Android Software Development Kit, Java, and Android Studio.

Learning Objectives

Design the core logic for a mobile software application. Write, debug, and test the code for the core logic for an application. Design User Interfaces that adapt to multiple screen sizes. Evaluate mobile app designs and architectures in terms of user experience, performance, and maintainability.

CIS 399 Workload

Since this is a 4 week class, we will be meeting five times a week for a total of 8 lecture hours and 2 hours of lab (in the same classroom as the lecture). You should expect to spend approximately 20 hours a week reading, studying and programming outside of scheduled class/lab times.

It will be extremely important to keep up with the reading and the programming assignments. If you find yourself falling behind, contact the instructor for help immediately- before it is too late.

Required Textbook

Murach's Android Programming 2nd Ed. by Joel Murach, 2015, Murach,
ISBN 978-1-890774-93-6

Source code for the examples and exercises in the book can be downloaded here:
https://www.murach.com/shop/murach-s-android-programming-2nd-edition-detail

Computer Software

You are expected to use your own computer to complete the assignments for this class. You will need to install the following software:

Java SE 8: If you don't already have the JDK installed, it will be installed by Android Studio, or you can download it here: http://www.oracle.com/technetwork/java/javase/downloads/jdk8-downloads-2133151.html

Android Studio: You can download Android Studio, which includes the Android SDK (for Windows or OS-X) here: http://developer.android.com/sdk/. The Android Studio setup program will install everything you need to develop Android applications: a version of the intelliJ IDE customized for Android development, the Android SDK and Platform tools, an Android emulator and system images.

Computing your Course Grade

```
Term project .... 50%
Lab assignments ........ 50%
```

There are 7 Lab assignments which constitute 50% of your grade. The last lab assignment, lab 8, is optional extra credit. There is a term programming project which comprises the other 50% of your grade. Your grade is based on weighted percentages, *not* total points.

Grades are determined using a straight percentage (not a curve of any kind): 90% is an A, 80% a B, 70% C, 67% C-/P, 60% D, 0-59% F/N. A minimum of 97% is required for the grade of A+.

Programming Term Project

During the second week you will write a proposal for an Android application that will be your term project. The project will be due the day scheduled for the final exam (there will not be a final exam). The application must have the following:

- At least 5 kinds of widgets
- An action bar with at least 2 items on the menu and an up button on the second activity.
- At least 2 activities (the main activity should launch a second activity)
- Different layouts for landscape and portrait orientation (using fragments is optional)
- Persist activity state when rotating

Your proposal should include at least a two paragraph description of the app, a list of features. and simple UI diagrams for the two activities.

Significant Dates

Independence Day Holiday: Tuesday, July 4; Independence day holiday, no class.

Final Project Due: Week 4, Friday, July 21; end of the four week term.

Universal Learning Environment

The University of Oregon, the CIS department and I are all working to create inclusive learning environments. Please notify me if there are aspects of instruction or design of this course that result in barriers to your participation.

Students with a UO disability notification letter should please meet with me as early as possible. You may also wish to contact Disability Services in 164 Oregon Hall at 346-1155. For information about Support and Services for Students with Disabilities, see the [Disability Services web page](#)

Class Policies:

Attendance: It is essential to attend every class session in order to succeed in this course, but no grade will be given for attendance.

Late Assignments: No late programming projects will be accepted, although there will be a quasi-grace period between the due date and the beginning of the first class of the week. Assignments submitted during that time will have 10% deducted from the grade. Assignments won't be accepted after the beginning of class. Partial credit will be given for projects that are partially completed.

Academic Honesty: While students are encouraged to discuss lab assignments and to use each other as resources, each student is responsible for his/her own work. In other words you can help each other, but you can't copy any part of someone else's work. The end product must be each student's own individual work.

Schedule (Tentative)

Week 1, June 25 - 29

Day	Topic	Do before class
M	Intro to mobile dev and Android development tools	Skim Ch. 1: An Intro to Android and Android Studio, Read Murach's Android Studio Update for 2017, Optional: Android Studio Overview
Tu	UI in Java	Read Ch. 2: How to Start Your First App, Read Building a Responsive UI with Constraint Layout *Start Lab 1: Ch. 2 & 3 Ex, Click counter app*
W	Activity Lifecycle	Ch. 3: How to Finish Your First App
Th	Persisting state	*Start Lab 2: Ch. 4 Ex, Pig Game v1*
F	Debugging	Read Ch. 4: How to Test and Debug an Android App, Optional: Debugging with Android Studio,
		Submit Labs 1 and 2 *See Canvas for the due date and time*

Week 2, July 2 – July 6

Day	Topic	Do before class
M	More on Layouts and Widgets	Ch. 5: How to Work with Layouts and Widgets
Tu	More on UI Events	Read Ch. 6: How to Handle Events
W	Independence Day Holiday	No class
Th	Themes and styles Activity lifecycle, persisting state	Skim Ch. 7, read Styles and Themes *Start Lab 3: Ch. 6, 7, 8 Ex, Pig Game v2*
F	Menus, Preferences Launching new Activities Pass data with an Intent	Read Ch. 8: How to Work with Menus and Preferences Read Ch. 10, pg. 320-321: How to work with intents *Start Lab 4: Ch. 9 Ex, Pig Game v3*
		Submit Labs 3 and 4 ***Submit a Term Project Proposal*** *See Canvas for the due date and time*

Week 3, July 10 - 14

Day	Topic	Do before class
M	UI Fragments	Read Ch. 9: How to Work with Fragments
Tu	More on fragments	
W	AsyncTask Parsing XML	Read AsyncTask, Read Ch. 10a: pg. 290 -395, 302 - 305
Th	ListView	Read Ch. 10b: pg. 314-319 *Start Lab 5: Ch. 10 Ex, Tide Table v1*
F	SQLite Database	Read Ch. 13 Read: Android SQLite Tutorial *Start Lab 6: Ch. 13 Ex, Tide Table v2*
		Submit Labs 5 and 6 *See Canvas for the due date and time*

Week 4, July 17 - 21

Day	Topic	Do before class
M	Consuming a web service	Review Ch. 10a: pgs. 320-328 *Start Lab 7: Ch. 10 Ex, Tide Table v3*
Tu	Geo-location	Read Ch. 18
W	TBD topic and Lab time in classroom	*Start Lab 8: Ch. 18 Ex, Tide Table v4*
Th	Lab time in classroom	Work on Term Project
F	Term Project Presentations	***Submit Labs 7 and 8*** ***Submit Term Project***