Mobile Application Development

CSCI 4661/5661 Section 601

Fall Semester 2018

Dr. Ben Samuel

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**Meets:** **6:30 PM – 7:45 PM M,W in MATH 118**

**Office Hours: M 1:00PM – 3:00PM, T 1:00PM - 3:00PM, TH 10:00AM -12:00PM.** Other times by appointment. Office Hours will be held in **Math 339**

**Prerequisite:** Credit or concurrent registration in CSCI 2125 is required, or consent of department.

**Text:** Griffiths and Griffiths, *Head First Android Development*. *2nd Edition* ISBN9781491974056

**Course Content:**

This course is an introductory course to developing mobile applications for devices using the Android operating system. In addition to developing Android applications, students will be introduced to, and carry out, design research. Though we reserve the right to adjust the topics covered based on student need and interest, the course intends to cover every chapter of the book, as well as others relevant to student’s interests and project needs. This includes topics such as:

* The Activity Lifecycle and Intents
* User Interfaces, layouts, and XML
* Fragments
* Design Support Library
* SQLite databases
* Threading and Asynchronous Tasks
* Started Services, Bound Services, and Permissions
* Content Providers
* Sensors
* Augmented Reality

**Grading:**

1. Your grade in this class will be based on three major components: **Homework assignments (40%),** a **class project (40%),** and **one midterm exam (20%).** Although we reserve the right to adjust the number of assignments to fit with the needs of the students and the pace of the course, students should expect to submit five homework assignments throughout the duration of the semester. Homework assignments are to be done individually, but students are encouraged to work in teams of 2-4 for the class project. The class project will have (near) weekly milestones due, each of which contribute to the total forty percent. These milestones are intended to encourage regular, consistent progress on your projects, as well as assist teams in fabricating informed designs.
2. Although some project milestones will be graded on a “Boolean” scale (either you did it or you didn’t), most assignments will be graded on numerical (percentage) basis. The grade breakdown is as follows:

A: >= 90,

B: 80 - 89,

C: 70 - 79,

D: 60 - 69,

F: < 60.

1. It is expected that all homework will be turned in on time. The value of an assignment decreases by ten percent for each day late. Thus, lateness penalties are:

* 1 day late - 10% off;
* 2 days late - 20% off;
* 3 days late - 30% off;
* Etc.

**Note:** We count school days (Weekends and holidays are not included).

1. *Homework Submission*: Homework submissions through gitlab will be **required** for this course.
2. *Project Milestone Submissions*: Each milestone will have its own submission instructions. Some milestones will be submitted via gitlab, while others will be e-mailed to the professor directly.
3. No make-ups for graded work (either tests or homework) will be given except for a legitimate (*e.g.*, medical) reasons.
4. Questions about the grading of student work should be raised within 72 hours of its return. After that time frame, issues raised will risk not being entertained.
5. Students should retain all returned graded work, in case there are issues raised about the grade.
6. The "I" grade (for Incomplete) is given only in exceptional circumstances, (*e.g.* missing the final exam because of a surgery).

**Attendance:**

Although attendance is not mandatory for this class, I will take attendance at the beginning of every class session. Attendance is not a formal part of the calculation of your grade, but in borderline cases, attendance and participation will be taken into account when determining a final grade. Plus it is a helpful way for me to learn all of your names.

**Academic Dishonesty:**

We must call your attention to the University's policies regarding academic dishonesty (http://www.uno.edu/studentaffairs/accountability.aspx). Academic dishonesty includes cheating, plagiarism, and collusion. In particular, it includes "the unauthorized collaboration with another person in preparing an academic exercise" and "submitting as one's own any academic exercise prepared totally or in part for/by another." In the event of academic dishonesty, **the student will be assigned a grade of 0** on the exam or exercise, the student will be informed in writing of the action taken, and **a copy of this letter will be sent to the Assistant Dean for Special Student Services**.

**Students with Disabilities:**

It is University policy to provide, on a flexible and individualized basis, reasonable accommodations to students who have disabilities that may affect their ability to participate in course activities or to meet course requirements.  Students with disabilities are encouraged to contact their instructors and/or the Office of Disability Services to discuss their individual needs for accommodations.

**Tentative Schedule of Study:**

**WEEK 1 (Aug 20, 22)**

Lecture 1: Chapter 1: Getting Started

Lecture 2: Chapter 2: Building Interactive Apps

*Homework 1 Due Friday, the 24th.*

*Project Milestone: Team Members and Team Name due Friday, the 24th.*

**WEEK 2 (Aug 27, 29)**

Lecture 3: Chapter 3: Multiple Activities and Intents

Lecture 4: Chapter 4: The Activity Lifecycle

*Project Milestone: Project Proposal due Friday, the 31st.*

**WEEK 3 (Sept 3, 5)**

Lecture 5: LABOR DAY HOLIDAY – NO CLASS – HAVE FUN!

Lecture 6: Chapter 5: Views and View Groups

*Project Milestone: Competitive Analysis due Friday, the 7th.*

**WEEK 4 (Sept 10, 12)**

Lecture 7: Chapter 6: Constraint Layouts

Lecture 8: Chapter 7: List Views and Adapters

*Homework 2 due Friday the 14th*

*Project Milestone: Initial Stakeholder Interview due Friday the 14th.*

**WEEK 5 (Sept 17, 19)**

Lecture 9: Chapter 8: Support Libraries and App Bars

Lecture 10: Chapter 9: Fragments

*Project Milestone: App Design Documents due Friday the 21st.*

**WEEK 6 (Sept 24, 26)**

Lecture 11: Chapter 10: Fragments for Larger Interfaces

Lecture 12: Chapter 11: Dynamic Fragments

*Project Milestone: App Storyboard Design due Friday the 28th.*

**WEEK 7 (Oct 1, 3)**

Lecture 13: Chapter 12: Design Support Library

Lecture 14: Chapter 13: Recycler Views and Card Views

*Homework 3 due Friday the 5th.*

**WEEK 8 (Oct 8, 10)**

Lecture 15: EXAM Review

Lecture 16: EXAM

*Project Milestone: Paper Prototype due Friday the 12th.*

**WEEK 9 (Oct 15, 17)**

Lecture 17: FALL BREAK HOLIDAY – NO CLASS – HAVE FUN!!

Lecture 18: Chapter 14: Navigation Drawers

*Project Milestone: Paper Prototype User Tests + Writeup, due Friday the 19th.*

**WEEK 10 (Oct 22, 24)**

Lecture 19: Chapter 15: SQLite databases

Lecture 20: Chapter 16: Basic Cursors

*Homework 4 due October 26th.*

**WEEK 11 (Oct 29, 31)**

Lecture 21: Chapter 17: Cursors and Asynctasks

Lecture 22: Chapter 18: Started Services

*Project Milestone: Initial Digital Prototype due Friday, November 2nd.*

**WEEK 12 (Nov 5, 7)**

Lecture 23: Chapter 19: Bound Services and Permissions

Lecture 24: Content Providers

*Project Milestone: Initial Digital Prototype User Tests + Writeup, due Friday the 9th.*

**WEEK 13 (Nov 12, 14)**

Lecture 25: Loaders

Lecture 26: Sync Adapters

*Homework 5 Due Friday, November 16th.*

**WEEK 14 (Nov 19, 21)**

Lecture 27: Broadcasts

Lecture 28: THANKSGIVING HOLIDAY – NO CLASS – EAT WELL!

*Project Milestone: Digital Prototype 2nd Checkpoint due Friday the 23rd.*

**WEEK 15 (Nov 26, 28)**

Lecture 29: WebView Class

Lecture 30: Settings

*Project Milestone: Interviews/User Tests with Digital Prototype due Friday the 30th.*

**WEEK 16 (Dec 3)**

Lecture 31: App Distribution

**FINAL PRESENTATIONS :  Wednesday, Dec. 12th, 8PM - 10PM**

*Final Project Milestones: Final Digital Prototype, Post Mortem, Peer Evaluations.*

*Additional topics (as time, interest, and project need permit), include but are not limited to: Accelerometer and gyroscope sensor data, augmented reality, app widgets, automated testing, and animation.*