

Syllabus

Android Application Development - COMP 475
2:30 – 3:45 TR Science 200
Fall 2017

Instructors: Dr. Frank McCown
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Home Page: <http://www.harding.edu/fmccown/classes/comp475-f17/>
Office Hours: Science 208: 10-11 am daily, 2-3 MWF, 4-5 TR or by appointment

Course Description

In this course you will learn how to develop native applications for Android, the most popular mobile platform. Students are expected to have experience programming with Java. Prerequisites: COMP 245 and 345.

Required online text: *Mobile App Development* by McCown (2017)

To get your zyBook:

1. Sign up at zybooks.com
2. Enter zyBook code: **HARDINGCOMP475McCownFall2017**
3. Click *Subscribe*

Student Learning Outcomes

At the end of this course, the student will be able to...

1. Identify important differences between developing mobile apps for iOS and Android.
2. Identify important differences between native, web, and hybrid apps.
3. Design and develop Android applications that meet specific requirements.
4. Explain how event driven applications use threading to perform time-consuming operations.
5. Present to their peers how to implement an Android feature.

Exams

Two regular exams will be given in class as well as a final comprehensive exam covering the entire course and, in more detail, the information presented since the 2nd exam. If you are unable to take an exam as scheduled due to a serious illness or some other emergency, it is **your responsibility** to call me and leave a message *before* the exam or as soon as you are physically able. If an official school function takes you out of class on an exam date, it is your responsibility to make arrangements *one week prior* to the exam as to when you will take the exam. Usually it will be given early, not late. Makeup exams for excused absences will be given, but a penalty of up to 75% will apply for unexcused absences, at the teacher's discretion. **Phones must be turned off and put away.**

Projects

Three major programming projects will be completed using Android Studio. These projects will require you to integrate the information learned in class to produce non-trivial Android applications. You should expect to spend a significant amount of time on each project.

The first two projects will be completed in teams of two or three that will be assigned by the instructor. The final project will be completed by teams of your own choosing. Pair programming may be used but is not required. Teams will use git for version control and will make their code available in private repositories on GitHub.com.

Reading & Homework Assignments

Reading and homework assignments will be assigned throughout the week. The reading assignments from the zyBook require you to answer all question sets and participate in the participation activities. Homework assignments may be completed individually or in pairs using pair programming. If pair programming is used, only one person needs to submit the pair's solution to Easel, and both students' names must be documented in at the top of the main activity code. Example: `// Pair programmed by Becky Jones and Sammy White`

Class Presentations

Teams of two will make 30 minute presentations to the class demonstrating how to implement a particular Android feature. Example: How do you implement the Google maps API into an app? Details about the presentations will be posted on Easel.

Extra Credit

1. The McChallenge: **1%** will be added to your final grade for the completion of a program which will be made available to you later in the semester. The program will be due the Friday before final exams. You can skip the program and still get the 1% added to your final grade if you beat me in a game of basketball, tennis, racquetball, Halo, chess, Trivia Pursuit, or any other sport/game that I know how to play. If you lose, you still may complete the program to get your 1%. Only one challenge per semester, and all challenges must be made *before* the final week of class. Come by my office to schedule a time to play.
2. Giving Blood: Donating at the Red Cross blood drives will earn you **0.2%** added to your final grade each time you donate. Donate as many times as you'd like, and give me a signed note confirming your donation each time you donate.

Grades

Final grades will be computed as follows:

Exams:	25%
Projects:	30%
Homework Assignments:	15%
Presentations:	10%
Final Exam:	20%

Standard letter grades: A = 90-100%, B = 80-89% C = 70-79%, D = 60-69%, F = 0-59%

Late work: A maximum of 10% will be taken off *each day* (not each class period) an assignment is late, up to 50%. Every day is counted, including weekends. Nothing more than 1 week late will be accepted.

Final grades are not rounded unless the student has given significant effort which is evidenced by regular attendance, completion of nearly all homework assignments, significant effort on projects, etc.

Miscellaneous

1. To be successful in this course, be prepared to spend **at least two hours outside of class** for every hour in class reading, completing tutorials, meeting with your team, and working on your project. This works out to about 9 hours a week. If you do not have this much time to dedicate to the course, you should take it some other semester when you can make that commitment.
2. You must check Canvas **regularly** for announcements and Easel for class assignments. Canvas is the place to ask questions outside of class and give help to others on homework and projects.
3. You are expected to hold to the **highest standard** of personal conduct and **integrity**. Cheating in all its forms is inconsistent with Christian faith and practice and will result in sanctions up to and including dismissal from the class with a failing grade. Homework and quizzes should be completed *individually* (not in teams or pairs), and it should be *your* work, not the work of someone else. One thing that you should *never do* is allow someone to see your source code as this often leads to cheating. Come by during office hours (or we'll arrange a time) for assistance on programs. Also see my [Plea for Integrity](#).

"Whatever you do... do all to the glory of God." - 1 Corinthians 10:31

4. Please adhere to the **dress code** as spelled out in the Student Handbook, meaning shorts are not to be worn in class, and men should remove caps while in class. Please wear shoes to class (flip flops are OK).
5. Laptops are not allowed in class. Silence your cell phones, and **put them away**. It is very distracting to me and those around you when you text in class/
6. Silence your cell phones, and **put them away**. It is very distracting to me and those around you when you text in class.

If you ever need assistance in this class or anything else, please don't hesitate to come by my office or give me a call.

Assessment

Harding University, since its charter in 1924, has been strongly committed to providing the best resources and environment for the teaching-learning process. The board, administration, faculty, and staff are wholeheartedly committed to full compliance with all criteria of the Higher Learning Commission of the North Central Association of Colleges and Schools. The university values continuous, rigorous assessment at every level for its potential to improve student learning and achievement and for its centrality in fulfilling the stated mission of Harding. Thus, a comprehensive assessment program has been developed that includes both the Academic units and the Administrative and Educational Support (AES) units. Specifically, all academic units will be assessed in reference to the following Expanded Statement of Institutional Purpose: **The University provides programs that enable students to acquire essential knowledge, skills, and dispositions in their academic disciplines for successful careers, advanced studies, and servant leadership.**

Assessment of the knowledge, skills, and dispositions of each student for the purpose of assigning a letter grade at the completion of this course will be based on the projects, homework assignments, and exams that were described previously in this syllabus.

Students with Disabilities

It is the policy for Harding University to accommodate students with disabilities, pursuant to federal and state law. Therefore, any student with a *documented disability* condition (e.g. physical, learning, psychological, vision, hearing, etc.) who needs to arrange reasonable accommodations, must contact the instructor and the Disabilities Office at the *beginning* of each semester. (If the diagnosis of the disability occurs during the academic year, the student must self-identify with the Disabilities Director *as soon as possible* in order to get academic accommodations in place for the remainder of the semester.) The Disabilities Office is Room 205 of the Student Center, telephone, (501) 279-4019.

Schedule

The following schedule is subject to change but gives you an idea of how the class will progress.

Week 1	Introduction to mobile app dev Android Studio	Week 6	Fragments	Week 12	SQLite Project 3
Week 2	Resources, debugging, MVC Layouts	Week 7	More fragments Student pres 2 – context menu	Week 13	Stu pres 7 – audio Stu pres 8 – unit testing
Week 3	Widgets, styles and themes Project 1	Week 8	AppBar, settings Project 2	<i>Thanksgiving Break</i>	
Week 4	Activity lifecycle Restoring state, intents	Week 9	Stu pres 3 – GPS, GMap API Stu pres 4 – drawable anim	Week 14	Stu pres 9 – wearables and TV Stu pres 10 - Kotlin Stu pres 11 - Xamarin
Week 5 Sep 18	Stu pres 1 – activity anim Exam 1	Week 10 Oct 23	Stu pres 5 – accelerometer Exam 2	Week 15	Project presentations
		Week 11	Threading Stu pres 6 - camera	Week 16 Dec 11	Final Exam