

**CPE 409 Special Topics in Software Engineering:
Android Application Development
Winter 2010**

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Office Hours Monday, Friday 1:10-2:00pm; Tuesday 12:30-3:30pm

Course Description

This course introduces mobile application development for the Android platform. Students will learn skills for creating and deploying Android applications, with particular emphasis on software engineering topics including software architecture, software process, usability, and deployment.

Objectives

- To learn skills required to produce and maintain a high-quality mobile software product
- To gain a breadth of knowledge for developing applications with the Android SDK
- To gain a depth of knowledge in select areas of the Android SDK
- To know and execute principles and concepts of software requirements engineering, particularly as it relates to mobile software product development
- To know and execute principles and concepts of software architecture
- To work effectively as a member of a team to meet project milestones
- To understand and apply a software process and software best practices
- To effectively write and speak about software engineering and mobile application development

Prerequisites

CSC/CPE 307 or CSC/CPE 309; or permission of instructor.

Required Texts

Meier, Professional Android Application Development, Wiley, 2009

Schedule

This course will meet Monday, Wednesday, and Friday from 2:10pm to 4pm in 14-256. Students are expected to attend all course meetings.

Typically the first hour will include instructor, student, and guest presentations, activities, discussions, and development team meetings. The second hour will generally be spent on lab activities.

A tentative schedule of topics and activities is attached. This schedule is subject and likely to change. The schedule will be posted and updated on the course website. Check this schedule daily. All reading assignments should be completed prior to class as noted in the schedule.

Furlough Days

All CSU faculty are required to take six furlough days each quarter during the 2009-2010 academic year. As a result, Dr. Janzen will not be available on the following days: January 19 and 29, February 8 and 16, and March 1 and 9. Class activities may still be planned even on days when Dr. Janzen is not in attendance due to the required furloughs.

Communication

The best place to discuss the course is during lecture and laboratory times. The main communication tool for the class will be the course web site and Blackboard. Students will be expected to check both on a daily basis. All assignments will be placed on the course web site and/or announced in lecture. Most class materials are available on the course web site; be sure to check regularly.

Email will only be used for special circumstances, such as communicating time sensitive information or personal issues. All students are expected to have their calpoly.edu email accounts forward to wherever they will read email at least daily. If you use email, put CSC 409 on the subject line to get the best response time. Leaving phone voicemails should be a last resort.

Classroom Attendance and Participation

Students are expected to take an active role in their own learning and the learning of their peers. Failure to actively and regularly participate may result in up to a 10% grade deduction. Consistent disruptive behavior may result in up to a 35% grade deduction and possibly being removed from the course.

Classroom Etiquette

To ensure a professional learning environment, the following rules will be enforced in the classroom:

- Do not eat except when food is provided for the entire class
- Do not use electronic devices that make sounds (e.g. cell phones, ipods)
- Do not use computers for anything besides presenting or taking notes when anyone is presenting

Grading

The course grade will be earned in the following categories:

1. Final Examination (10%)
2. Quizzes (10%)
3. Lab Assignments (25%)
4. Individual Assignments (25%)
5. Course Project (30%)

Letter grades will be assigned based on the expectation that an 'A' is earned with excellent work on all aspects of the course, sustained throughout the course. A 'B' is earned with very good work, perhaps excellent at times. A 'C' is earned with average work, perhaps very good at times but poor at other times. A 'D' is earned with consistently poor work.

Examination

A written final exam will be given on March 19 from 1:10 to 4pm. No early, late or makeup exams will be given except in an extreme circumstance (e.g. severe illness).

Quizzes

Quizzes will be given which will test comprehension of readings and recent presentations, labs, and discussion topics. Some or all of the quizzes may be given in Blackboard prior to class.

Lab Assignments

Regular (probably weekly) labs will be assigned. Labs will typically be graded credit/no-credit, sometimes with multiple graded deliverables per lab.

Individual Assignments

Students will complete individual assignments as outlined below, with details provided in Blackboard. Although the Vision and Scope and Self/Peer Assessment are directly related to the Course Project, they are assigned and graded individually.

Vision and Scope (5%)

How-to Contributions (6%)

Critical Analysis of Apps (3%)

Code Review (2%)

Alpha Release Evaluation (5%)

Beta Release Evaluation (2%)

Self/Peer Assessment (2%)

Course Project

Students will work in teams of one to three (two is strongly preferred) to implement and deploy an Android app of their choosing. Teams are expected to apply software best practices such as tracking tasks and using software configuration management, and select appropriate supporting tools. Graded milestones are outlined below, with details provided in Blackboard. All team members will generally receive the same grade for course project milestones.

Horizontal Prototypes (5%)

Vertical Prototype (5%)

Pre-Alpha Version (2%)

Alpha Release (4%)

Alpha Release Evaluation Evaluation (2%)

Web Ad (2%)

Beta Release (10%)

Hardware

Students are encouraged to bring personal laptops to class for completing labs. Android phones will be checked out to most students in the class. Students are responsible for taking excellent care of their phone, and returning them by the final exam, so the phones can be used in future courses. Failure to return a phone in good working condition, or to provide a suitable replacement by the final exam, will result in a hold status being placed on the student's records, preventing them from registering for classes and requesting transcripts.

Late Work Policies

Assignments are due at the beginning of class (2:10pm) on the date specified. Late work will be accepted up to three calendar days after the due date with a 10% penalty per 24 hours late. After three days, no credit will be given for late work. In desperate situations, it is better to turn something in that is partially complete, rather than nothing at all.

Integrity

All work submitted is to be your own. Cooperative study and mutual aid are healthy learning methods and are strongly encouraged. Just cite sources of anything you have copied, summarized or discussed directly with another. It is cheating to copy someone's work or allow someone to copy your work. It is cheating to copy material without giving credit. Plagiarism will result in a course grade of F. When you find good ideas by other people, the best policy is to summarize other work in your own words and cite their work as the source for the principle you state. Citing resources is not a sign of weakness of your own ideas, it is a sign that you can do research and build on others' work.