San José State University
College of Engineering
Computer Engineering Department
CMPE 277, Smartphone Application Development, Section 1
Fall 2017

Instructor:	Charles Zhang
Office Location:	ENG 281
Email:	charles.zhang@sjsu.edu
Office Hours:	Immediately following class or by appointment
Classroom:	Clark Building (CL) 222
Class Days/Time:	Thursday 6:00 - 8:45 PM
Prerequisites:	Familiarity with Object Oriented Programming (OOP) Java, C++, or Swift programming proficiency

Course Web Page and Messaging

Course materials such as syllabus, handouts, notes, assignment instructions, etc. can be found on the Canvas learning management system course website: http://sjsu.instructure.com. You are responsible for regularly (i.e. every couple of days) checking with Canvas to learn of any updates.

Course Description

Architectures, technologies, and programming concepts for developing smartphone applications. Covers current smartphone/tablet OSs, application development, and deployment environments. Prerequisites: Classified graduate standing or instructor consent. Computer Engineering and Software Engineering majors only.

Course Learning Outcomes

Upon successful completion of this course, students will be able to achieve:

- Ability to evaluate technologies, standards, and architectures for mobile platforms
- Knowledge in mobile application development methodologies and design patterns, and the capability to apply them in practice
- Hands on experience in designing, building, testing, and debugging enterprise applications for mainstream mobile platforms
- Ability to create server applications that provide services for mobile applications

Required Texts/Readings

Textbooks

Android Programming: The Big Nerd Ranch Guide (2nd or 3rd Edition) (Big Nerd Ranch Guides), by Bill Phillips and Brian Hardy, ISBN: 978-0134171456 (available to purchase online, so are the books listed below)

iOS Programming: The Big Nerd Ranch Guide (6th Edition) (Big Nerd Ranch Guides), by Christian Keur, Aaron Hillegass, and Joe Conway, ISBN: 978-0134682334

Reference books

Thinking in Java (4th Edition), by Bruce Eckel, ISBN: 978-0131872486

Swift Fundamentals: The Language of iOS Development, by Mr. Mark A Lassoff and Tom Stachowitz, ISBN: 978-0990402053

Objective-C Programming: The Big Nerd Ranch Guide (2nd Edition) (Big Nerd Ranch Guides), by Aaron Hillegass and Mikey Ward, ISBN: 978-0321942067

Other Readings

https://developer.android.com/guide/index.html
https://developer.apple.com/devcenter/ios
Various online resources to be posted in the lecture notes

Other technology requirements / Equipment / Material

Some of the lab and project assignments may be required to deployed to cloud services like Amazon Web Services and Google Cloud Platforms, which may incur fees paid to the service provider(s). For group based labs and the term project, there may be occasions that your group want to demonstrate the app(s) on a real device to get the best effect possible, in which case you you need to provide your own mobile devices.

Course Requirements and Assignments

SJSU classes are designed such that in order to be successful, it is expected that students will spend a minimum of forty-five hours for each unit of credit (normally three hours per unit per week), including preparing for class, participating in course activities, completing assignments, and so on. More details about student workload can be found in University Policy S12-3 at http://www.sjsu.edu/senate/docs/S12-3.pdf.

NOTE that University policy F69-24 at http://www.sjsu.edu/senate/docs/F69-24.pdf states that "Students should attend all meetings of their classes, not only because they are responsible for material discussed therein, but because active participation is frequently essential to insure

maximum benefit for all members of the class. Attendance per se shall not be used as a criterion for grading."

This course consists of lectures, 3-4 lab assignments, and one term project. Lab assignments are either for individuals or group based. The term project is group based, with group size up to four people. The assignments involve intensive Java and Swift (or Objective-C) programming, and require significant dedication and focus. You may need to investigate and research beyond the materials presented in the lectures to successfully finish the programming assignments.

Examination or Evaluation

There will be up to two in-class quizzes, one midterm, and one final exam. Both the exams will be closed notes and closed book.

No late assignments will be accepted. No requests for extension will be accepted. The exam dates, once decided, cannot be changed.

Grading Policy

Point Distribution*

Type	Percentage
Quizzes	5%
Labs	20%
Term Project	25%
Midterm	25%
Final	25%

Grade Assignment*

Grade	Total Points (After applying a *curve*)
A+	[96, 100]
A	[90, 95]
A-	[85, 89]
B+	[80, 84]

B	[75, 79]
B-	[70, 74]
C+	[66, 69]
C	[63, 65]
C-	[60, 62]
D	[50, 59]
F	[0, 49]

While it is every group's responsibility to ensure equal contribution from members, grading of group assignments also takes individual participation into consideration, as assessed by the instructor and the student's peers.

Grade Assignment

*: Point distribution is subject to minor adjustments within 5%. Before assigning final letter grades, a curve will be applied depending on how the whole class is doing, which means what you perceive as a low score by summing up all your raw points will not necessarily prevent you from getting a good grade. The point range for each letter grade is subject to **change** depending on the class's overall performance. The Computer Engineering Department's grade distribution guideline for graduate courses here will be used as a reference.

Note that "All students have the right, within a reasonable time, to know their academic scores, to review their grade-dependent work, and to be provided with explanations for the determination of their course grades." See University Policy F13-1 at http://www.sjsu.edu/senate/docs/F13-1.pdf for more details.

Classroom Protocol

You are expected to arrive in time for class. While in class you need to mute your cell phone and close your laptop, unless you are instructed otherwise. Please be considerate of your fellow students.

University Policies

Per University Policy S16-9, university-wide policy information relevant to all courses, such as academic integrity, accommodations, etc. will be available on Office of Graduate and

Undergraduate Programs' Syllabus Information web page at http://www.sjsu.edu/gup/syllabusinfo/

CMPE 277 Section 1 / Smartphone Application Development, Fall 2017 Course Schedule

Content in this schedule is tentative and subject to change. The students are obliged to consult the most updated and detailed version of the syllabus and schedule, along with any other update posted on Canvas.

Date	Topics	Readings	Assignments
Aug 24	Greensheet Walkthrough Mobile application development overview		
Aug 31	Introduction to Android First Android App, Debugging Android Apps	[PH: 1, 4, 6]	Lab 0 released (not graded)
Sep 7	Android MVC, Common UI Views and Layouts Activity and Its Life Cycle, Intent	[PH: 2, 3, 5, 21]	Lab 0 due Lab 1 released
Sep 14	Fragments, Fragment Arguments, Retain Fragments ListFragement and ViewPager	[PH: 7, 8, 9, 10, 11]	Lab 1 due
Sep 21	Action Bar, Context Menus, Dialog, and Android Security	[PH: 12, 16, 18]	Lab 2 released
Sep 28	Loopers, Handlers, and HandlerThread Background Tasks and Services		
Oct 5	Midterm Exam		
Oct 12	Introduction to Swift		Lab 2 due
Oct 19	Introduction to Objective-C		
Oct 26	Introduction to iOS, First iOS App Views and View Hierarchy		Term project released
Nov 2	View Controllers, Application States and Life Cycles Delegation, Text Input, and Touch Events		
Nov 9	iOS Data Persistence, State Restoration, Maps, and Location		Lab 3 released
Nov 16	Introduction to React Native (if time permits)		
~~Nov 23~~	~~Thanksgiving Holiday - Campus Closed~~ (no classes)		
Nov 30	Review of major course topics; final exam preparation		
Dec 7	Term Project Presentations		Term project due
Dec 14	Final Exam, Clark Building (CL) 222 (Time TBD)		Lab 3 due