San José State University
Department of Computer Science
CS175, Mobile Device Development, Section 01, Fall, 2016 (48263)

Course and Contact Information

Instructor:	Vidya Rangasayee
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Office Hours:	TR 9:30am – 10:30am (Additional hours by appointment)
Class Days/Time:	TR 12 noon - 1:15 pm
Classroom:	MH 422
Prerequisites:	CS 46B – Introduction to Data Structures or equivalent programming experience.

Course Format : Technology Intensive

Faculty Web Page and MYSJSU Messaging

Course materials will be available on Canvas at https://sjsu.instructure.com Please use piazza for all course discussions including private messages to the instructor

Course Description

Mobile Platform APIs including those for networking, touch, graphics, data, location, and camera. Testing and profiling on devices and emulators/simulators. Prerequisites: CS 047, and knowledge of Java equivalent to that of CS 046A or CS 049J

Course Learning Outcomes (CLO)

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

1. Understand the software architecture of an Android App and its different components.
2. Develop a basic Android app with simple UI and data architecture.
3. Use system framework APIs for device sensors and events.

4. Understand the software architecture of an iOS app and its components
5. Develop a basic iOs app with simple UI and data architecture
6. Use the APIs for device sensors and events.

Student Learning Outcomes

Upon successful completion of this course, you should be able to:

1. Android
    a. Understand the architecture of an Android application
    b. Understand the various components of the Android Operating System
    c. Use Android Studio and emulator to develop and test mobile applications
2. iOS
    a. Understand the architecture of an iOS Application
    b. Use Swift to develop applications for iOS
    c. Use XCode, emulator, Interface Editor and other tools
3. Mobile app development
    a. Understand mobile app development cycle
    b. User interface layout design, app business logic connections, data management
    c. Model-View-Controller application design
    d. Input: touch, multi-touch, geo-location, orientation and position
    e. Testing and submission for distribution

Required Texts/Readings

Textbook

Android Programming: the Big Nerd Ranch Guide, BILL PHILLIPS, CHRIS STEWART, BRIAN HARDY AND KRISTIN MARSICANO (amazon link)
iOS Programming (5th Edition): the Big Nerd Ranch Guide, CHRISTIAN KEUR AND AARON HILLEGASS (Amazon link)

Other References

1. *http://developer.apple.com/devcenter/ios/*
2. *Android Developers Website*
3. *Other references as required will be given during lectures.*

Other technology requirements / equipment / material

- *Android Studio and SDK v 23+ Can be downloaded from https://developer.android.com/studio/index.html*
- *Xcode and iOS SDK Can be downloaded from* https://developer.apple.com/develop/ *(requires an Apple developer account, please register for one)*
- *Access to github (requires a login. Please create one. You will be asked to submit your github login for access to the course repository.*

Course Requirements and Assignments

Programming assignments

There will be several programming assignments some of which are team based. For team based assignments, all members will get the same grade. Each team is responsible for choosing a team lead and dividing up the work

among the team members. You are personally responsible for participating and contributing to your team's work, and for understanding each part of the work for every assignment whether or not you worked on that part.

Unless asked for specifically, all assignments must be submitted electronically. Instructions for this will be on the first assignment.
To learn time management, each assignment is worth a maximum of 100 points. Late assignments will lose 20 points and an additional 20 points for each 24 hours after the due date.

There will be a final project in lieu of a written final exam. Students may choose to do this either for Android or iOS. The final project proposal is due by the third week of the semester. Please see Canvas for project proposal submission instructions and timelines.

Exams
There will be two midterms for this class. One on Android and the other on iOS. It is compulsory for students to take both exams regardless of whether they choose to do their final project in Android or iOS.
Midterm*: see Course Schedule
Final Exam*: See Course Schedule
* - all exams will be online on Canvas and will be open on the day of the exam.

Grading Policy

Your individual class grade will be weighted as follows:
20% - Final Project
30% - 2 Midterms
40% - Programming Assignments
10% - Pop quizzes, homework (non programming).

I first try scores of 90, 80, and 70 to cut off letter grades of A-, B-, and C-, respectively. If overall class performance is too low to use these cut offs, I set a cut off of C- to a lower score than the class total average but a higher score than 60 (this number may change), and divide the students' group above the cut off of C- into A+, A, A-, B+, B, B-, C+, C, C-. The rest of students will be given by a grade of D+, D, D-, F or WU depending on their class performance.

Classroom Protocol

Please:

- Be on time!
- No texting!
- Set your cell phones in silent mode!
- Participate in the class activities as much as you can.
- Be patient about strange, easy questions from students. Feel free to ask questions yourself.
- Let's make a comfortable and respectful environment for presenting any idea.
- **Start on your homework early and stay on top of them. Some assignments take way more time than you expect.**
- Have fun learning.

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/

CS175 Fall 2016 - Course Schedule

This is a VERY tentative schedule for this semester. This is subject to change with sufficient notice and will be informed through Canvas/Piazza

Week	Date	Topics, Readings, Assignments, Deadlines
1	NA	
1	8/25/2016	Course introduction; Android basics; creating a first Android app
2	8/30/2016	GUI, layout
2	9/1/2016	more widgets, layouts, lists
3	9/6/2016	Activities, intents
3	9/8/2016	Activities, intents
4	9/13/2016	Fragments, landscape
4	9/15/2016	Dynamic UIs, dialogs
5	9/20/2016	Libraries
5	9/22/2016	Media Player, Text to speech, Camera
6	9/27/2016	Web Apis, GSON, retrofit
6	9/29/2016	Databases SQL
7	10/4/2016	Android review
7	10/6/2016	Midterm 1 (Android)
8	10/11/2016	Introduction to iOS , Swift and Xcode
8	10/13/2016	MVC Architecture

9	10/18/2016	More Swift and Foundation Framework
9	10/20/2016	Views
10	10/25/2016	Interface Builder, Faceview Controller
10	10/27/2016	Multiple MVC, View Controller Lifecycle
11	11/1/2016	Closures
11	11/3/2016	Table view
12	11/8/2016	Core data
12	11/10/2016	Autolayout
13	11/15/2016	Guest Lecture - tentative
13	11/17/2016	Saving Loading Application States
14	11/22/2016	iOS Review
14	11/24/2016	THANKGIVING NO CLASS
15	11/29/2016	Midterm 2 - iOS
15	12/1/2016	PROJECT WORK
16	12/6/2016	Animation Core Motion
16	12/8/2016	Project Demos/Evaluation
17	12/13/2016	Project Demos/Evaluation
17	12/15/2016	NO FINALS