Syllabus - CS 378 - iOS Mobile Computing

The University of Texas at Austin - Spring 2017

Objectives: An overview of mobile computing with an emphasis on developing applications for the iOS operating system. Students will complete a major project. Topics will include, but are not limited to, the Xcode development environment, the Swift language, user interfaces/storyboards, networking, local data storage, maps, audio, graphics and localization.

Prerequisites: Upper-division standing. Experience with an object-oriented programming language such as C++ or Java.

Lecture: 52255   MW 6:00pm - 7:30pm   GDC 4.304

Instructor: Bob Seitsinger, email: bobs1725@cs.utexas.edu

Office hours: Generally, 1 hour after class, or by appointment.

Teaching Assistant: Mei Wang   email: meiwang@utexas.edu

TA Office hours: TA station desk 1, GDC 1.302. TTH, 10am-11am.

Mac Lab: GDC 5.710A

Textbook: None required

Computing Facilities: There are some Macs available for this class in GDC 5.710A. All the machines have Xcode 8 installed.

Tools: The latest version of Xcode - currently 8

Language: The latest version of Swift - currently 3

iOS Device: You are NOT required to have an iOS device. All the class deliverables can be produced using the iOS simulators that come with Xcode.

Class Discussion Tool: I will be setting up a discussion group for the class on Piazza. You will receive an email once your email is registered for the class.

Class Assignment Tool: All class assignments will be posted on Canvas.

Grading Policy:

The grade will be based on a total of 1000 points.

Grade component breakdown:

Component	Points
Attendance/Participation	100
Homeworks	8 homeworks, 20 points each, 160 points total. Homework 9 is extra credit, 20 points.
App idea paper	100
Mockups paper	120
Project Alpha Version	150
Project Beta Version	170
Project Final Version	200
Total	1000

The final letter grade will be assigned based on your total points, with the following scale:

Point Range	Grade
1000 - 940	A
939 - 900	A-
899 - 850	B+
849 - 825	B
824 - 800	B-
799 - 750	C+
749 - 725	C
724 - 700	C-
699 - 600	D
599 - 0	F

If you are dissatisfied with a grade you receive on an assignment you must submit your complaint via email, along with supporting evidence or arguments, to me or the TA within ***one week*** of the date the teaching staff first attempted to return the assignment to you.

Skills & Experience Flags:

II - Independent Inquiry

This course carries the Independent Inquiry flag. Independent Inquiry courses are designed to engage you in the process of inquiry over the course of a semester, providing you with the opportunity for independent investigation of a question, problem, or project related to your major. You should therefore expect a non-trivial portion of your grade to come from the independent investigation and presentation of your own work.

Academic Honesty: Take from the <u>CS department Code of Conduct.</u>

"The University and the Department are committed to preserving the reputation of your degree. It means a lot to you. In order to guarantee that every degree means what it says it means, we must enforce strict policy that guarantees that the work that you turn in is your own and that the grades you receive measure your personal achievement in your classes.

Every piece of work that you turn in with your name on it must be yours and yours alone unless explicitly allowed by an instructor in a particular class. Specifically, unless otherwise authorized by an instructor.

- Students may not discuss their work with anyone except the instructor and other members of the instructional staff (instructor, TA, lab proctor or partner on a pair assignment).
- Students may not acquire from any source (e.g. another student or an internet site) a partial or complete solution to a problem or project that has been assigned.

Your are responsible for complying with this policy in two ways:

1. You must not turn in work that is not yours, except as expressly permitted by the instructor of each course.
2. You must not enable someone else to turn in work that is not theirs. Do not share your work with anyone else. Make sure that you adequately protect all your files. Even after you have finished a class, do not share your work or published answers with the students who come after you. They need to do their own work on their own.

The penalty for academic dishonesty will be course grade of **F** and a referral of the case to the **Dean of Students**. Further penalties, including suspension or expulsion from the university may be imposed by that office.

One final word: This policy is not intended to discourage students from learning from each other, nor is it unmindful of the fact that most significant work in computer science and in the computing industry is done by teams of people working together. But, because of our need to assign individual grades, we are forced to impose an otherwise artificial requirement for individual work. In some classes, it is possible to allow and even encourage collaboration in ways that do not interfere with the instructor's ability to assign grades. In these cases, your instructor will make clear to you exactly what kinds of collaboration are allows for the class."

It is expected that you are to do a significant amount of the work on your own.

Religious Holidays: By UT Austin policy, you must notify me of your pending absence at least fourteen days prior to the date of observance of a religious holy day. If you must miss a class, an examination, a work assignment, or a project in order to observe a religious holy day, you will be given an opportunity to complete the missed work within a reasonable time after the absence.

Students with Disabilities: Students with disabilities may request appropriate academic accommodations from the Division of Diversity and Community Engagement, Services for Students with Disabilities, 512-471-6259, www.utexas.edu/diversity/ddce/ssd/.

Personal Issues: Students experiencing significant nonacademic problems (extended health problems or family emergencies) should contact the CNS Dean's Office (WCH 1.106, 512-471-4536) or the Dean of Student's Office (http://deanofstudents.utexas.edu/emergencyresources.php) for assistance.

Schedule: A schedule of lecture topics and assignments, with due dates, follows.

Class #	Day of Week	Date	Topic	Assignments
1	**Wed**	1/18	Introduction, Syllabus, Xcode, Anatomy of an iOS app	
2	**Mon**	1/23	Swift language	Homework 1 assigned
3	**Wed**	1/25	Swift language	
4	**Mon**	1/30	MVC (model, view, controller), view controllers, views, first iOS app, app startup/execution cycle.	Homework 1 due, Homework 2 assigned
5	**Wed**	2/1	Storyboards, segues, autolayout, constraints. Discuss project.	
6	**Mon**	2/6	View basics - frame, bounds, etc. View customizations.	Homework 2 due, Homework 3 assigned, Project teams defined
7	**Wed**	2/8	Table view controller, Navigation controller, protocols, delegates.	
8	**Mon**	2/13	Custom table view cells, alert views	Homework 3 due, Homework 4 assigned
9	**Wed**	2/15	Custom protocols and delegates, Extensions. Discuss mockups paper.	App idea paper due
10	**Mon**	2/20	UserDefaults, Core Data, Firebase.	Homework 4 due, Homework 5 assigned
11	**Wed**	2/22	User Interface Design, HIG	
12	**Mon**	2/27	Collection view controller and collection views.	Homework 5 due, Homework 6 assigned

Class #	Day of Week	Date	Topic	Assignments
13	Wed	3/1	Page view controller, Tab controller	Mockups paper due
14	Mon	3/6	Multithreading, Blocks, animation	Homework 6 due, Homework 7 assigned
15	Wed	3/8	Project management - git, github, cocoa pods, 3rd party libs, project structure, etc.	
16	Mon	3/13	*Spring Break*	
17	Wed	3/15	*Spring Break*	
18	Mon	3/20	Catch up day	Homework 7 due
19	Wed	3/22	Networking, AlamoFire	App Alpha version due
20	Mon	3/27	Gesture recognizers, Notifications	Homework 8 assigned
21	Wed	3/29	Core location, MapKit	
22	Mon	4/3	Siri	Homework 8 due
23	Wed	4/5	Core graphics	
24	Mon	4/10	Contacts and calendar access	Demo days assigned
25	Wed	4/12	iWatch development	App Beta version due
26	Mon	4/17	Guest lecturer?	Homework 9 assigned
27	Wed	4/19	Open topic(s) - Stevia, …	
28	Mon	4/24	Catch up day	Homework 9 due
29	Wed	4/26	Demos - session 1	
30	Mon	5/1	Demos - session 2	
31	Wed	5/3	Demos - session 3	App final release due