CMSC389Q: Special Topics in Computer Science; iOS App Development

Course Description

This course teaches mobile development on the iOS platform. Students must have a Macintosh laptop (or access to one) in order to participate in this course. Topics covered will be Xcode, Swift, design patterns, creating UI, networking, and common libraries (as per request) such as ARKit and Core ML. By the end of this course, students should have the resources necessary to create their own apps and publish to the app store.

Course Details

- **Course**: CMSC389Q
- **Prerequisites**: CMSC216 and CMSC250
- **Credits**: 1
- **Seats**: 30
- **Lecture Time**: 2 – 2:50 pm
- **Location**: CSI 3118
- **Semester**: Fall 2018
- **Textbook**: None
- **Course Facilitator(s)**: Travis Ho, Tamer Bader
- **Faculty Advisor**: Neil Spring

Topics Covered

- Xcode
- Swift
- Storyboard and Viewcontrollers
- CocoaPods
- Delegate design pattern & protocols
- Persisting data
- Networking
- Requested topics (i.e. core audio, core image, core graphics, contacts, photos, core motion, GPS, dragging, shaking, …)
- Requested topics (i.e. core ML, ARKit, animation, …)

Schedule

Week	Topic	Assignment
1 (8/31)	Xcode and Swift	Assigned: Swift reference guide and ELMS quiz out.
2 (9/7)	Creating views in Storyboard (labels, buttons, image views) and positioning them with auto-layout	Due: Elms Quiz Assigned: Assignment #1
3 (9/14)	Linking views to code (Actions and Outlets-button clicks, segueing to the next)	Due: Assignment #1 Assigned: Assignment #2
4 (9/21)	Advanced views (common UI's i.e. social media with nav bar, scroll views news feed, table views photo album). And any design tips.	Due: Assignment #2 Assigned: Assignment #3
5 (9/28)	Adding dependencies (Cocoapods, other options, and installing a sample dependency like Socket.io)	Due: Assignment #3 Assigned: Nothing
6 (10/5)	Networking with REST API and JSON	Due: Nothing Assigned: Assignment #4
7 (10/12)	Requested topics for midterm project (i.e. core audio, core image, core graphics, contacts, photos, core motion, GPS, dragging, shaking …). Individual help, Q&A.	Due: Assignment #4 Assigned: Midterm project

8 (10/19)	Requested topics for midterm project (i.e. core audio, core image, core graphics, contacts, photos, core motion, GPS, dragging, shaking, …). Individual help, Q&A.	Due: Nothing In-class participation – No HW. Work on midterm project!
9 (10/26)	Publishing to the app store, good practices, and sharing the midterm projects (errors and ideas)	Due: Midterm project due Assigned: ELMS quiz on Final project ideas/topics
10 (11/2)	Persistent data. Core data, keychain, UserDefaults.	Due: ELMS quiz Assigned: Assignment #5
11 (11/9)	Requested topics for final project (i.e. core ML, ARKit, animation, …). Individual help, Q&A.	Due: Assignment #5 Assigned: Final Project
12 (11/16)	Requested topics for final project (i.e. core ML, ARKit, animation, …). Individual help, Q&A.	Due: None Assigned: Work on final project!
13 (11/23)	THANKSGIVING	
14 (11/30)	More inspiration. Sample projects, etc. If there are more requested topics or cool things, can show here.	Due: Nothing Assigned: Work on final project!
15 (12/7)	FINAL	Due: Final project due

Grading

Grades will be maintained on the CS department grades server. You will be responsible for all material discussed in lecture as well as posts to the class repository and Piazza, including deadlines, policies, assignment changes, etc.
Your final course grade will be determined according to the following percentages:

Percentage	Title	Description
40%	Weekly HW	Weekly assignments ranging from ELMS quizzes, to coding activities, to take-home projects.
25%	Midterm	The midterm will be on topics from weeks 1-8, and will be a large coding project.
35%	Final Exam	The final exam will cover all the topics discussed during the semester, and will be a large coding project.

Communicating with course staff

We can be reached through in-person office hours or via email.

Faculty Advisor:
Neil Spring: nspring@umd.edu

Course Facilitators:
Travis Ho: tho12@umd.edu Office Hours: TBD
Tamer Bader: tbader@terpmail.umd.edu Office Hours: TBD

Excused Absence and Academic Accommodations

See the section titled "Attendance, Absences, or Missed Assignments" available at Course Related Policies.

Disability Support Accommodations

See the section titled "Accessibility" available at Course Related Policies.

Academic Integrity

Note that academic dishonesty includes not only cheating, fabrication, and plagiarism, but also includes helping other students commit acts of academic dishonesty by allowing them to obtain copies of your work. In short, all submitted

work must be your own. Cases of academic dishonesty will be pursued to the fullest extent possible as stipulated by the Office of Student Conduct. It is very important for you to be aware of the consequences of cheating, fabrication, facilitation, and plagiarism. For more information on the Code of Academic Integrity or the Student Honor Council, please visit http://www.shc.umd.edu.

Course Evaluations

If you have a suggestion for improving this class, don't hesitate to tell the instructor or TAs during the semester. At the end of the semester, please don't forget to provide your feedback using the campus-wide CourseEvalUM system. Your comments will help make this class better.

Thanks to the CS professors at the University of Maryland, College Park for the basic syllabus outline.