MCDA 5550.2 - Web, Mobile, and Cloud Application Development (3.000 Credit hours)

Course Information

Course Administrator: Yasushi Akiyama (y_akiyama@cs.smu.ca)

Instructors: Alla Bondarenko (alla.bondarenko@smu.ca): iOS/Swift
Dinesh Govindaraj (dinesh.kumar.govindaraj@smu.ca): Web/Mobile Apps

Senior Tutors: Meenal Shah & Sahil Behl

Office hours: Yasushi Akiyama (MN 132): http://cs.smu.ca/~y_akiyama/office_hours.html
(Please consult with each instructor for their office hours)

Prerequisite

Enrolled in the M.Sc. in Computing & Data Analytics, or a permission of the instructor.

Time

Lecture	MW	05:30 pm-07:00 pm	S 126D
Tutorials	MW	07:01 pm-08:30 pm	S 126D

Note that the proportions of the lectures and tutorials as well as the breaks in between can vary based on the instructor's teaching style choices.

Course Description and Objectives

(Calendar description) Students develop applications that are accessible through the Internet on a variety of platforms including cloud environments and mobile devices. An emphasis is placed on designing and deploying mobile applications; push technology; data structures and memory management; interface design; Scalable Vector Graphics (SVG); cloud computing; and privacy/security.
This course consists of the following parts:

1. Web Apps (HTML5, CSS3, jQuery, NoSQL, Database, node.js, AngularJS)
2. iOS Apps (Swift)

Recommended Course Materials/Textbooks

Web Apps:

Building Cross-Platform Mobile and Web Apps for Engineers and Scientists: An Active Learning Approach, 1st Edition. Pawan Lingras et al. (ISBN-10: 1305105966, ISBN-13: 9781305105966)
http://www.cengage.com/cgi-wadsworth/course_products_wp.pl?fid=M20b&product_isbn_issn=9781305105966&template=nelson

iOS Apps:

Details to be discussed by the industry professors.

Course Website

https://smu.brightspace.com/d2l/home/45659

Any cancellation of a class (lecture and/or lab) will be announced through the News Forum on the Brightspace.

We will also post important announcements on the same forum, thus you must check Brightspace regularly to stay up to date on news and instructions relevant to this course. You should update your email addresses that are linked your Brightspace accounts to make sure you will receive important email notifications.

Grading Scheme:

iOS Assignments (45%)
Mobile Web/Responsive Assignments (45%)
Participation and Active Learning components (10% -- attendance and participation in the learning activities)

Attendance

As the part of the MSc CDA program, the attendance for this course is mandatory. If you cannot avoid absence, then you are required to document the reason of your absence and how you have made up for the missing class and submit it to the instructor for the approval. Otherwise, you will lose marks for class participation.

Submitting Assignments

You will be instructed to submit your assignments through the Brightspace, by uploading to a specific cloud storage (e.g., Git), or by other means of the instructor's choice for the respective section of the course. Late assignments will not be accepted, but you are encouraged to complete it as many assignments will be built around or based on the previous assignments.

Academic Integrity:

The University has policies on academic responsibility, listed in Section 2 (Academic Integrity) of the Academic Calendar. You should read them (https://smu.ca/webfiles/GraduateCalendar2018-2019V2.pdf).

We will sometimes provide you with "starter code" and use plenty of sample code in lectures and tutorials. This code can be incorporated entirely into your submission as-is or adapted as required. Code you prepared for earlier assignments, labs, or past courses may also be reused, without any penalty. The student who gives code to another is also guilty of an academic integrity violation, even if it was given with a warning not to copy it. Note that on a first offense, the violator will receive a zero for the assignment or test. Otherwise, the official policies given in the calendar will apply.

List of Topics

This schedule including the assignment due dates and the topics is tentative, and may change depending on some factors such as cancellations of lectures due to inclement weather.

Wk #	Date	Module	Instructors	Topics	Assignments (due)
1	Wed Jan 09	iOS	A. Bondarenko	Basic types and operators. Collection types. Closures.	
2	Mon Jan 14	iOS		Classes and enumerations. Properties and Methods. Casting. Error Handling.	
	Wed Jan 16	iOS		Xcode IDE. UIKit. Introduction to AutoLayout. Working with input types.	
3	Mon Jan 21	iOS		Networking. Working with dictionaries.	
	Wed Jan 23	iOS		Working with UITableView.	
4	Mon Jan 28	iOS		Enhanced UI elements.	Assignment – Part1
	Wed Jan 30	iOS		Extensions. Protocols. Access levels.	
5	Mon Feb 04	iOS		Location Services. Singleton pattern implementation.	
	Wed Feb 06	iOS		Persistent Storage. Implementing NSCoding protocol.	
6	Mon Feb 11	iOS		MapKit. Integration with Apple Maps.	Assignment – Part2
	Wed Feb 13	iOS		Introduction to unit tests. Introduction to AVFoundation.	
7	Mon Feb 18	Winter Break			
	Wed Feb 20				
8	Mon Feb 25	Web/Mobile	D. Govindaraj	List of tentative topics to be covered: • Intro to Web • Forms/JS/JQuery/Bootstrap	
	Wed Feb 27	Web/Mobile			
9	Mon Mar 04	Web/Mobile			
	Wed Mar 06	Web/Mobile			

10	Mon Mar 11	Web/Mobile		• Storing & Saving Data • AngularJS • Node.js and mongoDB • Cloud services	
	Wed Mar 13	Web/Mobile			
11	Mon Mar 18	Web/Mobile			
	Wed Mar 20	Web/Mobile			
12	Mon Mar 25	Web/Mobile			
	Wed Mar 27	Web/Mobile			
13	Mon Apr 01	Web/Mobile			
	Wed Apr 03	Web/Mobile			