

UNIVERSITY OF REGINA
Department of Computer Science

CS 455 – Mobile Computing
Winter 2017

Instructor: **Dr. Orland Hoerber**
Lectures: **T/Th 1:00 – 2:15 PM (CL 435)**
Webpage: **<http://www.cs.uregina.ca/~hoeber/teaching/cs455/2017W/>**
Email: **orland.hoerber@uregina.ca**

Office Hours: **T/W/Th 11:00 AM – 12:00 PM (other times by appointment only)**
Office: **CW 308.25**
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Course Prerequisites

CS 340 and one of CS 205, CS 315, or CS 335

Calendar Description

Mobile Computing focuses on the design and implementation of software in a networked mobile environment. The primary topics to be covered in the course include software development practices, network computing, graphics programming, and human-computer interaction, all focused on the challenges and opportunities afforded by modern mobile computing devices.

Hardware and Lab

This particular offering of the course will use the iPhone/iPod Touch/iPad as the particular mobile platform. All programming tasks for the assignments and project will be done in Swift and will be written for iOS 10. This mobile platform will allow us to take advantage of advanced sensors, networking, graphics, and multi-touch interaction. A small number of iPod Touch devices will be available on a sign-out basis for testing of assignments and project work.

Since the software development kit will only run on a Mac OS X platform, a shared laboratory (UDML – CL 135) will be available for students to use who do not have access to a personal Mac computer.

Textbook & Readings

Matt Neuburg, iOS 10 Programming Fundamentals with Swift, O'Reilly Media Inc., 2017
ISBN: 978-1-491-97007-2

R. Harison, D. Flood, and D. Duce, Usability of mobile applications: literature review and rationale for a new usability model, Journal of Interaction Science, 1:1, 2013.

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Swift Documentation

<https://swift.org/documentation/>

Readings from the iOS Developer Library

<https://developer.apple.com/library/ios/navigation/>

Evaluation

The final grade in the course will be determined as follows:

Assignments	2 x 10%	20%
Project Milestones	5/10/10/25%	50%
Final Exam	(Apr 27)	30%
Total		100%

* In order to pass the course, you must pass the final exam. Your final mark may be adjusted by +/- 5%, at the instructor's discretion.

Course Schedule & Topics (Tentative)

Topic	Date	Topics
0	January 5	Syllabus & Introduction
1	January 10/12	Fundamentals of Swift Readings: Chapters 1-5 Project Groups (Jan 10)
2	January 17/19	Xcode and iOS Programing Readings: Chapters 6-9 Readings: Start Developing iOS Apps (Swift) Project Proposal (Jan 19)
3	January 24/26	Anatomy of an iOS App Readings: App Programming Guide for iOS
4	January 31/February 2	The User Experience & Design Readings: iOS Human Interface Guidelines Assignment 1 Due (Feb 2)
5	February 7/9	Touch Programming Readings: Event Handling Guide for iOS
6	February 14/16	Graphics & Animation Readings: View Programming Guide for iOS Readings: Core Animation Programming Guide Project Design (Feb 16)

Topic	Date	Topics
		Midterm Break
7	February 28/March 2	Network Programming Readings: UIAlertView Readings: NSURL, and NSURLConnection Assignment 2 Due (Mar 2)
8	March 7/9	Project Self-Help (No Lecture, Mar 7) Industry Guest Lecture (Mar 9)
9	March 14/16	Advanced Networking Readings: Grand Central Dispatch Readings: Push Notifications Project Update (Mar 16)
10	March 21/23	Persistent Data Storage Readings: File System Programming Guide Readings: Archives and Serializations Programming Guide
11	March 28/30	Sensor Programming Readings: CoreLocation & MapKit Readings: CoreMotion
12	April 4/6	Evaluation Methods Readings: Usability of Mobile Applications
13	April 11	Project Demos Project Submission (Apr 11)

The **Final Exam** has been scheduled for April 27 from 2:00 – 5:00 PM. The exam will be comprehensive, covering the entire breadth of topics covered in the course.

Lectures and Lecture Notes

Lectures will be held twice per week: T/Th 1:00 – 2:15 PM. All lecture notes and assignments will be posted on UR Courses. The lecture notes should not be used as an alternative to attending the lectures. It is expected that students will attend the lectures, listen to the explanations and discussions, and take notes about the important information.

Assignments & Project

All assignments and project milestones are due at 11:55 PM on the specified dates, and must be submitted electronically via UR Courses. Late submissions will not be accepted, but the grades for missing assignments may be moved to the final exam under exceptional circumstances, and with appropriate documentation.

Grades

All grades will be assigned according to the Undergraduate Calendar, Section 5.10: Grading System and Descriptions:

- 90–100: An outstanding performance.
- 80–89: Very good performance.
- 70–79: Above average performance.
- 60–69: A generally satisfactory and intellectually adequate performance.
- 50–59: A barely acceptable performance.
- 0–49: An unacceptable performance.

Other Notes and Information

1. The best way to contact me is via email.
2. You should send class-related email using your University of Regina account only. This will ensure that spam filtering does not keep your email from getting to me.
3. You should check UR Courses and your University email on a regular basis. Important announcements for this class will be made on UR Courses. Other announcements and direct communication will be via email.
4. Students are expected to attend the lectures. If you must skip a lecture, it is your responsibility to find out from classmates what you missed.
5. Although group discussions and study groups are encouraged, all assignments are to be completed individually. Group discussions should be focused on general concepts, ideas, and lecture materials, and not the specifics of any assignment.
6. Group work is permitted in the project, but must be limited to include only those in your documented group.
7. Plagiarism and other forms of academic misconduct will not be tolerated. It is up to each student to understand the rules and regulations pertaining to this (Section 5.14 in the Undergraduate Calendar). Be aware that not only is the act of copying the work of another considered plagiarism, so is the act of allowing another to copy your work.