

UNIVERSITY OF REGINA
Department of Computer Science

CS 455 – Mobile Computing
Fall 2018

Instructor: **Dr. Orland Hoerber**
Lectures: **T/Th 8:30 – 9:45 AM (ED 106.2)**
Webpage: **<http://www.cs.uregina.ca/~hoeber/teaching/cs455/2018F/>**
Email: **orland.hoerber@uregina.ca**

Office Hours: **W 9:00 AM – 10:30 AM (other times by appointment only)**
Office: **CW 308.25**

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 11. 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.

There will be three assigned times in which students in this course will have exclusive access to the lab:

- M 3:00 – 6:00 PM (open work session)
- W 3:00 – 6:00 PM (tutorial/help session)
- F 9:00 – 12:00 noon (tutorial/help session)

Textbook & Readings

Matt Neuburg, iOS 11 Programming Fundamentals with Swift, O'Reilly Media Inc., 2018
ISBN: 978-1-491-99931-8

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.

Swift Documentation

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

Readings from the iOS Developer Library

<https://developer.apple.com/documentation>

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	(Dec 18)	30%
Total		100%

* In order to pass the course, you must pass the final exam (failure to pass the final exam may result in your final exam grade being assigned as your final course grade). Your final mark may be adjusted by +/- 5%, at the instructor's discretion.

Course Schedule & Topics (Tentative)

Topic	Date	Topics
0	September 6	Syllabus & Introduction
1	September 11/13	Fundamentals of Swift Readings: Chapters 1-5 Project Groups (Wed Sep 12)
2	September 18/20	Xcode and iOS Programing Readings: Chapters 6-9 Readings: Start Developing iOS Apps (Swift) Project Proposal (Wed Sep 19)
3	September 25/27	Anatomy of an iOS App Readings: App Programming Guide for iOS
4	October 2/4	The User Experience & Design Readings: iOS Human Interface Guidelines Assignment 1 Due (Fri Oct 5)

Topic	Date	Topics
5	October 9/11	Cocoa & Touch Readings: Event Handling Guide for iOS Readings: View Programming Guide for iOS
6	October 16/18	Sensor Programming Readings: CoreLocation & MapKit Readings: CoreMotion Project Design (Wed Oct 17)
7	October 23/25	Network Programming Readings: UIView Readings: NSURL & NSURLConnection Assignment 2 Due (Fri Oct 26)
8	October 30/November 1	Advanced Networking Readings: Grand Central Dispatch Readings: Push Notifications
	November 6/8	Industry Guest Lecture (Nov 6) Fall Break (Nov 7 - 12)
	November 13/15	Project Self-Help (No Lectures Nov 13/15) Project Update (Fri Nov 16)
9	November 20/22	Persistent Data Storage Readings: File System Programming Guide Readings: Archives and Serializations Programming Guide
10	November 27/29	Evaluation Methods Readings: Usability of Mobile Applications
	December 4/6	Project Demos Project Submission (Thu Dec 6)

The **Final Exam** has been scheduled for December 18 from 9:00 - 12:00 noon. 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 8:30 - 9:45 AM. 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 – Academic Regulations – 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 labs and keep up with the online course material.**
5. If any student who, because of special needs, may have a need for accommodations, please contact the Center for Student Accessibility (<http://www.uregina.ca/student/accessibility/>).
6. All exams are “closed book”, with no additional material permitted. Coats, hats, books, pencil cases, and all other personal items shall be left at the front of the room during examination periods. Cell phones, watches, and all other electronic devices shall be put in a clear plastic bag and placed under your seat. Cell phones and all other wireless devices must be turned off. Any student violating these rules may be charged with academic misconduct.
7. The instructor reserves the right to organize student seating during examinations.
8. **If you have any issues with the marking of any assignment or exam in this course, please submit your complaint via email directly to the instructor** (not to the marker or TA). Explain which course component you want investigated, your current mark, and the perceived problem with the marking. All issues with marking must be raised one week before the final exam.
9. The Undergraduate Calendar is available here: <https://www.uregina.ca/student/registrar/resources-for-students/academic-calendars-and-schedule/undergraduate-calendar/sections.html>