CompSci 402: Mobile App Development - Spring 2020

Course Description

A project-intensive course on mobile development using iOS as a platform. Overview of mobile platforms and their characteristics, mobile interface design and best practices using such technologies as GPS, camera, persistence, notifications and others. Software used for course assignments requires a Mac so students must have their own.

PREREQS: COMPSCI 321

Objectives

1. Become proficient in the major technologies and paradigms of mobile application development using iOS.
2. Develop experience creating real world mobile applications.

Requirements

The following items are required for this class:

- Intel-based Mac
- Xcode
- Github Account

Recommendations

The following items are not required but will help in developing mobile applications

- An iOS device (iPad, iPhone or iPod Touch)
- iOS developer account

Schedule

Date	Description	Assignment Due	Resources
Aug 25	Introduction to iOS Xcode 10 Overview, Git		
Aug 27	Introduction to Cocoa Touch, iOS devices, device capabilities, OS versions and differences.		
Sept 1	Intro to Swift . Views and View Controllers (classes, variables, properties, ARC, class vs instance methods)		Chapter 1
Sept 3	Swift Advanced, View Controllers and UIKit		
Sept 8	Layout Constraints, UIKit, Optionals		
Sept 10	Optionals, classes, communication between view controllers, debugging	**Homework 1 Due**	EA Tutorial
Sept 15	Collections, planning an app, prototyping apps		Collections
Sept 17	Workspaces and CocoaPods, the business of the App Store		
Sept 22	Data persistence (Plists, JSON, User Defaults)		SwiftUI Tutorials
Sept 24	Web Services (ReST, JSON, APIs), Notification Center		
Sept 29	TableViewControllers, Delegates, Data Sources		Recorded
Oct 1	Camera, UIAlertController and Maps	**Homework 2 Due**	
Oct 6	Maps and location (GPS)		

Oct 8	Core Data		EA Tutorial
Oct 13	Core Data		
Oct 15	Core Data Review App		Core Data
Oct 20	WebViews		
Oct 22	Backends for Supporting Mobile Apps (attendance optional)	**Homework 3 due**	
Oct 27	Building large apps, design patterns and software architecture		
Oct 29	Mobile App Development Professionally (optional)	**Project 1 due**	
Nov 3	Releasing Apps to the Store		
Nov 5	Intro to Android development with Kotlin (attendance optional)		Locations
Nov 10	App from Scratch		
Nov 12	App from Scratch		
Nov 17	Game Dev on Mobile (optional)	**Project 2 due**	
Nov 19	Game Dev on Mobile (optional)		
Nov 24	Thanksgiving Break		
Nov 26	Thanksgiving Break		
Dec 1	Review		
Dec 3	TBD		
Dec 8	TBD		
Dec 10	Workshop - Attendance optional		
Dec 13		Final Project Due	

Homework	50%
Projects	25%
Final Project	25%

Course Requirements

- Completing all requirements will yield a grade of 80%. Going above and beyond, adding features not taught in class, being creative, adding additional items to the requirements can yield the remaining 20% or more.
- Attendance is required. Email me prior to absence to get a link to the recorded course.
- Project source code must be in your GitHub repository and shared with BSUMobileDev (MichaelZiray@BoiseState.edu)
- Repositories should be named as such:[LastName]-20XX-Fall
- The assignment must be able to be built in Xcode. I will pull your code from Git, open and build it in Xcode. Failure to run or compile could result in a grade of zero.
- Your app must work and appear appropriately on any iPhone Simulator.
- Your app must work in different orientations for both phone and tablet. This means if you rotate the device to landscape that your interface displays in landscape mode (or locks portrait).
- Each assignment requires a git tag or comment your commit to show me it's your final commit
- You will be graded on:
  - If your app compiles properly straight from Git
  - If your app looks and feels like a proper iOS app (ask if you have questions about this)
  - Rotation works
  - If your app functions on both iPhone and iPad sized iOS devices
  - Each assignment will have a grading rubric it will be graded against
- Code quality. It should be obvious to me what your code does. If there's a variable or method name that is confusing, points will be taken off. Your code should be self documenting but feel free to add comments if needed.

Discord

https://discord.gg/qHnsmKG

Github

https://github.com/ElectronicArmory/2020-iOS-Development

Student Well-being:

If you are struggling for any reason (COVID, relationship, family, or life's stresses) and believe these

may impact your performance in the course, I encourage you to contact the Dean of Students at (208) 426-1527 or email deanofstudents@boisestate.edu for support. Additionally, if you are

comfortable doing so, please reach out to me and I will provide any resources or accommodations

that I can. If you notice a significant change in your mood, sleep, feelings of hopelessness or a lack of self worth, consider connecting immediately with Counseling Services (1529 Belmont Street, Norco Building) at (208) 426-1459 or email healthservices@boisestate.edu.