COMS W4995 Introduction to iOS Mobile Application Development

Course outline and overall goals

Mobile application development based on Apple's iOS operating system and Swift programming language.

The class will need to work on Apple Mac computers running Xcode, students will learn how to develop applications for iPhones/iPads/iWatch devices.

Students will create mobile applications based on the latest programming patterns and frameworks in use in the mobile industry today.

The class covers fundamentals essential to understanding all aspects of app development from concept to deployment on the App Store.

Taught in a team environment. Students required to present their project proposals and deliver a fully functional mobile application as a final project.

COLUMBIA | ENGINEERING
The Fu Foundation School of Engineering and Applied Science

COMS W4995 Class Syllabus

Class Topics

- Lecture 1 – Intro to Mobile Application Development & XCode IDE
- Lecture 2 – Intro to Swift & Storyboard (Constraints) - my first app - [**Homework 1 (10%)**
- Lecture 3 – The App Lifecycle (App Delegate) & more Swift syntax; Intro to Source Code Control (Git)
- Lecture 4 – Storyboard Navigation (Back, Tabbar, Page) [Red/green/blue]
- Lecture 5 – More Swift (Delegation & TableViewControllers) [**Homework 2** (10%)]
- Lecture 6 – More Swift (JSON parsing from file) [Shopping list]
- Lecture 7 - More Swift {Completion blocks} & Networking APIs (REST) [**Homework 3** (20%)]
- Lecture 8 – iOS Frameworks (Core Location/MapKit/ARKit/HealthKit)
- Lecture 9 – Data Persistence (User defaults/CoreData) **HW3 MIDTERM DUE** (20%)
- Lecture 10 - UI/UX (Accessibility/i18n/l10n) [**Final Project Description**]
- Lecture 11 – Networking and Authentication for Enterprise Apps (REST/OAUTH/GRAPHQL)
- Lecture 12 – Application Analytics Tools (app statistics, crash reports) / [**Final Project storyboard**]
- Lecture 13 – Deploying your app (AppStore, Testflight, Enterprise distribution)
- Lecture 14 – Final Project presentations to class **FINAL PROJECT DUE** (50% of Class Grade)