**iOS Development Syllabus   
Fall 2012**

Welcome to the iOS Development Class! We look forward to having a very productive semester with you where very marketable skills will be taught. The format of this class is as follows: There will be two lectures per week where the essentials of software development on the iOS platform will be taught. In addition, there will be one lab per week so students can further extend their knowledge of the subject by hands-on building. There will also be small home-works to make sure the information given in lecture is understood. By the end of the semester, all students will have built their own iOS application that they can distribute in the Apple App Store for sale or download.

**Professor**Jeff Ringenberg - [jringenb@eecs.umich.edu](mailto:jringenb@eecs.umich.edu)

**Undergraduate Instructors**Chris Wendel – [chriwend@umich.edu](mailto:chriwend@umich.edu)  
Andrew Rauh – [arauh@umich.edu](mailto:arauh@umich.edu)  
Raj Vir – [rvir@umich.edu](mailto:rvir@umich.edu)

**Lectures**

Lectures will take place twice a week and go over the basics of iOS Development. Either Professor Ringenberg or one of the Undergraduate Instructors will give them. Lectures will give students’ necessary knowledge and tools in order to develop software on the iOS Platform.

Lecture 1: Introduction to XCode, iOS, Objective C  
Lecture 2: Objective C essentials, The Foundations Frameworks  
Lecture 3: Memory management, Views/View Controllers, View lifecycle, MVC  
Lecture 4: View hierarchy, Navigation Controllers, Tab Views, Tab View Controllers

Lecture 5: Application lifecycle, App Delegates, UIImageView, UIScrollView, UIPickerView, UITableView  
Lecture 6: UITableViews continued, custom UITableView cells  
Lecture 7: SQLite and Backend Connections  
Lecture 8: Plists, NSUserDefaults, iPad and Univeresal apps, basic Core Data  
Lecture 9: Multitasking and Threads, Sensors, Accelerometer, Taps and Touches, Gestures  
Lecture 10: MapKit, Core Location, Photo Library and Camera Access. Provisioning Profiles, submitting to App Store.

Lecture 11: Background Processes, UIWebView

**Labs/Projects**

Lab 1: Advanced “Hello World” application  
Lab 2: [Project 1] Build views, formatting  
Lab 3: [Project 1] UINavigationControllers, Tabview Controllers

Lab 4: [Project 2] Backend Connections, SQLite  
Lab 5: [Project 2] UIImageView, Core Location  
Lab 6: Demo Projects

**Final Project**

Students will make an iOS application that incorporates the skills they have learned throughout the semester. They will demo their Applications to the class at their last lab and can optionally distribute their apps on the Apple App Store.