Course Overview

• Overview of iOS
• Language: Swift
• Development environment: Xcode
• Lifecycle: Design, implement, test, deploy
• Model-View-Controller (MVC) paradigm
Course Topics

- Swift
- Storyboarding and UI design
- Navigation and segues
- Tables
- Settings
- Alerts and notifications
- Gestures
Course Topics (cont.)

• Sensors
• Communications
• Data storage
• Graphics and animation
• Multimedia
• Apple Watch
Course Outcomes

• Proficient with iOS development environment
• Design, implement, test and deploy iOS app
• Able to use various iOS frameworks and kits
Course Details

• Course website
  – www.eecs.wsu.edu/~holder/courses/MAD/

• Prerequisites
  – Advanced Data Structures
  – Object-oriented design

• Grading (curved)
  – 12 homeworks (80%)
  – 1 final project (20%)
  – Submissions via Blackboard Learn (learn.wsu.edu)
Mobile App Development: Platforms

- iOS (Swift)
- Android (Java)
- Windows (C#)
  - Xamarin (C# → iOS/Android/Windows)
iOS Devices

iPad

iPhone

Apple Watch
Overview of iOS: Layers

iOS Layers

- **Cocoa Touch Layer**: Frameworks that define appearance of app (e.g., GameKit, MapKit, UIKit)
- **Media Layer**: Graphics, Audio and Video technologies (e.g., CoreAudioKit, GLKit, SpriteKit, SceneKit)
- **Core Services Layer**: Services and basic types (e.g., Network, CoreData, CoreLocation, CoreMotion, CloudKit, HealthKit, HomeKit, StoreKit, WebKit)
- **Core OS Layer**: Low-level services (e.g., file I/O, networking, security)
Overview of iOS: Frameworks

- ARKit
- CloudKit
- HealthKit
- HomeKit
- GameKit
- MapKit
- SceneKit
- MusicKit

- WebKit
- UIKit
- CoreData
- CoreLocation
- CoreMotion
- CoreML
- WatchOS/WatchKit
- Over 50 more...
Development Environment: Xcode
Resources

• developer.apple.com
• swift.org
• www.raywenderlich.com
• stackoverflow.com