

# Certificate in Advanced iOS Application Development

Pace University CPE  
Fall 2015

September 24<sup>th</sup> – December 17<sup>th</sup>  
Tuesday & Thursday evenings  
6:00 pm to 8:30 pm  
CRN 90442

## Course Outline:

### Swift with Cocoa and Objective-C

Introduction to iOS Development with SWIFT for Cocoa and Cocoa Touch. Includes review of syntax, language features, working with SWIFT in Xcode 6 and with Objective-C. Advanced use of the Objective-C language. Best practice use of Properties, Accessors, Memory Management, Categories and Extensions, Protocols, etc.

- Essential SWIFT in Playground
- Basic SWIFT App with Storyboard
- Objective-C and SWIFT Interaction
- Calling Objective-C from SWIFT and vice versa

### User Interface Design

Creating advanced and dynamic layouts using both Storyboard and XIB approaches. Effective Auto Layout in the user interface builder and coding auto layout approaches. Comparison study between auto layout and frames.

- Introduction and Exercises in Storyboards
- Segues
- Navigation Concepts
- Auto Layout including Constraints in Storyboard/IB (and code)

### Understanding multitasking

Concurrency using Blocks; NSOperationQueue and NSOperation; Advanced Concurrency Programming utilizing GCD and Threads. Using Timers and Run Loops.

- Understanding Closures
- Concurrency vs Threads
- Grand Central Dispatch

## **Networking and Internet**

Network Communication – AFNetworking, Game Kit framework (Peer to Peer), WebKit Framework and RESTful APIs (JSON, XML and Regular Expressions).

## **Data Management**

Using the manager - MVCS model approach. Advanced SQLite and Core Data with advanced schema and structures, Share Data among Apps, Access Contacts and Photos, Calendar Access and XML Files.

## **Advanced Interactivity Design**

Adding advanced layered touch support to views. Adding Gesture Recognizers. Overview of the Responding Chain. Drawing directly on Views.

## **Extending views and Customization**

Advanced UITableView usage, Advanced UIScrollView and UICollectionView usage.

## **Graphics and Animations**

Using Animations to make your App transition, move, and bounce using UIView and CALayer. Includes Auto Layout Animations, Core Animation, OpenGL ES, Core Image, Quartz 2D, AirPrint, Photo Library and basics of Sprite Kit.

## **Debugging and Error Handling**

Advanced Debugging and Error Handling. Assertions and Exceptions. Usage of Instruments in your Development.

## **Mobile App Integrations**

- Introduction to CocoaPods
- Understanding Ruby

## **Analytics**

Crash and Exception reporting, Custom Reports, Event Tracking, Flow Visualization and Real-Time Reporting using Google Analytics and Crashlytics.



Contact

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