



# iOS Programming for iPhone® and iPad® Applications Using Objective-C

**Duration:** 35 hours

**Prerequisites:** Prior programming experience in an object-oriented language.

**Course Description:** Participants in this hands-on course will learn about and gain practice developing iOS applications for iPhone and iPad devices. Attendees will learn all the basics needed for iOS development, from installation of the Xcode editor to the Apple approval process. The Objective-C language is presented and used in hands on exercises to learn how it interacts with the hardware systems.

In hands on exercises, students will use built-in data views as well as create custom screens for data entry and presentation. Students will learn to follow Apple's design recommendations to provide clean interfaces that appropriately size to various devices and screens.

The course includes coverage of scheduled background execution to allow code to be run when the app isn't active and to schedule alerts to draw attention back to the app.

Comprehensive hands on exercises are integrated throughout to reinforce learning and develop real competency. Students will create apps from the ground up, demonstrating the features of Objective-C and serving as an introduction to developing apps for release to the App Store.

## Students Will Learn

- ➔ iOS Overview
- ➔ Using Xcode
- ➔ Objective-C Language Fundamentals
- ➔ Flow Control, Loops, Functions and Main
- ➔ Heap, Stack, Pointers, and the Preprocessor
- ➔ Object Oriented Programming with Objective-C
- ➔ Objective-C Methods and ARC
- ➔ Building iPhone Single View Applications with Xcode
- ➔ MVC Architectures
- ➔ Protocols/Delegates, Notifications and KVC/KVO
- ➔ Forms, Views and ViewControllers
- ➔ NSObjects and other Foundation Classes
- ➔ Dynamic Typing vs Static Typing and Introspection
- ➔ Singleton, Lazy Instantiation and Other Philosophies
- ➔ Exception Handling, Logging and Debugging
- ➔ Working with Threads
- ➔ System Events and Background Execution

## Overview

### Macintosh Orientation

- Versions of iOS and Supported Devices

### Objective-C

- Fundamental Syntax

- Overview of the New OS X
- Command Line Interaction
- Apple Approval Process

### Xcode IDE Installation and Use

- Installing and Updating Xcode
- Code Development and Tracking
- Debugging Utilities
- Application Navigation Tools

### MVC Architecture

- Model-View-Controller Development Paradigm
- Application Design Process

### SOA Application Design Overview

- Service Oriented Architecture
- Web Services Overview
- Apple Push Notification Service (APNs)

### Dynamic Typing

- Understanding the id Data Type
- Analyzing Objects for Type Safety
- Testing Objects for Function Support

### Custom View Design and Layout

- Designing Views
- Apple's UI Design Standards
- Utilizing Controls
- Custom View Transitions and Animations

### Blocks

- Purpose and Syntax of Blocks
- Block Animation Methods
- Developing Multithreaded Blocks

- Object Oriented Programming Support
- Using Dynamic Binding
- Using ARC
- Writing Code for Hardware Interaction
- Data Types and Structs
- Flow Control
- Pointers, Heap and Stack

### NeXTStep Object Support

- Using the NeXTStep Data Types
  - NSDate, NSPoint, NSSize, NSString
- Using the NeXTStep Collection Objects
  - NSSet and NSMutableSet
  - NSArray and NSMutableArray
  - NSDictionary and NSMutableDictionary

### System Event Handling

- Recognizing Apps Moving to Background
- Detecting and Solving Low Memory Events
- Handling Custom Events and Exceptions

### Threading Support

- Creating Threads
- Using Threads for Asynchronous Processing

### Basic Design Patterns Used in iOS

- Singleton Pattern
- Lazy Instantiation
- Protocol/Delegate Patterns

### Views and View Controllers

- Using Generic Views and View Controllers
- Using Specific Purpose Views
  - Text View
  - Web View
  - Map View
  - Table and Table Cell View

## Related Bootcamp

Track	Duration	Price
Mobile Application Developer	2-course track	\$2,400
	3-course track	\$3,600

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