

**Swift for Experienced Objective-C Programmers**

**Course Number:** SWFT-110  
**Duration:** 3 days

**Overview**

Accelebrate's Swift training course introduces experienced Objective-C programmers to the Swift language for Cocoa and Cocoa Touch. During the course, attendees complete activities that include building apps for both the iOS and OS X platforms.

**Prerequisites**

* All attendees must have extensive experience with the Objective-C programming language
* Previous experience building macOS or iOS applications using Xcode is assumed

**Materials**

All Swift training students receive a textbook, lab instruction manual, and a course workbook.

**Software Needed on Each Student PC**

* Mac running the current or immediately previous version of macOS, with 8 GB RAM or more
* The latest version of Xcode (available for free from the Apple App Store)

**Objectives**

* Understand the advantages of the Swift language and how it differs from Objective-C
* Gain experience using Swift’s data types and standard library
* Build iOS and macOS apps using Swift
* Learn how Swift supports object-oriented development principles
* Become familiar with the advanced features of the Swift language

**Outline**

* Introduction
  + Goals of the Swift Language
  + Swift vs. Objective-C
  + Interactive Playgrounds
  + Swift Package Manager
* Swift Basics
  + Statements
  + Constants and Variables
  + Type Annotations
  + Type Safety and Inference
  + Type Aliases
* Accelerated Language Concepts
  + Types
  + Operators
  + Strings and Characters
  + Control Flow
* Collection Types
  + Mutability
  + Tuples
  + Arrays
  + Array Literals
  + Dictionaries
  + Dictionary Literals
* Functions
  + Parameters and Return Values
  + Parameter Names
  + Default Parameter Values
  + Variadic Parameters
  + In-Out Parameters
  + Function Types
  + Nested Functions
* Closures
  + Closure Expression Syntax
  + Trailing Closures
  + Capturing Values
* Enumerations
  + Syntax
  + Switch Statement
  + Associated Values
* Classes and Structures
  + Properties
  + Lazy Stored Properties
  + Property Observers
  + Instance Methods
  + Type Methods
  + Subscripts
  + Inheritance
  + Overriding
  + Type Casting
  + Initialization
  + Initializer Chaining
  + Deinitialization
  + Nested Types
  + Extensions
* Automatic Reference Counting (ARC)
  + Introduction
  + Reference Cycles
  + Weak References
  + Unowned References
* Optionals
  + Forced Unwrapping
  + Binding
  + Implicitly Unwrapped Optionals
  + Optional Chaining
* Protocols
  + Syntax
  + Requirements
  + Protocols as Types
  + Delegation
  + Collections
  + Inheritance
  + Composition
* Generics
  + Generic Functions
  + Type Parameters
  + Generic Types
  + Constraints
  + Associated Types
* Debugging
  + Assertions
  + LLDB and the Swift REPL
  + Advanced Swift Debugging in LLDB
* Interoperability
  + Interacting with Objective-C APIs
  + Interaction with C APIs
  + Mixing Swift and Objective-C
  + Migrating an Objective-C Project to Swift
* Conclusion