

**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