

# ***iOS (Apple iPhone Development)***

**Objective:** To familiarize with the mobile application development on the Apple iPhone.

**Pre-requisites:** While this is an introduction to mobile development, it is not an introductory programming course. Accordingly students need to have working knowledge of at least one object-oriented programming language such as Java, JavaScript or C++.

## **Session 1 (Introduction to SWIFT Language)**

- Introduction to Swift Programming Language
- Variables & Constants
- Introduction to Functions (Methods)
- Arrays, Dictionaries, Data, Date and Other Basic Data Types
- Enums, Structures, Closures
- For, If, Switch Statements
- Object Oriented Concepts with SWIFT
- Type Check, AnyObject, Any
- Protocols, Extension, Error Handling
- Working with classes

## **Session 2 (Working with XCODE)**

- Introduction to XCODE
- COCOA Touch Framework
- iOS Application Architecture
- Application Lifecycle

## **Session 3 (Introduction to View Controllers and Views)**

- View Controllers, View, View LifeCycle
- Basic Controls – Labels, Buttons, TextField, UIImageView
- TableView with default cells and customized cells
- Collection view with default cells and customized cells
- Picker View, Date Picker, Scroll View, Navigation and Tab bar Controller
- Understanding Interface Builder, XIB Files
- Creating Outlets and Actions
- Handling Touch and Gesture Events
- Segment and Page Control, Switch View, UIAlertView

## **Session 4 (Integrating with Database)**

- Introduction to Data Storage Methods in iOS
- Using Core Data, SQLite Database, User Defaults, Property List

## **Session 5 (Web Services)**

- What are web Services
- Why do we use web-services
- How apps function with the help of web-services
- Introduction to different web services
- JSON Parsing, XML Parsing
- GET and POST Methods

## **Session 6 (Multimedia)**

- Playing Audio and Video
- Capturing Images using Camera, Getting the images from the Image Gallery
- Getting Images from Gallery
- Sending Mail and SMS from App

## **Session 7 (Map Integration)**

- Introduction to Maps
- Working with Pin Annotations

## **Session 8 (Communicating with other view Controllers)**

- Using Storyboard to design the app, Using Sequences
- Introduction to methods used for passing data from one to another view controller

## **Session 9 (Auto Layout)**

- Introduction to Auto-Layout
- Working with Constraints
- Using Constraints to change view sizes
- Programmatically control the views

## **Session 10 (Deep Concepts of Swift Language)**

- Introduction to Multithreading
- Multithreading in iOS App, Using NSThread, NSOperation and NSOperation Queue, GCD

## **Session 11 (Push Notifications)**

- Introduction to Notification
- NSNotification and NSNotificationCenter, UILocalNotifications, Push Notification Services

### **Session 12 (Troubleshooting App)**

- Debugging

### **Session 13 (Launching an iOS App)**

- Introduction to BundleID, AppID, Certificates
- Making a Build
- Posting app to App Store
- Using TestFlight

### **Session 14 (Mails and SMS)**

- Sending mail and SMS from an App

### **Session 15 (Map Kit)**

- Create Map
- Show Location On Map
- Using Delegate for Core Location and Map

### **Session 16 (Other Technologies Introduction)**

- Git/Bitbucket
- Vector Image
- Googles Firebase

### **Session 17 (Project Work)**