

INT372:IPHONE APPLICATION PROGRAMMING

L:3 T:0 P:2 Credits:4

Course Outcomes: Through this course students should be able to

CO1 :: understand the fundamental concepts of the Swift programming language and its role in iOS development

CO2 :: apply MVVM architecture principles to structure and simulate basic iOS applications.

CO3 :: demonstrate various UIKit controls to create interactive and functional iOS user interfaces.

CO4 :: classify and integrate different TableView structures for organized data presentation in apps.

CO5 :: utilize iOS project templates and tools to design scalable and modular mobile applications.

CO6 :: express responsive layouts and integrate web services to enhance app functionality and user experience.

Unit I

Introduction to iPhone and iOS platform with Swift : Difference between iOS and MAC OS, Object-oriented programming, Declaring & defining classes, Variables, Arrays, Methods & messages, Closure, Dictionary, struct, enum, guard

Unit II

MVVM architecture : Introduction to MVVM architecture, Introduction to Xcode, Workspace window, Interface-builder, Attribute inspector, Simulator & creating project, Looking at view controller, Understanding outlets, Actions, Designing UI, Application-delegate, Working with navigator pane, Utility pane, Activity life cycle

Unit III

UIKit controls : Implementing UIButton, UITextView & keyboard handling, UITextField and customizing inputs, UISwitch, UIImageView, Creating small application with these controls, Understanding & working with Views, Multi-view applications, Concept of segue, Calling another view-controller using navigation-controller, Passing & receiving data in them, UISegmented control, UISlider, UIAlertView, UIActionSheet, Progress View

Unit IV

TableViews : Implementing simple table, Customizing TableView cells, Grouped & indexed sections, Adding header, footer & image, Displaying item-selected, Navigating to another view, UITableView basics

Unit V

iPhone Project templates : Using navigation controllers, Concept of auto-layout, Playing audio & video files, Implementing UICollectionView, Implementing UIToolbar, UITabBar in applications, Database using SQLite

Unit VI

Web Services : Displaying maps & monitoring changes using MapKitFramework, WKWebView

List of Practicals / Experiments:

List of Practical

- Build a Basic iOS App Using Swift and Xcode.
- Design a basic responsive UI with Auto Layout.
- Build an app using multiple UIKit controls.
- Design app to implement a UITableView.
- Implement a Navigation Controller for multi-screen navigation
- Build an app to play video files using AVPlayer
- Design a simple app that utilize a WKWebView
- Build an App using SQLite

Text Books:

1. SWIFT DESIGN PATTERNS by MIHIR DAS, BPB PUBLICATIONS

References:

1. HEAD FIRST SWIFT: A LEARNER'S GUIDE TO PROGRAMMING WITH SWIFT by PARIS BUTTFIELD- ADDISON & JONATHON MANNING, SHROFF/O'REILLY