

Kadi Sarva Vishwavidyalaya, Gandhinagar

MCA Semester II

MCA-25(A) : Next Generation Application Development

Rationale:

This course teaches how to build a simple iOS app in iOS 7 from concept to release. Its approach is based on my personal experience of creating my first iOS app. You start with an idea for an app called Bands that gets fleshed out into a set of features. You then learn about Objective-C/Swift and the design concepts that are the foundation of Cocoa Touch and the iOS SDK. From there you start to build the Bands app by progressively building the project from what is essentially a “Hello World” app to a final app that includes all features you can find in many popular iOS apps

Prerequisites: Knowledge of object oriented programming

Learning Outcomes:

It's for current iOS developers who would like to learn some of the technologies included in newer releases of iOS and Xcode such as storyboards, auto layout, and local search.

Sub Total Credit	Teaching scheme		Examination scheme				
	(per week)		MID	CEC	External		Total Marks
	Th	Pr	Th	Th	Th.	Pr.	
5	3	4	25	25	50	50	150

Course Contents:

Unit 1 Getting Started: Scoping the App, Defining the Features, Creating a Development Plan

Starting a new app: Creating a New App in Xcode, Adding a Label to a Storyboard, Running in the Simulator, Learning About Auto Layout, Exploring Application Settings, Running on a Device

Unit 2 Creating a user input Form: Introducing the Band Model Object, Building an Interactive User Interface, Saving and Retrieving Data

Using table views: Exploring Table Views, Implementing the Bands Data Source, Implementing Sections and Index, Editing Table Data

Unit 3 Integrating the Camera and photo library in ios apps: Adding an Image View and Gesture Recognizer, Selecting a Picture from the Photo Library, Taking a Picture with the Camera

Integrating social media: Sending E-mails and Text Msges, Simplifying Social Network
Using web views: Learning About Web Views Adding Navigation

Exploring maps and local search: Learning About Map Views, Performing a Local Search

Unit 4 Getting started With Web services

- Learning About Web Services
- Exploring the iTunes Search API
- Discussing JSON
- Adding the Search View
- Introducing NSURLSession
- Creating and Scheduling a Data Task
- Parsing JSON
- Displaying Search Results
- Previewing Tracks
- Showing Tracks in iTunes

Unit 5 Deploying your ios app

- Deploying the App to Beta Testers
- Registering Beta Devices
- Generating Digital Certificates
- Creating an App ID and Ad Hoc Provisioning Profile
- Signing and Deploying an Ad Hoc Build
- Submitting the App to Apple
- Exploring iTunes Connect
- Creating an App Store Provisioning Profile
- Validating and Submitting an App

Text Book :

“Beginning iOS Programming - Building and Deploying iOS Applications”, **Publisher:** Wrox,
By: Nick Harris

Reference Books :

- Programming iOS 7
- iOS 7 Programming Cookbook
- iOS 7 Programming Fundamental

Unit wise coverage from Text Book

- Unit 1: Chapter -1,2,3
- Unit 2: Chapter-4,5
- Unit 3: Chapter-6,7,8,9
- Unit 4: Chapter 10
- Unit 5: Chapter – 12

Practical List based on basics of Swift Programming Language and iOS App Development.

1. Define a function named factorial to find out the factorial of given number. Pass an Integer and Return the result then print the same in main program.
2. Define a function to generate the result of a student. Pass marks of 5 subjects and Return the result as a tuple (per, grade). Find the grade using if statement. Print the tuple in the main program.

3. Define a class called Shape having members dim1, dim2, and area. Write member functions findArea and showArea. Inherit this Shape class into Square, Rectangle and Triangle. Override the member function findArea accordingly and implement the classes in main program.
4. To implement required and optional variables. Unwrapping of optional to the required.
5. To implement a function to find simple interest ($I = PRN / 100$). Function should omit the argument names.
6. Develop an IOS application having three controls. A Label, Text Field and a Button. Capture an event of button click. When button is clicked, the label should print "Hello" and the value of Text Field.
7. Develop an iOS application to open another view when button is pressed in the current view.
8. Develop an iOS application to perform Arithmetic operations.
 - The first view contains Two Text Fields, One Segmented Control showing Operations and a Button.
 - When the Button is clicked, generate result according to the operation and show it in
 - another view.
9. Write Swift code to implement required functions of the following data types.
 - NSArray and NSMutableArray
 - NSString and NSMutableString
 - NSDictionary and NSMutableDictionary
10. Create an iOS application to create student list and display it using TableView.
11. Create an iOS application to demonstrate the use of UIImageView. Use UITapGestureRecognizer to select an image from UIImagePickerController and UISwipeGestureRecognizer to remove an image from UIImageView.
12. Develop an app to pick pictures from photo gallery.
13. Create an iOS application to store username and password using NSUserDefaults. If user already exists then move to another controller and display welcome message on the UILabel otherwise save the data and prompt the alert message.
14. Write a code to demonstrate the use of table view controller to display Item list.
15. Demonstrate practical on use of Web View, Map View, Integration with Camera, Image Pickder Control and Image View.