GUJARAT TECHNOLOGICAL UNIVERSITY

COMPUTER ENGINEERING/ INFORMATION TECHNOLOGY
SUBJECT NAME: iOS PROGRAMMING
SUBJECT CODE: 2180714
B.E. 8th SEMESTER

Type of course: Elective

Prerequisite: Basics of programming language, Concepts of OOP, DBMS, Server side scripting

Rationale: iOS Programming which is based on objective C is used to design & develop all kind of applications for the devices which runs on iOS operating system platform under X-CODE IDE.

Teaching and Examination Scheme:

Teaching Scheme			Credits	Examination Marks						Total Marks
L	T	P	C	Theory Marks			Practical Marks			
				ESE (E)	PA (M)		ESE (V)		PA (I)	
					PA	ALA	ESE	OEP		
3	0	2	5	70	20	10	20	10	20	150

Content:

Sr. No.	Content	Total Hrs	% Weightage
1	Fundamentals: Overview of MAC OS and X-CODE, Introduction to iPhone Architecture, Essential COCOA Touch Classes, Interface Builder, Nib File, COCOA and MVC Framework, Overview of features of latest iOS.	7	30%
2	Swift Basics: Basics of objective c, Need of transformation from objective c to swift, Data types, variables, constants, operators, Decision making statements, looping, arrays, dictionaries, functions, enumerations, structure, classes, inheritance	8	15%
3	iPhone application development: Auto Layout, Views, Outlets and Actions, Different View Controller: single view Controller, Master-Detail View Controller, Navigation View Controller, Managing Application Memory, Application delegate, Handling Keyboard Input, UI Controllers: Label, Button, Text Field, Slider, Switch, Progress View, Page Control, Table View, Collection View, Image View, Text View, Web View, Map View, Date Picker, Picker View, Search Bar, Gestures, push notification, Image Picker, QR Code Scanner, Audio and Video, Accelerometer, Location service, 3D touch, attribute tracking, Making the app live, overview of watchos.	17	35%
4	Database Management: SqLite, Web Services, JSON parsing, XML Parsing, alamofire	12	20%

Suggested Specification table with Marks (Theory):

Distribution of Theory Marks					
R Level	U Level	A Level	N Level	E Level	C Level
15	**45**	**35**	**5***	-	**-**

Legends: R: Remembrance; U: Understanding; A: Application, N: Analyze and E: Evaluate C: Create and above Levels (Revised Bloom's Taxonomy)

Note: This specification table shall be treated as a general guideline for students and teachers. The actual distribution of marks in the question paper may vary slightly from above table.

Reference Books:

1. iOS 10 Programming Fundamentals with Swift by Matt Neuburg - O'Reilly Media Pub
2. Building iPhone and iPad Electronic Projects - MikeWesterfield - O'Reilly Media Pub.
3. Head First iPhone and iPad Development, 2nd Edition - Dan Pilone, Tracey Pilone - O'Reilly Media
4. Beginning iPhone and iPad Web Apps - ChrisApers, Daniel Paterson - Apress Pub

Course Outcome:

After learning the course the students should be able to:

1. Design iphone and ipad application.
2. Develop iphone and ipad application.
3. Upload ios application on app store

List of Experiments:

1. Installation of x-code on MAC.
2. Write a program in swift to check the number is even or odd.
3. Write a program in swift to check the number is prime or not.
4. Write a program in swift to check the string is palindrome or not.
5. Write a program in swift that convert birth date into year, month and days.
6. Write a program to create a simple calculator in swift.
7. Write a program to demonstrate different UI controllers.
8. Write an application to demonstrate the use of table control & views.
9. Develop an iphone application in which user can insert, update and delete the record in database.
10. Develop a program to generate a sign-up form which contains following fields. Username, Password, Gender, Birth-date, Country, Image, Submit, Terms and conditions. On successful registration attempt system must generate one alert message. (Label, Round rectangle button, Segmented control, Text field, Picker view, Data picker, Image view, Navigation)
11. Write an i-phone application which can play audio and video files.
12. Develop a medium size project using iOS programming with using all controllers, notifications, database & views.

Design based Problems (DP)/Open Ended Problem:

1. Create an iphone application by which the user can put/take the things on rent
2. Create one music player for iphone or ipad

Major Equipment:

- iMac/Macbook/machine which can run X-code.

List of Open Source Software/learning website:

- xcode
- https://developer.apple.com
- http://www.tutorialspoint.com/swift/

ACTIVE LEARNING ASSIGNMENTS:

Preparation of power-point slides, which include videos, animations, pictures, graphics for better understanding theory and practical work – The faculty will allocate chapters/ parts of chapters to groups of students so that the entire syllabus to be covered. The power-point slides should be put up on the web-site of the College/ Institute, along with the names of the students of the group, the name of the faculty, Department and College on the first slide. The best three works should submit to GTU.