GANPAT UNIVERSITY

FACULTY OF COMPUTER APPLICATIONS

Programme	Master of Computer Applications	**Branch/ Spec.**	Computer Application
Semester	III	**Version**	1.0.0.0
Effective from Academic Year	2024-25	**Effective for the batch Admitted in**	June 2024
Subject Code	P13A4IOS	**Subject Name**	IOS APPLICATION DEVELOPMENT

Teaching scheme						**Examination scheme (Marks)**			
(Per week)	**Lecture (DT)**		**Practical (Lab.)**		**Total**		**CE**	**SEE**	**Total**
	L	TU	P	TW					
Credit	2	0	2	0	4	Theory	40	60	100
Hours	2	0	4	0	6	Practical	20	30	50

Objective:

- The students will be able to develop iOS applications using the swift programming language.

Pre-requisites:

- *Knowledge of High-Level Programming Languages and Object-Oriented Programming Concepts*

Course Outcomes :

- **1 = Slight (Low); 2 = Moderate (Medium); 3 = Substantial (High); "-" = No Correlation**

Name of CO	**Description**
CO1	*Apply Swift programming constructs and iOS fundamentals using Xcode, Playground, and Interface Builder to develop basic iOS applications.*
CO2	*Design and implement interactive iOS user interfaces using OOP principles, UIKit framework, Auto Layout, and iOS application lifecycle.*
CO3	*Develop feature-rich iOS applications by integrating advanced views, gesture recognizers, notifications, file handling, and JSON parsing.*
CO4	Implement and evaluate data persistence techniques in iOS applications using Core Data, SQLite, plist, User Defaults, and Keychain.

Mapping of CO and PO

CO \ PO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**

CO1	3	2	1	2	–	–	–	2
CO2	2	2	3	2	2	–	–	2
CO3	2	2	3	3	2	–	–	2
CO4	2	2	3	3	–	–	1	2

Content:

Unit	SECTION-I	Hrs
1	**iOS Fundamentals and Swift Basics** Basics of iOS, Understanding the playground, xcode ,simulator and IB interface, NIB file and Storyboard Swift features, Variable, Constant, Swift Data type, Operators, ,Optional , Collection type and Tuple, Flow control [if and switch], Loops [for-in, for , while and repeat-while], Control transfer statements ,Trying out swift in playground, Enum, Type Casting ,	*5*
2	**OOPs Concepts and Introduction to UIKit Framework** Class, Object, Extensions, Protocols, Access Control, ARC, Understand iOS memory management, Design Pattern, Delegate Pattern, App Delegate, iOSApp life cycle, UI Elements, Connecting View and Controller, Auto Layout , Size class, Stack view, Interface Development, TableView,	*10*
	SECTION-II	
3	**Working with Views, Bar, Map and File manipulation** Collection View and various view controllers, Working with tab bar and tool bar, UIGesture Recognizer- Swipe, Pinch, Pan, Long Press, Notification – push and local notification, Accessing File and Directories, JSON Parsing	*9*
4	**Data Persistence** Core Data, SQLite database, plist , User defaults, Keychain	*6*

Practical Content:

List of programs specified by the subject teacher based on above mentioned topics.

Text Books:

1	Swift Cookbook by Cecil Costa Packt Publishing Limited (30 April 2015).

Reference Books:

1	Beginning Swift Programming (WROX) by Wei-Meng Lee 1st edition (20 February 2015).
2	iOS Programming Fundamentals with Swift By Matt Neuburg Publisher: O'Reilly Media (19 November 2019).
3	The Core iOS Developer's Cookbook by Erica Sadun and Rich Wardwell,Addison Wesley; 5th edition (9 March 2014).

MOOC/Certification Courses:

1	*https://developer.apple.com/*
2	https://nptel.ac.in/
3	https://www.edx.org/

Question Paper Scheme:

University Examination Duration: 3 Hours

Note for Examiner: -

(I) Questions 1 and 4 are compulsory with no options.

(II) Internal options should be given in questions 2, 3, 5 and 6.

SECTION – I

Q.1 –8 Marks

Q.2 –11 Marks

Q.3 –11 Marks

SECTION - II

Q.4 –8 Marks
Q.5 –11 Marks
Q.6 –11 Marks