

SIT1402	MOBILE APPLICATION DEVELOPMENT	L	T	P	Credits	Total Marks
		3	0	0	3	100

### UNIT 1 INTRODUCTION AND UI INTERFACE

9 Hrs.

Introduction to mobile technologies, mobile operation systems, Mobile devices - pros and cons, Introduction to Android, Versions, Features, Architecture, UI Widgets and Events handling, Layouts, Required tools - Eclipse, ADT, AVD, Application structure, Android Manifest file, Android design philosophy, Creating Android applications.

### UNIT 2 BUILDING BLOCKS AND DATABASES

9 Hrs.

Introduction to Activities and Intents - Understanding Activity life cycle, Linking Activities, Passing Data, Toast, Displaying a Dialog Window and Notifications. Content Provider, Services, Broadcast receivers, accessing databases, sample applications, debugging and deploying app, publish in Playstore.

### UNIT 3 OBJECTIVE C PROGRAMMING

9 Hrs.

Objective C - Data Types and Expressions, Decision Making and Looping, Objects and Classes, Property, Messaging, Categories and Extensions, Fast Enumeration - NSArray, NSDictionary, Methods and Selectors, Static & Dynamic objects, Exception handling, Memory management, **Required Tools - Xcode, iOS Simulator, Instruments, ARC, frameworks.**

### UNIT 4 INTRODUCTION TO iOS

9 Hrs.

Introduction to iPhone, History, Versions, Features, MVC Architecture, View Controller - Building the UI and Event handling, Application life cycle, Tab Bars, Story Boards and Navigation Controllers, Table View, Push Notification, Database handling, Debugging and Deployment, Publishing app in Appstore, sample applications.

### UNIT 5 WINDOWS MOBILE APP DEVELOPMENT 9 Hrs.

Introduction to Windows Phone 8, Application Life cycle, UI Designing and events, Building, Files and Storage, Network Communication, Push Notification, Background Agents, Maps and Locations, Data Access and storage, Introduction to silverlight and XAML, Running and Debugging the App, Deploying and Publishing.

**Max. 45 Hours**

### COURSE OUTCOMES

On completion of the course, student will be able to

- CO1 : Comprehend various mobile technology and business trends in mobile applications.
- CO2 : Develop the mobile applications using various controls.
- CO3 : Explore Objective C and sketch out the different built in blocks
- CO4 : Assess and deploy Iphone OS and apps
- CO5 : Design mobile applications using emulators.
- CO6 : Create applications to hand-held devices

### TEXT / REFERENCE BOOKS

- 1.Reto Meier, "Professional Android Application Development", Wrox Edition.
- 2.<http://www.tutorialspoint.com/android/index.htm>
- 3.<http://developer.android.com/training/index.html>
- 4.Stephen G. Kochan, "Programming in Objective C", Addition Wesley, 4th Edition.
- 5.David Mark, Jack Nutting and Jeff LaMarche, "Beginning iOS 5 Development", Apress Edition.
- 6.Baijian Yang, Pei Zheng, Lionel M. Ni, "Professional Microsoft Smartphone Programming", Wrox Edition.

### END SEMESTER EXAM QUESTION PAPER PATTERN

**Max. Marks : 100**

**Exam Duration : 3 Hrs.**

**PART A** : 10 questions of 2 marks each - No choice

20 Marks

**PART B** : 2 questions from each unit of internal choice, each carrying 16 marks

80 Marks

SITA1601	MOBILE APPLICATION DEVELOPMENT	L	T	P	Credits	Total Marks
		3	0	0	3	100

### COURSE OBJECTIVES

- To understand basic concepts of mobile technologies, different operating systems and how to work with Android .
- To develop applications for current and emerging mobile computing devices, performing tasks at all stages of the software development life-cycle.
- To learn how to code with objective C programming.
- To design, implement and deploy mobile applications for iOS .
- To design, implement and deploy mobile applications for windows OS.

#### UNIT1 INTRODUCTION TO ANDROID

9 Hrs.

Introduction to mobile technologies, mobile operation systems - pros and cons, Introduction to Android, Features, Architecture, UI Widgets and Events handling, Layouts, Application structure, Android Manifest file, Creating Android applications.

#### UNIT2 BUILDING BLOCKS AND DATABASES

9Hrs.

Introduction to Activities and Intents - Understanding Activity life cycle, Linking Activities, Passing Data, Toast, Displaying a Dialog Window and Notifications. Content Provider, Services, Broadcast receivers, accessing databases, Location and sensors, Multimedia audio, video and camera, Deploying and publishing application.

#### UNIT3 OBJECTIVE C PROGRAMMING

9 Hrs.

Objective C - Objects and Classes, Property, Messaging, Categories and Extensions, Fast Enumeration - NSArray, NSDictionary, Methods and Selectors, Static & Dynamic objects, Exception handling, Memory management, **Swift language essentials: Arrays, Dictionaries, functions.**

#### UNIT4 INTRODUCTION TO IOS

9Hrs.

Introduction to iPhone, MVC Architecture, View Controller - Building the UI and Event handling, Application life cycle, Tab Bars, Story Boards and Navigation Controllers, Table View, Push Notification, Database handling, **Introduction to icloud, Webkit framework in iOS8**, Deploying and publishing application.

#### UNIT 5 WINDOWS MOBILE APP DEVELOPMENT

9 Hrs.

Introduction to Windows Phone 8, Application Life cycle, UI Designing and events, Building, Files and Storage, Network Communication, Push Notification, Background Agents, Maps and Locations, Data Access and storage, Introduction to silverlight and XAML, Data Binding, Deploying and Publishing.

MAX. 45 Hours.

### COURSE OUTCOMES:

On completion of the course, student will be able to

- CO1: Understand the technologies and business trends impacting mobile applications.
- CO2: Understand and remember the components of android, iOS and Windows mobile applications.
- CO3: Learn the programming languages and techniques for developing mobile applications.
- CO4: Develop mobile applications with compelling user interface and database connectivity for real time applications for iOS.
- CO5: Deploy mobile applications with compelling user interface and database connectivity for real time applications for Windows OS.
- CO6: Develop and deploy mobile applications using silverlight .

### TEXT / REFERENCE BOOKS:

1. Reto Meier, "Professional Android Application Development", Wrox, 2010.
2. <http://www.tutorialspoint.com/android/index.htm>
3. <http://developer.android.com/training/index.html>
4. Stephen G. Kochan, "Programming in Objective C", Dorling Kindersley India Pvt.Ltd, 2012.
5. David Mark, Jack Nutting and Jeff LaMarche, "Beginning iOS 6 Development Exploring the iOS SDK", Apress, 2013.
6. Henry Lee, Eugene Chuvyrov, " Beginning Windows Phone App Development", Apress 2012.

### END SEMESTER EXAM QUESTION PAPER PATTERN

Max. Marks: 100

Part A: 10 questions carrying 2 marks each – No choice

Part B: 2 questions from each unit of internal choice, each carrying 16 marks

Exam Duration:3 Hrs.

20 marks

80 marks

SIT4402	MOBILE APPLICATION DEVELOPMENT LAB	L	T	P	Credits	Total Marks
		0	0	4	2	100

### SUGGESTED LIST OF EXPERIMENTS

1. To implement mobile application life cycle methods.
2. To implement simple calculator application.
3. To implement simple SMS application.
4. To implement authentication verification application without and with database.
5. To implement navigation application with multiple pages / activities.
6. To implement student placement registration form with database.
7. To implement a simple notification application.
8. To implement simple intent with data passing application.
9. To implement simple profile changer application through SMS.
10. To create mobile web browser application.
11. To create mobile e-mail application to sent a mail.
12. Mini project.

### COURSE OUTCOMES

On completion of the course, student will be able to

- CO1 : Build applications with GUI components using appropriate mobile application life cycle method.
- CO2 : Design reliable message passing applications employing various widgets, broadcast receivers and toast in android.
- CO3 : Develop event handlers and intent to link various database to mobile applications.
- CO4 : Build interactive mobile applications by importing web application concepts.
- CO5 : Create an e-mail application with the help of android software development packages
- .CO6 : Create mobile applications for real world requirements.

SITA2601	MOBILE APPLICATION DEVELOPMENT LAB	L	T	P	Credits	Total Marks
		0	0	4	2	100

### COURSE OBJECTIVES

- To develop applications for current and emerging mobile computing devices, performing tasks at all stages of the software development life-cycle.
- To learn how to utilize rapid prototyping techniques to design and develop sophisticated mobile interfaces.
- To understand the programming languages and platform for developing mobile applications.
- To design, implement and deploy mobile applications using an appropriate software development environment.
- To upload the developed application into the Android play store.

### LIST OF EXPERIMENTS:

1. To implement mobile application life cycle methods.
2. To implement simple calculator application.
3. To implement simple SMS application.
4. To implement authentication verification application without and with database.
5. To implement navigation application with multiple pages / activities.
6. To implement student placement registration form with database.
7. To implement a simple notification application.
8. To implement simple intent with data passing application.
9. To implement simple profile changer application through SMS.
10. To create mobile web browser application.
11. To create mobile e-mail application to sent a mail.
12. To add Google maps to an Android application.
13. To create photo show application
14. To create app to upload a document
15. Mini project

### NOTE:

1. Above applications have to be created and deployed in Android OS.
2. Environment Required: Android SDK / Android Studio.

### COURSE OUTCOMES:

On completion of the lab, student will be able to

- CO1: Understand how to set up Android Development Environment.
- CO2: Design various Android UI components.
- CO3: Develop Android applications using Java.
- CO4: Develop Android applications by using Eclipse with ADT / Android Studio.
- CO5: Create real time applications using Android database connectivity.
- CO6: Deploy the Android App into play store.