

List of New Courses Introduced in the Academic Year 2018-2019

ODD SEM

| S.No | Course Code | Name of the Course |
|-------------|--------------------|------------------------------------|
| 1 | SIT1401 | Human Computer Interaction |
| 2 | SIT1402 | Mobile Application Development |
| 3 | SIT4401 | Human Computer Interaction Lab |
| 4 | SIT4402 | Mobile Application Development Lab |

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|----------------|-----------------------------------|----------|----------|----------|----------------|--------------------|
| SIT1401 | HUMAN COMPUTER INTERACTION | L | T | P | Credits | Total Marks |
| | | 3 | 0 | 0 | 3 | 100 |

COURSE OBJECTIVES

- Understand the basics of human and computational abilities and limitations.
- Practice a variety of simple methods for evaluating the quality of a user interface.
- Apply appropriate HCI techniques to design systems that are usable by people.

UNIT 1 FOUNDATIONS OF HCI

9 Hrs.

The Human: I/O channels - Memory - Reasoning and problem solving; The computer: Devices - Memory - processing and networks; Interaction: Models - Frameworks - Ergonomics - Styles - Elements - Interactivity - Paradigms.

UNIT 2 DESIGN & SOFTWARE PROCESS

9 Hrs.

Interactive Design basics - process - scenarios - navigation - screen design - Iteration and prototyping. HCI in software process - software life cycle - usability engineering - Prototyping in practice - design rationale. Design rules - principles, standards, guidelines, rules. Evaluation Techniques - Universal Design.

UNIT 3 MODELS AND THEORIES

9 Hrs.

Cognitive models - Socio-Organizational issues and stake holder requirements - Communication and collaboration models - Hypertext, Multimedia and WWW.

UNIT 4 MOBILE HCI

9 Hrs.

Mobile Ecosystem: Platforms, Application frameworks - Types of Mobile Applications: Widgets, Applications, Games - Mobile Information Architecture, Mobile 2.0, Mobile Design: Elements of Mobile Design, Tools.

UNIT 5 WEB INTERFACE DESIGN

9 Hrs.

Designing Web Interfaces - Drag & Drop, Direct Selection, Contextual Tools, Overlays, Inlays and Virtual Pages, Process Flow. Case Studies.

Max. 45 Hours

TEXT / REFERENCE BOOKS

1. Alan Dix, Janet Finlay, Gregory Abowd, Russell Beale, "Human Computer Interaction", 3rd Edition, Pearson Education, 2004 (UNIT I, II & III).
2. Brian Fling, "Mobile Design and Development", First Edition, O'Reilly Media Inc., 2009 (UNIT IV).
3. Bill Scott and Theresa Neil, "Designing Web Interfaces", First Edition, O'Reilly, 2009 (UNIT V).

END SEMESTER EXAM QUESTION PAPER PATTERN

Max. Marks : 100

PART A : 10 questions of 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

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|----------------|---------------------------------------|----------|----------|----------|----------------|--------------------|
| SIT1402 | MOBILE APPLICATION DEVELOPMENT | L | T | P | Credits | Total Marks |
| | | 3 | 0 | 0 | 3 | 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 design, implement and deploy mobile applications using an appropriate software development environment.

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, AndroidManifest 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

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", Addison 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

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|----------------|---------------------------------------|----------|----------|----------|----------------|------------------------|
| SIT4401 | HUMAN COMPUTER INTERACTION LAB | L | T | P | Credits | Total Marks |
| | | 0 | 0 | 4 | 2 | 100 |

SUGGESTED LIST OF EXPERIMENTS

1. Design a drop-down list or a menu in a GUI keeping in view the serial position effect
2. Design of a Mobile Keypad focusing on size, layout and devilling(a minimum of two different layouts)
3. Design of different icons in Graphical user Interface (a minimum of four different icons)
4. Design UI screens for the elderly people with unsteady hands keeping in view the mouse sensitivity
5. Design a menu structure for ordering house- hold items from a mall directly to your home through a mobile phone interface. Categorize the items into menus and submenus. (make use of Hick's Law)
6. Design a UI for ATM Interface
7. Design a prototype of a TV remote Control Panel
8. Design a UI prototype of an Automatic vending machine for Drinks
9. Design a Mobile Interface for a Mall Map
10. Design a Mobile Interface screens for railway enquiry system
11. Design a Web Interface for Online banking system
12. Design a Web Interface for a University website

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| 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.

Note:

- Above applications have to be created and deployed in Android OS, iPhone OS, and Windows Phone OS.
- Environment Required: Android SDK in Linux Environment, Windows Phone OS SDK and iMac OS with Xcode and Objective C.