ITEC343 (Mobile Application Development)

General Information

Course Code	ITEC343		Required (R)/Selected Elective (SE)			R
Credit Hours	Theory	2	Lab	1	Total	3
Prerequisites	NIL					
Course Coordinator	Ms. Shazia Ali					

Course Description

The Mobile Application Development course is designed to provide students with a comprehensive understanding of mobile app development concepts, tools, and techniques. This course introduces mobile application development for the Android platform. Android is a software stack for mobile devices that includes an operating system, middleware, and key applications. The Android SDK provides the tools and APIs necessary to begin developing applications on the Android platform. Students will learn skills for creating and deploying Android applications, with particular emphasis on software engineering.

Course Objectives

This course will develop the students' ability to:

- Understanding Mobile application development concepts
- Explore the architecture of Android.
- Use android studio for Android application components.
- Understand activities and apply various components.
- Discover screen components and layouts.
- Exploit different views for the android application.
- Develop apps for android devices.
- Testing and debugging mobile applications

Course Contents

List of Topics	Weeks
Chapter -1 : **Introduction to Mobile application,** development, Overview of mobile App development, Different platforms (iOS, Android, etc.) and development frameworks and Introduction to IOS and Android OS	1,2
Chapter-2 : Getting Started with Android, Android Versions, Features of android, Android Architecture , Android devices ,Android development tools, Android Studio, Creating Android Virtual Devices (AVD), Android Development languages, Introduction to activities, fragment & Intent Displaying Notification	3,4,5
Chapter-3 : Getting to Know the Android User Interface, Components of Screen, Views and View Group, Frame Layout, Linear Layout, Table Layout, Relative Layout, Units of Measurement, Scroll View, Orientation, Anchoring Views, Action Bar	6,7

Chapter-4 : Designing Your User Interface with Views, Basic Views, Text View Edit Text, Button, Radio button & Radio Group, Checkbox, Image button, Toggle button, Progress bar, List views, Picker Views (Date & Time),Toasts	8,9
Chapter-5 : **Displaying Pictures and Menus with Views**, Image Switcher, Grid View, Image View, Display options menus, Context menus, Pop up menu, Web View	10,11
Chapter-6 : Data Persistence, Saving and loading Preferences, Options for saving, Persisting data to files, Guidelines for choosing best storage options, SQLite database, SQLite Classes, Where is data stored in Android?, Creating and using databases	12,13
Chapter-7: Testing & debugging mobile applications, Introduction, Importance of testing, Key objectives of mobile app testing, Types of Testing, Manual Testing, Automated Testing, Debugging Process	14,15

Textbook

- Required Textbook---Beginning Android Programming with Android Studio, 4th Edition, 2016, Jerome DiMarzio, ISBN: 978-1-118-70559-9

Reference Materials

- Headfirst Android Development- O'Reilly- 2nd Edition, Dawn Griffiths & David Griffiths ISBN: 978-1-491-97405-6

Course Learning Outcomes

CLO	**Description**	**Level of Learning**	**Mapped PI**
CLO-1	**Identify** the various Android components, **understand** the fundamentals of mobile application development, their specific purposes and lifecycles, and explain their roles within the process of mobile application development.	**Knowledge**	**PI 1.1, PI 1.2**
CLO-2	**Explain** the Android architecture and effectively **demonstrate** the ability to build, run, and debug a mobile application within this framework	**Comprehension and Applying**	**PI 2.2**
CLO-3	**Design** an Android application's user interface programmatically using appropriate UI frameworks and tools	**Applying**	**PI 2.1**
CLO-4	**Apply** techniques for integrating the user interface with a database and for storing files in both internal and external storage within an	**Applying**	**PI 2.3**

	Android application and methods of testing to enhance the app quality		
CLO-5	**Create** an Android-based application as a group mini-project, showcasing teamwork and collective problem-solving skills.	**Creating**	**PI 3.2,PI 3.3**

CLO-SO Mapping

	SO IDs					
CLO IDs	**SO-1**	**SO-2**	**SO-3**	**SO-4**	**SO-5**	**SO-6**
CLO-1	PI 1.1, PI 1.2	-	-	-	-	-
CLO-2	-	PI 2.2	-	-	-	-
CLO-3	-	PI 2.1	-	-	-	-
CLO-4	-	PI 2.3	-	-	-	-
CLO-5	-	-	PI 3.2,PI 3.3	-	-	-

Approvals

Prepared by	Shazia Ali	
Approved by	Dr Nadim Rana	TL Signature
Last update	5/10/2024	