Course: 305-02: Mobile Application Development - 1

Course Code	305-02
Course Title	Mobile Application Development – 1
Credit	4
Teaching per Week	4 Hrs
Minimum weeks per Semester	15 (Including class work, examination, preparation etc.)
Review / Revision	June 2021
Purpose of Course	Mobile application development is the process of creating software applications that run on a mobile device, and a typical mobile application utilizes a network connection to work with remote computing resources. Mobile device is used for different purposes ranging from email to online shopping and multiple apps for different reasons. Hence, the mobile development process involves creating installable software bundles, implementing backend services such as data access with an API, and testing the application on target devices. Knowledge about mobile application development on Android platform and gradually on hybrid platform is need of the current era.
Course Objective	1) To understand concepts of Mobile Technology 2) Understand the development process and have edge over mobile user interface (UI) design. 3) Understand various UI development tools, Application design interfaces and creating basic app on Android platform.
Pre-requisite	Basic knowledge of Simple HTML, concept of Operating system and basics of coding. This course will be mandatory to pursue Paper-405-02 (Mobile Application Development -2) in Semester-4.
Course outcome	- Students will be able to understand the concepts of Mobile technology - Students will have concepts of Android and Android frame work - Understand how data can be transferred using XML. - Understand setting up of Android environment. - Edge over Android widgets and development of basic Android based Apps.
Course Content	**Unit-1: Concepts of Mobile computing.** 1.1 Fundamentals of Mobile computing: 1.1.1 Concepts of fixed and wireless network 1.1.2 Introduction of Multiplexing, Modulation 1.1.3 Fundamentals of spectrum, Bluetooth technology 1.1.4 Concepts of Wireless Application Protocol(WAP) 1.1.5 Concepts of Mobile Agents. 1.2 Introduction of Android 1.2.1 History, concepts and Features of Android 1.2.2 Concepts of API framework 1.3 Intro. of Android Architecture (Software Stack) 1.3.1 kernel Native Libraries 1.3.2 Concepts of Native Libraries and Android Runtime(Dalvik VM) 1.3.3 Application Framework 1.3.4 Application **Unit-2: Setting up Android Environment:** 2.1 Android Emulator 2.1.1 Setting up JDK and Android Studio

	2.1.2 Android SDK manager 2.2 Creating Android Virtual Device (AVD) 2.3 Creating first App: 2.3.1 Activity 2.3.2 Layout **Unit-3: XML (Extensible Markup Language)** 3.1 Characteristic and Use of XML 3.2 XML syntax (Declaration, Tags, elements) 3.3 root element, case sensitivity 3.4 XML document: 3.4.1 Document Prolog Section 3.4.2 Document element section 3.5 XML declaration and rules of declaration. **Unit-4:Creating basic App** 4.1 Basic App using Android studio 4.1.1 Create new android project 4.1.2 Write message and run 4.1.3 Understanding different components. 4.2 Dalvik Virtual Machine (DVM) 4.3 Understanding AndroidManifest.xml **Unit-5: Android Widgets(UI):** 5.1 Hiding Title bar 5.2 screen Orientation (Portrait, Landscape) 5.3 Form Widget Palette 5.3.1 Placing text fields and Button 5.3.2 Button onClick event 5.4 Displaying Notification: 5.4.1 Toast Class 5.4.2 Displaying message on Toast 5.5 ToggleButton: 5.5.1 ToggleButton Attributes:(textOff, textOn) 5.5.2 Event methods : getTextOff(), getTextOn(), setChecked() 5.6 CheckBox: 5.6.1 Event methods: isChecked(), setChecked()
Reference Books	1) Android Application Development (With Kitkat Support), Author: Pradeep Kothari, Publisher:DreamTech Press.,ISBN:978-9351194095 2) Android Studio 3.0 Development Essentials: Android 8 Edition , Author: Neil Smyth, ISBN:978-1977540096 3) Flutter for Beginners: An introductory guide to building cross-platform mobile applications with Flutter and Dart 2, Author: Alessandro Biessek, Packt Publishing House,ISBN:978-1788996082 4) Beginning Flutter: A Hands On Guide to App Development, Author: Marco L. Napoli, Publisher: Wrox, ISBN:978-1119550822 5) Android Programming for Beginners - Second Edition, Author:John Horton, Publisher: Image Short ISBN: 978-1789538502 6) Android 9 Development Cookbook, Author: Rick Boyer, Publisher: Packet Publishing, ISBN:978-1788991216 7) The Dart Programming Language, Author:Bracha, Publisher:Pearson Education India, ISBN:978-9332570368 8) Google Flutter Mobile Development Quick Start Guide: Get up and running with iOS and Android mobile app development, Author: Prajyot Mainkar, Publication:Packt Publishing, ISBN:978-1789344967

	9) Practical Flutter: Improve your Mobile Development with Google's Latest Open-Source SDK ,Author: Frank Zammetti, Publisher: Apress, ISBN:978-1484249710
Teaching Methodology	Class Work, Discussion, Self-Study, Seminars and/or Assignments
Evaluation Method	30% Internal assessment. 70% External assessment.