Course: IT 803 Elective 2: Smart Device Computing Using Android

Course Code	803 Elective 2
Course Title	Smart Device Computing Using Android
Credit	4
Teaching per Week	4 Hrs
Minimum weeks per Semester	15 (Including Class work, practical, examination, preparation, holidays etc.)
Last Review / Revision	June 2019
Purpose of Course	Purpose of Course is help students to understand the components and structure of mobile application development framework of Android. The course also provides students with the skills necessary to develop an Android App from scratch to deploying it on the Google App Store.
Course Objective	Learn the basic and important design concepts and issues of development of mobile applications. Understand the capabilities and limitations of mobile devices. Write applications for the platforms used, simulate them, and test them on the mobile hardware where possible.
Pre-requisite	Basic programming knowledge of Java and Event handling
Course Out come	Course Out come is student will design and develop user Interfaces for the Android platform by applying Java programming concepts to Android application development and will be familiar with technology and business trends impacting mobile applications. Competent with the characterization and architecture of mobile applications
Course Content	**Unit 1 : Basics of Android** 1.1. Introduction to Android OS 1.1.1. Android Framework 1.2. Introduction to Android Studio 1.2.1. Setting up development environment 1.2.2. Android Development Tools 1.2.3. Android Studio Project structure 1.2.4. Testing and Debugging 1.3. Activity and Activity Life Cycle 1.4. View and ViewGroups 1.4.1. Linearlayout, Relative Layout, Constraint Layout, Webview,Gridview, Recycler View, Adapter View 1.5. Intent and Intent filter 1.6. Android UI Widgets 1.7. Menus in Android 1.7.1. OptionsMenu 1.7.2. PopupMenu 1.7.3. ContextMenu 1.8. Dialogs and Notifications 1.9. Fragment 1.9.1. Fragment Life Cycle 1.9.2. Creating Fragment 1.9.3. Communicate with other fragments 1.10. Styles and Themes 1.11. App Manifest File 1.12. App Permissions 1.13. App Bar 1.13.1. Setup the App bar 1.13.2. Add and handle actions **Unit 2 : Data Storage and Retrival** 2.1 Working with files 2.1.1 Internal Storage 2.1.2 External Storage 2.2 Working with network(P2P connection) 2.3 Managing Data using SQLite 2.4 Database Debugging 2.5 Shared Preferences 2.6 Content Provider

	2.6.1 ContentResolver 2.6.2 Working with Content Provider(Contacts,SMS,Call,MMS) 2.6.3 Creating Content Provider 2.7 Data Backup **Unit 3 : Services in Android** 3.1 Overview of Services 3.2 Service types 3.2.1 Bounded 3.2.2 Started 3.3 Asynchronous Task 3.4 Broadcast Receivers 3.4.1 Listening for specified broadcasts 3.4.2 System broadcasts 3.4.3 Custom & User defined broadcasts 3.4.4 Sticky Broadcasts 3.5 Google play services 3.6 Google Map and Events with Google Map 3.7 Geo coding and Reverse geo coding **Unit 4 : Working with Audio, Video and Camera** 4.1 Camera 4.1.1 Taking Photos 4.1.2 Recording Videos 4.1.3 Controlling the camera 4.2 Images & Graphics 4.2.1 Drawables 4.3 Audio and Video 4.3.1 MediaPlayer 4.3.2 MediaController 4.4 Animations **Unit 5 : Advance Programming in Adroid** 5.1 Android Web Services 5.1.1. Check HttpURL Connection. 5.1.2. Web Service Call 5.1.3. SQLITE and MySql in web Service 5.2 XML and JSON Parsing 5.3 Push Notifications 5.4 Working with Bluetooth, Wi-Fi and Sensors 5.5 Kotlin language in Android 5.6 Gradle plugin integration 5.7 Social Login with Google, Facebook or Twitter 5.8 Network Connectivity 5.9 Publishing App
Reference Book	1. Professional Android 4 by Reto Meier WROX Publication 2. Hello, Android: Introducing Google's Mobile Development Platform by Ed Burnrtte SPD publication 3. Android Essentials by Chris Haseman Apress Publication 4. Android Development by Mark L Murphy Wiley India 5. Sams Teach Yourself Android by Lauren Darcey &Sams Publishing 6. Android Application Development Black Book by Pradeep Kothari Dreamtech publication 7. Android Programming : Pushing the Limits by Erik Hellman Wiley India 8. Android Sensor Programming by Greg Milette Wiley India
Teaching Methodology	Class Room Teaching, Discussion and Assignment
Evaluation Method	30% Internal assessment 70% External assessment