Programme: MCA

Course Code: CSO-2   **Title of Course:** Android App Development

Number of Credits: 4 (4L-0T-0P)   **Total contact hours:** 48 hours (48L-0T-0P)

Effective from AY: 2021-22

Prerequisites for the course	Hands-on experience in object oriented programming(CSC-106) and web development basics(CSC-201,CSC-205) and Knowledge of OS(CSC-103)	
Objectives	On completion of this course, the learner should be able to successfully build, debug and deploy android apps.	
Content	**Android OS, Ecosystem & Basics** ● Mobile Platforms & OSs; Approaches to mobile development; Android OS; Android System Architecture; Android App Lifecycle; Play Store ● Intro; Create Your First Android App; Layouts, Views and Resources; Text and Scrolling Views; Resources to Help You Learn ● Activities and Intents; The Activity Lifecycle and Managing State; Starting Activities with Implicit Intents ● Debugging your apps; Testing your app; Support libraries, and Backwards Compatibility	15 hours
	User Interface ● Screen Sizes; User Interaction - User Input Controls, Menus; Screen Navigation; RecyclerView ● Delightful User Experience; Drawables, Themes and Styles; Material Design; Providing Resources for adaptive layouts ● Testing the User Interface	15 hours
	Background Tasks ● Background Tasks; AsyncTask and AsyncTaskLoader; Connecting to the Internet; Broadcast Receivers; Services ● Triggering, Scheduling, and Optimizing Background Tasks; Notifications; Alarm Manager; Transferring Data Efficiently	9 hours
	Data Saving, Retrieving, Loading ● Overview to storing data ● Shared Preferences; App Settings ● SQLite; Firebase ● Sharing Data: Content Resolvers and Content Providers ● Using Loaders to Load and Display Data ● Connecting with API service endpoints	9 hours
Pedagogy	Hands-on assignments / tutorials / peer-teaching /	

	troubleshooting	
References/ Readings	1. Bill Philips & Brian Hardy, "Android Programming: The Big Nerd Ranch Guide" 2. Dawn Griffiths & David Griffiths, "Head First Android Development" 3. Ian F. Darwin, "Android Cookbook" 4. https://developer.android.com 5. https://kotlinlang.org	
Learning Outcomes	1. Learner will understand the android ecosystem, android versions & compatibility across them. 2. Learner will be able to design user interfaces specifically to be run native android devices. 3. Learner will be able to evaluate which type of views & widgets are preferable for various use cases. 4. Learner will be able to build and design navigation flows in an app. 5. Learner will be able to connect the app to Android services or apps already available on the device. 6. Learner will be able to build apps that can store data locally or remotely.	