DMAD-1-03T: Introduction to Android

Total Marks: 100
External Marks: 70
Internal Marks: 30
Credits: 4
Pass Percentage: 40%

Course: Introduction to Android	
Course Code: DMAD-1-03T	
Course Outcomes (COs) After the completion of this course, the students will be able to:	
CO1	Gain proficiency in Android app development, understanding the Android Studio development environment, Java or Kotlin programming languages, and the fundamental concepts of building Android applications.
CO2	Develop skills in designing user interfaces (UI) for Android applications, adhering to Android's design principles and guidelines to create visually appealing and user-friendly experiences.
CO3	Understand the process of deploying Android applications on the Google Play Store, including the necessary steps for app submission, review, and updates.
CO4	Learn to integrate and utilize various Android APIs and features, such as location services, camera access, notifications, and other functionalities to enhance the capabilities of Android applications.
CO5	Gain a comprehensive understanding of the Android ecosystem, including the Android OS architecture, application lifecycle, and how apps interact with the underlying system and hardware.

Detailed Contents:

Module	Module Name	Module Contents
Module I	**Introduction to Android**	Introduction to Android: Android as a popular mobile platform, History of Android, Evolution of Android, Features of Android, Comparison of mobile Operating systems, Devices that run Android as the Operating System, Categories of Android applications Android Architecture: Introduction, Android Architecture, Android Architecture, Types of mobile applications, Application Fundamentals
Module II	**Activity lifecycle**	Activity lifecycle: Introduction, what is an Activity in Android? Android Application Fundamentals, what are the Android process states? Android Development Environment: Introduction, Reasons for Android Development, Android Development Platforms, Features and Tools, Configuring Android Development Environment, Setting Up

		Android Development Environment, Install Android for Windows 10
Module III	**Integrating Multimedia**	Integrating Multimedia: Introduction to Multimedia, Audio and video integration into Android Application Development, Multimedia for Android Interactive Application Development, Camera functions in Android Application Development, Supported Media Formats, Saving Data on Android Devices: Android Storage Options, Shared Preferences, Internal Storage, External Storage, Saving data in SQLite databases
Module IV	**Connectivity and the cloud**	Connectivity and the cloud: Connecting devices wirelessly, performing network operations, Considerations when transferring data, syncing to the cloud with information delivery models, Push Notification, publish to Android Market: How can you obtain an Android Application? App Stores, Revenue Models, Google Play, Process of Publishing an Android Application, Performance Profiling, Android Monitor Overview, Android Monitor Basics, Profiling a Running App in Android Monitor, How Android Manages Memory, Battery Analysis, Optimizing Battery Analysis, Security: Security Concerns of an Android Application, Security Provided by the OS, Information Leakage, Device Management Policies

Books

1. Dawn Griffiths and David Griffiths, "Head First Android Development", Shroff/O'Reilly
2. Bill Phillips and Chris Stewart, "Android Programming: The Big Nerd Ranch Guide", Big Nerd Ranch Guides
3. Neil Smyth, "Android Studio 4.0 Development Essentials - Kotlin Edition" , O'Reilly Media
4. Michael Burton and Donn Felker, "Android App Development for Dummies", For Dummies
5. John Horton, "Android Programming for Beginners", Packt Publishing