



Mobile Application Development Course

(Android with Kotlin + Flutter Framework)

Duration: 4 Weeks | Level: Beginner to Intermediate

Mode: Hands-on Sessions + Projects + Deployment

Target Audience: CSE/IT/ECE students, App enthusiasts, Startup founders

WEEK 1: Android Development using Kotlin – Fundamentals

Topics:

- Android Studio Setup & Project Structure
- Kotlin Basics for Android
- Activity & Fragment Lifecycle
- UI Design using XML
- Buttons, TextView, EditText, ImageView
- Intents and Navigation

Lab Activities:

- “Hello Android” App
- Basic Login Screen
- Passing Data Between Screens

Mini Project:

- Simple Calculator / To-Do App

WEEK 2: Android Advanced + API Integration

Topics:

- RecyclerView and Adapter
- Shared Preferences & Data Storage

- **Firestore Setup (Authentication & Realtime Database)**
- **Consuming REST APIs with Retrofit**
- **JSON Parsing**

Lab Activities:

- **Build a Blog Reader using API**
- **Firestore Login System**

Mini Project:

- **News Reader App using API + Firestore**

WEEK 3: Flutter Development – UI & Navigation

Topics:

- **Flutter & Dart Introduction**
- **Flutter Project Structure**
- **Widgets (Stateless vs Stateful)**
- **Layouts: Rows, Columns, Stack, Container**
- **Navigation and Routes in Flutter**
- **Forms & Input Handling**

Lab Activities:

- **“Hello Flutter” App**
- **Registration Form UI**

Mini Project:

- **Student Info App (Multi-screen Navigation)**

WEEK 4: Flutter Advanced + Firestore Integration

Topics:

- **State Management (Provider / setState)**
- **Local & Cloud Data Storage (Firestore Firestore)**
- **Integrate APIs in Flutter**
- **Firestore Authentication**
- **Publishing Apps to Play Store (Demo)**

Lab Activities:

- **Flutter Login System with Firebase**
- **Display Dynamic Data with Firestore**

Final Project:

- **E-Commerce App / Notes App / Weather App (Flutter + Firebase)**