

Diploma in Flutter App Development

Duration: 6 Months

Course Overview

The **Diploma in Flutter App Development** equips learners with the knowledge and skills to design, build, and deploy cross-platform mobile applications using **Flutter and Dart**. The course covers everything from Dart programming fundamentals, Flutter widgets, and UI design principles to state management, API integration, and advanced app features. By the end, learners will be capable of building and deploying fully functional apps for both **Android and iOS platforms**.

Course Objectives

1. To provide a strong foundation in **Dart programming language**.
 2. To train students in **Flutter framework** for cross-platform development.
 3. To build skills in **UI/UX design** using Flutter's widget system.
 4. To teach **state management techniques** for handling complex applications.
 5. To develop practical knowledge in **API connectivity and data handling**.
 6. To introduce **advanced Flutter features** such as animations, notifications, and Firebase.
 7. To prepare students for **app deployment** on Android Play Store and Apple App Store.
 8. To enable students to work on **real-world projects and portfolios** for careers in app development.
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Course Outcomes

By the end of the course, learners will be able to:

- Write and debug **Dart programs**.
- Build mobile apps using **Flutter framework**.
- Create **interactive and responsive UIs**.
- Manage state using **Provider, Riverpod, or Bloc**.
- Integrate **REST APIs** for real-world applications.

- Implement **advanced app features** (push notifications, Firebase, animations).
 - Deploy apps to **Google Play Store** and **Apple App Store**.
 - Work as **Flutter App Developers, Mobile App Engineers, or Freelance Developers**.
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Course Syllabus

Module 1: Introduction to Flutter & Dart

- Introduction to Mobile App Development
 - Overview of Flutter & Cross-Platform Development
 - Dart Programming Basics (Variables, Data Types, Operators, Control Flow)
 - Functions & Collections in Dart
 - Object-Oriented Programming in Dart (Classes, Inheritance, Interfaces)
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Module 2: Flutter Basics

- Setting up Flutter SDK & Android Studio/VS Code
 - Flutter Project Structure & Architecture
 - Widgets in Flutter – Stateless & Stateful
 - Layouts (Row, Column, Stack, Container, ListView, GridView)
 - Navigation & Routing
 - Handling User Input & Forms
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Module 3: UI/UX Design with Flutter

- Material Design & Cupertino Widgets
 - Styling & Theming Apps
 - Images, Icons & Custom Fonts
 - Gesture Detection & Touch Events
 - Responsive Design & Media Queries
 - Mini Project – Personal Profile App
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Module 4: State Management

- Introduction to State Management
 - setState() and InheritedWidget
 - Provider for State Management
 - Riverpod / Bloc (optional advanced)
 - Practical App – To-do List with State Management
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Module 5: API Connectivity & Data Handling

- Introduction to REST APIs
 - HTTP Package for API Calls
 - JSON Parsing in Flutter
 - Fetching & Displaying Remote Data
 - SQLite & Hive Local Database
 - Mini Project – Weather App with API
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Module 6: Advanced Flutter Features

- Animations (Implicit & Explicit Animations)
 - Push Notifications with Firebase Cloud Messaging
 - Firebase Authentication & Firestore Database
 - File Handling & Media Access (Camera, Gallery, Storage)
 - Maps & Location Services
 - Mini Project – Chat App with Firebase
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Module 7: App Deployment

- Preparing Apps for Deployment
- Debug vs Release Mode
- Generating APK & App Bundle for Android
- Testing on Real Devices & Emulators

- Publishing App on **Google Play Store**
 - Steps for Deployment on **Apple App Store**
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Module 8: Final Project & Assessment

- Planning & Designing a Real-World App
 - Possible Projects:
 - E-commerce App
 - Social Media App
 - Expense Tracker App
 - Online Learning App
 - Full App Development (UI + API + Database + Deployment)
 - Final Testing & Debugging
 - Presentation & Certification
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☒ This diploma ensures students are **job-ready Flutter developers**, capable of building **cross-platform apps** with **real-world functionality**.