

# MOBILE APP DEVELOPMENT WITH FLUTTER

## Course Curriculum

### Course Overview:

*This course is designed to equip students with a comprehensive understanding of the Flutter framework for efficient mobile application development. Through hands-on exercises, real-world examples, and practical projects, students will gain the skills needed to create engaging and responsive mobile applications using Flutter's powerful toolkit.*

WEEK	DAY	MODULE	OBJECTIVES	TOPICS	HOURS
Week 1	Day 1	1. Introduction to Flutter - 1	This module introduces students to what Flutter is and discusses its importance in app development.	1. Introducing Flutter	1.00
✓	✓	2. Introduction to Flutter - 2	Moving forward with introduction providing step-by-step instructions for installing Flutter and setting up the development environment on different platforms. - We are walking through the process of creating a simple "Hello, World!" Flutter app.	1. Setting Up the Development Environment 2. Creating Your First Flutter app 3. Understanding the basic project structure	2.00
✓	Day 2	3. Dart Fundamentals	Introduction to Dart programming language basics, including data types, variables, and functions and Providing hands-on exercises to practice Dart syntax.	1. Dart data types 2. Variables, and functions.	1.5
✓	✓	4. Control Structures	Explaining if-else statements, loops (for, while), and switch statements in Dart and Showing how to use these control structures in Flutter app development.	1. If-else, and switch statements 2. For, while loops	1.5
Week 2	Day 3	5. Object-Oriented Programming in Dart	Explain the different stages that a Product undergoes and how each one is essential in building a valuable product.	1. What is OOP? 2. OOP concepts such as Classes, Objects, Constructors, and Methods.	3.00
✓	Day 4	6. Introduction to Flutter Widgets	The module takes an in-depth look at what widgets are in Flutter and how everything is a widget. We are introducing basic widgets like Text, Container, and Scaffold.	1. What are widgets in Flutter? 2. Intro to basic widgets	1.50

WEEK	DAY	MODULE	OBJECTIVES	TOPICS	HOURS
✓	Day 4 cont...	7. Getting Familiar with Layouts	Discussion on the importance of layouts in app design. Introduction to layout widgets like Row, Column, and Expanded.	1. What are Layouts? 2. Introduction to Rows, Columns and Expanded	1.50
Week 3	Day 5	8. Building User Interfaces - 1	Indepth practical examples of working with Text, Buttons, Images, and icons and Customization of these widgets for various use cases. Discussion on responsiveness and building for multiple screen sizes	1. Working with basic widgets: Text, Buttons, Images, and Icons 2. Responsive design principles using MediaQuery and LayoutBuilder	1.50
✓	✓	9. Building User Interfaces - 2	Introduction to navigation in Flutter apps. - Extending navigation by introducing named routes and passing data between screens. - We are implementing basic navigation scenarios.	1. Understand Basic navigation concepts using Navigator and routes 2. Named routes and passing data between screens	1.50
✓	Day 6	10. Introduction to State Management - 1	Exploring StatefulWidget and State classes for handling mutable state in Flutter and creating a simple StatefulWidget example. - Implementation of basic state management using the setState method.	1. Exploring StatefulWidget and State classes. 2. Simple state management using setState	1.00
✓	✓	11. Introduction to State Management - 2	This module goes further into state management in flutter using Riverpod, one of the best frameworks available for managing state in Flutter	1. The Riverpod Framework	2.00
Week 4	Day 7	12. Advanced UI Components and Data Handling - 1	Creation of dynamic lists and grids using ListView and GridView and their respective builders - Making HTTP requests using packages like http or dio while demonstrating how to handle asynchronous operations in Flutter.	1. Dynamic lists and grids using ListView and GridView 2. Making HTTP requests using packages like HTTP or dio	1.50
✓	✓	13. Advanced UI Components and Data Handling - 2	This module treats retrieval and parsing JSON data from REST APIs and displaying JSON data in Flutter widgets, building complex UI components like TabBars, AppBar, and BottomNavigationBar and Implementing various input fields and forms	1. Handling and Parsing of JSON Data 2. Complex UI components like TabBars, AppBar, and BottomNavigationBar 3. Input fields and forms	1.50

WEEK	DAY	MODULE	OBJECTIVES	TOPICS	HOURS
✓	Day 8	14. Building an App and Deployment - 1	Guiding students through the process of building a complete Flutter app that incorporates all concepts learned in previous classes. - We are encouraging students to apply their knowledge to create a functional app.	1. Build a complete app as a culmination of the course	1.50
✓	✓	15. Building an App and Deployment - 2	Overview of the deployment process for Android and iOS. and discussing the steps involved in publishing apps to app stores like Google Play Store and Apple App Store while emphasizing best practices for preparing an app for deployment.	1. Deployment and app Store: Discuss the Deployment process for Android and iOS	1.50
				<b>Total</b>	<b>24.00</b>