# FLUTTER APPLICATION DEVELOPMENT

Nature of the Course: Theory + Practical
Total Hours per Day: 2 Hours
Course Duration: 4 Weeks

## Course Summary

Flutter is Google's UI toolkit for building beautiful, natively compiled applications for mobile, web, and desktop from a single codebase. The goal is to enable developers to deliver high performance apps that feel natural on different platforms, embracing differences where they exist while sharing as much code as possible. It is Google's mobile app SDK, complete with a framework, widgets, and tools, that gives developers an easy way to build and deploy visually attractive, fast mobile apps on both Android and iOS platforms. It enables a smooth and easy cross-platform mobile app development.

## Completion Criteria

After fulfilling all of the following criteria, the student will be deemed to have finished the Module:

- Has attended 90% of all classes held.
- Has received an average grade of 80% on all assignments
- Has received an average of 60% in assessments.
- The tutor believes the student has grasped all of the concepts and is ready to go on to the next module.

## Required Textbooks

- Rap Payne, "Beginning App Development with Flutter", Apress.
- Marco L. Napoli, "Beginning Flutter: A Hands-on Guide to App Development", Wiley.

## Prerequisites

- Fundamental understanding of programming, bits/bytes, procedures, classes, and computer architecture. It's absolutely acceptable if you only have a theoretical understanding of programming, but you should be certain about what programming is and what you intend to gain from this session.
- If you are only interested in theory and have no interest/patience in spending at least 10 hours every week throughout the duration of the course, then this course might not be for you.
- If you have absolutely no idea about programming or do not see yourself doing programming in the next six -odd months, then this class may not be for you.

## Course Details
## Week I
## Introduction And Installation
- Introduction to Flutter
- Introduction to Cross-Platform Mobile Applications

## Basics Of Dart Programming Language
- Hello World
- Variables and Datatypes
- Control-Flow Statements
- Functions
- Comments
- Imports and Classes
- Async and Await

## Exploring Flutter
- Flutter Hello World Application
- Understanding Material Design
- Project Structure
- Concept of PUB

## Week II
## Understanding Widgets
- Introduction to Widgets
- Text

- Container
- Rows
- Columns
- Buttons
- Scaffolds
- Creating Custom Widgets

## List Of Items
- Using List Views
- Using List View Builder

## Navigation
- Using Navigator
- Using Routes
- Named Routes

# Week III
## Basics Of Stateful And Stateless Widgets
- Introduction to Stateless Widgets
- Introduction to Stateful Widgets
- Understanding Set State

## Using Plugins And Packages
- Installing Plugins in Applications
- Using Plugins (Image Picker, Camera etc.)

# Week IV
## Data Persistence
- Shared Preferences
- Using Database

## Http Requests
- Getting Data from a Remote Server
- Working with Data and Creating Data Models

## Projects
- To-Do Application
- CryptoCurrencys Tracker

- Blog Applications and Many More…

## Labs

Lab assignments will focus on the practice and mastery of contents covered in the lectures; and introduce critical and fundamental problem-solving techniques to the students.

## Learning Outcomes

- Building a contact profile page for an Android device's address book will teach you about layouts.
- You'll learn how to style apps with Flutter themes.