Course Code & Name	26CAPL8003 Mobile Computing Lab		
Teaching Hours /week (L: T:P: R)	0:0:4:0	Credits	2
CIE Marks	50	ESE Marks	50
Course Type	Lab (PCL)	Exam Hours	3
Prerequisites (if any)	26CAPC8003		

Course Objectives:

1. To develop cross-platform mobile applications using Flutter by understanding widget-based UI design, state management, and integration with backend services.
2. To gain hands-on experience in building, testing, and deploying interactive and responsive mobile apps for Android and iOS platforms using the Dart programming language and Flutter framework.

Course Outcomes (COs)

At the end of the course students should be able to:

CO#	Course Outcome	Bloom's Knowledge Level (KL)
CO 1	Design simple user interfaces for mobile apps using basic building blocks of the Flutter framework and Dart programming language.	K3
CO 2	Develop a simple Flutter application using simple widgets and layouts	K3
CO 3	Develop an Animation on Flutter and Develop Flutter applications using Dart packages	K3
CO 4	Develop an app to retrieve local and real-time data from the web	K3

Note: *K1- Remember, K2- Understand, K3- Apply, K4- Analyse, K5- Evaluate, K6- Create*

CO-PO Mapping Table (Mapping of Course Outcomes to Program Outcomes)

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8
CO 1	3	2	1	2	1	-	-	2
CO 2	3	3	2	3	2	-	-	2

CO 3	3	3	3	3	2	-	-	2
CO 4	3	3	3	3	3	-	-	2

Note: *1: Slight (Low), 2: Moderate (Medium), 3: Substantial (High), - : No Correlation*

Course Assessment Method

(CIE: 50 marks, ESE: 50 marks)

Continuous Internal Evaluation Marks (CIE)

Attendance	(Continuous Assessment) Preparation/Pre-Lab Work experiments, Viva and Timely completion of Lab Reports / Record	Internal Lab Examination-1	Internal Lab Examination- 2	Total
8	**22**	**10**	**10**	**50 Marks**

End Semester Examination Marks (ESE)

In Part A, all questions need to be answered and in Part B, each student can choose any one full question out of two questions.

Procedure/ Preparatory work/Design/ Algorithm	Conduct of experiment/ Execution of work/ troubleshooting/ Programming	Result with valid inference/ Quality of Output	Viva voce	Record	Total
10	**15**	**10**	**10**	**5**	**50 Marks**

Continuous Assessment (22 Marks)

1. Conduct of Lab Experiments/Project (12 Marks)
2. Timely Completion of Lab Reports/ Project Reports (5 Marks)
3. Viva Voce (5 Marks)

Final Marks Averaging: The final marks for conduct of experiments, viva, and records are the average of all the specified experiments in the syllabus.

Evaluation Pattern for End Semester Examination (50 Marks)

1. Procedure/Algorithm/Flowchart (10 Marks)
2. Conduct of Experiment/Execution of Work (15 Marks)
3. Quality of Output (10 Marks)
4. Viva Voce (10 Marks)
5. Record (5 Marks)

Exprt. No.	List of Experiments
1	Write a Dart program to input two numbers and display the greater number using if-else.
2	Write a Dart program to display the multiplication table of a number using a for loop.
3	a) Write a Dart program to create a class Student with fields Name, RollNo, and Marks. Create an object and display the values using a function. b)Create a Dart program that defines a Calculator class with methods for addition, subtraction, multiplication, and division.
4	a)Create a simple Flutter app that displays your name and a profile picture using basic Text and Image widgets. b)Build a Flutter app with two buttons and a text field. On clicking a button, update the text field with a greeting message.
5	Design a Login page using multiple layers of widgets
6	Create a Registration form using Form widget with TextFields for Name, Email, and Password.
7	Create a Flutter app that animates the size of a container when a button is clicked
8	Develop a Splash screen animation in Flutter
9	Create a Flutter app that fetches and displays weather information from a REST API
10	Develop a Flutter app to store and retrieve user details (name, email) using SQLite database.
11	Create a Flutter app to Implement CRUD operations using a List in Dart
12	Create a Flutter app to add and display a list of products using Google Cloud Firestore
13	Create a Simple app that retrieves and shows **news headlines** from a free web API.

Text Books				
Sl. No	**Title of the Book**	**Name of the Author/s**	**Name of the Publisher**	**Edition and Year**
1	Flutter for Beginners	Alessandro Biessek	Packt Publishing	**3rd Edition**
2	Flutter and Dart Up and Running	Dr. Deepti Chopra, Roopal Khurana	BPB Publications	First Edition 2023

Reference Books				
Sl. No	**Title of the Book**	**Name of the Author/s**	**Name of the Publisher**	**Edition and Year**
1	Beginning App Development with Flutter: Create Cross-Platform Mobile Apps	Rap Payne	Apress	First Edition 2019
2	Beginning Flutter: A Hands On Guide to App Development	Marco L. Napoli	Apress	

Web References/ Video Links (NPTEL, SWAYAM…)	
Sl.No	**Link ID**
1	https://www.geeksforgeeks.org/flutter-tutorial/
2	https://www.freecodecamp.org/news/how-to-develop-a-flutter-app-from-scratch/
3	https://flutter.dev/learn