PRASAD V POLTLURI SIDDHARTHA INSTITUTE OF TECHNOLOGY::AUTONOMOUS
DEPARTMENT OF COMPUTER SCINECNE AND ENGINEERING

USER INTERFACE DESIGN USING FLUTTER

Course Code	23ES1553	Year	III	Semester	I
Course Category	ES	Branch	CSE	Course Type	Practical
Credits	2	L – T – P	0 – 0 - 2	Prerequisites	OOP Concepts and Bootstrap
Continuous Evaluation:	30	Semester End Evaluation:	70	Total Marks:	100

Course Outcomes	
Upon successful completion of the course, the student will be able to:	
CO1 Apply the basics of Dart Language and Flutter SDK to develop mobile application	L2
CO2 Implement various interactive user interfaces with Flutter	L3
CO3 Develop an effective report based on various learning methods implemented.	L3
CO4 Apply technical knowledge for a given scenario and express with an effective oral communication.	L3
CO5 Analyze the output of flutter-based mobile applications.	L4

List of Experiments		
Exp. No.	**Experiment**	**Mapped CO**
1.	a) Install Flutter and Dart SDK. b) Write a simple Dart program to understand the language basics.	**CO1,CO3, CO4**
2.	a) Explore various Flutter widgets (Text, Image, Container, etc.). b) Implement different layout structures using Row, Column, and Stack widgets.	**CO1,CO2, CO3,CO4**
3.	a) Design a responsive UI that adapts to different screen sizes. b) Implement media queries and breakpoints for responsiveness.	**CO2,CO3, CO4**
4.	a) Set up navigation between different screens using Navigator. b) Implement navigation with named routes.	**CO2,CO3, CO4**
5.	a) Learn about stateful and stateless widgets. b) Implement state management using set State and Provider	**CO2,CO3, CO4**
6.	a) Create custom widgets for specific UI elements. b) Apply styling using themes and custom styles.	**CO2,CO3, CO4**
7.	a) Design a form with various input fields. b) Implement form validation and error handling.	**CO2,CO3, CO4**

8.	a) Add animations to UI elements using Flutter's animation framework. b) Experiment with different types of animations (fade, slide, etc.)	CO2,CO3, CO4
9.	a) Fetch data from a REST API. b) Display the fetched data in a meaningful way in the UI	CO2,CO3, CO4,CO5
10.	a) Write unit tests for UI components. b) Use Flutter's debugging tools to identify and fix issues	CO3,CO4, CO5

Learning Resources
Text Books
1. Marco L. Napoli, Beginning Flutter: A Hands-on Guide to App Development.   2. Rap Payne, Beginning App Development with Flutter: Create Cross-Platform Mobile Apps 1st Edition, Apres   3. Richard Rose, Flutter & Dart Cookbook, Developing Full stack Applications for the Cloud, Oreilly.
Reference Books
1. Mouaz M. Al-Shahmeh, Flutter Apps Development: Build Cross-Platform Flutter Apps with Trust   2. Thomas Bailey, Alessandro Biessek, Flutter for Beginners - Second Edition: An introductory guide to building cross-platform mobile applications with Flutter 2.5 and Dart
E-Resources & other digital material
1. https://codelabs.developers.google.com/codelabs/flutter-boring-to-beautiful#0   2. https://dart.dev/   3. https://flutter.dev/   4. https://www.tutorialspoint.com/dart_programming/index.htm   5. https://www.youtube.com/watch?v=OLjyCy-7U2U   6. https://www.youtube.com/watch?v=5rtujDjt50I&list=PLlxmoA0rQ-LyHW9voBdNo4gEEIh0SjG-q   7. https://www.youtube.com/watch?v=GLSG_Wh_YWc