

PVP SIDDHARTHA INSTITUTE OF TECHNOLOGY, KANURU, VIJAYAWADA
DEPARTMENT OF INFORMATION TECHNOLOGY

USER INTERFACE DESIGN USING FLUTTER

CourseCode	23ES1 553	Year	III	Semester	I
Course Category	ES	Branch	IT	Course Type	ENGINEERING SCIENCE
Credits	1	L – T – P	0-0-2	Prerequisites	DART LANGUAGE
Continuous Evaluation:	30	Semester End Evaluation :	70	Total Marks:	100

Course Outcomes			Blooms Level
Upon successful completion of the course, the student will be able to:			
CO1	Implement Flutter Widgets and Layouts, Responsive UI Design and with Navigation in Flutter		L3
CO2	Design and Develop Widges and customize widgets for specific UI elements, Themes, animation apart from fetching data		L3
CO3	Apply technical knowledge to conduct experiments as an individual, or team member using required tools.		L3

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	3		3						2		3	3
CO2	3	3	3		3						2		3	3
CO3					3				3		2		3	3
AVG	3	3	3		3				3		2		3	3

Syllabus		
Exp. No.	Contents	Mapped CO
1	a) Install Flutter and Dart SDK. b) Write a simple Dart program to understand the language basics.	CO1, CO3
2	a) Explore various Flutter widgets (Text, Image, Container, etc.). b) Implement different layout structures using Row, Column, and Stack widgets.	CO1, CO3
3	a) Design a responsive UI that adapts to different screen sizes. b) Implement media queries and breakpoints for responsiveness.	CO1, CO3
4	a) Set up navigation between different screens using Navigator. b) Implement navigation with named routes.	CO1, CO3
5	a) Learn about stateful and stateless widgets. b) Implement state management using set State and Provider.	CO2, CO3
6	a) Create custom widgets for specific UI elements. b) Apply styling using themes and custom styles.	CO2, CO3
7	a) Design a form with various input fields. b) Implement form validation and error handling.	CO2, CO3
8	a) Add animations to UI elements using Flutter's animation framework. b) Experiment with different types of animations (fade, slide, etc.).	CO2, CO3
9	a) Fetch data from a REST API. b) Display the fetched data in a meaningful way in the UI.	CO2, CO3
10	a) Write unit tests for UI components. b) Use Flutter's debugging tools to identify and fix issues	CO2, CO3

Learning Resources
Text Books
<ol style="list-style-type: none"> 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.