



**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**Syllabus for Integrated MSc, 7<sup>th</sup> Semester**  
**Branch: Information Technology**  
**Subject Name: Cross Platform Mobile Development Using Flutter**  
**Subject Code: 1370507**

**Teaching and Examination Scheme**

Teaching Scheme			Credits	Examination Marks				TotalMarks
L	T	P		Theory Marks		Practical Marks		
			ESE(E)	PA (M)	PA (I)	ESE(V)		
3	0	2	4	70	30	20	30	150

**Content:**

Sr. No.	Content	Teaching Hours	Module Weightage (%)
1.	<b>Introduction to Flutter</b> What is Flutter, Why Flutter? Flutter Framework, Architecture of Flutter Applications, Working of Flutter and Dart, installation of Flutter SDK, Using Hot Reload and themes, External packages import, project templates, organizing files and folders. -	5	10%
2.	<b>Introduction to Dart:</b> Introduction to Dart Programming-Variables and Data types- Decision Making and Loops. Functions- Object Oriented Programming.	7	15%
3.	<b>Introduction to Layouts</b> Introduction to Widgets- Gestures, Widget Build Visualization, Type of Layout Widgets- Single Child Widgets- Multiple Child Widgets- Advanced Layout, Application-Introduction to Gestures- Statement Management in Flutter. Ephemeral State. Management-Application State - scoped model- Navigation and Routing.	10	25%
4.	<b>Database Concepts</b> SQLite- Cloud Fire store- Internalization on Flutter- Using intl Package-Testing on Flutter-Types of Testing- Widget Testing- Steps Involved- Working Example-Deployment- Android Application- IOS Application- Development Tools- Widget Sets- Flutter Development with Visual Studio Code- Dart DevTools- Flutter SDK	12	25%
5.	<b>Animation &amp; Packages</b> Introduction to Animation Based Classes-Work flow of the Flutter Animation- Working. Application- Android Specific Code on Flutter- Introduction to Package- Types of Packages- Using a Dart Package- Develop a Flutter Plugin Package- Accessing Rest API- Basic Concepts- Accessing Product service API.	11	25%



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**Reference Books:**

1. Marco L. Napoli, “Beginning Flutter: A Hands on Guide to App Development”, John Wiley & Sons, 1st Edition, 2020.
2. D. Kopec, “Dart for Absolute Beginners”, Apress, 1st Edition, 2014.
3. Beginning App Development with Flutter: Create Cross-Platform Mobile Apps, By Rap Payne, 2019
4. Rap Payne, “Beginning App development with Flutter”, Apress, 1st Edition, 2019.
5. Eric Windmill, “Flutter in Action”, Manning Publications, 1st Edition, 2019.
6. Simone Alessandria, “Flutter Projects: A Practical, Project-based Guide to Building Real-world Cross-platform Mobile Applications and Games”, Packt Publishing Limited, 1st Edition, 2020.
7. Frank Zammetti, “Practical Flutter: Improve your Mobile Development with Google’s Latest Open-Source”, Apress, 1st Edition, 2019

**Course Outcome:**

After learning the course, the students should be able to:

No.	CO statement
CO-1	Understand the fundamentals of the Flutter framework.
CO-2	Model native platform code using Flutter and Dart.
CO-3	Develop Flutter applications using Dart packages and Use Flutter's tools to enhance your development process.
CO-4	Construct Flutter application using database.
CO-5	Make your app interactive with Build Animation on Flutter and Familiarize with API.