

## SEMESTER S7

### MOBILE APPLICATION DEVELOPMENT

(Common to CS/CA/CM/CD/CR/AI/AM/AD)

<b>Course Code</b>	<b>OECST725</b>	<b>CIE Marks</b>	40
<b>Teaching Hours/Week (L: T:P: R)</b>	3:0:0:0	<b>ESE Marks</b>	60
<b>Credits</b>	0	<b>Exam Hours</b>	2 Hrs. 30 Min.
<b>Prerequisites (if any)</b>	GXEST204 OR OECST615	<b>Course Type</b>	Theory

#### Course Objectives:

1. To impart a Comprehensive Mobile Development Knowledge
2. To give Proficiency in Flutter and Dart, UI/UX Design Skills
3. To present the Industry Practices and Deployment such as app security, testing.

#### SYLLABUS

<b>Module No.</b>	<b>Syllabus Description</b>	<b>Contact Hours</b>
<b>1</b>	<b>Fundamentals of Mobile Application Development:</b> Introduction to Mobile Application Development, Overview of Mobile Platforms: iOS and Android, Introduction to Flutter: History, Features, and Benefits, Setting Up the Flutter Development Environment*, Mobile App Architectures (MVC, MVVM, and BLoC), Basics of Dart Programming Language.	<b>9</b>
<b>2</b>	<b>User Interface Design and User Experience:</b> Principles of Mobile UI/UX Design, Designing Responsive UIs with Flutter, Using Flutter Widgets: StatelessWidget and StatefulWidget, Layouts in Flutter: Container, Column, Row, Stack, Navigation and Routing in Flutter, Customizing UI with Themes and Styles.	<b>9</b>
<b>3</b>	<b>Advanced Flutter Development:</b> State Management in Flutter: Provider, Riverpod, and BLoC	<b>9</b>

	Networking in Flutter: HTTP Requests, JSON Parsing, RESTful APIs Data Persistence: SQLite, SharedPreferences, Hive Asynchronous Programming with Dart: Futures, async/await, and Streams	
<b>4</b>	<b>Industry Practices and App Deployment:</b> Advanced UI Components and Animations, App Security Best Practices, Testing and Debugging Flutter Applications, Publishing Apps to Google Play Store and Apple App Store, Industry Trends and Future of Mobile Development with Flutter	<b>9</b>

**Course Assessment Method**  
**(CIE: 40 marks, ESE: 60 marks)**

**Continuous Internal Evaluation Marks (CIE):**

<b>Attendance</b>	<b>Assignment/ Microproject</b>	<b>Internal Examination-1 (Written)</b>	<b>Internal Examination- 2 (Written)</b>	<b>Total</b>
<b>5</b>	<b>15</b>	<b>10</b>	<b>10</b>	<b>40</b>

**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*

<b>Part A</b>	<b>Part B</b>	<b>Total</b>
<ul style="list-style-type: none"> <li>● 2 Questions from each module.</li> <li>● Total of 8 Questions, each carrying 3 marks</li> </ul> <p style="text-align: center;"><b>(8x3 =24 marks)</b></p>	<ul style="list-style-type: none"> <li>● Each question carries 9 marks.</li> <li>● Two questions will be given from each module, out of which 1 question should be answered.</li> <li>● Each question can have a maximum of 3 subdivisions.</li> </ul> <p style="text-align: center;"><b>(4x9 = 36 marks)</b></p>	<b>60</b>

## Course Outcomes (COs)

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

Course Outcome		Bloom's Knowledge Level (KL)
<b>CO1</b>	Explain the basics of mobile application development and different mobile platforms and the environment setup.	<b>K2</b>
<b>CO2</b>	Apply principles of effective mobile UI/UX design, develop responsive user interfaces using Flutter widgets.	<b>K3</b>
<b>CO3</b>	Experiment effectively with state in Flutter applications. networking and data persistence in Flutter apps.	<b>K3</b>
<b>CO4</b>	Apply security best practices in mobile app development and debug Flutter applications effectively.	<b>K3</b>

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

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

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
<b>CO1</b>	3	3	3	3								3
<b>CO2</b>	3	3	3	3	3							3
<b>CO3</b>	3	3	3	3	3							3
<b>CO4</b>	3	3	3	3	3							3

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

Text Books				
Sl. No	Title of the Book	Name of the Author/s	Name of the Publisher	Edition and Year
1	Flutter Cookbook	Simone Alessandria	Packt	2/e, 2023
2	Flutter for Beginners	Alessandro Biessek	Packt	1/e, 2019

<b>Reference Books</b>				
<b>Sl. No</b>	<b>Title of the Book</b>	<b>Name of the Author/s</b>	<b>Name of the Publisher</b>	<b>Edition and Year</b>
1	Flutter in Action	Eric Windmill	Manning	1/e, 2019
2	Flutter and Dart: Up and Running	Deepti Chopra, Roopal Khurana	BPB	1/e, 2023

<b>Video Links (NPTEL, SWAYAM...)</b>	
<b>No.</b>	<b>Link ID</b>
1	<a href="https://www.youtube.com/watch?v=VPvVD8t02U8">https://www.youtube.com/watch?v=VPvVD8t02U8</a>

# **SEMESTER 8**

**COMPUTER SCIENCE AND ENGINEERING**