

Course: 405-02: Mobile Application Development - 2

Course Code	405-02																																																						
Course Title	Mobile Application Development – 2																																																						
Credit	4																																																						
Course	Major Course																																																						
Level of Course	300 – 399 (Higher Course)																																																						
Teaching per Week	4 Hrs																																																						
Minimum weeks per Semester	15 (Including class work, examination, preparation etc.)																																																						
Review / Revision	2023-2024																																																						
Implementation From	2024-2025 A.Y.																																																						
Purpose of Course	Mobile application development is the process of creating software applications that run on a mobile device, and a typical mobile application utilizes a network connection to work with remote computing resources. Mobile device is used for different purposes ranging from email to online shopping and multiple apps for different reasons. Hence, the mobile development process involves creating installable software bundles, implementing backend services such as data access with an API, and testing the application on target devices. Knowledge about mobile application development on Android platform and gradually on hybrid platform is need of the current era.																																																						
Course Objective	<ol style="list-style-type: none"> 1) To understand concepts of Mobile Technology 2) Understand the development process and have edge over mobile user interface (UI) design. 3) Understand various UI development tools, Application design interfaces and creating basic app on Android platform. 4) Concepts of DART and introduction of FLUTTER. 																																																						
Pre-requisite	Basics of Mobile Application Development and designing concepts.																																																						
Course outcome	CO1: Students will be able to understand the internal concepts of Android. CO2: Students will have concepts of important Android Widgets(UI) CO3: To learn concepts of DART. CO4: To work on Flutter. CO5: To gain edge over Basic Flutter Widgets.																																																						
Mapping between Courses Outcome(CO) and Program Specific Outcome(PSO):	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th>PSO1</th> <th>PSO2</th> <th>PSO3</th> <th>PSO4</th> <th>PSO5</th> <th>PSO6</th> <th>PSO7</th> <th>PSO8</th> </tr> </thead> <tbody> <tr> <td>CO1</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>CO2</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>CO3</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>CO4</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>CO5</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>		PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	CO1									CO2									CO3									CO4									CO5								
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Course Content	<p>Unit-1 : Basic Attributes and Events of Important Android Widgets(UI)</p> <p>1.1 ListView, Custom ListView 1.2 DatePicker, TimePicker, ProgressBar 1.3 Horizontal and Vertical ScrollView 1.4 AutoCompleteTextView, TextWatcher to EditText 1.5 ImageSlider, ImageSwitcher, SearchView 1.6 TabLayout and FrameLayout</p>																																																						

	<p>Unit-2: Working with DART:</p> <p>2.1 DART overview, concept, features and installation 2.2 Online editor DartPad and dart2js tool 2.3 Executing Dart basic code using Command line, DartPad and IDE 2.4 Understanding DART syntax:</p> <ul style="list-style-type: none"> 2.4.1 Identifiers, Datatypes, variables, comments 2.4.2 Decision making (if, if..else, if..else if..., switch..case) 2.4.3 Iterative statements (for, for...in loop, while, do..while) 2.4.4 break, continue, label <p>2.5 DART function :</p> <ul style="list-style-type: none"> 2.5.1 Calling function, deleting function 2.5.2 Passing arguments to function, lexical scoping. <p>Unit-3: Introduction of Flutter:</p> <p>3.1 Fundamentals of Flutter:</p> <ul style="list-style-type: none"> 3.1.1 Installation and Architecture of Flutter 3.1.2 Features of Flutter 3.1.3 Creating basic flutter project using Android Studio <p>3.2 Flutter Widget:</p> <ul style="list-style-type: none"> 3.2.1 Types of flutter widget: <ul style="list-style-type: none"> 3.2.1.1 Visible and Invisible 3.2.1.2 StatelessWidget, StatefulWidget 3.2.1.3 Single child widget and Multiple child widget <p>UNIT-4: Flutter basic widgets:</p> <p>4.1 Visible widget(Constructor and Properties): Text, Image, Button, Icon</p> <p>4.2 Invisible widget(Constructor and Properties): column, row, center, padding, scaffold, stack</p> <p>4.3 Text, TextField</p> <p>4.4 Buttons, Slider</p> <p>4.5 Checkbox, RadioButtons</p> <p>Unit-5: Flutter widget (Constructor, attributes and Properties)</p> <p>5.1 Progress Bar, Stack</p> <p>5.2 Lists</p> <p>5.3 Alert Dialogbox , Tooltip</p> <p>5.4 Toast, Switch</p> <p>5.5 Charts, Flutter Form.</p>
Reference Books	<ol style="list-style-type: none"> 1) Android Application Development (With Kitkat Support), Author: Pradeep Kothari, Publisher: DreamTech Press., ISBN:978-9351194095 2) Android Studio 3.0 Development Essentials: Android 8 Edition , Author: Neil Smyth, ISBN:978-1977540096 3) Flutter for Beginners: An introductory guide to building cross-platform mobile applications with Flutter and Dart 2, Author: Alessandro Biessek, Packt Publishing House, ISBN:978-1788996082 4) Beginning Flutter: A Hands On Guide to App Development, Author: Marco L. Napoli, Publisher: Wrox, ISBN:978-1119550822 5) Android Programming for Beginners - Second Edition, Author:John Horton, Publisher: Image Short ISBN: 978-1789538502 6) Android 9 Development Cookbook, Author: Rick Boyer, Publisher: Packt Publishing, ISBN:978-1788991216 7) The Dart Programming Language, Author:Bracha, Publisher:Pearson

	Education India, ISBN:978-9332570368 8) Google Flutter Mobile Development Quick Start Guide: Get up and running with iOS and Android mobile app development, Author: Prajyot Mainkar, Publication:Packt Publishing, ISBN:978-1789344967 9) Practical Flutter: Improve your Mobile Development with Google's Latest Open-Source SDK ,Author: Frank Zammetti, Publisher: Apress, ISBN:978-1484249710
Teaching Methodology	Class Work, Discussion, Self-Study, Seminars and/or Assignments
Evaluation Method	50% Internal assessment. 50% External assessment.