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Aegis: Charutar Vidya Mandal (Estd.1945)

FACULTY OF ENGINEERING & TECHNOLOGY

Effective from Academic Batch: 2022-23

Programme: Bachelor of Technology (Artificial Intelligence (AI) and Data Science)

Semester: VI

Course Code: 202046712

Course Title: Mobile Application Development

Course Group: Professional Elective Course - II

Course Objectives: This course is gaining importance in today's digital era. This course aims to cover various methods of mobile application development that are required to become a professional app developer. This course provides hands-on experience and exposure to the required tools and techniques to produce industry-standard mobile apps using android and flutter

Teaching & Examination Scheme:

Contact hours per week			Course Credits	Examination Marks (Maximum / Passing)				
Lecture	Tutorial	Practical		Theory		J/V/P*		Total
				Internal	External	Internal	External	
3	0	2	4	50/18	50/17	25/9	25/9	150/53

* J: Jury; V: Viva; P: Practical

Detailed Syllabus:

Sr.	Contents	Hours
1	Overview of Android: Introducing Android, The Android Application Components, the manifest file, Downloading and Installing Android, Exploring the Development Environment, Developing and Executing the first Android Application.	04
2	Using Activities, Fragments, and Intents in Android: Working with activities, Using Intents, Fragments, Using the Intent Object to Invoke Built -in Application	05
3	Working with the User Interface Using View and ViewGroups: Working with View Groups, building data with the AdapterView Class, Designing AutoTextCompleteView, Implementing Screen Orientation, Designing the views programmatically, Handling UI events, Creating Menus.	06



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4	Storing the Data Persistently: Introducing the Data Storage Options, Using the internal storage, Using the external storage, Using the SQLite Database, Working with content Provider.	08
5	Working with Location Services and Maps: Working with Google Maps, Working with Geocoding and Reverse Geocoding. Use Media Player, Recording and Playing sound, creating a sound pool, Using Camera, Recording Video.	05
6	Working with Graphics and Animation: Working with Graphics, Using the Drawable Object, Using the ShapeDrawable object, Hardware Acceleration, Working with Animation. Signing the Android Application, Versioning the Android Application, Publishing the Android Application.	05
7	Introduction to flutter: Introduction Dart & Flutter, how to install flutter on android studio. The flutter user interface, widgets.	04
8	Flutter: Handling user input & Routing: Input widgets, validating input, custom input, Theming & styling, Routing: navigating between screens.	03
	Total	40

List of Practicals / Tutorials:

1	Configuring Android Development Environment.
2	Develop an android application that uses GUI components, Font and Colors.
3	Develop an android application that uses Layout Managers and event listeners.
4	Develop a standard calculator android application to perform basic calculations like addition, subtraction, multiplication, and division.
5	Develop an android application that create, save, update, and delete data in database.
6	Develop an android application that uses GPS location information.
7	Develop an android application that draws basic graphical primitives (Rectangle, circle etc.) on the screen.
8	Create an android application that writes data to SD Card.
9	Configuring Flutter Development Environment.
10	Develop a flutter application that uses GUI components, Font, and Colors.
11	Develop login signup application using flutter.

Reference Books:

1	Android Application Development Black Book by Pradeep Kothari, DreamTech
2	Beginning Android 4 Application Development by Wei Meng Lee, Wrox
3	Android Wireless Application Development by Lauren Darcey, Shane Conder, Pearson



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4	Flutter for beginners By Alessandro Biessek, Packt publication
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Supplementary learning material:

1	https://developer.android.com/
2	https://flutter.dev/

Pedagogy:

- Direct classroom teaching
- Audio Visual presentations/demonstrations
- Assignments/Quiz
- Continuous assessment
- Interactive methods
- Seminar/Poster Presentation
- Industrial/ Field visits
- Course Projects

Suggested Specification table with Marks (Theory) (Revised Bloom's Taxonomy):

Distribution of Theory Marks in %						R: Remembering; U: Understanding; A: Applying; N: Analyzing; E: Evaluating; C: Creating
R	U	A	N	E	C	
15%	25%	25%	15%	20%	---	

Note: This specification table shall be treated as a general guideline for students and teachers. The actual distribution of marks in the question paper may vary slightly from above table.

Course Outcomes (CO):

Sr.	Course Outcome Statements	%weightage
CO-1	Understand Android & flutter architecture, activities and their life cycle.	16
CO-2	Use View Groups comprising layouts and Views in application.	26
CO-3	Manage data binding, user interface events, maps	24
CO-4	Work with graphics, animation, still images and video.	20
CO-5	Publish and distribute Android Application	14

Curriculum Revision:

Version:	2.0
Drafted on (Month-Year):	June-2022



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Last Reviewed on (Month-Year):	-
Next Review on (Month-Year):	June-2026