16IT402 MOBILE APPLICATION DEVELOPMENT

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Prerequisite Course: Java Programming

Course Description and Objectives:

This course helps a student to design effective mobile applications using the Android development environment. The main objective of this course is to create user-friendly applications that involve design of layout, windows components,   and multiple screens with one- touch options.

Course Outcomes:

Students will be able to:

COs	Description	PO
CO1	Define, explain and understand the android mobile application design models and styles	-
CO2	Apply activities, dialog boxes, fragments, intents, views and layouts to android apps	PO1
CO3	Analyze various mobile applications during the design of mobile apps	PO2
CO4	Create user-friendly mobile user interfaces and views.	PO3, P10
CO5	Design and develop mobile apps for given real time scenario using modern tool android studio	PO5, PO10

Mapping of Course Outcomes (COs) to Programme Outcomes (POs)

POs COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1												
CO2	3											
CO3		2										
CO4			3							2		
CO5					2					3		

1: Weakly correlated 2: Moderately correlated   3: Strongly correlated

Skills:

- Writing mobile applications for user requirements.
- Usage of various components of Android operating system.
- Utilization of activities, intents, layouts and views for content.

Activities:

- Installation of Android Studio and required plug-ins.
- Creating activities, Dialog boxes and linking other activities in the application.
- Creating applications by using Activities, Fragments and Intents.
- Implementing applications using different views.

Syllabus

UNIT – 1 **9 Hours**

GETTING STARTED WITH ANDROID**:** Android introduction, Versions of android, Features of android, Architecture, Devices in the market, Developer community.

UNIT – 2 **10 Hours**

ACTIVITIES, FRAGMENTS, INTENTS: Understanding activities, Linking activities using intents, Fragments, Calling built in apps using intents.

UNIT – 3 **10 Hours**

GETTING TO KNOW ANDROID UI: Understanding the components of screen - Views and view groups, Liner layout, Absolute layout, Table layout, Relative layout, Frame layout, Scroll view.

UNIT – 4 **8 Hours**

DISPLAY ORIENTATION: Anchoring views, Resizing and repositioning views, Managing changes to screen orientation, Utilizing the action bar, Creating UI programmatically.

UNIT – 5 **8 Hours**

DESIGNING UI WITH VIEWS: Using basic views - Text view, Button, Image Button, Edit text, check Box, Toggle button, Radio button, and Radio group views, Progress bar view and Auto complete text view.

List of Experiments:
1. Installation of Android studio, its required tools and Android Virtual Device (Emulator).
2. Displaying the welcome message in AVD.
3. Creating a basic Activity and applying themes, styles to it.
4. Displaying various types of Dialog objects.
5. Linking activities with Intents.
6. Passing data using intent object.
7. Usage of Fragments and adding them dynamically to the application.
8. Communication between fragments.
9. Creating various layouts.
10. Displaying Action bar.
11. Handling view events.

Test Book:

Wei-Meng Lee, "Beginning Android Application Development", 1st Edition, John Wiley & Sons, Inc., 2012.

Reference Books:

1. Raimon Refols Montane, Laurence Dawson, "Learning and Android Application Development", 1st Edition, PACKT Publishing, 2016.
2. Reto Meier, "Professional Android 4 Application Development", 3rd Edition, Wrox, 2012.
3. Adam Gerber and Clifton Craig, "Learn Android Studio", 1st Edition, Apress, 2015.