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19CS312 MOBILE COMPUTING

Hours Per Week :

L	T	P	C
3	0	2	4

Total Hours :

L	T	P
45	-	30

CS	WA/RA	SSH	SA	S	BS
5	5	30	20	5	5

PREREQUISITE COURSE: OOPs through Java.

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. Also allows students to understand the of wireless and mobile communication technologies and applications.

COURSE OUTCOMES:

Upon completion of the course, the student will be able to achieve the following.

COs	Course Outcomes	POs
1	Define, explain and understand the android mobile application designmodels and styles.	1
2	Apply activities, dialog boxes, fragments, intents, views and layouts to android apps.	1
3	Analyze various mobile applications during the design of mobile apps.	2
4	Design and develop mobile apps for given real time scenario using modern tool android studio.	5,10
5	Analyze various routing algorithms used in mobile/wireless networks.	2

SKILLS:

- ✓ *Write mobile applications for user requirements.*
- ✓ *Use of suitable components of Android operating system to design mobile app.*
- ✓ *Utilize of activities, intents, layouts and views for content.*

UNIT– I **L- 9**

INTRODUCTION ANDROID: Android introduction - versions of android, features of android, architecture, devices in the market, developer community.

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

UNIT – II **L- 10**

ANDROID UI: Understanding the components of screen - views and view groups, liner layout, absolute layout, table layout, relative layout, frame layout, scroll view.

Display Orentations - anchoring views, resizing and repositioning views; Managing changes to screen orientation; Utilizing the action bar; Creating UI programmatically.

UNIT – III **L- 10**

DESIGNING UI WITH VIEWS: Using basic views - text view, button, image button, edit text, check box, toggle button, radio button, radio group views, progress bar view and auto complete text view.

UNIT – IV **L- 8**

MOBILE TELECOMMUNICATIONS SYSTEMS: Introduction to 1G, 2G, 3G systems; GSM - mobile services, system architecture, security services; GPRS architecture; UMTS architecture; Categories of wireless networks - infrared vs radio LANs; IEEE 802.11 - standards, architecture; Bluetooth.

UNIT – V **L- 8**

NETWORK LAYER: Mobile IP; Dynamic host configuration protocol; Routing - destination sequence distance vector routing, dynamic source routing, ad hoc on demand distance vector routing; Applications of wireless sensor networks; Transport and application layers - classical TCP improvements; WAP architecture.

LIST OF EXPERIMENTS

LIST OF EXPERIMENTS **TOTAL HOURS: 30**

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.

TEXT BOOK:

1. Wei-Meng Lee, “Beginning Android Application Development”, 1st edition, John Wiley & Sons, 2012.

REFERENCE BOOKS:

1. Raimon Refols Montane and 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.