FACULTY OF COMPUTER APPLICATIONS
Bachelor of Computer Applications

- **Sem.** :5
- **Subject Code** :05BC1506
- **Subject** : Android Programming
- **Course Objectives** :

    1. To be familiarized with mobile development and basics of android
    2. To understand UI designing and Fragment in android
    3. To integrate menus, animation, multimedia and background threads in Android Application
    4. To implement the concepts of SQLite, Content Provider and Shared Preferences in Android Application
    5. To learn how to publish Android App on Google Play store

- **Prerequisites** : OOP concepts, Core Java and RDBMS

Unit No	Topics Covered	No of lectures required
1	**Mobile Application Development:** • Defining Mobile Applications • The history of the Development of Mobile Apps • The History of Mobile Phones • Wireless Markup Language • History and Introduction of Android	05
2	**Basics of Android:** • OHA • Android Development Tools • Android SDK • Building Blocks of Android • Android Architecture • Activity Life-Cycle • AndroidManifest.xml file • Anatomy of Android Application • Building a Sample Android App	08

3	**Android UI Design Essentials:**	12
	• Working with Intents	
	• Types of Intents	
	• Fundamentals of android UI design	
	• Layouts (Linear, Relative, Table, Frame, Absolute)	
	• Introduction to adapters	
	• Widgets in android like TextView, EditText, RadioButton, RadioGroup, Spinner, ListView, Button, ImageButton, ToggleButton, CheckBox etc	
	• Working with WebView	
	• Introduction to Fragment	
	• Fragment Life-Cycle	
4	**Android UI Design Essentials:**	12
	• Animation (Frame-by-Frame, Tween)	
	• Menu (Options, Context)	
	• Introduction to Action Bar	
	• Working with Alarm	
	• Working with Telephony API	
	• Working with AsyncTask	
	• Working with VideoView	
	• Introduction to styles and themes	
5	**Working with Data and Storage in Android:**	13
	• Dialogs	
	• Creating, saving and retrieving shares preferences	
	• Managing and working with data using SQLite	
	• Sharing data between Applications using Content Provider	
	• Introduction to Monetization of Android App	
	• Signing and Publishing Android App	

Course Outcomes: (After completion of this course student should be able to)

1. Describe mobile development and basics of android
2. Design UI and develop Fragment for Android App
3. Develop an Android App using multimedia, menus, animation and background threads
4. Build their ability to develop Database Application by applying the concepts of SQLite and Content Providers.
5. Demonstrate how to publish Android App on Google Play store.

Course Outcomes – Program Outcomes Mapping Table :

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	H		L			H	M	L
CO2	L	L	H			M	L	H
CO3	L	M	H			M	L	H
CO4	L	M	H			M	L	H
CO5	L	L	M	L	L	M	L	H

Text Book:

1. **Professional Android 2 Application Development, Reto Meier Wiley India Pvt Ltd, Latest Edition**

Reference Books:

1. **Android Wireless Application Development, Darcey Lauren and Shane Conder, Pearson Education, Latest Edition**
2. **Mark L Murphy, "Beginning Android", Wiley India Pvt Ltd, Latest Edition**
3. **Beginning Android Application Development, Wei-Meng Lee, Wiley India Pvt. Ltd., Latest Edition**

Web References:

1. **https://developer.android.com**
2. **https://www.tutorialspoint.com/android/index.htm**

App References:

1. **Learn Android – Android App Development**
2. **Android Tutorial – Learn Android Online**

Syllabus Coverage from text book:

Unit #	Chapter Numbers
1	1,2,3
2	4,5
3	9,10,11,15,17
4	7,8,10,19

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PRACTICALS

Sr. No	List of Practicals
Unit – 2	
1.	Installing "Android Studio IDE" and "Android SDK
2.	Write your First Android App
3.	Create "Hello World" application. That will display "Hello World" in the middle of the screen also change the text color and background color of the text
4.	Create an application that designs a layout with a text box and button named Submit. The user should enter the text in the text box. When the submit button is clicked then the text in the text box should be displayed in the toast
5.	Create an application to demonstrate Android Activity Life Cycle.
Unit – 3	
6.	Create an application with login module (Check username and password) On successful login, go to next screen. And when login fails, alert user using Toast. Also pass username to next screen.
7.	Create an application that designs a layout having two text boxes user name and password. The user and password will be taken from the user. The username and password will be verified. If the verification is successful then a new layout will appear which will display username and password.
8.	Create an application to call specific entered number by user in the Edit Text
9.	Create an application that will show List of Countries in One fragment, when we click on the name of any country, the second fragment should display the flag of the Country whose name is clicked in the first fragment
10.	Create an android application which helps us to create a simple calculator with basic functions of clear, add, multiply, subtract, divide and mod
11	Create an application to demonstrate the use of ToggleButton
12	Create an application to demonstrate the use of ImageButton
13	Create an application to demonstrate the use of ListView
14	Create an application to demonstrate the use of Spinner

15	Create an application to demonstrate the use of CheckBox
16	Create an application to demonstrate the use of RadioButton
17	Create an application to demonstrate the use of RadioGroup
18	Create an application to demonstrate the use of ImageView
19	Create an application to demonstrate the use of TextView, EditText and Button
20	Create an application to demonstrate the use of RelativeLayout
21	Create an application to demonstrate the use of TableLayout.
22	Create an application where the UI consists of an EditText and a Button when the user clicks on the Button the URL entered in the EditText should be displayed on the screen
23	Create an application to demonstrate the use of AbsoluteLayout
24	Create an application to demonstrate the use of WebView.
25	Create an application that designs a layout to display contact label (name) and phone no stored in the contacts using content provider. When the user selects any contact label (name) from the list view dialer application should be launched and call should be made using dialer application.
Unit – 4	
26	Create an application to demonstrate the use of Context Menu
27	Create an application where a user takes an ImageView, and buttons, the number of buttons depends on Tween animation effects the user wants, on clicking a particular button the particular effect of tween animation should be applied on an ImageView.
28	Create an application that will change color of the layout, based on selected options from the menu
29	Create an application to demonstrate the use of Frame-by-Frame animation
30	Create an application to demonstrate the use of ActionBar
31	Create an application that works like an alarm
32	Create an application to demonstrate the use of VideoView
33	Create an application that designs a layout with 3 text boxes and an options menu. The options menu should contain options

	like Simple Interest and compound Interest. The text boxes should be used for the input of information like the principal amount, rate of interest and number of years. Then clicking on the option from menu appropriate operation should be performed and correct result should be displayed
Unit – 5	
34	Create an application to demonstrate the use of SharedPreference.
35	Create an application to demonstrate the use of AlertDialog
36	Create an application that designs a layout having text boxes and button submit. The details of doctor like doctor's id, first name, last name, mobile number, address, city and specialization should be entered by the user in the textboxes and on clicking on the button submit the data should be saved into the database. Create another layout that contains a text box, a button search and a text view that gives searching facility. User can search doctor's full information by providing doctor's id in the text box. On clicking on button search the information of the doctor should be displayed in text view. Doc_detail (doc_id, firstname, lastname, mob, add, city, specialization)
37	Create an application to demonstrate the CRUD operation of SQLite
38	Create an application to use Native content provider in android
39	Create an application to use another native content provider in android
40	Create an application to use another native content provider in android