

FACULTY OF COMPUTER APPLICATIONS
Course

- **Sem.** : 6
- **Subject Code** : 05BC3602
- **Subject** : Mobile Computing
- **Course Objectives** :
 1. To be familiarized with mobile development and basics of android
 2. To understand UI designing in android
 3. To integrate menus and multimedia in Android Application
 4. To implement the concepts of SQLite and Shared Preferences in Android Application
 5. To learn how to publish Android App on Google Play store

- **Prerequisites:** Knowledge of Java

Unit No	Topics Covered	No of lectures required
1	Mobile Application Development <ul style="list-style-type: none"> ● 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 <ul style="list-style-type: none"> ● OHA ● Android Development Tools ● Android SDK ● Building Blocks of Android ● Android Architecture ● Activity Life-Cycle ● AndroidManifest.xml file ● Anatomy of Android Application 	07

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	<ul style="list-style-type: none"> ● Building a Sample Android App 	
3	Android UI Design Essentials <ul style="list-style-type: none"> ● Working with Intents ● Types of Intents ● Fundamentals of android UI design ● Layouts (Linear, Relative, Table, Frame) ● Introduction to adapters ● Widgets in android like TextView, EditText, ● RadioButton, RadioGroup, Spinner, ListView, Button, ImageButton, ToggleButton. ● Working with WebView 	08
4	Expanding the User Experience <ul style="list-style-type: none"> ● Menu (Options, Context) ● Working with Telephony API ● Working with VideoView ● Introduction to styles and themes 	05
5	Working with Data and Storage in Android <ul style="list-style-type: none"> ● Creating, saving and retrieving shares preferences ● Managing and working with data using SQLite ● Introduction to Monetization of Android App ● Signing and Publishing Android App 	05

Course Outcomes:

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

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Course Outcomes – Program Outcomes Mapping Table: (Change as per the program)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	H		L			H	M	L			
CO2	L	L	H			M	L	H	L		
CO3	L	M	H			M	L	H		M	
CO4	L	M	H			M	L	H		M	H
CO5	L	L	M	L	L	M	L	H		M	

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Text Book:

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

Reference Books:

1. **Android Wireless Application Development, Darcey Lauren and Shane Conder, Pearson Education, Second Edition**
2. **Mark L Murphy, “Beginning Android”, Wiley India Pvt Ltd, First Edition**
3. **Beginning Android Application Development, Wei-Meng Lee, Wiley India Pvt. Ltd., First 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 /reference book & web/app reference:

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

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PRACTICALS

Unit No	List of Practicals
1	<ol style="list-style-type: none"> 1. Installing "Android Studio IDE" and "Android SDK Steps 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.
2	<ol style="list-style-type: none"> 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 android application which helps us to create a simple calculator with basic functions of clear, add, multiply, subtract, divide and mod 10. Create an application to demonstrate the use of ToggleButton 11. Create an application to demonstrate the use of ImageButton 12. Create an application to demonstrate the use of ListView 13. Create an application to demonstrate the use of Spinner 14. Create an application to demonstrate the use of RadioButton 15. Create an application to demonstrate the use of RadioGroup 16. Create an application to demonstrate the use of TextView, EditText and Button 17. Create an application to demonstrate the use of RelativeLayout 18. Create an application to demonstrate the use of TableLayout.

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	<p>19. 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</p> <p>20. Create an application to demonstrate the use of AbsoluteLayout</p> <p>21. Create an application to demonstrate the use of WebView.</p> <p>22. 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</p>
<p align="center">3</p>	<p>22. Create an application to demonstrate the use of Context Menu</p> <p>23. Create an application that will change color of the layout, based on selected options from the menu</p> <p>24. Create an application to demonstrate the use of VideoView</p> <p>25. 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</p>
<p align="center">4</p>	<p>26. Create an application to demonstrate the use of SharedPreferences.</p> <p>27. 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.</p> <p>28. 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)</p> <p>29. Create an application to demonstrate the CRUD operation of SQLite</p>