



# GUJARAT TECHNOLOGICAL UNIVERSITY

Program Name: Bachelor of Computer Applications

Level: UG

Course / Subject Code: BC04001051

Course / Subject Name: Mobile Application Development

w. e. f. Academic Year:	2024-25
Semester:	4
Category of the Course:	Skill Enhancement Courses (SEC)

<b>Prerequisite:</b>	None
<b>Rationale:</b>	Android programming is important due to the platform's massive market share, open-source nature. This offers the vast opportunities for developers and businesses to create innovative applications and reach a global audience.

### Course Outcome:

After Completion of the Course, Student will able to:

No	Course Outcomes	RBT Level
01	Install Android and configure parameters, Understand Android Application components	U
02	Use various views and viewgroups, menu components, audio, video, graphics, animation for developing Android Application	U
03	Use internal and external storage to store data persistently	U
04	Sign and Publish Android Application	U
05	Develop an application for given project definition	A

\*Revised Bloom's Taxonomy (RBT)

### Teaching and Examination Scheme:

Teaching Scheme (in Hours)			Total Credits L+T+ (PR/2)	Assessment Pattern and Marks				Total Marks
L	T	PR	C	Theory		Tutorial / Practical		
				ESE (E)	PA / CA (M)	PA/CA (I)	ESE (V)	
2	0	2	3	70	30	20	30	150

### Course Content:

Unit No.	Content	No. of Hours	% of Weightage
1.	Getting an Overview of Android <ul style="list-style-type: none"><li>Introducing Android</li><li>Discussing about Android Applications</li><li>The Manifest File</li></ul>	6	20



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	<ul style="list-style-type: none"><li>• Downloading and Installing Android</li><li>• Exploring the Development Environment</li><li>• Developing and Executing the Android Application</li></ul> Using Activities, Fragments, and Intents in Android <ul style="list-style-type: none"><li>• Working with Activities</li><li>• Using Intents</li><li>• Fragments</li><li>• Using the Intent Object to Invoke Built-in Application</li></ul>		
2.	Working with the User Interface Using Views and ViewGroups Working with View Groups - Linear Layout, Relative Layout, ScrollView Layout, Table Layout, FrameLayout Layout Working with Views -Using the TextView, Using the EditText View, Using the Button View, Using the RadioButton View , Using the CheckBox View ,Using the ImageButton View, Using the ToggleButton View, Using the RatingBar View  Designing the AutoTextCompleteView  Designing the Views Programmatically Handling UI Events - Handling User Interaction with Activities, Handling User Interaction with the Views  Creating Menus - The Options Menu, The Context Menu , The SubMenus  Notifying the User - Creating the Toast Notification , Creating the Status Bar Notification , Creating the Dialog Notification	8	30
3.	Storing the Data Persistently  Introducing the Data Storage Options - Using Preferences  Using the Internal Storage - Exploring the Methods Used for Internal Storage, Developing an Application to Save User Data Persistently in File  Using the External Storage - Exploring the Methods Used for External Storage , Developing Application to Save File in SD Card  Using the SQLite Database Working with Content Providers	8	25



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4.	Working with Graphics and Animation <ul style="list-style-type: none"><li>Understanding the Concept of Hardware Acceleration</li><li>Working with Animations</li><li>Role of Media Playback</li><li>Using Media Player</li><li>Recording and Playing Sound</li><li>Creating a Sound Pool</li><li>Using Camera for Taking Pictures</li><li>Recording Video</li></ul>	6	20
5.	Signing and Publishing <ul style="list-style-type: none"><li>Signing the Android Application</li><li>Versioning the Android Application</li><li>Publishing the Android Application</li></ul>	2	5
<b>Total</b>		<b>30</b>	<b>100</b>

### Suggested Specification Table with Marks (Theory):

Distribution of Theory Marks (in %)					
R Level	U Level	A Level	N Level	E Level	C Level
30	60	10	-	-	-

Where R: Remember; U: Understanding; A: Application, N: Analyze and E: Evaluate C: Create (as per Revised Bloom's Taxonomy)

### References/Suggested Learning Resources:

#### (a) Books:

- Android Application Development Blackcook By Pradeep Kothari published by Dreamtech
- Introduction to Android Application Development by Joseph Anuzzi, Lauren Darcey, Shane Conder published by Addison-Wesley Professional
- Android Application Development by Rick Roger and John Lombardo and Mednieks and Meike published by O'Reilly

#### (b) Open source software and website:

- <https://developer.android.com/>

#### Suggested Project List, if any:

- Create an E-commerce application to display Electronic products focusing on mobile phones. When user clicks on mobile phone image it should zoom and should rotate 360 degree. The search based on price should retrieve appropriate mobile phone products from database.



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## Suggested Activities for Students, if any:

1. Check the UI of commercial applications and understand the essential components of design.
2. Check the data storage capacity of Android device and use internal and external storage for data storage

## CO- PO Mapping:

Semester 4	Course Name: Mobile Application Development POs										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	2	1	1	1	2	-	-	-	-	-	-
CO2	2	1	1	1	2	-	-	-	-	-	-
CO3	2	1	1	1	2	-	-	-	-	-	-
CO4	2	1	1	1	2	1	-	-	-	-	-
CO5	2	2	2	2	2	1	2	2	2	2	2

Legend: '3' for high, '2' for medium, '1' for low and '-' for no correlation of each CO with PO.

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