

Gyanmanjari College of Computer Application
Semester-3 (MCA)

Subject: Mobile Application Development - MCAXX13514

Type of course: Major Core

Prerequisite: Basic knowledge of JAVA Programming

Rationale:

Android is one of the leading mobile operating systems globally, powering billions of devices. Mobile Applications provide enormous opportunities for businesses to reach and engage with their customers. As a result, there is a growing demand for skilled Mobile application developers capable of developing innovative and robust applications that meet the needs of both businesses and end users. This demand paves the way for the development of a dedicated course on Mobile application development that focuses on industrial applications and meets market demand. This course develops necessary skills in students, after learning this course; students will be able to develop user-friendly mobile applications.

Teaching and Examination Scheme:

Teachi	ng Schei	me	Credits	Examination Marks					
				Theory Marks		Practical Marks		CA	Total Marks
		ľ		ESE	MSE	V	P	ALA	IVICIANO
3	0	4	5	60	30	10	20	30	150

Legends: CI-Class Room Instructions; T – Tutorial; P - Practical; C – Credit; SEE - Semester End Evaluation; MSE- Mid Semester Examination; LWA - Lab Work Assessment; V – Viva voce; CCE-Continuous and Comprehensive Evaluation; ALA- Active Learning Activities.

Course Content:

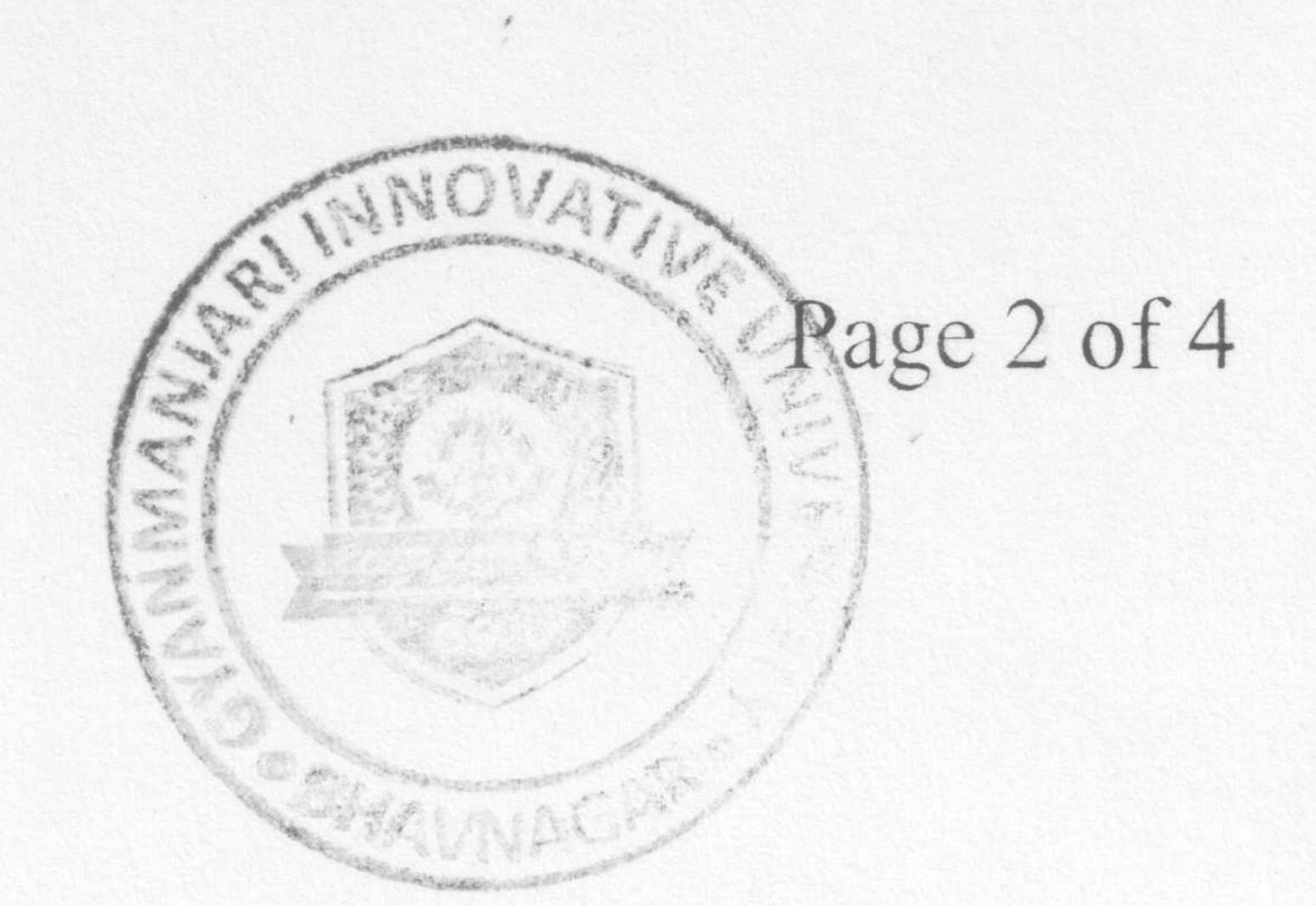
Sr. No	Course content	Hrs	% Weightage
1	Introduction To Android: History of App Development, Introduction of Mobile App development, The Open Handset Alliance, Introduction of Android, Android Studio and SDK setup, Building a sample Android application, Anatomy of Android applications.		20%

	Android Application Design Essentials: Application Context, Activities, Activity Life Cycle, Services,		
7	Intents Receiving and Broadcasting Intents, Android Manifest File and its common settings, Using Intent Filter, Special	17	20%
	Permissions, Managing Application resources in a hierarchy, Working with different types of resources.		
	Android User Interface Design:		
3	Toast, User Interface Screen elements, Designing User Interfaces with Layouts(LinearLayout, RelativeLayout, GridLayout, etc) Widgets(EditTextView, TextView, Button, CheckBox, RadioButton, etc). Different types of Menu.	10	30%
	Working with data in Android: Shared Preferences, App Setting, SQLite primer, Store data	07	15%
	using SQLite database, Content Providers, Content Resolver		
	*Using Android APIs:		
5	Using Android Networking APIs, Using Android Web API,		
	Using Android Telephony APIs, Deploying (selling) your		
	Android application		
	Introduction to Kotlin:		150/
	Overview of Kotlin programming language, Key features of Kotlin compared to Java, Setting up Kotlin in Android Studio	06	15%
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Note: (*) Only for practical

Continuous Assessment:

Sr. No	Active Learning Activities	Marks
1	Platform Comparison Analysis: Students will visit software company and research and compare the features, development tools, and market trends of different mobile platforms (e.g., Android, iOS, cross-platform frameworks). And submit report on GMIU Web Portal.	10
2	Peer Programming Exercises: Coding task will be assign in pair to students they have to complete together and upload on GMIU Web Portal.	10
3	Prototyping Challenge: Will Assign students to develop interactive prototypes of mobile app concepts using prototyping tools like Figma, Adobe XD, or Sketch and submit design on GMIU Web Portal.	10
	Total	30



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Suggested Specification table with Marks (Theory):60

		Distribution of (Revised Bloom				
Level	Remembrance (R)	Understanding (U)	Application (A)	Analyze (N)	Evaluate (E)	Create (C)
Weightage	25%	25%	30%	20%		

Note: This specification table shall be treated as a general guideline for students and teachers. The actual distribution of marks in the question paper may vary slightly from above table.

Course Outcome:

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After 16	carning the course the students should be able to:
CO1	Understand the concept of open source mobile development
CO2	Describe Android architecture frame work
CO3	Design Android UI Layout
CO4	Develop event driven programs
CO5	Create mobile applications involving data storage in SQLite database and web APIs.

List of Practical

Sr. No	Descriptions	Unit No	Hrs
1	Install Android Studio with Specific Latest SDK in your System.	1	4
2	Create "Hello World" application. That will display "Hello World" in the middle of the screen in the red color with white background.	1	4
3	a. Create sample application with login module.(Check username and password)b. On successful login, go to next screen.	2	4
4	Create login application where you will have to validate EmailID (UserName). Till the username and password is not validated, login button should remain disabled.	2	4
5	Create and Login application as above. On successful login, open browser with any URL.	2	4
6	Create an application that will pass some number to the next screen, and on the next screen that number of items should be display in the list.	3	4
7	 a. Create spinner with strings taken from resource folder(res >> value folder). b. On changing spinner value, change image. 	3	4

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8	Create an application that will change color of the screen, based on selected options from the menu.	3	4
9	Create an application that will display toast (Message) on specific interval of time.	3	4
10	a. Create an UI such that, one screen have list of all the types of cars. b. On selecting of any car name, next screen should show Car details like: name, launched date, company name, images(using gallery) if available, show different colors in which it is available.	3	4
11	Read contacts using content providers and display in list.	4	4
12	Create an application to call specific entered number by user in the EditText.	4	4
13	Create an application to make CRUD operation on the database.	4	4
14	Create an application to open any URL inside the application and clicking on any link from that URL should not open Native browser but that URL should open the same screen.	5	4
15	First Application in Kotlin to print "Hello World!"	6	4
		Total	60

Instructional Method:

The course delivery method will depend upon the requirement of content and need of students. The teacher in addition to conventional teaching method by black board, may also use any of tools such as demonstration, role play, Quiz, brainstorming, MOOCs etc.

From the content 10% topics are suggested for flipped mode instruction.

Students will use supplementary resources such as online videos, NPTEL/SWAYAM videos, e-courses, Virtual Laboratory

The internal evaluation will be done on the basis of Active Learning Assignment

Practical/Viva examination will be conducted at the end of semester for evaluation of performance of students in laboratory.

Reference Books:

- [1] Android: Prasanna Kumar Dixit
- [2] Professional Android 4 Application Development: Reto Meier
- [3] Beginning Android 4: Wei-Meng Lee
- [4] Android Application Development For Dummies: Michael Burton, Donn Felker

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