Ganpat University
॥ विद्यया समाजोत्कर्षः ॥

Faculty of Computer Applications

Programme	B.Sc. IT Honours (Cyber Security)	**Branch**	Computer Applications
Semester	V	**Version**	1.0.0.0
Effective from Academic Year	2026-27	**Effective for the batch Admitted in**	June 2024
Subject code	U65A1MAS	**Subject Name**	MOBILE APPLICATION AND SECURITY

Teaching scheme						**Examination scheme(Marks)**			
(Per week)	**Lecture (DT)**		**Practical (Lab.)**		**Total**		**CCE**	**SEE**	**Total**
	L	TU	P	TW					
Credit	2	-	2	-	4	Theory	50	50	100
Hours	2	-	4	-	6				

Objective:

To provide awareness and skill of mobile application development and security through standard concept.

Pre-requisites:

One should have knowledge of OOPs Concepts and basic knowledge of JAVA.

Learning Outcome:

Name of CO	Description
CO1	Mobile application development life cycle.
CO2	Implementation of Android Application.
CO3	Understanding database concepts in Mobile technology.
CO4	Android application reverse engineering.
CO5	Mobile application security concepts.

Mapping of CO and PO:

Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	1	2	2	2	1	2	1	1	0	0
CO2	3	2	1	2	2	2	1	2	1	1	0	0
CO3	2	1	1	2	2	2	1	2	1	1	0	0
CO4	1	0	1	2	2	3	1	2	0	1	0	1
CO5	1	0	1	1	2	3	1	2	0	1	0	1

Content:

Unit	Content	Hrs.
1	**Android Concepts:** History of android, The Open Handset Alliance, Android SDK installation, Android SDK & their codenames, Advantages of android, The Android O/S Architecture, Overview of IDE for Android application, What is AVD, How to launch and start the AVD (android virtual device), Android Application Resources, Android Application Components.	06
2	**User Interface Elements:** Form Widgets – Text View, Button, Check Box, Radio Buttons, Radio Group, Spinner Control, Date Picker, Time Picker, Progress bar, Option menu, Image View Text Fields - Various type of Text Filed (Plain text, PasswordText, NumericText, EmailText, PhoneText, MultilineText, etc.) Working with dialog - Simple dialog, alert dialog, date picker dialog	06
3	**Features of Android:** Various Layouts - What is layout, Layouts common attribute, Types of Layout (Linear layout, Relative layout, Table layout, Constraint layout) Using Data-Driven Containers - List View, Grid View, and Gallery View (Using the Array Adapter)	06

4	**Data Storage:** Shared Preferences, SQLite Database: Creating a SQLite Database, Creating Tables, Creating, Updating, and Deleting Database Records, Querying SQLite Databases, Closing and Deleting a SQLite Database.	06
5	**Reverse Engineering Android Apps:** APK extraction - Investigating layout, manifest, permissions, Extracting the content of the classes.dex file, Decompilation Using dex2jar, JDGUI, APKTool, Reverse engineer the app and change its behavior, Code patching - Modifying the code, Recompile, Resign the APK.	06

Practical Content:

List of practical specified by subject teacher based on above mentioned topics

Reference Books:

1	Android Wireless Application Development by Shane Conder & Lauren Darcy, Published by Addision-Wesley Professional
2	Android Developer Fundamental: Concept Reference by Google Developer Team
3	Kotlin in Action by Dmitry Jemerov and Svetlana Isakova, Published by Manning
4	Team Learning Pentesting for Android Devices by Aditya Gupta, Published by Packt Publishing Ltd.

Web Reference:

1	https://www.youtube.com/watch?v=fis26HvvDII
2	https://www.youtube.com/watch?v=yaZ66V0mKSM&list=PLlyCyjh2pUe9wv-hU4my-Nen_SvXIzxGB

MOOC/Certificate Course:

1	https://developer.android.com/courses/android-basics-compose/course
2	https://onlinecourses.swayam2.ac.in/nou21_ge41/preview
3	https://www.coursera.org/specializations/android-app-development

Question Paper Scheme:

End Semester Examination Duration: (2 Hours Theory Examination)

Note for Examiner: -

Q-1 Any Five out of Seven (25 Marks)
Q-2 Any Two out of Three (06 Marks)
Q-3 Mandatory question (05 Marks)
Q-4 Any Two out of Three (08 Marks)
Q-5 Any Two out of Three(06 Marks)

*The question paper must comprehensively address all Course Outcomes (COs), align with Bloom's Taxonomy levels, and ensure complete syllabus coverage