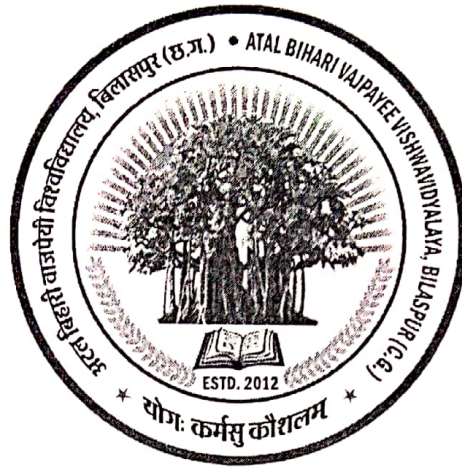# Department of Computer Science and Application

Atal Bihari Vajpayee Vishwavidyalaya, Bilaspur (C.G.)

Scheme and Syllabus

of

POST GRADUATE CERTIFICATE

IN

ANDROID APP DEVELOPMENT

(w.e.f. Academic Session 2022-23)

Program Code:.....P.G.C – 001

Department of Computer Science and Application
Atal Bihari Vajpayee Vishwavidyalaya Bilaspur (C.G.)
(A State University, Established by the Government of Chhattisgarh)

1. **About the Course**

   Android app development is a process in which mobile apps are developed for devices that run the Android operating system. Android apps are written with the help of languages such as Java, Kotlin and C++ languages with the Android Software Development Kit (SDK). Android was initially released in the year 2009 and is basically written in Java language. In today's time, Android dominates the entire mobile app industry and holds the majority of the share with a broad clientele all across the globe.

2. **Scope**

   Android Mobile Application Development course is designed such that after successfully completed the course, the learner will be able to use the development tools in the Android development environment, use the major components of Android API to develop their own apps, describe the life cycles of Activities, Applications and Fragments, use the Java programming language to build Android apps, make UI-rich apps using all the major UI components, store and manipulate data using Content Providers, Shared Preferences and Notifications, do background processing with Services and Async Tasks, utilize sensors to add orientation and location to their apps, send and receive SMS messages programmatically, package and prepare their apps for distribution on the Google Play Store.

3. **Course Learning Outcome**

   After completion of this course the students will be able to:
   - Use the development tools in the android development environment,
   - Use the major components of Android API set to develop their own apps,
   - Describes the life cycle of Activities, Applications and Fragments,
   - Use the java programing language to build android apps,
   - Make UI-rich apps using all the major UI components, store and manipulate data using content providers, Shared notification and Preferences,
   - Utilize sensor to add orientation and location to their apps, sends, and receive MSM message programmatically,
   - Package and prepare their apps for distribution on the Google play store.

4. **Eligibility Criteria** - Any graduate

5. **Fees structure** - One-time tuition fees of Rs. 5000/- + Misc. Fee as applicable

6. **Intake** - 30 Seats

7. **Duration** - 6 Months (probably from August to January).

8. **Prerequisite** – Basic knowledge of programming.

9. **Scheme of Examination**

S. No	Course Name	Marks				Credit
		UE	IA	MAX	MIN	
1	Theory: Android App Development	75	25	100	40	4
2	Practical based on theory	75	25	100	40	2
	Total	150	50	200	80	6

UE: University Exam   IA: Internal Assessment

10. Course Contents

Module - I
Introduction to Mobile Apps: Need of Mobile Apps, Different kinds of Mobile Apps, brief about Android.

Module- II
Introduction to Android: History Behind Android Development, what is Android, Pre-requisites to learn Android, Brief Discussion on Java programming Language.

Module - III
Android Architecture: Overview of Android Stack, Android Features, Introduction to OS layers.

Module - IV
Deep Overview in Android Stack: Linux Kernel, Libraries, Android Runtime, Application Framework, Dalvik VM.

Module – V
Installing Android Machine: Configuring Android Stack, setting up Android Studio, Working with Android Studio, Using Older Android Tools.

Module – VI
Creating First Android Application: Creating Android Project, Debugging Application through DDMS, setting up environment, AVD Creation, Executing Project on Android Screen.

Module - VII
Android Components: Activities, Services, Broadcast Receivers, Content Providers.

Module -VIII
Building UI with Activities: Activities, Views, layouts and Common UI components, Creating UI through code and XML, Intents, Communicating data among Activities.

Module – IX
Advanced UI: Selection components (Grid View, List View, Spinner), Adapters, Custom Adapters, Building UI for performance, Menus, Creating custom and compound Views.

Module - X
Notifications: Toast, Custom Toast, Dialogs, Status bar Notifications.

Module - XI
Styles and Themes: Creating and Applying simple Style, inheriting built-in Style and User defined style, Using Styles as themes.

Module - XII
Data Storage: Shared Preferences, Android File System, Internal storage, External storage, SQLite.

Module - XIII
Introducing SQLite: SQLite Open Helper, creating a database, Opening and closing a database, working with cursors Inserts, updates, and deletes, Network.

Module - XIV

Android Application Deployment: Android Application Deployment on device with Linux and Windows, Android Application Deployment on Android Market.

TEXT/ REFERENCE BOOKS

1. PGDMAD-103: Android Mobile Application Development, ISBN-978-81-940577-2-7 June 2019 by Dr. Babasaheb Ambedkar Open University.
2. Android Programming with Kotlin for Beginners by John Horton.
3. Head First Android Development: A Brain-Friendly Guide
4. PGDMAD-105: Software Lab for Android Mobile Application Development, ISBN-978-81-
5. Mobile Computing Technology, Applications and service creation, Asoke K Telukder, Roopa R Yavagal by TMH.
6. Android Application Development Black Book, Pradeep Kothari, dreamtech press.
7. Wireless and mobile networks, Dr. Sunilkumar S. Manvi, Dr. Mahabaleshwar S.Kakkasageri by WILEY.
8. Wireless networks, P. Nicopolitidis, M. S. Obaidat, G.I. Papadimitriou, A.S. Pomportsis by WILEY.
9. Mobile Computing, Raj Kamal by Oxford.
10. Mobile Computing Theory and Practice-Kumkum Garg- Pearson

E-RESOURCES

1. https://developer.android.com.
2. https://www.javatpoint.com/android-tutorial
3. https://onlinecourses.swayam2.ac.in/nou22_ge57/course
4. https://www.tutorialspoint.com/android/index.htm