PROGRAMME PROJECT REPORT (PPR)

Diploma in Mobile Application Development (DMAD)

1. Introduction about the Programme

The Diploma in Mobile Application Development is a specialized educational program designed to provide individuals with the practical skills and knowledge needed to thrive in the field of mobile app development. This diploma program is structured to cover a comprehensive range of topics, including programming languages, mobile platforms, UI/UX design, backend development, and the deployment of mobile applications. The aim is to equip students with the expertise required to create, test, and deploy mobile apps for platforms like Android and iOS.

2. Programme Mission & Objectives

2.1 Mission Statement

The mission of the Diploma in Mobile Application Development Programme is to empower aspiring individuals with the knowledge, skills, and practical experience required to excel in the dynamic and innovative realm of mobile app development. This Programme is dedicated to fostering a learning environment that promotes creativity, critical thinking, and adaptability, preparing students to meet the evolving challenges and opportunities within the mobile technology industry.

2.2 Objectives

The Programme has been framed to achieve the following main objectives:

- To develop a strong foundation in programming languages relevant to mobile app development, such as Java.
- To enable students to master the development for major mobile platforms, including Android and iOS, using appropriate development environments like Android Studio
- To equip students with the skills to design visually appealing and user-friendly interfaces.
- To provide hands-on, practical experience through projects and real-world applications, allowing students to apply theoretical knowledge in practical scenarios.

3. Relevance of the Programme

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The relevance of a diploma in Mobile Application Development Programme is significant in today's digital age where the reliance on technology and interconnected systems has increased exponentially. This diploma Programme is typically structured to equip students with a comprehensive skill set to thrive in the dynamic and evolving field of mobile app development.
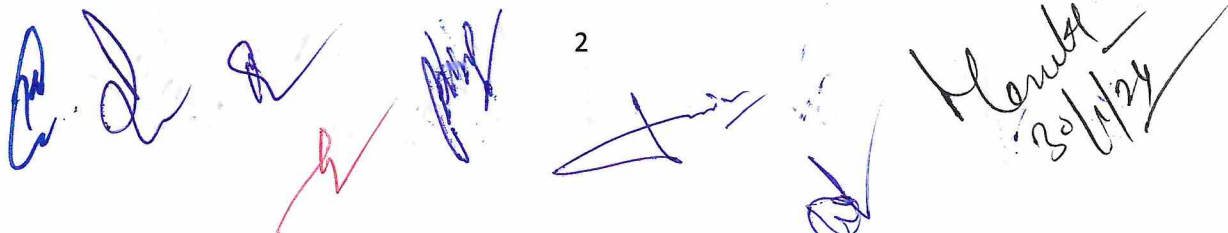
4. Prospective Target Group

- Having passed 10+2 in any Stream or the equivalence examination or the higher examination from the recognized Board/University.
- Having passed 2 Years ITI Programme in any trade after Matriculation from Punjab State Board of Technical Education & Industrial Training, Chandigarh or such examination from any other recognized State Board of Technical Education.
- Having passed 3 Years Diploma in any stream after Matriculation from Punjab State Board of Technical Education & Industrial Training, Chandigarh or such examination from any other recognized State Board of Technical Education.

Learners with above said eligibility may join this course to improve their knowledge, skills, employability, and entrepreneurship ability. The working persons and who cannot study through regular mode can continue their education through this open learning mode.

5. Appropriateness of the Programme

The Programme will provide academic continuity to the learning community and will facilitate continuous professional development for the employees and entrepreneurs across the country and Punjab state, in particular. The Programme aims to reach the learners who are distant and those lacking access. To reach the unreached, the courses' instructions and specially prepared study material in the form of printed notes and audio-video lessons to the learners will be delivered at their door steps through postal correspondence and digital media like e-mail, website etc. Limited face-to-face contact sessions will be held at Learner Support Centres (LSC) set up by the university as close as possible to the learner's home. Communication with the university and interaction between the teacher and the learners will be further facilitated using electronic media options like telephone, e-mails, chat sessions, video conferencing and tele conferencing, if and when required. All of these characteristics will help learners to engage in relevant, purposeful and interesting lessons.

Apart from this, the learners will have the advantage to study at their own pace and convenience as the Programme can be completed in the time span ranging from one year to two years.

The multiple exit and enter option for learners is facilitated. Learners are allowed to exit the Programme after the six months obtained at least 20 credits with a relevant certificate and re-enter the same Programme at a later time.

6. Instructional Design

Annexure-A (Course Scheme of Diploma in MAD)

Annexure-B (Syllabi of Diploma in MAD)

7. Procedure for Admissions

Notifications regarding admission will be published in the leading national and regional newspapers. In addition to this, all the required information will be updated regularly on the university website

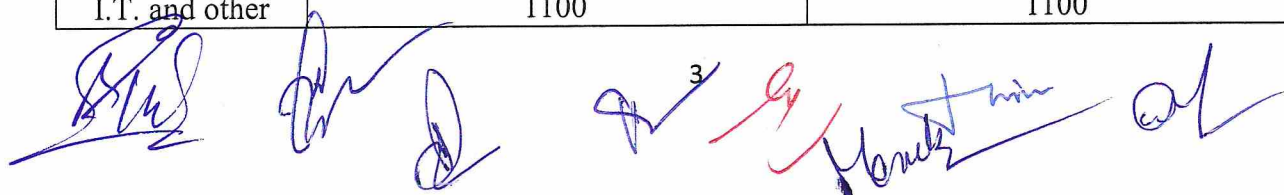**7.1 Programme Duration:** 1 Year to 2 Years

7.2 The Medium of Examination: English

7.3 Eligibility:3-4

- Having passed 10+2 in any Stream or the equivalence examination or the higher examination from the recognized Board/University.
- Having passed 2 Years ITI Programme in any trade after Matriculation from Punjab State Board of Technical Education & Industrial Training, Chandigarh or such examination from any other recognized State Board of Technical Education.
- Having passed 3 Years Diploma in any stream after Matriculation from Punjab State Board of Technical Education & Industrial Training, Chandigarh or such examination from any other recognized State Board of Technical Education.

7.4 Total Programme Fee:

Fee Head Details	Semester-1	Semester-2
Registration/ Continuation Fee	300	300
Tuition Fee	--	--
Examination Fee	1400	1400
I.T. and other	1100	1100

Charges		
Security Fee (Refundable)	--	--
Total Fee (Rs.)	2800	2800

7.5 Instructional Delivery Mechanisms:

The Programme has been designed with the aim to reach the distant and those lacking access to a regular mode of education. The courses' instructions and specially prepared study material will be made available through Learner Support Centres (LSCs) and digital media like e-mail, website etc. Limited face to face contact sessions will be held at the study centers set up by the university as close as possible to the learner's home. Communication with the university and interaction between the teacher and the learners will be further facilitated using electronic media options like telephone, e-mails, chat sessions, video conferencing and tele conferencing, if and when required.

Besides this, Counseling Sessions will be held at all the LSCs regularly during weekends. The university will also conduct live/virtual classes for learners using modern ICT methods. However, to ensure learner participation and interaction, online classes will be blended with face to face discussions and meetings with the learners.

8. Evaluation

The learners' progress is measured through the means of continuous evaluation and end semester examinations.

8.1 Continuous Internal assessment through assignments

Assignments help the learners to recapitulate the theory and go back to the text again in case they are unable to answer a particular question. Thus, assignments also help to reinforce learning in distance and open learning system of education. The assignments will consist of a set of questions and activities that have to be answered by the Programme participants by remaining at their own place.

Two assignments will be submitted for a 4 credits course and one assignment will be submitted by the learner for a 2 credits course. The assignments will cover all or any types of questions (long answer type, short answer type, objective type, multiple choice questions and case studies).

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Learners will be required to obtain 40% marks as pass percentage in each assignment separately. In the final result, assignments will carry 30% weightage.

8.2 Semester End Examination

Semester end examination is the major component of the evaluation system and carries 70% weightage in the final result. The university will conduct end semester examination twice a year i.e., in June and in December. The learners can take the examination only after the completion of the course, failing which they can take the same in December or June of subsequent years but within the total span of the Programme. In case any student fails to get a passing score in the semester end examination, they will be eligible to reappear in the next semester end examination for that course as and when it is held but within the total span of the Programme only.

In order to claim Certificate/Diploma in MAD, the learner is required to score at least 40% marks in both continuous evaluations (i.e.in assignments) as well as in semester end examinations separately.

8.3 Updated Notification for the Learners

The information regarding the university policies and procedures, academic activities like assignment submissions, question papers, results and other notices related to examination and evaluation will be uploaded on the official website of the university.

9. Laboratory Support

Modernize Computer Labs at the Learner Support Centres (LSCs) will be provided with all latest computers and software required for this Programme.

10. Library Resources

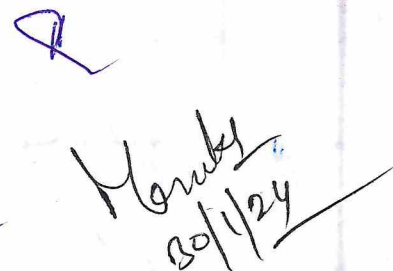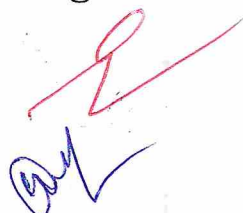The students may avail the library facilities at their Learner Support Centres (LSCs).

11. Cost Estimation

The cost of the Programme will be as per the fee decided upon.

12. Quality Assurance Mechanism

The university has constituted a "Centre of Internal Quality Assurance (CIQA) as per UGC (Open and Distance Learning) Regulations, 2020.

13. Programme Outcomes (POs)

Programme: Diploma in MAD

	Programme Outcomes (POs)
On successful completion of this Programme, the students will be able to:	
PO1	Learn the necessary skills and knowledge to thrive in the dynamic and rapidly evolving field of mobile app development.
PO2	Design, develop, and deploy mobile applications for various platforms, considering both iOS and Android environments.
PO3	Create mobile applications with effective and user-friendly interfaces
PO4	Integrate databases into mobile applications, including local storage, cloud databases, and data synchronization.
PO5	Implement secure coding practices, data encryption, and authentication mechanisms to ensure the security of mobile applications.
PO6	Analyze and solve problems related to mobile app development, demonstrating critical thinking and troubleshooting skills.
PO7	Adhere to ethical standards in mobile app development and demonstrate professional conduct in the workplace.
PO8	Gain an ability of continuous learning to keep up with emerging technologies and trends in mobile app development.

14. Programme Specific Outcomes (PSOs)

Programme: Diploma in MAD

	Programme Specific Outcomes (PSOs)
On successful completion of this Programme, the students will be able to:	
PSO1	Gain proficiency in programming languages commonly used in mobile app development, such as Java.
PSO2	Understand the key features, architecture, and development tools specific to major mobile platforms, including Android and iOS.
PSO3	Design effective and user-friendly interfaces, considering principles of usability, accessibility, and visual design.
PSO4	Demonstrate strong problem-solving skills and critical thinking abilities when encountering challenges in mobile app development.
PSO5	Implement robust security measures in mobile applications, applying secure coding practices, encryption, and authentication methods.

15. Course Outcomes (COs)

Course Outcomes (COs) of Courses of Semester-1

Course#1

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Course: Introduction Mobile Architecture
Course Code: DMAD-1-01T
Course Outcomes (COs)   After the completion of this course, the students will be able to:

CO1	Gain a foundational understanding of major mobile platforms (iOS, Android) and their architecture, including the key components and frameworks that enable mobile application development.
CO2	Learn the fundamental principles of designing mobile applications, considering factors such as user interface (UI), user experience (UX), and responsiveness across different devices.
CO3	Acquire knowledge of cross-platform development frameworks (e.g., React Native, Flutter) and understand how to create mobile applications that can run on multiple platforms with a single codebase.
CO4	Develop an awareness of mobile security concerns and best practices, including data encryption, secure authentication, and protection against common mobile app vulnerabilities.
CO5	Learn how mobile applications interact with backend services, including the use of APIs (Application Programming Interfaces) and understanding the role of backend architecture in supporting mobile functionality.

Course#2

Course: Java Programming
Course Code: DMAD-1-02T
Course Outcomes (COs)   After the completion of this course, the students will be able to:

CO1	Mastery of core Java principles, encompassing variables, data types, control structures, and the application of object-oriented programming concepts to address diverse programming challenges.
CO2	Competency in crafting Java applications, involving the creation of modular, well-structured code, effective exception handling, and the implementation of efficient data structures and algorithms to address practical scenarios.
CO3	Strong debugging skills, including the identification and resolution of errors within Java code, an understanding of common programming pitfalls, and the application of effective troubleshooting methods to enhance program reliability.
CO4	Exploration of advanced Java topics such as multithreading, networking, file input/output, and database connectivity. Proficiency in utilizing Java's standard libraries and APIs, demonstrating competence in areas such as working with collections, managing network interactions, and connecting to databases.
CO5	Acquisition of collaborative software development skills, encompassing experience with version control systems like Git, adherence to established coding standards, and the cultivation of effective documentation habits. Capability to contribute effectively to team-based Java projects.

Course#3

Course: Introduction to Android
Course Code: DMAD-1-03T
Course Outcomes (COs)   After the completion of this course, the students will be able to:

CO1	Gain proficiency in Android app development, understanding the Android Studio development environment, Java or Kotlin programming languages, and the fundamental concepts of building Android applications.
CO2	Develop skills in designing user interfaces (UI) for Android applications, adhering to Android's design principles and guidelines to create visually appealing and user-friendly experiences.
CO3	Understand the process of deploying Android applications on the Google Play Store, including the necessary steps for app submission, review, and updates.
CO4	Learn to integrate and utilize various Android APIs and features, such as location services, camera access, notifications, and other functionalities to enhance the capabilities of Android applications.
CO5	Gain a comprehensive understanding of the Android ecosystem, including the Android OS architecture, application lifecycle, and how apps interact with the underlying system and hardware.

Course#4

Course: Java Programming Lab
Course Code: DMAD-1-02P
Course Outcomes (COs)   After the completion of this course, the students will be able to:

CO1	Develop the ability to apply these fundamentals in creating well-structured and readable code.
CO2	Acquire the skills to proficiently design and build Java.
CO3	Hone the art of debugging by mastering techniques to identify and rectify errors in Java code.
CO4	Develop a working knowledge of Java's extensive set of standard libraries and APIs.
CO5	Cultivate the skills necessary for collaborative software development. This involves working seamlessly within a team using version control systems like Git, adhering to coding standards, documenting code effectively, and embracing best practices. The goal is to produce software that is not only functional but also maintainable and scalable over time.

Course#5

Course: Introduction to Android Lab
Course Code: DMAD-1-02P
Course Outcomes (COs)

After the completion of this course, the students will be able to:	
CO1	Attain proficiency in Android app development by gaining hands-on experience in designing, coding, and debugging basic Android applications using the Android Studio IDE.
CO2	Develop expertise in designing visually appealing and user-friendly Android user interfaces (UI), applying Android's design principles, layouts, and widgets effectively.
CO3	Learn to integrate and utilize various device features such as camera, sensors, and location services in Android applications, demonstrating the ability to create feature-rich and interactive mobile apps.
CO4	Acquire strong debugging and troubleshooting skills in the Android development environment, including the use of debugging tools and techniques to identify and fix common issues in Android applications.
CO5	Understand the process of deploying Android applications on physical devices or emulators, and gain proficiency in testing and validating the functionality of Android apps on different devices and screen sizes.

Course Outcomes (COs) of Courses of Semester-2

Course#6

Course: Introduction to Windows Mobile and IOS	
Course Code: DMAD-2-01T	
Course Outcomes (COs) After the completion of this course, the students will be able to:	
CO1	Gain proficiency in developing mobile applications for both Windows Mobile and iOS platforms, understanding the respective development environments, tools, and programming languages (e.g., C# for Windows Mobile, Swift for iOS).
CO2	Develop skills in designing user interfaces (UI) for both Windows Mobile and iOS applications, considering platform-specific design guidelines and best practices to create intuitive and user-friendly experiences.
CO3	Understand the process of deploying mobile applications on the Windows Mobile Store and Apple App Store, including the submission and review processes for each platform.
CO4	Explore techniques for achieving cross-platform compatibility, either through platform-specific development or by using cross-platform frameworks, allowing the creation of applications that can run on both Windows Mobile and iOS.
CO5	Learn about the lifecycle management of mobile applications on Windows Mobile and iOS, including topics such as app states, background processing, and handling interruptions to create responsive and efficient applications.

Course#7

Course: Introduction to Windows Mobile and IOS Lab	
Course Code: DMAD-2-01P	
Course Outcomes (COs)	

	After the completion of this course, the students will be able to:
CO1	Attain proficiency in developing mobile applications for both Windows Mobile and iOS platforms, demonstrating the ability to use respective development environments, tools, and programming languages effectively.
CO2	Develop advanced skills in designing user interfaces (UI) for Windows Mobile and iOS applications, adhering to platform-specific design guidelines and creating visually appealing and intuitive user experiences.
CO3	Gain the ability to design and implement applications that run seamlessly on both Windows Mobile and iOS platforms, exploring approaches such as platform-specific development and cross-platform frameworks.
CO4	Learn to integrate and utilize various platform-specific features and functionalities, such as utilizing Windows Mobile and iOS APIs for device-specific capabilities like camera, location services, and notifications.
CO5	Understand the process of deploying mobile applications on the respective app stores (Microsoft Store and Apple App Store), including app submission, review processes, and compliance with store guidelines for both Windows Mobile and iOS.

Course#8

Course: Introduction to Cyber Security	
Course Code: ICS-1-02T	
Course Outcomes (COs) After the completion of this course, the students will be able to:	
CO1	Understand network security threats, security services, and countermeasures.
CO2	Understand principles of network security by monitoring and analyzing the nature of attacks through cyber/computer forensics software/tools.
CO3	Develop cyber security strategies and policies
CO4	Measure the performance and troubleshoot cyber security systems.
CO5	Understand various Cryptographic Techniques

Course#9

Course: Data Base Management System (DBMS)	
Course Code: DBMS-2-01T	
Course Outcomes (COs) After the completion of this course, the students will be able to:	
CO1	Understand the fundamental elements of database management system.
CO2	Understands the three level architecture of DBMS and mapping between these levels.
CO3	Familiar with the hierarchical model, network model, entity relationship model and relational model.
CO4	Acquire knowledge of normalization technique that reduces data redundancy and eliminates undesirable characteristics like Insertion, Update and Deletion Anomalies.
CO5	Apply SQL to solve problems

Course#10

Course Name: Introduction to Cyber Security Lab
Course Code: ICS-1-02P

Course Outcomes (COs)

After the completion of this course, the students will be able to:

CO 1	Identify and analyze common cyber threats, including malware, phishing attacks, and network vulnerabilities.
CO 2	Apply techniques to detect, mitigate, and respond to various types of cyber threats.
CO 3	Implement security configurations for operating systems, network devices, and applications.
CO 4	Apply ethical hacking techniques to identify and exploit vulnerabilities in controlled environments, emphasizing responsible and legal practices.
CO5	Implement cryptographic techniques for security purpose

Course#11

Course: Data Base Management System (DBMS) Lab
Course Code: DBMS-2-01P
Course Outcomes (COs)

After the completion of this course, the students will be able to:

CO1	Implement Basic DDL, DML and DCL commands.
CO2	Understand Data selection and operators used in queries and restrict data retrieval and control the display order.
CO3	Use Aggregate and group functions to summarize data.
CO4	Join multiple tables using different types of joins.
CO5	Implementation of different types of operators in SQL