Course Objective:1)To provide students with a comprehensive understanding of mobile application development, including the underlying platforms, tools, and frameworks.
2)To equip students with the skills to design and develop mobile applications on Android and iOS platforms using appropriate programming languages and tools.
3)To introduce cross-platform mobile application development frameworks and their advantages in creating versatile applications.
4)To emphasize the importance of mobile application security, performance optimization, and effective deployment strategies.
5)To explore advanced topics in mobile development, including augmented reality, virtual reality, and the latest trends influencing the mobile ecosystem.

S. NO	Course Outcomes (CO)
CO1	Understand the fundamentals of mobile application development, including platform-specific and cross-platform approaches.
CO2	Design and develop functional Android and iOS applications using industry-standard tools like Android Studio and Xcode.
CO3	Implement cross-platform mobile applications using frameworks like React Native and Flutter.
CO4	Address and mitigate common security issues in mobile applications, while optimizing their performance.
CO5	Deploy mobile applications to app stores and understand the processes involved in continuous integration and delivery.

S. NO	Contents	Contact Hours
UNIT 1	**Introduction to Mobile Application Development** Overview of Mobile Computing: Definition, Characteristics, and Applications Mobile Platforms and Architectures: Android, iOS, Cross-Platform Solutions Development Tools: Android Studio, Xcode, React Native, Flutter Introduction to Mobile Application Lifecycle: Activities, Intents, and Services Basics of UI/UX Design for Mobile Apps: Principles and Best Practices	**10**
UNIT 2	**Android Application Development** Android Architecture: Application Components, Manifest File, and Resources User Interface Design in Android: Layouts, Views, and Widgets Event Handling and Gesture Detection in Android Data Storage in Android: Shared Preferences, Files, SQLite, and Room Database Networking in Android: REST APIs, JSON Parsing, and Firebase Integration	**12**
UNIT 3	**iOS Application DevelopmentNetworking and Communication in CPS** Introduction to iOS and Swift Programming Language iOS Architecture: Core iOS Components, MVC Pattern, and App States User Interface Design in iOS: Storyboards, Auto Layout, and Interface Builder Data Persistence in iOS: UserDefaults, Core Data, and File System Networking in iOS: URLSession, Alamofire, and Firebase Integration	**10**
UNIT 4	**Cross-Platform Mobile Application Development** Overview of Cross-Platform Development: Advantages and Challenges Introduction to React Native: Components, Navigation, and State Management Introduction to Flutter: Widgets, State Management, and Navigation Debugging and Testing in Cross-Platform Apps: Tools and Techniques Case Study: Developing a Simple Mobile Application Using Cross-Platform Tools	**10**
UNIT 5	**Advanced Topics in Mobile Application Development** Mobile App Security: Common Vulnerabilities and Mitigation Strategies Performance Optimization for Mobile Apps: Memory Management, Battery Usage, and Network Optimization Introduction to Augmented Reality (AR) and Virtual Reality (VR) in Mobile Apps Deployment and Distribution of Mobile Apps: App Store, Google Play, and Continuous Integration/Continuous Deployment (CI/CD) Future Trends in Mobile Application Development: 5G, AI Integration, and Progressive Web Apps (PWAs)	**10**
	TOTAL	**42**