

Essential Understanding of Mobile App Development

Course Duration: 24 Hours

Course code: EUMAD

1. Course Overview

This course introduces participants to the foundational concepts of mobile app development. It covers platforms, tools, frameworks, design principles, and the basic development lifecycle. Participants will gain the knowledge and skills to conceptualize, design, and build simple mobile applications for Android and iOS.

2. What you'll learn?

- Understand the mobile app ecosystem and development platforms.
- Learn the differences between native, hybrid, and cross-platform apps.
- Explore essential development tools and IDEs.
- Build basic user interfaces and app functionality.
- Work with simple data storage and APIs.
- Test apps on emulators and devices.
- Learn best practices in UI/UX design and mobile security.

3. Target Audience

- Beginners interested in mobile app development.
- Students and IT professionals exploring app development careers.
- Product managers and business analysts seeking foundational knowledge.
- Anyone aiming to create basic apps or understand mobile app workflows.

4. Pre-Requisites

- Basic computer literacy.
- Familiarity with programming concepts is helpful but not mandatory.

5. Course content

Day 1: Introduction & Fundamentals

Module 1: Mobile App Development Overview

- Mobile platforms: Android, iOS, cross-platform
- Native vs hybrid vs cross-platform apps
- Mobile app development lifecycle
- Introduction to tools and IDEs (Android Studio, Xcode, Flutter, React Native)

Module 2: Fundamentals of App Development

- Core app components
- Application architecture basics (MVC, MVVM)
- Programming languages: Java, Kotlin, Swift, Dart
- App permissions and security basics
- Hands-On Lab: Set up development environment; run “Hello World” app on emulator

Day 2: UI/UX and Data Handling

Module 3: UI/UX Design for Mobile Apps

- Principles of intuitive UI and UX
- Layouts, buttons, navigation patterns
- Designing for multiple devices and orientations
- Hands-on: Create a login screen and dashboard interface

Module 4: Data Storage and API Integration

- Local storage: Shared Preferences, SQLite
- Cloud storage and basic data persistence
- Introduction to REST APIs and JSON
- Hands-on: Display API data in a simple app

Day 3: Testing, Deployment & Trends

Module 5: Testing and Debugging

- Testing on emulator and physical devices
- Debugging common app issues
- Basic performance optimization

Module 6: Deployment Basics

- Preparing apps for release
- Overview of Google Play Store and Apple App Store publishing
- Mini project: Build and test a simple app

Module 7: Emerging Trends & Best Practices

- Cross-platform frameworks: Flutter, React Native
- Security best practices for mobile apps
- Mobile app design trends and case studies
- Capstone Exercise: Develop a small functional app integrating UI, data handling, and testing