Mobile Development

1. **Course number and name:** 020DMOES4 Mobile Development

2. **Credits and contact hours:** 4 ECTS credits, 2x1:15 contact hours

3. **Instructor's or course coordinator's name:** Anthony Tannoury

4. **Instructional materials:**
   – Android Developer Documentation (developer.android.com): The official documentation for Android app development, providing guides, tutorials, API references, and sample code.
   – iOS Developer Documentation (developer.apple.com): The official documentation for iOS app development, including guides, reference materials, and coding examples.
   – React Native Documentation (reactnative.dev): The official documentation for React Native, a popular framework for building cross-platform mobile apps using JavaScript and React.
   – Flutter Documentation (flutter.dev): The official documentation for Flutter, a UI toolkit developed by Google for building natively compiled applications for mobile, web, and desktop from a single codebase.
   – "Android Programming: The Big Nerd Ranch Guide" by Bill Phillips and Chris Stewart: A comprehensive guide to Android app development, covering the fundamentals, user interface, data persistence, networking, and more.
   – "iOS Programming: The Big Nerd Ranch Guide" by Joe Conway and Aaron Hillegass: A beginner-friendly book that teaches iOS app development using Swift, covering topics such as views, view controllers, networking, and Core Data.
   – "Learning React Native" by Bonnie Eisenman: A comprehensive guide to building cross-platform mobile apps using React Native, covering the basics, UI components, data management, navigation, and testing.

5. **Specific course information**
   a. **Catalog description:**
   The Mobile Application Development course is designed to provide students with a comprehensive understanding of developing applications for mobile platforms. In today's digital landscape, mobile applications play a vital role in connecting businesses and users, making this course highly relevant and in-demand. During this course, students will learn the essential concepts, tools, and techniques required to develop mobile applications for popular platforms such as Android and iOS. Through hands-on projects and real-world examples, students will gain practical experience in designing, developing, and deploying mobile applications.
   By the end of the course, students will have the knowledge and skills to independently develop and deploy mobile applications for various platforms. They will have a strong foundation in mobile app development, enabling them to pursue careers as mobile app developers or entrepreneurs in the app industry.

b. **Prerequisites:** None

c. **Selected Elective** for CCE students

6. **Educational objective for the course**
   a. **Specific outcomes of instruction:**
      – Develop Android Apps: Build native Android applications using Java or Kotlin, understand the Android framework, design user interfaces, handle data storage, manage networking, and integrate external APIs.
      – Create iOS Apps: Develop native iOS applications using Swift, explore the iOS development environment, apply UI design principles, manage data, handle networking, and integrate with Apple's ecosystem.
      – Explore Cross-Platform Development: Investigate cross-platform frameworks like React Native and Flutter to build applications for both Android and iOS platforms using a single codebase.
      – Design Mobile Apps: Understand the principles of mobile app design, consider user experience (UX), create intuitive interfaces, and optimize app performance.
      – Test and Debug Apps: Implement techniques for testing mobile applications, identify and resolve bugs, and ensure app quality and reliability.
      – Deploy and Distribute Apps: Prepare apps for deployment to app stores, understand the submission process, and implement strategies for app distribution and monetization.
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   b. **PI addressed by the course:**

PI	1.3	2.1	2.2	2.3	2.4	2.5	3.2	5.2	7.2
Covered	x	x	x	x	x	x	x	x	x
Assessed	x	x	x				x		

7. **Brief list of topics to be covered**
   – Introduction to Mobile Development
   – User Interface Design for Mobile Apps
   – Native App Development
   – Cross-Platform Development
   – Data Persistence and Storage
   – Networking and Web Services
   – App Performance and Optimization
   – App Testing and Debugging
   – App Deployment and Monetization
   – Security and Privacy
   – Emerging Trends and Technologies