هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission

T-104
2022

# Course Specification

هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission

T-104
2022

# Course Specification

| | |
|---|---|
| Course Title: | **Mobile App Development 1** |
| Course Code: | **2334 CSA** |
| Program: | **Web and Mobile Application Development** |
| Department: | **NA** |
| College: | **Applied College** |
| Institution: | **King Khalid University** |
| Version: | **1** |
| Last Revision Date: | **6 August 2023** |

# Table of Contents:

# A. General information about the course:

| Course Identification | | | | | |
|---|---|---|---|---|---|
| **1. Credit hours:** | 3 | | | | |
| **2. Course type** | | | | | |
| a. | University ☐ | College ☐ | Department☐ | Track☐ | Others☒ |
| b. | Required ☒ | Elective☐ | | | |
| **3. Level/year at which this course is offered:** | 3rd Level | | | | |
| **4. Course general Description:** This course introduces the core issues associated with application development for mobile devices using the Android Studio platform and introduction to iOS platform. Topics will also include understanding and handling of how-to setup their environment with their libraries and development kit. Topics will also include understanding of how to use the Android project tree, component tree, main activity java file and xml file as well. | | | | | |
| **5. Pre-requirements for this course (if any):** | | | | | |
| **6. Co- requirements for this course (if any):** | | | | | |
| **7. Course Main Objective(s):** • At the first part, students will learn the clarification of the elements and architectures of the user interfaces for both as basic introduction, and more. • Moreover, students will be exposed to the android and iOS system architecture in general. • Another issue, students should know system requirements for both platforms to get the best performance. • Then as second part, students will continue learning the Android Resources including UI Layouts and The Android Activities, String, Colors, Drawable, Graphics, and more. • Moreover, students will learn how to deal with xml files as a new language for customizing and defining project's elements and attributes. • Students will be exposed to the Android building UI, including Graphical Layout Designer, Android layout model, fields, Android logging system, Table layout and relative layout and Activities. • Finally, students will get a knowledge of how to be Android designers for a mobile UI. | | | | | |

## 1. Teaching mode (mark all that apply)

| No | Mode of Instruction | Contact Hours | Percentage |
|---|---|---|---|
| 1. | Traditional classroom | 64 | 100 |
| 2. | E-learning | | |
| 3. | Hybrid<br>• Traditional classroom | | |

| No | Mode of Instruction | Contact Hours | Percentage |
|---|---|---|---|
| | • E-learning | | |
| 4. | Distance learning | | |

## 2. Contact Hours (based on the academic semester)

| No | Activity | Contact Hours |
|---|---|---|
| 1. | Lectures | 32 |
| 2. | Laboratory/Studio | 32 |
| 3. | Field | |
| 4. | Tutorial | |
| 5. | Others (specify) | |
| | Total | 64 |

## B. Course Learning Outcomes (CLOs), Teaching Strategies and Assessment Methods

| Code | Course Learning Outcomes | Code of CLOs aligned with program | Teaching Strategies | Assessment Methods |
|---|---|---|---|---|
| 1.0 | Knowledge and understanding | | | |
| 1.1 | know both platforms android and iOS and how they work, define the Android user interface. | K2 | Lectures + Lab | Exams, Assignments, Quizzes |
| 1.2 | Know how to set up the Android IDE, iOS IDE and their libraries and jars to get them running consistently and correct as well. | K1<br>K2 | Lectures + Lab | Exams, Assignments, Quizzes |
| 1.3 | Analyze and identify the different methods for each platform to develop programming skills. | K2 | Lectures + Lab | Exams, Assignments, Quizzes |
| 2.0 | Skills | | | |
| 2.1 | Create a small but realistic working mobile application using features such as data persistence and data communications. | S1<br>S2 | Lectures + Lab | Exams, Assignments, Quizzes |
| 2.2 | Student knows how to prepare a mobile application for distribution in terms of skills. | S3 | Lectures, Lab, Group Discussion | Exams, Assignments, Quizzes |
| 3.0 | Values, autonomy, and responsibility | | | |
| 3.1 | Be able to work on teams or individuals to design a static UI Mobile Applications. | V1<br>V2 | Lectures, Lab, Case Study, Groupwork | Exams, Assignments and presentation |
| 3.2 | Present a given Mobile Application idea to classmate. | V3 | Lab, Groupwork, Presentation | Exams, Assignments and presentation |

## C. Course Content

| No | List of Topics | Contact Hours |
|---|---|---|
| 1 | Introduction to IOS Platform:<br>• Introduction to Xcode and iOS SDK.<br>• Introduction to Swift.<br>• iOS application architecture.<br>• | 8 |

| | | |
|---|---|---|
| 2 | Introduction to Android and Java<br>• Android API<br>• Setting up Android Studio<br>• The structure of Android Java code<br>• Building and developing the Android Application. | 10 |
| 3 | JAVA, XML and UI Designer<br>• Creating Java Project and main XML Layout<br>• Add button to the main Layout<br>• Writing Java Methods<br>• Adding message codes | 10 |
| 4 | Layout and Material Design<br>• Introduction to Layout<br>• Building UI with ConstraintLayout<br>• Building UI with CardView | 10 |
| 5 | Java Basics, Decisions and Loops<br>• Using Variables, Operators and Expressions<br>• Switching to make decisions<br>• Repeating codes with loops | 10 |
| 6 | Java Methods<br>• Scope and variables revisited<br>• Method recursion | 8 |
| 7 | Mini Project<br>• Building a mobile application by using learned skills<br>• Revision | 8 |
| Total | | 64 |

## D. Students Assessment Activities

| No | Assessment Activities * | Assessment timing (in week no) | Percentage of Total Assessment Score |
|---|---|---|---|
| 1. | Quiz 1 | 4 | 5 |
| 2. | Midterm Exam 1 | 7 | 10 |
| 3. | Practical Assessment | 1 to 16 | 30 |
| 4. | Midterm Exam 2 | 12 | 10 |
| 5. | Quiz 2 | 14 | 5 |
| 6. | Final Exam | After week 16 | 40 |

*Assessment Activities (i.e., Written test, oral test, oral presentation, group project, essay, etc.)

# E. Learning Resources and Facilities

## 1. References and Learning Resources

| | |
|---|---|
| Essential References | • Android Programming for Beginners, by John Horton, 2015.<br>• Beginning iPhone Development with Swift, Exploring the iOS SDK, by David Mark, Jack Nutting, Kim Topley, Fredrik Olsson, Jeff LaMarchee, Apress, 2014. |
| Supportive References | Head First Android Development: A Brain-Friendly Guide 1st Edition. |
| Electronic Materials | ▪ https://www.tutorialspoint.com/android/<br>▪ https://developer.android.com/docs |
| Other Learning Materials | • Android Studio and SDK tools and iOS as well. |

## 2. Required Facilities and equipment

| Items | Resources |
|---|---|
| facilities<br>(Classrooms, laboratories, exhibition rooms, simulation rooms, etc.) | • Lecture Room with a capacity of More than 30 Chairs and Tables for Students and 1 Teacher's Table and Chair and 1 Projector/Screen.<br>• Laboratories with at least 25 Computers for students and 1 for Lab Instructor and Lab Assistant with Computer Table/Chair with the same number and 1 Projector/Screen. |
| Technology equipment<br>(projector, smart board, software) | • Laboratories computer with NetBeans IDE.<br>• Projectors, Computer for Theory Classes and Practical Sessions.<br>• Internet connection. |
| Other equipment<br>(depending on the nature of the specialty) | • Overhead projector<br>• Computer for individual students<br>• Internet access<br>• Networked laboratory systems |

## F. Assessment of Course Quality

| Assessment Areas/Issues | Assessor | Assessment Methods |
|---|---|---|
| Effectiveness of teaching | Students | Indirect |
| Effectiveness of students assessment | Course Teacher | Direct |
| Quality of learning resources | Program Supervisor, Quality Unit | Direct |
| The extent to which CLOs have been achieved | Course Teacher | Direct |
| Other | Course Teacher, Quality Unit | Direct |

**Assessor** (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify)

**Assessment Methods** (Direct, Indirect)

## G. Specification Approval Data

| | |
|---|---|
| COUNCIL /COMMITTEE | |
| REFERENCE NO. | |
| DATE | |