



Course Specification

(Bachelor)

Course Title: **Mobile Application Development**

Course Code: **HCI 3302**

Program: **BSc in Human Computer Interaction**

Department: **Software Engineering**

College: **Computing**

Institution: **Umm Al Qura University**

Version: **1.0**

Last Revision Date: **22/04/2025**



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A. General information about the course:

1. Course Identification

1. Credit hours:

3 hours

2. Course type

A. University College Department Track Others
 B. Required Elective

3. Level/year at which this course is offered: (3rd year/ 6th level)

4. Course General Description:

This course explores the design and development of mobile applications with a focus on Human-Computer Interaction (HCI) principles. Students will learn to create user-friendly, accessible, and engaging mobile apps by integrating usability research, interaction design, and modern development tools. Emphasis is placed on crafting seamless user experiences tailored to mobile platforms.

5. Pre-requirements for this course (if any):

SE1101 - Object Oriented Application Development

6. Co-requisites for this course (if any):

N/A

7. Course Main Objective(s):

The main objective of the course is for the students to:

- Understand core principles of mobile application development and HCI.
- Acquire practical skills in designing and implementing mobile apps.
- Develop user-centered applications that prioritize accessibility and usability.
- Learn to work with industry-standard tools and frameworks.
- Critically evaluate and improve mobile apps using feedback and testing.

2. Teaching mode (mark all that apply)

| No | Mode of Instruction | Contact Hours | Percentage |
|----|--|---------------|------------|
| 1 | Traditional classroom | 60 | 100% |
| 2 | E-learning | | |
| 3 | Hybrid <ul style="list-style-type: none"> • Traditional classroom • E-learning | | |
| 4 | Distance learning | | |

3. Contact Hours (based on the academic semester)

| No | Activity | Contact Hours |
|----|----------|---------------|
|----|----------|---------------|



| | | |
|--------------|-------------------|-----------|
| 1. | Lectures | 30 |
| 2. | Laboratory/Studio | 30 |
| 3. | Field | - |
| 4. | Tutorial | - |
| 5. | Others (specify) | - |
| Total | | 60 |

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

| Code | Course Learning Outcomes | Code of PLOs aligned with the program | Teaching Strategies | Assessment Methods |
|------------|--|---------------------------------------|--|---------------------------|
| 1.0 | Knowledge and understanding | | | |
| 1.1 | Demonstrate foundational knowledge of mobile app development and HCI principles. | K1 | Lectures, discussions, case studies | Quizzes / Exams / Project |
| 1.2 | Evaluate ethical, legal, and social considerations in mobile app design. | K3 | Lectures, discussions, case studies | Quizzes / Exams / Project |
| 2.0 | Skills | | | |
| 2.1 | Design and develop mobile applications using appropriate tools and techniques. | S1 | Demonstrations, code reviews, experimentations | Quizzes / Exams / Project |
| 2.2 | Collaborate effectively in teams to complete a mobile app project. | S5 | Discussions, code reviews, experimentations | Quizzes / Exams / Project |
| 3.0 | Values, autonomy, and responsibility | | | |
| 3.1 | Conduct usability testing and implement feedback to improve app functionality and accessibility. | V2 | case studies, experimentations, demonstrations | Quizzes / Exams / Project |

C. Course Content

| No | List of Topics | Contact Hours |
|----|--|---------------|
| 1. | Introduction to Mobile Application Development | 4 |





| | | |
|--------------|--|-----------|
| 2. | Basics of Android Development | 8 |
| 3. | User Interface Design | 8 |
| 4. | Data Storage and Persistence | 4 |
| 5. | Networking and APIs | 4 |
| 6. | User Interaction and Input | 4 |
| 7. | Multimedia in Apps | 4 |
| 8. | Location and Maps | 4 |
| 9. | Introduction to Cross-Platform Development | 4 |
| 10. | Accessibility and Inclusivity in Mobile App Design | 4 |
| 11. | Publishing, Maintenance, and Final Project Work | 8 |
| 12. | Final Project Presentations and Course Recap | 4 |
| Total | | 60 |

D. Students Assessment Activities

| No | Assessment Activities * | Assessment timing (in week no) | Percentage of Total Assessment Score |
|----|-------------------------|--------------------------------|--------------------------------------|
| 1. | Assignments | 3-14 | 10 |
| 2. | Project | 3-14 | 30 |
| 3. | Midterm | 7-8 | 20 |
| 4. | Final Exam | 16-17 | 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: The Big Nerd Ranch Guide (4th Edition, 2019) by Bill Phillips, Chris Stewart, Kristin Marsicano, and Brian Hardy |
| Supportive References | <ul style="list-style-type: none"> • Flutter Complete Reference: Create Stunning Applications with Flutter 3 (2022) by Alberto Miola • Mobile App Development with Swift: Exploiting the Latest iOS Features (2020) by Siddharth Shekar and James Goodwill |
| Electronic Materials | |
| Other Learning Materials | |

2. Required Facilities and equipment





| Items | Resources |
|---|-----------------------|
| facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.) | Traditional Classroom |
| Technology equipment (projector, smart board, software) | Multimedia Projector |
| Other equipment (depending on the nature of the specialty) | |

F. Assessment of Course Quality

| Assessment Areas/Issues | Assessor | Assessment Methods |
|---|--|---|
| Effectiveness of teaching | Students | Direct: Survey at the end of the course |
| Effectiveness of Students assessment | Instructor and quality assurance committee | Indirect: Course Report |
| Quality of learning resources | Instructor and quality assurance committee | Direct: Survey at the end of the course |
| The extent to which CLOs have been achieved | Instructor and quality assurance committee | Indirect: Course Report |
| Other | | |

Assessors (Students, Faculty, Program Leaders, Peer Reviewers, Others (specify))

Assessment Methods (Direct, Indirect)

G. Specification Approval

| | |
|---------------------------|--|
| COUNCIL /COMMITTEE | SOFTWARE ENGINEERING DEPARTMENT COUNCIL |
| REFERENCE NO. | THE 17TH MEETING FOR THE ACADEMIC YEAR 1446H |
| DATE | 22/04/2025 |

