

Course Syllabus

CSE 162: Mobile Computing

Fall 2025

Instructor: Hua Huang
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Course Description

This course introduces students to the fundamental concepts of mobile computing. Topics include:

- The range of computing devices, from smartphones and tablets to other mobile platforms.
- Sensor and context-aware computing technologies in mobile devices and their real-world applications.
- Wireless communication technologies that enable connectivity and mobility.
- Programming for mobile devices, with an emphasis on smartphones and tablets.

Students will gain both conceptual understanding and practical experience, preparing them to develop applications and explore research opportunities in the rapidly evolving field of mobile cloud computing.

Text Books

Required: Head First Android Development, 2nd Edition (access the book through the university library)

Course Objectives

By the end of this course, students will be able to:

1. Understand the fundamental principles of mobile computing, the major enabling technologies, and the role of mobile computing in modern computing ecosystems.
2. Gain practical experience in implementing applications on mobile device platforms.

3. Develop problem-solving skills by addressing technical challenges through hands-on laboratory exercises.

Program Learning Outcomes

1. Analyze complex computing problems and apply principles of computing and other relevant disciplines to identify effective solutions.
2. Design, implement, and evaluate computing-based solutions that meet a given set of requirements within the context of the program's discipline.
3. Function effectively as a member or leader of a team engaged in activities appropriate to the program's discipline.
4. Apply computer science theory and software development fundamentals to produce computing-based solutions.

Prerequisites

- CSE 031: Introduction to Computer Science and Engineering II
- MATH 024: Linear Algebra and Differential Equations
- CSE 100: Algorithm Design and Analysis
- CSE 165: Introduction to Object-Oriented Programming

Academic Dishonesty Policy

1. Each student in this course is expected to abide by the University of California, Merced's Academic Honesty Policy. Any work submitted for academic credit must be the student's own work.
2. You are encouraged to study together and to discuss information and concepts covered in lectures and sections with other students. You may provide or receive "consulting" help. However, this permissible cooperation must never involve one student having a copy of another student's work (e.g., by email, file attachment, or hard copy). If copying occurs, both the student who copied and the student who provided the material will receive a zero for the assignment. Penalties may also include failure in the course and University disciplinary action.
3. During examinations, you must do your own work. Talking, discussion, comparing papers, copying, or collaborating in any form is not permitted. Any such behavior will result in failure of the exam and may lead to failure of the course and University disciplinary action.

Course Topics

- Mobile Applications and Requirements
- Mobile Application Development Concepts
- Mobile and Ubiquitous Sensing, Tagging, and Controlling
- Location-Based Services
- Context-Aware Systems
- Mobile and Ubiquitous Networks

Grading Policy

- Labs: 35%
- Exercises: 25%
- Exams: 35%
- Attendance: 5%

Contact Information

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Disability Statement

Accommodations for Students with Disabilities: The University of California Merced is committed to ensuring equal academic opportunities and inclusion for students with disabilities based on the principles of independent living, accessible universal design and diversity. I am available to discuss appropriate academic accommodations that may be required for student with disabilities. Requests for academic accommodations are to be made during the first three weeks of the semester, except for unusual circumstances. Students are encouraged to register with Disability Services Center to verify their eligibility for appropriate accommodations.