

EEP 523: Mobile Applications for Sensing and Control

Summary:

This course provides students with hands-on experience to develop cutting-edge mobile applications on the Android platform. Emphasizing practical skills, the course enables students to harness the full range of sensors and control features that modern Android devices offer. Throughout the quarter, students will engage with Kotlin, the officially supported language for Android development, to create responsive and efficient applications.

- **Instructor:**
 - **Sep Makhsous**, sosper30@uw.edu

Main Communication Platform: Slack Link: [CLICK HERE](#)

Class Meetings Information:

- **Lecture:**
 - Th 6:30 pm-9:50 pm, ECE 045

Grading policy:

- Homework (3): 50%
 - ICTEs (3-5): 10%
 - Final Project: 40%
 - Bonus: 5%
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Class format:

The class will be held in person. It is important that you attend the class meetings to increase your learning experience, especially during In-Class Team Exercises (ICTE) (more info below). We will provide, prefilled slides, recorded lectures, and filled-out notes for you to review asynchronously. We will also provide a zoom option for those who can not make it in person; however, this is not a hybrid course, hence, the engagement through zoom will be limited. If you are joining the class remotely, you will need to make sure to collaborate with your team during ICTEs to receive full credit.

FAQ

Q: *What should I do if I can't come in person to a class meeting.?*

A: Connect to the class via Zoom -- you will be able to listen to the lecture. Coordinate with your team and join them remotely during ICTEs.

Q: *How do I access class recordings?*

A: Canvas, under the Zoom tab

Overview

Learning Outcomes [LO]

1. By the conclusion of this course, students will be able to:
 - Apply Kotlin programming concepts to develop Android mobile applications.
 - Construct dynamic user interfaces using Android's rich set of layout managers and view components.
 - Utilize Android's extensive sensor and control APIs for building interactive applications.
 - Manage user interactions and navigate between different activities in an Android app.
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Course materials

We will provide lecture notes, homework assignments, and other materials using Canvas Home Page,

Here is a summary of all the course material:

- **Prefilled slides:** will be posted 12 hours prior to the lecture
- **ICTEs:** will be posted during the second half of the class and will be due by the end of class time
- **HW:** will be posted at least 2 weeks prior to the deadline and will be due on Friday at midnight
- **Filled-out Lectures and Recordings:** will be posted 12 hours after the lecture

Textbook references

There is no required textbook for this course. I will draw material from these references:

<https://www.geeksforgeeks.org/top-books-to-learn-and-master-kotlin/>

Prerequisites

Familiarity with Java or similar programming languages

Homework

See the Canvas home page for homework assignments and deadlines.

Workload: **there will be 3 homework assignments** posted and submitted on Canvas.

In-Class Team Exercises (ICTE)

Will be published on Canvas and should be done in groups and submitted by the end of class.

Collaboration guidelines

Done in teams: ICTEs

Done individually: HW assignments and Final project

In addition, you are welcome (and encouraged) to:

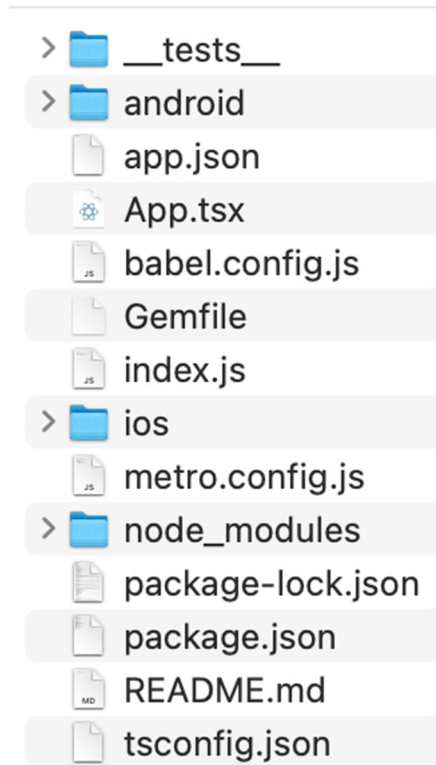
- work together, synchronously and asynchronously, in study groups;
- use analytical and numerical computational tools -- specify the tool(s) in source code and/or text;
- reuse example source code and other materials provided in this course;
- consult textbooks, websites, and other publicly-available materials -- include a full citation(s) with the URL and/or [DOI \(Links to an external site.\)](#).

Submission guidelines

For ICTE, we only need to see a video demo of your app to make sure you got it working.

For all your Homework, and Project assignments, **you need to submit a zip file for your Application folder.**

Your application folder should look similar to:



Make sure that your application folder contains a README.md file, where you need to describe all these points:

1. Explain the working of your App.
2. How many hours it took you to complete building it.
3. What were the most challenging parts.
4. Mention all the websites and other resources you used to build this App.

Please make your code well documented by adding comments.

You also have to submit a video explaining your app's working. You may include your voice, but it is not compulsory. Your video should showcase all the requirements of the assignment.

Exams

No Exams

Due dates and extensions

Due date: ***assignments are usually due by 11:59p Saturday.*** Submitting by this deadline will provide a +5% bonus points

Extensions: ***everyone automatically receives an extension*** on homework to midnight (11:59p) on Sunday immediately following the due date. Due to the fact that we will release solutions on Monday morning, **no further extensions will be considered -- please plan accordingly.**

Rationale: we want to incentivize you to start (or at least review) assignments/exams and to make use of scheduled class meeting times -- thus, the nominal due date is 11:59p Sat. However, we don't want to penalize you if other aspects of your professional or personal life take priority in any given week -- thus, the actual due date is 11:59p Sunday.

Canvas

We will use Canvas (i.e. this site) extensively for course materials and Slack for all communications.

The instruction team will provide homework, example code, etc. through Canvas; you will submit homework electronically through Canvas as described above.

If you have a question -- about a concept, HW problem, etc. -- it's likely someone else in the class does as well. **Please use our Slack channel to post questions (rather than emailing or messaging the instruction team directly) so that (a) others get to propose answers and (b) others get to see the definitive answer (if any).** If you send questions via email to the instruction team, we will direct you to ask it on Slack so others can benefit from our answers.

If you are unfamiliar with Canvas, here are some links to help you get started:

<https://www.tacoma.uw.edu/canvas/getting-started>Links to an external site.

<https://www.tacoma.uw.edu/canvas/how-do-i>Links to an external site.

<https://community.canvaslms.com/community/answers/guides> (Links to an external site.)

Diversity, Equity, and Inclusion

I consider this classroom to be a place where you will be treated with respect, and I welcome individuals of all ages, backgrounds, beliefs, ethnicities, genders, gender identities, gender expressions, national origins, religious affiliations, sexual orientations, ability – and other visible and non-visible differences. All members of this class, including instructors, are expected to

contribute to a respectful, welcoming, and inclusive environment for every other member of the class.

Disability and access accommodations

Your experience in this class is important to me. If you have already established accommodations with Disability Resources for Students (DRS), please communicate your approved accommodations to me at your earliest convenience so we can discuss your needs in this course.

If you have not yet established services through DRS, but have a temporary health condition or permanent disability that requires accommodations (conditions include but not limited to; mental health, attention-related, learning, vision, hearing, physical or health impacts), you are welcome to contact DRS at 206-543-8924 or uwdrs@uw.edu or disability.uw.edu ([Links to an external site.](#)). DRS offers resources and coordinates reasonable accommodations for students with disabilities and/or temporary health conditions. Reasonable accommodations are established through an interactive process between you, your instructor(s) and DRS. It is the policy and practice of the University of Washington to create inclusive and accessible learning environments consistent with federal and state law.

Religious accommodations

Effective July 28, 2019, [Washington State Senate Bill 5166 \(Links to an external site.\)](#) required that UW develop a policy for accommodation of student absences or significant hardship due to reasons of faith or conscience, or for organized religious activities. I am proud that my UW ECE colleague [Rania HusseinLinks to an external site.](#) contributed to drafting and promoting this legislation.

The UW's policy, including more information about how to request an accommodation, is available at Faculty [Syllabus Guidelines and Resources \(Links to an external site.\)](#). Accommodations must be requested within the first two weeks of this course using the Religious Accommodations Request form available at: <https://registrar.washington.edu/students/religious-accommodations-request> ([Links to an external site.](#))

Safety

Call SafeCampus at 206-685-7233 anytime – no matter where you work or study – to anonymously discuss safety and well-being concerns for yourself or others. SafeCampus’s team of caring professionals will provide individualized support, while discussing short- and long-term solutions and connecting you with additional resources when requested.

Academic Integrity

Integrity is at the heart of engineering—and of this course. You’re here to learn, grow, and challenge yourself, and that only works in a community built on trust and honesty.

If you’re ever unsure whether something crosses the line, **ask first**. It’s always better to clarify than assume.

Examples of academic misconduct include (but aren’t limited to):

- **Cheating** – sharing or receiving answers on exams, quizzes, or individual assignments.
- **Plagiarism** – submitting work that isn’t yours or failing to properly credit sources.

As future engineers, you are expected to uphold the **College of Engineering’s Statement of Principles**, which emphasizes honesty, responsibility, and respect for the profession and each other.

Suspected violations (e.g., cheating, plagiarism, falsification) will be reported to the **College of Engineering Dean’s Office** and the **University’s Office of Community Standards and Student Conduct**. Students found responsible may:

- Receive a **zero** on the affected assignment or exam,
- Face academic penalties,
- And in severe cases, risk **expulsion**.

While a case is under review, a temporary **“X” grade** will be recorded. Once resolved:

- If **responsible**, a zero is assigned for that work.
- If **not responsible**, your grade will be updated based on your original performance.

Let’s keep this a class—and a community—where everyone earns their success the right way.

Credits: I would like to acknowledge and thank Professor Sam Burden for providing me with the inspiration and framework for this syllabus

