ECS 198F: The Software Developer's Toolkit

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Office Hours: TBD
Office: Kemper 75 (CSIF Room)

Class Website: **https://divteaching.github.io/**
Class Hours: M/W/F 5:10 - 6:00 pm
Class Room: Olson Hall 151

Course Description

This course equips students with the practical skills needed for modern software development and effective teamwork. It covers essential tools and practices, including version control with Git, coding standards, containerization with Docker, unit testing, and implementing CI/CD pipelines.

Through hands-on assignments and a quarter-long group project, students will gain experience in developing software collaboratively while applying real-world engineering practices. Guest lectures from industry professionals will provide insights into modern trends and best practices in software development.

By the end of the course, students will have a solid foundation in collaborative workflows and the tools used in professional software engineering environments.

Prerequisites/Corequisites

Prerequisites: ECS 36A or ECS 32A recommended or equivalent experience

Course Structure

Class Structure

This course is structured to provide a balance of guided learning, hands-on practice, and collaborative project work.

Lectures: There are three recorded lectures each week, introducing key course concepts. Every lecture will be recorded to allow students to learn at their own pace and revisit material as needed. *Note: Lectures may not be recorded in the event of technology failures.*

Homework Assignments: Four small homework assignments will be distributed throughout the quarter to reinforce lecture topics. These assignments focus on practical applications of lecture material, ensuring students gain hands-on experience with essential tools and techniques.

Group Project: A quarter-long final group project challenges students to work in teams, applying course concepts to develop a software application with a given specification. This project emphasizes collaboration, coding best practices, and implementing professional workflows, preparing students for real-world software development. Students may work in groups of **3 or 4** members.

Grading Policy

The following grading scale will be used.

A	85 - 100 %
B	70 - 84 %
C	55 - 69 %
D	40 - 54 %
F	0 - 40 %

I may or may not curve the scale dependent on overall class scores at the end of the quarter. Any curve will only improve your grade. Grades will be weighted as follows:

- **60%**: Homework (4 Assignments, 15% each).
- **40%**: Group Final Project.

Course Policies

Adminstrative Policy

All assignments must be submitted through **Gradescope**. Grades will be posted on both **Gradescope** and **Canvas**, where you can track your progress throughout the course.

Course materials, including lecture slides, assignments, and resources, will be available on the **course website** for easy access.

All course-related communication, including questions and announcements, will take place on the **Class Discord**. Students must join the Discord server to ensure timely updates and discussions. **Please do not use email to contact the instructor.**

Link to the Class Discord: https://discord.gg/mZvpete3

Attendance Policy

Attendance is not mandatory but strongly encouraged. Engaging with lectures helps reinforce material, clarify concepts, and stay on track. Active participation enhances your learning experience and prepares you for success in the course.

Policies on Late Assignments

Students are allowed up to **5 late days** during the quarter to use on homework assignments without penalty. These late days can be distributed across assignments but cannot be used for the final group project.

Late assignments will be accepted for no penalty if a valid excuse is communicated at least **48 hours** before the deadline. After the deadline, a penalty of **10% per day** will be deducted from the assignment score. Assignments may only be submitted at most **7 days late**.

Final Project: The final group project will not be accepted late and must be submitted by the deadline. No extensions will be granted for the final project under any circumstances.

Academic Integrity and Honesty

You are expected to have read UC Davis's Code of Academic Conduct, which you may find here. Any failure to respect the Code of Conduct will be reported to Student Judicial Affairs and usually results in both disciplinary and academic sanctions. If you have questions about the Code of Academic Conduct, please ask your instructor or contact the Office of Student Support and Judicial Affairs.

Tentative Schedule

Week 01 - Week 02: Unix and Developer Tools

Week 02 - Week 03: Structured Design and Development

Week 04 - Week 05: Containerization and Docker

Week 06 - Week 07: Quality Assurance and Automated Testing

Week 08 - Week 09: CI/CD and DevOps

Week 10: Guest Lectures (Tentative)