

# CSE 7319 – Software Architecture and Design

## Term Project Assignment

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Instructor: Dr. Isaac Chow

Due Date: October 3, 2025

Proposal Presentation: Third Friday of the class

### Project Options

Students may choose one of the following project options:

- Option 1: Develop a software application using Microservices Architecture as the primary style. You may use Docker for containerization and Kubernetes for orchestration as part of your deployment method, along with an optional CI/CD pipeline for automated build, test, and deployment.
- Option 2: Propose and implement a software application of your own design that fits within the scope of software architecture and includes at least one well-defined architecture style. Deployment methods (e.g., Docker, Kubernetes, cloud services) may be selected based on your project needs.

### Objective

The term project is designed to give students hands-on experience in applying software architecture principles to real-world applications. The primary goal is to design, implement, and present a working software application that showcases an understanding of modern architecture practices, deployment strategies, and automation workflows.

For Option 1, students will gain practical experience with microservices, containerization, orchestration, and CI/CD, building a solution that demonstrates scalability, maintainability, and automation.

For Option 2, students will have the flexibility to explore an innovative project idea of their choice, provided it fits within the scope of software architecture and incorporates at least one well-defined architectural style.

In both options, students will be expected to:

- Design and implement the application.
- Deploy and demonstrate the system in class.
- Document the architecture and implementation clearly.

## Project Requirements

1. Software Application: Choose an application domain of your interest. Must include a backend service and a frontend.
2. Documentation: Provide README.md with project overview, architecture diagram, build/run instructions, and demo access info.
3. Deliverables: Proposal Presentation (third Friday of class), Final Submission (Oct 3, 2025), and In-Class Demo.

## Grading Criteria (Total: 100 points)

Component	Weight
Proposal Presentation	20%
Application Functionality and Implementation	30%
Software Architecture Design and Documentation	30%
Final Demo and Presentation	20%

## Notes

- You may work individually or in teams of up to 2 students.
- Late submissions will incur penalties as per course policy.
- Creativity and innovation in application design are encouraged.