

Elements of Software Engineering (CS 314)

Ref. No: 40705

Winter 2025

Course Objective

- To study techniques for software development from problem specification through design, implementation, testing, and maintenance

Class Homepage

- <http://web.cecs.pdx.edu/~xie/cs314-w25/cs314-w25.htm>

Instructor

- **Prof. Fei Xie**
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Office Hours

- By appointment

Prerequisites:

- Programming skills (CS 302) in a high-level programming language

Meeting Time and Location

- T/Th 12:00-1:50PM, KMC 190

Textbooks

- **Required:** Engineering Software Products: An Introduction to Modern Software Engineering (1st Edition) by Ian Sommerville, Pearson

Grading

- **Exams:** 40%
 - Final Exam 10:15AM-12:05PM on March 20
- **Term project:** 40%
 - The term project will be an individual or 2-person team software development project.
 - The term project will be announced in January 16.
 - Due Days:
 - Feature Document Due: January 28
 - Architecture Document Due: February 18
 - Test Plan Due: March 11
 - Project Report and Final Deliverables: March 18

- **Homework assignments:** 15%
- **Class participation and popup quizzes:** 5%
 - Popup quizzes may be given at the beginning or the end of each lecture.

Homework Policies

- **Submission Policy**
 - Each assignment must be submitted electronically on Canvas by 12pm on due day.
- **Late Policy**
 - Extension is only given due to illness and other hardships.

Class Schedules

	Dates	Topics	Readings
Week 1	Jan. 7	Software Product	Chapter 1
	Jan. 9		
Week 2	Jan. 14	Agile Software Engineering	Chapter 2
	Jan. 16		
Week 3	Jan. 21	Features, Scenarios, and Stories	Chapter 3
	Jan. 23		
Week 4	Jan. 28	Software Architecture	Chapter 4
	Jan. 30		
Week 5	Feb. 4	Cloud-Based Software	Chapter 5
	Feb. 6		
Week 6	Feb. 11	Microservices Architecture	Chapter 6
	Feb. 13		
Week 7	Feb. 18	Security and Privacy	Chapter 7
	Feb. 20		
Week 8	Feb. 25	Reliable Programming	Chapter 8
	Feb. 27		
Week 9	Mar. 4	Testing	Chapter 9
	Mar. 6		
Week 10	Mar. 11	Devops and Code Management	Chapter 10
	Mar. 13		

(This schedule is subject to changes according to the need of the class. All suggested readings are from the required textbook, Engineering Software Products: An Introduction to Modern Software Engineering (1st Edition) by Ian Sommerville.)

Academic Integrity

- Academic misconducts will be handled according to the rules of the Department of Computer Science, Maseeh College of Engineering and Computer Science, and Portland State University.