Elements of Software Engineering (CS 314)
Ref. No: 40704
Winter 2026

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-w26/cs314-w26.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 11:00-12:40PM, TBD

Textbooks

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

Grading

- **Exams**: 40%
  - Final Exam 11:10AM-1:00PM on March 19
- **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 15.
  - Due Days:
    - Feature Document Due: January 27
    - Architecture Document Due: February 17
    - Test Plan Due: March 10
    - Project Report and Final Deliverables: March 17

- ▪ **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 11am on due day.
- ▪ **Late Policy**
  - ○ Extension is only given due to illness and other hardships.

Class Schedules

	Dates	Topics	Readings
Week 1	Jan. 6	Software Product	Chapter 1
	Jan. 8		
Week 2	Jan. 13	Agile Software Engineering	Chapter 2
	Jan. 15		
Week 3	Jan. 20	Features, Scenarios, and Stories	Chapter 3
	Jan. 22		
Week 4	Jan. 27	Software Architecture	Chapter 4
	Jan. 29		
Week 5	Feb. 3	Cloud-Based Software	Chapter 5
	Feb. 5		
Week 6	Feb. 10	Microservices Architecture	Chapter 6
	Feb. 12		
Week 7	Feb. 17	Security and Privacy	Chapter 7
	Feb. 19		
Week 8	Feb. 24	Reliable Programming	Chapter 8
	Feb. 26		
Week 9	Mar. 3	Testing	Chapter 9
	Mar. 5		
Week 10	Mar. 10	Devops and Code Management	Chapter 10
	Mar. 12		

(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.