

CS 361 - Software Engineering I

Syllabus

Instructor

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Textbook (optional)

Software Engineering - Theory and Practice, 4th Edition by Pfleeger & Atlee

Prerequisites

College Limitations: +16 (Engr)

Level Limitations: +01, +03 (Undergraduate, Postbac Degree Seeking)

Turning in coursework

You will turn in all coursework items through TEACH before 23:30 (TEACH server time, Pacific Time Zone) on the date they are due (generally Sunday), otherwise it will be marked late.

Learning Objectives

On completion of the course, students should be able to perform the following tasks.

1. **Process:** a sequence of activities intended to design and produce software
2. **Requirements:** a description of what software should do and should be
3. **Documents:** representations of requirements, designs, and systems
4. **Notations:** the rules for what those documents should look like
5. **Design:** a description of something that could be created
6. **Validate:** making sure that something is what it should be
7. **Cost and schedule:** the amount of money and time expended on creating a system
8. **Team:** people striving toward a common goal

Topics Covered

Software Engineering Processes
Requirements Elicitation
Diagram Notations
Evaluating Requirements
Software Architecture
Software Architecture Decomposition
Software Architecture Evaluation
Object Oriented Design
Object Oriented Design Patterns
Agile Process Overview
Agile Teamwork
Pair Programming
Effort Estimation
Project Scheduling

Software Testing
Refactoring
Professionalism

Grade Evaluation

Scores for vision statement, projects, exam.

Vision statement - 20%

- A few paragraphs about a problem
 - Examples: poverty, hunger, addiction, etc
- A few paragraphs about an idea for a solution
 - Examples: a web application, mobile application, etc
- Write a first draft during week 1, revise later in the term
- Every student votes for interesting visions
 - Instructor organizes students into teams based on votes
 - Teams work on projects aimed at working on envisioned software

Casting votes on Vision statement - 7%

- Both voting will be done individually by each student.
- Submission is via web interface provided the instructor.

Projects – Two projects, 20% each (40%)

- Both projects will be done in teams
- The project is to work on one of the class's envisioned solutions (above)
- The instructor assigns students to teams
 - Taking into account (somewhat) what students vote for
- All team members will generally get the same grade on the project
 - With additional penalties for team members who fail to contribute much
 - Team member evaluation will impact grade of the project.

For the second project you have to write real code and real tests and submit the code. The idea is that each pair would select some feature and implement that and then write a test to check that particular implementation. You will also have to perform integration testing/overall feature integration. You are only expected to get through two 1-week cycles and whatever extra time you have left after finishing the integration (during week 10) you will use that time to write up the document. Grading will NOT be based on how many features/ functionality you have implemented, but whatever the number of features you have implemented ,did you write test case for them and are those actually well thought tests (because it's possible to write a huge number of trivial tests that actually doesn't add any value). Whatever the number of features you decide to implement has to work correctly

and has to be substantial enough (Decided by the instructor) according to the number of people in the group.

Team member evaluation– Two projects, 4% each (8%)

- Both evaluation will be done **individually** by each student.
- All team members will evaluate all other team members on
 - Participation in group meetings
 - Timeliness in deliverables
 - Giving feedbacks

Team member evaluation will impact grade of the project

Final exam - 25%

- Will be multiple choice
- Generally is very easy if you carefully review
- Material from lectures will be covered
- If taking this course remotely, then plan ahead about how to be proctored
- Must be scheduled in advanced with the exam window noted in the syllabus calendar

Typical Grading Scale

A	$\geq 92\%$
A-	90-91
B+	87-89
B	82-86
B-	80-81
C+	77-79
C	72-76
C-	70-71
D+	67-69
D	62-66
D-	60-61
F	≤ 59

* REMINDER: A passing grade for core classes in CS is a C or above. A C-, 72 or below, is not a passing grade for CS majors.

Late Policy

Late work is not accepted without prior arrangement for any group work or the final. Individual vision statement assignments lose 10% per day but can always be turned in for 50% credit up until the end of week 8.

Academic Dishonesty:

OAR 576-015-0020 (2) Academic or Scholarly Dishonesty:

a) Academic or Scholarly Dishonesty is defined as an act of deception in which a Student seeks to claim credit for the work or effort of another person, or uses unauthorized materials or fabricated information in any academic work or research, either through the Student's own efforts or the efforts of another.

b) It includes:

(i) CHEATING - use or attempted use of unauthorized materials, information or study aids, or an act of deceit by which a Student attempts to misrepresent mastery of academic effort or information. This includes but is not limited to unauthorized copying or collaboration on a test or assignment, using prohibited materials and texts, any misuse of an electronic device, or using any deceptive means to gain academic credit.

(ii) FABRICATION - falsification or invention of any information including but not limited to falsifying research, inventing or exaggerating data, or listing incorrect or fictitious references.

(iii) ASSISTING - helping another commit an act of academic dishonesty. This includes but is not limited to paying or bribing someone to acquire a test or assignment, changing someone's grades or academic records, taking a test/doing an assignment for someone else by any means, including misuse of an electronic device. It is a violation of Oregon state law to create and offer to sell part or all of an educational assignment to another person (ORS 165.114).

(iv) TAMPERING - altering or interfering with evaluation instruments or documents.

(v) PLAGIARISM - representing the words or ideas of another person or presenting someone else's words, ideas, artistry or data as one's own, or using one's own previously submitted work. Plagiarism includes but is not limited to copying another person's work (including unpublished material) without appropriate referencing, presenting someone else's opinions and theories as one's own, or working jointly on a project and then submitting it as one's own.

c) Academic Dishonesty cases are handled initially by the academic units, following the process outlined in the University's Academic Dishonesty Report Form, and will also be referred to SCCS for action under these rules.

Students with Disabilities

Accommodations are collaborative efforts between students, faculty and Disability Access Services (DAS). Students with accommodations approved through DAS are responsible for contacting the faculty member in charge of the course prior to or during the first week of the term to discuss accommodations. Students who believe they are eligible for accommodations but who have not yet obtained approval through DAS should contact DAS immediately at (541) 737-4098. Students with documented disabilities who may need accommodations, who have any emergency medical information the instructor should be aware of, or who need special arrangements in the event of evacuation, should make an appointment with the instructor as early as possible, and no later than the first week of the term.

Typical Schedule

Time period	Activities
Week 1	Watch Unit 1 videos. Vision statement <u>due at end of week 1.</u>
Week 2	Watch Unit 2 videos. Teams form at end of week 2.
Week 3	Watch Unit 3 videos. Work in teams on Project A.
Week 4	Watch Unit 4 videos. Continue working in teams on Project A.
Week 5	Finish Project A, which is <u>due at the end of week 5 .</u>
Week 6	Watch Unit 5 videos. Updated vision statement <u>due at end of week 6 .</u>
Week 7	Watch Unit 6 videos. Teams form at end of week 7.
Week 8	Watch Unit 7 videos. Work in teams on Project B.
Week 9	Watch Unit 8 videos. Continue working in teams on Project B.
Week 10	Finish Project B, which is <u>due at the end of week 10.</u>
Post-week 10	<u>Final exam occurs.</u>

Writing Intensive Course Outcomes

1. Develop and articulate content knowledge and critical thinking in the discipline through frequent practice of informal and formal writing.
2. Demonstrate knowledge/understanding of audience expectations, genres, and conventions appropriate to communicating in the discipline.
3. Demonstrate the ability to compose a document of at least 2000 words through multiple aspects of writing, including brainstorming, drafting, using sources appropriately, and revising comprehensively after receiving feedback on a draft.