CSE 403
Software Engineering

Spring 1996
Instructor: Nancy G. Leveson
Location: Loew 105
Monday, Wednesday, Friday 11:30 — 12:20

Course Description

This course will study the concepts, methods, and tools for the specification, design, construction, testing (analysis), and documentation of large software systems. Included also will be "non-technical" topics essential to creating complex software systems successfully including project management.

Textbook

Ghezzi, Jazayeri, and Mandrioli. *Fundamentals of Software Engineering*, Prentice Hall, 1991.

Office and Hours

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Teaching Assistant

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Course Assessment

Assignments will count for half the grade and the final exam for the other half.

50% assignments

50% final exam

Assignments

Most of the group assignments will be based on a simple text formatter. The interview might be based on some other task.

1. **Interview** - Groups will interview people from other groups to elicit information which will allow the development of a requirements specification.
2. **Requirements** - Groups will develop a requirements specification based on the interviews in the previous assignment.
3. **Formal methods** - A homework exercising knowledge of state machines, petri nets and algebraic specifications.
4. **Design** - Groups will develop designs for the program based on several standard design methodologies.
5. **Program** - Groups will write a program based on their design.
6. **Testing** - Groups will develop a test suite and test their program and the program written by another group.
7. **Maintenance** - Groups will perform a maintenance task on another group's program.

Lecture, Reading and Assignment Schedule — CSE 403 *Subject to Change*				
Week	Date	Topic	Reading	Assignment due
1	3/25	Software Engineering	C-17 Study, Therac-25	
	3/27	Software Principles	Pages 1-8	
	3/29	Software Principles	Chapter 3	
2	4/1	Software Principles		
	4/3	Requirements	Pages 154-156	
	4/4			Interview
	4/5	Requirements	Pages 160-167	
3	4/8	State machines	Pages 167-174	
	4/10	Petri nets	Pages 174-180	
	4/11			Interview
	4/12	Algebraic specifications	Pages 219-226	
4	4/15	Pre and post conditions	Pages 202-207	Requirements
	4/17	Design	Pages 61-145	
	4/19	Design		Formal methods
5	4/22	Design		
	4/24	Design		
	4/26	Metrics	Pages 339-344	
6	4/29	Metrics	Pages 420-433	
	5/1	Testing		Design
	5/3	Testing	Pages 255-301	
7	5/6	Process Models	Pages 357-384	
	5/8	Process Models		Program
	5/10			
8	5/13	Project Management	Chapter 8	
	5/15	Project Management		Testing
	5/17	Project Management		
9	5/20	Maintenance	Page 412, 367	
	5/22	Ethics		
	5/24	Ethics		Maintenance
10	5/27	Holiday		
	5/29			
	5/31			