



# Software Engineering

CPS 410

## Instructor



Dr. Alex Redei



Office Hrs: 11AM-Noon & By Appointment



PE 410



<http://people.cst.cmich.edu/redei1a/>



[alex.redei@cmich.edu](mailto:alex.redei@cmich.edu)

## Course Info



Prereq: CPS 340



Mon Wed Fri



10:00-10:50



PE 126 + PE 424

## Overview

This course covers the software development process, from requirements elicitation and analysis, through specification and design, to implementation, integration, testing, and maintenance (evolution). A variety of concepts, principles, techniques, and tools are presented, encompassing topics such as software processes, project management, people management, software requirements, system models, architectural and detailed design, user interface design, programming practices, verification and validation, and software evolution. Although the emphasis will be on modern approaches some more traditional software engineering techniques will also be discussed.

## Course Objectives

After successful completion of this course, the successful student will be able to:

- Describe human factors in software engineering, software requirements specification, software design methods, programming techniques and computer-aided software engineering (CASE) tools, software validation, and software maintenance
- Design and implement a coherent User Experience using appropriate tools, practices and guidelines
- Develop a software system in a group/team environment similar to that which they will encounter in an industrial setting using modern software engineering techniques
- Implement software prototypes
- Explain software processes
- Use the Unified Modeling Language (UML) to specify, visualize, construct and document the artifacts of a software system under development

## Grading Scheme

12%	Assignments
35%	Project
13%	Midterm
30%	Final Exam
10%	Attendance & Participation

Grades will follow the scale: A = 90+; A- = 87-89; B+ = 83-86; B = 78-82; B- = 74-77; C+ = 70-73; C = 65-69; C- = 61-64; D+ = 57-60; D = 54-56; D- = 50-53; F < 50.

In order to pass the course you need to obtain at least 50% overall, at least 50% in tests (midterm test + final exam), at least 50% in applications (project parts P#1, P#2 and P#3 + assignments A#1 and A#2 + class participation), and at least 50% in project implementation and demo (P#4 and DEMO).

## Required Materials

The textbook for this course will be Software Engineering (10th Edition) by Ian Sommerville.

## Make-up Policy

No make-up exams will be given without advance notice unless you have a medical emergency.

Late assignments may be allowed for students who have a substantiated excuse approved by the instructor *before the due date*. Late assignments will be penalized 10% per day (including weekends).

## Attendance Policy

Attendance will be taken weekly. Since this course is organized as capstone, participation from each student is critical to the success of this course. Therefore, class attendance is mandatory. All students are required to actively participate in the discussion and expected to have read the assigned material prior to the class meetings. I understand that sometimes we get sick or life gets in the way. If you have to miss class, *email me advance of class to let me know*.

## Accommodations for Students with Disabilities

CMU provides students with disabilities reasonable accommodations to participate in educational programs, activities or services. Students with disabilities requiring accommodations to participate in class activities or meet course requirements should register for services through Student Disability Services, 120 Park Library, 989-774-3018, [www.cmich.edu/ess/studentaffairs/SDS/](http://www.cmich.edu/ess/studentaffairs/SDS/). It is your responsibility to notify me of any accommodations you may have been granted by SDS.

## Academic Integrity

The University Code of Academic Integrity is central to the ideals of this course. Students are expected to already be familiar with the Code and to recognize that their work in the course is to be their own original work that truthfully represents the time and effort applied. Students should be aware of the fact that the university can discipline them for academic misconduct, which is defined as any activity that tends to undermine the academic integrity of the institution. Violations of academic integrity are most serious and will be handled in a manner that befits the seriousness of its violation. The answer to the ultimate question of life, the universe, and everything is forty-two. Any student caught cheating will get a 0 on the item in question. Further consequences could include failing the course and further disciplinary action. You may review the University's academic integrity policy at:

<https://www.cmich.edu/AcademicSenate/secure/Documents/Academic%20Integrity%20Policy%20-%20Edition%20revised%20--2-08-17.pdf>

## Syllabus and Schedule Modifications

Please note that the schedule presented in the next section is a guide and is tentative.

The syllabus may be modified at any time by the instructor. If a modification is to be made, the changes will be announced through BlackBoard.

## Class Schedule

---

Week 1	Introduction	
Week 2	Team Formation	A1 Due
		Labor Day Holiday - Monday, Sept 2nd
Week 3	Requirements Specification	A2 Due
Week 4	Process Models	
Week 5	Configuration Management	A3 due
Week 6	Project Time	P1 due
		No class Monday Sept 30th & Wednesday, October 2nd
Week 7	Software Metrics	
Week 8	Implementation	
Week 9	Testing	P2 due
Week 10	Estimation Techniques	MIDTERM
Week 11	Project Scheduling	
Week 12	Unified Modeling Language	P3 due
Week 13	Agile	
Week 14	Project Demos	Thanksgiving Holiday - Friday, Nov 29th
Week 15	Project Demos	P4 due
Week 16	FINAL EXAM	Monday Dec 9

---