

# CS 420

## Software Engineering in Practice

### Course Syllabus

**Catalog data:** CS 420 [M] – **Software Engineering in Practice** - develop software in a team environment; project management; unit and integration testing, bug tracking, configuration management, software process models; object-oriented design with UML

**Prerequisites:** CS 320

**Course Coordinator:** Dr. Orest Pilskalns

### Course Description:

Develop and enhance software engineering skills by requiring students to participate in a team project. A team based project allows students to experience software engineering principles in practice. The project focuses on practical issues in software engineering such as version control, integration testing, and software maintenance. The project guides them through phases of the software lifecycle allowing them to experience team and project management issues. Documentation is required as exit and entrance criteria to each phase. Each phase builds upon the previous phases. The course contains homework assignments that augment the course project and lectures.

### Textbooks:

There is no required textbook. However, you will be responsible for reading material handed out in class and posted on the class website. In addition, you may be asked to find and read material that can be obtained using the WSU library system or the Internet.

### Supplemental Text:

- UML Distilled, by Mark Fowler, Addison-Wesley, 2005
- Software Engineering Seventh Edition, by Ian Sommerville, Addison-Wesley, 2004.

### Exams and Quizzes:

Examination times and dates will be announced in class. Quizzes may be administered without prior announcement. Makeup exams will not be given without prior authorization or written documentation that the student was unable to participate. Unexcused missed exams result in a grade of zero for that exam. Excused absences from exams include personal emergencies and work-related obligations, however confirmation is necessary.

### Homework:

Homework is due at the beginning of class on the date specified in the assignment. Late homework and projects will lose 20% for each day they are late. Once solutions to the homework are handed out or discussed in class, late homework will no longer be accepted. Points will be deducted for incorrect grammar, punctuation, and spelling. **Peer reviews may be used to assess individual effort on team based homework.**

### Measured Course Outcomes (for ABET):

Students taking this course will:

1. Peer review teammates based on their ability to contribute their time, ideas, and software engineering skills while working on a team project. (Contributes to performance criteria D-1 and D-2).
2. Carry out a design and development process in a team environment to satisfy project requirements for a computer program or system. (Contributes to performance criteria C-2 and D-3).
3. Design and execute a test plan to verify a design and validate project requirements. (Contributes to performance criteria C-3).
4. Deliver at least one individual oral presentation about their role in the team based project. (Contributes to performance criteria G-2).

### Major Topics Covered in the Course:

1. Students will work on a large software project that requires the coordinated efforts of a team to be successful.
2. Software Engineering in a team environment will include the following topics:
  - a. Team management
  - b. Project planning
  - c. Version control
  - d. Integration testing
  - e. Software maintenance
3. Students will experience, as a team, each phase in a software process model that must include:
  - a. Software requirements and specification including formal analysis
  - b. Object oriented design and programming
  - c. Testing, debugging, and maintenance

### CSAB Category Content

	FUNDAMENTAL	ADVANCED		FUNDAMENTAL	ADVANCED
Data Structures	0	0	Computer Organization and Architecture	0	0
Algorithm & Software Design	0	3	Concepts of Programming Languages	0	0

### Oral and Written Communications

Students are required to deliver at least one oral presentation concerning their roles and experiences as a team member working on a software development project. Students are required (as a team) to create a software requirements specification document (SRS).

## CC2001

This course provides coverage of topics in the following areas (hours listed are minimums):

SE1. Software Design [core]	2
SE2. Using APIs [core]	1
SE3. Software Tools and Environment [core]	3
SE4. Software Processes [core]	1
SE5. Software Requirements and Specification [core]	2
SE6. Software Validation [core]	4
SE7. Software Evolution [elective]	3
SE8. Software Project Management [elective]	4

### Grading Policy:

Exams and Quizzes	40 %
Homework, Projects, Presentations	50 %
Discretionary	10 % (Attendance is required).

**If you fail to attend on more than 1 occasion, you will lose your discretionary points.**

A+	94 - 100%	A	91 - 93 %	B+	87 - 90%	B	83 - 86%
B-	80 - 82%	C+	77 - 79%	C	73 - 76%	C-	71 - 72%
D+	68 - 70%	D	62 - 67%	D-	60 - 61%	F	≤ 59%

### Course Policies:

**Plagiarism or cheating** will not be tolerated. University policy will be adhered to in all such cases. There is a difference between collaboration and plagiarism. Plagiarism is the act of using another's work without giving them credit for it. Collaboration is the exchange of ideas, the debate of issues and the examination of readings among each other that enables you to arrive at your own independent thoughts. Collaboration is encouraged, however plagiarism or cheating will result in a failing grade for the exam or assignment in question.

**Reasonable accommodations for disabilities** are available for students who have a documented disability. Students must notify the course instructor during the first two weeks of class of any accommodations needed for the course. Late notification may cause the requested accommodations to be unavailable. All accommodations must be approved through the Associate Director of Student Services, in SS203A, 546-9567.

**Late drops** are governed by departmental and college policies. The student must show documented evidence supporting reasons for a request to drop a class after the deadline. Requests will be considered on an individual basis.