

CSE 360

Introduction to Software Engineering

Fall 2004

General: Classroom Bldg/Room: Brickyard/210
Course portal: <http://my.asu.edu> (CSE 360, SLN: 20924)
Lecture hours: 1:40 – 2:55 pm, Tu. & Th.

Textbook: **Required:**
Software Engineering Theory and Practice, 2nd Ed., by S.L. Pfleeger, 2001.
References:
UML 1.5 Standard, <http://www.omg.org/technology/documents/formal/uml.htm>.
Software Engineering: A Practitioner's Approach, 5th Ed., R.S. Pressman, 2000.
Object Solutions: Managing the Object-Oriented Project, G. Booch, 1996.

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Office hours: Tu. & Thu. 3:00 – 4:30 p.m.; and by appointment

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Office hours: Wed. 11:00 - 1:00 pm; Fri. 11:00 - 12:00 pm
Brickyard/485

Course Description (CSE/ASU catalogue):

Software life cycle models; project management, team development environments and methodologies; software architectures; quality assurance and standards; legal, ethical issues. Prerequisites: CSE-210 and CSE-240

Course Objectives:

(I) Students will develop an understanding of software engineering topics including basic software engineering approaches supporting requirements, design, coding, testing, maintenance and quality assurance. (II) Students will become aware of national and international standards. Students employ a disciplined process for acquiring requirements, develop software architecture, reasoning about the correctness of software programs while adhering to a code of ethics. (III) Students will learn to work in a team setting where project planning and tracking is used as a basis to support systematic software development, software inspection, software product documentation and oral presentation.

Course Project:

Focuses on a team of students creating a software product in which team members individually and collaboratively apply the course concepts, approaches, and techniques to the course project (see the Course Project Description). Each team consists of 5 students. As in industry settings, success of a software project depends on key factors including individual effort and competency as well as team's ability to communicate and cooperate, be creative, have discipline, and manage resources and time. Hence, project's emphasis is on quality of analysis, design and documentation as well as prototype software development and demonstration.

Software Tools and Computing Laboratory:

Projects are to be developed using Rational Rose and an IDE that supports the Java™ programming language. Laboratory is located in Brickyard, room 214. For hours refer to the course webpage.

Course Topics*

1. Introduction [3 hours]
 - software engineering as a discipline
 - what software engineering is not!
2. Software engineering processes/products [4 hrs]
 - classical and modern engineering processes
 - software products and standards
3. Software engineering metrics/planning/management [6 hrs]
 - Customer and software team tasks assignments (*people*)
 - project scheduling and monitoring (*process*)
 - system decomposition, modularization, interface specification (*product*)
 - risk analysis and cost estimation
4. Documentation [1 hr]
 - requirements, analysis, design, implementation, testing, and their relation to each other
5. Structured and object-oriented software specification approaches [12 hrs]
 - requirements elicitation and use-cases
 - software architecture and quality attributes
 - analysis and design concepts, principles and modeling techniques
6. Software testing and inspection [3 hrs]
 - white- and black-box testing
 - unit and integrated testing
7. Ethics and software safety [2 hrs]
8. Project evaluations and presentations [6 hrs]
 - students present their progress in two stages (preliminary and final). Projects are critiqued and evaluated by the instructor, TA, and peers.

* Estimated time to be devoted to each topic and its subtopics.

Grading Scheme and Important Dates	% of Course Grade	Date/Time [§]	Location
Homework	10%	start of class	BY-210
Midterm 1	25%	10/12/04	BY-210
Midterm 2 (comprehensive)	25%	12/07/04	BY-210
Project	40%	see below	BY-210
Total	100%	NA	NA

§ Tentative

Project		% of Project Grade	Date/Time	Location
Deliverable 1	Hand-in preliminary requirements, analysis/architecture	5%	10/05/04 beginning of class	BY-210
Presentations	Slides; may have conceptual prototype		10/05/04 and 10/07/04	BY-210
Deliverable 2	Hand-in detail design and partial report	5%	11/16/04 beginning of class	BY-210
Presentations	Slides; may have partial prototype		11/16/04 and 11/18/04	BY-210
Final Report	Hand-in report and upload software to MyASU Digital Box	25%	Thu., Dec 9, beginning of class	BY-210
Presentations	Slides and demo	5%	Thu., Dec 9, 12:20-2:10 pm	BY-210
Total		40%	NA	NA

Attendance: Participation is an integral part of the course and attendance will be monitored randomly.

Homework: Each homework assignment must be turned at the start of the class on its due date. Homework grades will be reduced by 20% each day. Late homework assignment grade is zero once the solution is posted on the blackboard. All homework assignments need to be turned in and selected ones will be graded. Homework assignments need to be typed.

Project deliverables: Each deliverable is due at the start of the class on its due date. There is 20% per day for late submissions. The deliverables need to be typed.

Letter Grade: Course grade is based on 10-point scale (it may be relaxed at the discretion of the instructor). **Students are responsible for all materials covered and discussed in class, posted on Blackboard, and email correspondences.** Examinations **may not be taken individually** except in special situations with prior arrangement and approval at least 3 days (72 hours) in advance of the exam day. Presentations must also be given on their assigned dates.

Withdrawals: Unrestricted withdrawal deadline **Sept. 17th** (in person) and **Sept. 19th** (Sundial/Web); restricted course withdrawal deadline is **Oct. 29th**; restricted complete withdrawal deadline is **Dec. 1st**. Note that students wishing to drop the course AT ANY TIME must take appropriate actions. **Ceasing attendance does not automatically drop you from the course.** IF YOU ARE STILL ON THE CLASS ROLL AT THE END OF THE SEMESTER, YOU WILL RECEIVE 0's FOR ANY WORK NOT COMPLETED AND WILL BE GRADED ACCORDINGLY.

Academic Integrity and Ethics: The University's Code of Academic Integrity (<http://www.asu.edu/studentlife/judicial/integrity.html> and <http://www.asu.edu/studentlife/judicial>) states that students shall not "represent the work of others as their own." The Computer Science and Engineering department requires all students to adhere to ASU's policy on Academic Honesty. This policy will be applied to all work submitted for grade, including term paper, exams, and homework assignments. The minimum penalty for submitting work that is not your own is an E grade. Note: You are encouraged to discuss class assignments with your instructor, your teaching assistant, and your fellow students. However, any work submitted as part of course work must be your own work. I.e., final work submitted by student must represent his/her own individual efforts unless stated otherwise by the instructor. College of Engineering and Applied Sciences policy states that any act of cheating will result in receiving an XE for the course indicating failure due to disciplinary action.