

COMPUTER ENGINEERING DEPARTMENT

CMPE 202

Software Systems Engineering

Fall 2012

Instructor: Paul Nguyen
Office: ENG 281

Section/Times: Section 04 (48012)
Tuesdays & Thursdays, 3:00 pm – 4:15 pm

Location: Engineering Building, Room 337

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Office Hours: Tuesdays & Thursdays, 4:30 pm – 5:30 pm (or by appointment)

Course Catalog Description

Integrated approach to software design and development including requirements elicitation and analysis, system design and construction through studying multiple facets of software development processes, design methodologies, modeling approaches, and implementation techniques.

Prerequisites

Classified graduate standing or instructor consent.

Program Outcomes (PO)

	Description
PO 1	Be able to demonstrate an understanding of advanced knowledge of the practice of software engineering, from vision to analysis, design, validation and deployment.
PO 2	Be able to tackle complex engineering problems and tasks, using contemporary engineering principles, methodologies and tools.
PO 3	Be able to demonstrate leadership and the ability to participate in teamwork in an environment with different disciplines of engineering, science and business.
PO 4	Be aware of ethical, economic and environmental implications of their work, as appropriate.
PO 5	Be able to advance successfully in the engineering profession, and sustain a process of life-long learning in engineer or other professional areas.
PO 6	Be able to communicate effectively, in both oral and written forms.

Course Learning Objectives (CLO)

	Description
CLO 1	Be able to understand the integrated approach to software systems development.
CLO 2	Be able to perform software development tasks from a system's point of view.
CLO 3	Be able to generate modeling artifacts for implementers to construct software systems.

Course Learning Objectives Support Program Outcomes

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6
CLO 1	X	X	X			
CLO 2		X				X
CLO 3	X	X	X			X

Textbook Required

- Larman, Craig. *Applying UML and Patterns: An Introduction to Object-oriented Analysis and Design and Iterative Development*. 3rd ed. Upper Saddle River, NJ: Prentice Hall PTR, 2005.

Supplemental Textbooks Recommended

- Horstmann, Cay S. *Big Java*. 4th ed. Hoboken, NJ: Wiley, 2010.
- Freeman, Eric, Elisabeth Freeman, Kathy Sierra, and Bert Bates. *Head First Design Patterns*. Sebastopol, CA: O'Reilly, 2004.

Classroom Protocol

Each student is required to engage in classroom activities, participate in project reviews and presentations, submit assignments and reports on time, and take exams and tests on time.

Class eLearning Site

- A Desire2Learn class site is used to post essential class-related information.
- A student must actively check and follow the postings of this site.

Expected Course Workload

Success in this course is based on the expectation that students will spend, for each unit of credit, a minimum of forty-five hours over the length of the course (normally 3 hours per unit per week with 1 of the hours used for lecture) for instruction or preparation/studying or course related activities including but not limited to internships, labs, clinical practica. Other course structures will have equivalent workload expectations as described in the syllabus.

Assignments and Grading Policy

Assignments/Exams	Percent	Points
Lab & Homework Assignments	25%	100
Team Project	25%	100
Midterm Exam	25%	100
Final Exam	25%	100
	TOTAL	400

Note:

*Extra credit will be available on the midterm and final exam.
There will be no curves and no borderline grade adjustments.*

Grade Overall Score

Letter Grade	Low	High
A+ (>100%)	401	<i>or more</i>
A (93%-100%)	372	400
A- (90%-92.99%)	360	371
B+ (87%-89.99%)	348	359
B (83%-86.99%)	332	347
B- (80%-82.99%)	320	331
C+ (77%-79.99%)	308	319
C (73%-76.99%)	292	307
C- (70%-72.99%)	280	291
D+ (67%-69.99%)	268	279
D (60%-66.99%)	240	267
F (0%-59.99%)	0	239

Dropping and Adding

Students are responsible for understanding the policies and procedures about add/drop, grade forgiveness, etc. Refer to the current semester's [Catalog Policies](http://info.sjsu.edu/static/catalog/policies.html) section at <http://info.sjsu.edu/static/catalog/policies.html>. Add/drop deadlines can be found on the [current academic calendar](http://www.sjsu.edu/academic_programs/calendars/academic_calendar/) web page located at http://www.sjsu.edu/academic_programs/calendars/academic_calendar/. The [Late Drop Policy](http://www.sjsu.edu/aars/policies/latedrops/policy/) is available at <http://www.sjsu.edu/aars/policies/latedrops/policy/>. Students should be aware of the current deadlines and penalties for dropping classes.

Information about the latest changes and news is available at the [Advising Hub](http://www.sjsu.edu/advising/) at <http://www.sjsu.edu/advising/>.

Note: Enrolled students must submit a signed honesty pledge and verification of prerequisites by the second class meeting. If these are not submitted, the instructor may drop the student from the course.

University Policies

Academic Integrity

Your own commitment to learning, as evidenced by your enrollment at San José State University, and the University's Academic Integrity Policy requires you to be honest in all your academic course work. Faculty members are required to report all infractions to the Office of Student Conduct and Ethical Development. The policy on academic integrity can be found at http://sa.sjsu.edu/student_conduct. Instances of academic dishonesty will not be tolerated. Cheating on exams or plagiarism (presenting the work of another as your own, or the use of another person's ideas without giving proper credit) will result in a failing grade and sanctions by the University. For this class, all assignments are to be completed by the individual student unless otherwise specified. If you would like to include your assignment or any material you have submitted, or plan to submit for another class, please note that SJSU's Academic Policy S07-2 requires approval of instructors.

Campus Policy in Compliance with the American Disabilities Act

If you need course adaptations or accommodations because of a disability, or if you need to make special arrangements in case the building must be evacuated, please make an appointment with me as soon as possible, or see me during office hours. Presidential Directive 97-03 requires that students with disabilities requesting accommodations must register with the [Disability Resource Center](http://www.drc.sjsu.edu/) (DRC) at <http://www.drc.sjsu.edu/> to establish a record of their disability.

Student Technology Resources

Computer labs for student use are available in the Academic Success Center located on the 1st floor of Clark Hall and on the 2nd floor of the Student Union. Additional computer labs may be available in your department/college. Computers are also available in the Martin Luther King Library. A wide variety of audio-visual equipment is available for student checkout from Media Services located in IRC 112. These items include digital and VHS camcorders, VHS and Beta video players, 16 mm, slide, overhead, DVD, CD, and audiotape players, sound systems, wireless microphones, projection screens and monitors.

Learning Assistance Resource Center

The Learning Assistance Resource Center (LARC) is located in Room 600 in the Student Services Center. It is designed to assist students in the development of their full academic potential and to motivate them to become self-directed learners. The center provides support services, such as skills assessment, individual or group tutorials, subject advising, learning assistance, summer academic preparation and basic skills development. The [LARC website](http://www.sjsu.edu/larc/) is located at <http://www.sjsu.edu/larc/>.

SJSU Writing Center

The SJSU Writing Center is located in Room 126 in Clark Hall. It is staffed by professional instructors and upper-division or graduate-level writing specialists from each of the seven SJSU colleges. Our writing specialists have met a rigorous GPA requirement, and they are well trained to assist all students at all levels within all disciplines to become better writers. The [Writing Center website](http://www.sjsu.edu/writingcenter/about/staff/) is located at <http://www.sjsu.edu/writingcenter/about/staff/>.

Peer Mentor Center

The Peer Mentor Center is located on the 1st floor of Clark Hall in the Academic Success Center. The Peer Mentor Center is staffed with Peer Mentors who excel in helping students manage university life, tackling problems that range from academic challenges to interpersonal struggles. On the road to graduation, Peer Mentors are navigators, offering "roadside assistance" to peers who feel a bit lost or simply need help mapping out the locations of campus resources. Peer Mentor services are free and available on a drop-in basis, no reservation required. The [Peer Mentor Center website](http://www.sjsu.edu/muse/peermentor/) is located at <http://www.sjsu.edu/muse/peermentor/>

Schedule

Schedule is subject to change with 2-week notice.

Date	Lecture/Lab Topics	Course Textbook Readings
Week #0 08/23	Course Overview	Chp 1. OO Analysis & Design Chp 2. Iterative, Evolutionary & Agile
Week #1 08/28, 08/30	Classical vs. Object-Oriented Concepts UML Overview	Chp 4. Inception Phase Chp 5. Evolutionary Requirements
Week #2 09/04, 09/06	Extreme Programming (XP) Test-Driven Design	Chp 6. Use Cases Chp 7. Other Requirements
Week #3 09/11, 09/13	OO Modeling with CRC Cards Analysis and Design with UML	Chp 9. Domain Models Chp 10. System Sequence Diagrams
Week #4 09/18, 09/20	Agile Software Requirements Scrum and Agile UP	Chp 11. Operation Contracts Chp 14. On to Object Design
Week #5 09/25, 09/27	UML Diagrams (Part 1)	Chp 28, 29 & 30. UML Activity & State Machine Diagrams
Week #6 10/02, 10/04	UML Diagrams (Part 2)	Chp 15. UML Interaction Diagrams
Week #7 10/09, 10/11	UML Diagrams (Part 3)	Chp 16. UML Class Diagrams
Week #8 10/16, 10/18	Mapping Models to Code	Chp 20. Mapping Designs to Code
Week #9 10/23, 10/25	Midterm Exam	
Week #10 10/30, 11/01	Gang of Four Design Patterns (Part 1)	Chp 17. GRASP: Designing Objects with Responsibilities
Week #11 11/06, 11/08	Gang of Four Design Patterns (Part 2)	Chp 26. Applying GoF Design Patterns
Week #12 11/13, 11/15	Gang of Four Design Patterns (Part 3)	<u>Note:</u> Campus Closed on November 22
Week #13 11/20	Project Workshops	
Week #14 11/27, 11/29	Project Workshops	
Week #15 12/04, 12/06	Project Presentations	
Week #16 12/13	Final Exam 2:45 pm – 5:00 pm	