San José State University
College of Engineering/Computer Engineering Department
CMPE 202, Software Systems Engineering, Spring 2018

Please refer to Canvas for the most current version

Course and Contact Information

Instructor:	Paul Nguyen
Office Location:	ENG 281
Email:	paul.nguyen@sjsu.edu
Office Hours:	Saturdays, 3:00 pm – 4:00 pm (by appointment only)
Class Days/Time:	Saturdays, 12:00 pm – 2:45 pm (Section 3)
Classroom:	ENG 189
Prerequisites:	Computer Engineering and Software Engineering Majors only. Instructor Consent Required. Not available to Open University students. *Students who do not provide documentation of having satisfied the class prerequisite and co-requisite requirements (if any) by the second class meeting will be dropped from the class.*

Course Format

This course requires the student to have a personal computer that is installed with a modern operating system, such as MS Windows ™, Mac OS X ™, or Linux. The personal computer must be able to connect to Internet and is capable of running multiple virtual machines, such as VMware Player (free), VMware Fusion (licensed), or Oracle Virtual Box (free).

Faculty Web Page and MYSJSU Messaging

Course materials such as syllabus, handouts, notes, assignment instructions, etc. can be found on the course web site available from the eLearning platform Canvas (i.e. eCampus) at: http://sjsu.instructure.com. You are responsible for regularly checking with the messaging system (email, discussions, announcements news) through Canvas and MySJSU to learn any updates.

Course 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.

Course Goals and Learning Outcomes

Program Outcomes (PO)

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)

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 Textbooks

- Fowler, Martin. **UML Distilled: A Brief Guide to the Standard Object Modeling Language**. Addison-Wesley, 2004. (**required**)
- Gamma, Erich. **Design Patterns: Elements of Reusable Object-oriented Software**. Addison-Wesley, 1995. (**required**)
- Coplien, Harrison. **Organizational Patterns of Agile Software Development**. Prentice Hall, 2004. (**recommended**)

Supplemental Materials

Additional web resources and academic papers will supplement the lectures and reading materials and may include Safari eBooks available at: http://proquest.safaribooksonline.com.libaccess.sjlibrary.org/?uicode=calstate.

Course Requirements and Assignments

SJSU classes are designed such that in order to be successful, it is expected that students will spend a minimum of forty-five hours for each unit of credit (normally three hours per unit per week), including preparing for class, participating in course activities, completing assignments, and so on. More details about student workload can be found in University Policy S12-3 at http://www.sjsu.edu/senate/docs/S12-3.pdf.

NOTE that University policy F69-24, "Students should attend all meetings of their classes, not only because they are responsible for material discussed therein, but because active participation is frequently essential to insure maximum benefit for all members of the class. Attendance per se shall not be used as a criterion for grading."

Grading Policy

Assignments/Exams	Percent	Points
Lab Quizzes	20%	100
Personal Project	20%	100
Team Hackathon	10%	50
Midterm Exam	25%	125
Final Exam	25%	125
	TOTAL:	**500**

Extra Credit:

*A total of **50 points** in extra credits will be available earned through class participation or special projects.*

The instructor reserves the right to change the percentages. Late work will result in a zero or reduced grade.

Grading Scale

Letter Grade	Percentage	Low	High
A+	>100%	501	*or more*
A	93% - 100%	465	500
A-	90% - 92.99%	450	464
B+	87% - 89.99%	435	449
B	83% - 86.99%	415	434
B-	80% - 82.99%	400	414
C+	77% - 79.99%	385	399
C	73% - 76.99%	365	384
C-	70% - 72.99%	350	364
D+	67% - 69.99%	335	349
D	60% - 66.99%	300	334
F	0% - 59.99%	0	299

Final Grading Calculations:

Letter Grade will be assigned based on the overall Total Points earned. There will be no borderline adjustments or grading on a curve.

*A total of **50 points** of earned extra credit maximum will be included in the Total Points.*

Major exams in this class may be video recorded to ensure academic integrity. The recordings will only be viewed if there is an issue to be addressed. Under no circumstances will the recordings be publicly released.

Classroom Protocol

- Each student is required to engage in classroom activities, participate in labs, submit assignments and reports on time, *and* take exams and tests on time.
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- Web-browsing or online chatting in class is not allowed. Cell Phones are to be turned off or switched into silence mode during lectures and tests. During exams if you receive a cell phone call or page it will be assumed that you have completed your exam and no further work will be allowed.
- No make-up exams will be held.
- Exams will be closed book, closed notes.
- Student causing disruption in the class will be asked to leave the class

Major exams in this class may be video recorded to ensure academic integrity. The recordings will only be viewed if there is an issue to be addressed. Under no circumstances will the recordings be publicly released.

University Policies

Per University Policy S16-9, university-wide policy information relevant to all courses, such as academic integrity, accommodations, etc. will be available on Office of Graduate and Undergraduate Programs' Syllabus Information web page at http://www.sjsu.edu/gup/syllabusinfo/"

Software Systems Engineering, CMPE 202, Spring 2018 (Course Schedule)

Week	Date	Topics, Readings, Assignments, Deadlines
1	1/27	Topics: Class Introduction, Software Engineering Overview, OOP Foundations
2	2/3	Topics: Agile Methodologies, CRC Cards, JUnit & UML Sketching
3	2/10	Topics: UML Diagrams – Class & Sequence Diagrams
4	2/17	Topics: UML Diagrams – Activity, Use Case & State Diagrams
5	2/24	Topics: Design Patterns – State, Singleton, Adapter, Observer
6	3/3 (*)	Topics: Design Patterns – Proxy, Decorator, Factory Method, Chain of Responsibility
7	3/10	Topics: Design Patterns – Command, Composite, Iterator, Strategy
8	3/17	*Midterm Exam*
9	3/24	Team Hackathon Project Kick-Off
10	3/31	Spring Break (No Class)
11	4/7	Topics: Design Patterns Labs (Part 1)
12	4/14	Topics: Design Patterns Labs (Part 2)
13	4/21	Topics: Design Patterns Labs (Part 3)
14	4/28	Topics: Multi-Paradigm Programming / Functional
15	5/5	Topics: Multi-Paradigm Programming / Aspect-Oriented
16	5/12	Project Demo (Day 1)
17	5/19	Project Demo (Day 2)
18	5/26	*Final Exam (Location and Times TBD)*

Notes:

(*) May have to reschedule lecture this week from Saturday to Sunday