

San José State University
College of Engineering
(CMPE202, Software Systems Engineering, Sections 02 Spring, 2021)

Course and Contact Information

Instructor:	Gopinath Vinodh
(Virtual) Office Location:	Virtual (Zoom)
Telephone:	(Your telephone number)
Email:	gopinath.vinodh@sjsu.edu
Office Hour:	Saturdays 245pm-345pm
Class Days/Time:	(Saturdays 12:00pm-2:45pm) / (PST)
Classroom:	Online Zoom meetings
Prerequisites:	Classified graduate standing or graduate advisor consent
Canvas Website:	https://sjsu.instructure.com

Canvas Learning Management System

Course materials, syllabus, assignments, grading criteria, exams, and other information will be posted on the SJSU Canvas course site at <http://sjsu.instructure.com/>. You are responsible to check Canvas regularly for class work and exams. If you have questions regarding the use of Canvas, please visit [Instructional Design Student Support webpage](http://ges.sjsu.edu/student-support) to file a ticket (<http://ges.sjsu.edu/student-support>).

Faculty Web Page and MYSJSU Messaging

All course updates and announcements will be posted on Canvas.

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.

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).

Course Goals

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 Outcomes (CLO) (Required)

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.

Required Textbook/Readings

Textbook

- 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)

Other Readings

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](http://www.sjsu.edu/senate/docs/S12-3.pdf) 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.”

Final Examination or Evaluation

Final Exam will be online exam on Canvas.

Grading Information

Assignments/Exams	Percent	Points
Homeworks and Quizzes	20%	100
Project – Individual	20%	100
Project - Team	20%	100
Midterm Exam	20%	100
Final Exam	20%	100
	TOTAL:	500

Grading Scale

Letter Grade	Percentage	Low	High	<u>Final Grading Calculations:</u> <i>Letter Grade will be assigned based on the overall Total Points earned. There will be no borderline adjustments.</i>
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

Virtual 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.
- Student causing disruption in the class will be asked to leave the class.

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](http://www.sjsu.edu/gup/syllabusinfo/) (<http://www.sjsu.edu/gup/syllabusinfo/>).

Course Number / Title, Semester, Course Schedule

List the agenda for the semester including when and where the final exam will be held. Indicate the schedule is subject to change with fair notice and how the notice will be made available.

Week	Date	Topics, Readings, Assignments, Deadlines
1	1/30	Software Engineering Overview
2	2/6	Agile Frameworks – XP, Scrum, Kanban
3	2/13	UML Class Diagrams
4	2/20	UML Sequence and State Diagrams
5	2/27	Intro to Design Patterns – Singleton, State, Adapter, Observer
6	3/6	Design Patterns - Proxy, Decorator, Factory method, Chain of Responsibility
7	3/13	Design Patterns – Command, Composite, Iterator, Strategy
8	3/20	Project status updates from Teams Recap of design patterns Mid term review
9	3/27	Mid Term Exam
10	4/10	UML – Other diagrams, Advanced Class Diagram concepts

11	4/17	Abstract factory, Builder, Prototype, Bridge, Facade, Flyweight
12	4/24	Mediator, Memento, Template method, Interpreter, Visitor
13	5/1	Miscellaneous Patterns – DI, MVC, DAO
14	5/8	Code Smells and Refactoring; Final exam review
15	5/15	Team Project Demos
16	5/22	Final Exam

The schedule is subject to change with fair notice.