San José State University
Department of Computer Science
CS 160 - Software Engineering
Spring 2022, Section 01

Course and Contact Information

Instructor:	Kenward (Ken) Tsang
Email:	kenward.tsang@sjsu.edu
Office Hours:	MW 8:45 PM - 10:00 PM (by appointment)
Office Location:	TBD (by appointment)
Class Days/Time:	MW 7:30 PM - 8:45 PM
Classroom:	MH 222
Prerequisites:	CS 146, CS 151 (with a grade of "C-" or better in each); CS 100W (with a grade of "C" or better) or instructor consent

Course Description

3 unit Computer Science course

Software engineering principles, software process and process models, requirements elicitation and analysis, design, configuration management, quality control, project planning, social and ethical issues. Required team-based software development, including written requirements specification and design documentation, oral presentation, and tool use.

Course Format

This course is offered in-person with a designated day/time and location, with additional online material. Students are expected to bring their computer to every class meeting in order to engage in class activities. Reliable internet connection for use of Canvas and additional online resources is required.

Course Materials

Resources such as the syllabus, handouts, notes, assignment instructions, and more can be found on Canvas. Students are responsible for regularly checking Canvas (or other communication systems as indicated by the instructor) to learn of any course updates.

Course Learning Outcomes (CLOs)

Upon successful completion of this course, students will be able to:

- CLO 1 - Identify software project lifecycle components.
- CLO 2 - Apply Agile techniques in an industry setting.
- CLO 3 - Create features, scenarios, and stories for project planning.
- CLO 4 - Design architecture in accordance with key system attributes.
- CLO 5 - Utilize developer operations and code management.
- CLO 6 - Exercise reliable programming and testing methodology throughout a project.
- CLO 7 - Understand common privacy issues.

Required Texts/Readings

Textbook:

Engineering Software Products: An Introduction to Modern Software Engineering
by Ian Sommerville

Pearson; 1st edition (May 19, 2019)
ISBN-13: 978-0135210642
ISBN-10: 013521064X

Other Readings:

Other readings may be assigned from articles and journals. The links for these materials will be provided on Canvas.

Course Requirements and Assignments

Success in this course is based on the expectation that students will spend, for each unit of credit, a minimum of 45 hours over the length of the course (normally three hours per unit per week) for instruction, preparation/studying, or course related activities, including but not limited to internships, labs, and clinical practica. Other course structures will have equivalent workload expectations as described in the syllabus.

This course consists of a single midterm, final exam, and group project. Additional assignments will be given throughout the semester to supplement learning outcomes.

Midterm and Final Exam:

> Exams will be closed-book format. All questions will be based on previous learning material covered in the lecture slides. The final exam will include project-based questions as well as a retrospective where students will evaluate their project peers. Student retrospective feedback will affect their team members' final exam grade with the instructor's discretion.

Project:

> The group project is a significant portion in determining student success and should not be underestimated. However, the project can be visualized as a collection of smaller individual assignments. Three deliveries split the project into achievable milestones that student groups are accountable for. Project documentation and source code must be submitted electronically in accordance with instructor guidelines. Additionally, weekly checkpoint and scrums will be submitted as a form of graded active participation. Students that do not attend these events will lose points and will ultimately reflect poorly amongst their peers during the final exam retrospective.

Grading Information

Students' individual grades will be weighted as follows:

Midterm	150 points	15%
Final	200 points	20%
Project	600 points	60%
Miscellaneous assignments	50 points	5%
Total	1000 points	100%

Grading Scale

Students' final letter grade will be determined from the table below.

Range	**Grade**
97–100%	A+
93–96%	A
90–92%	A−
87–89%	B+
83–86%	B
80–82%	B−
77–79%	C+
73–76%	C
70–72%	C−
67–69%	D+
63–66%	D
60–62%	D−
0–59%	F

University Policies

Per University Policy S16-9, relevant university policy concerning all courses, such as student responsibilities, academic integrity, accommodations, dropping and adding, consent for recording of class, etc. and available student services (e.g. learning assistance, counseling, and other resources) are listed on the Syllabus Information webpage. Make sure to visit this page to review and be aware of these university policies and resources.

Course Schedule

Week	Date	Topic	Note
1			
	01/26	Introduction	First day of instruction
2	01/31	Software Products	
	02/02	Agile Software Engineering	ZenHub demo
3	02/07	Features, Scenarios, and Stories	
	02/09	Project Introductions	MURAL demo 1
4	02/14	Project Adoption	MURAL demo 2
	02/16	Software & Microservices Architecture	
5	02/21	DevOps & Code Management	GitHub demo
	02/23	Reliable Programming, Testing & Privacy	
6	02/28	Checkpoint	
	03/02	Scrum	
7	03/07	Checkpoint	
	03/09	Scrum	
8	03/14	Checkpoint	Delivery 1
	03/16	Scrum	
9	03/21	Midterm Review	
	03/23	Midterm	
10	**03/28**	**Spring Recess**	**No class scheduled**
	03/30	**Spring Recess**	**No class scheduled**
11	04/04	Checkpoint	
	04/06	Scrum	
12	04/11	Checkpoint	
	04/13	Scrum	

Week	Date	Topic	
13	04/18	Checkpoint	Delivery 2
	04/20	Scrum	
14	04/25	Checkpoint	
	04/27	Scrum	
15	05/02	Checkpoint	
	05/04	Scrum	
16	05/09	Final Presentations	Delivery 3
	05/11	Final Presentations	Delivery 3
17	05/16	Final Exam Review	Last day of instruction
	05/18	Final Exam	7:45 PM - 10:00 PM