**San José State University**

# Computer Science DepartmentCS160, Software Engineering, Sections 1 & 4, Fall, 2022

## Course and Contact Information

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| Instructor: | H. Chris Tseng |
| Office Location: | MH213 |
| Telephone: | (408) 924-7255 |
| Email: | chris.tseng@sjsu.edu |
| Office Hours: | Mon/Wed: 8:45 - 9:15 PMTue/Thur: 5:45 – 6 PMSat: 4:30 - 5 PM with [1-1 appointment](https://calendly.com/professortseng/15-minute-meeting-clone) |
| Class Days/Time: | Mon/Wed 3:00 – 4:15 PM (sec. 1); 4:30 – 5:45PM (sec. 4) |
| Classroom: | Online |
| Prerequisites: | CS 146, CS 151 (with a grade of "C-" or better in each); CS100W (with a grade of C or better) or instructor consent. |

## Course Description

Software engineering principles, 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. (See prerequisites description on top of this page).

## Learning Outcomes

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

SLO 1 Analyze a complex computing problem and to apply principles of computing and other relevant disciplines to identify solutions.

SLO 2 Design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program’s discipline.

SLO 3 Recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles.

(The above learning outcomes are provided by ABET for CS program under the URL https://www.abet.org/accreditation/accreditation-criteria/criteria-for-accrediting-computing-programs-2019-2020/#GC3. Learning outcomes related to CS160 are listed above.)

### Course Learning Outcomes (CLO)

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

1. CLO 1 challenges of software engineering and the roles of process and methodologies;
2. CLO 2 functional specifications and use cases;
3. CLO 3 software design development and documentation;
4. CLO 4 UML, class, sequence diagrams;
5. CLO 5 software project test plan;
6. CLO 6 code walk through;
7. CLO 7 software project management;
8. CLO 8 tracking issues and progress;
9. CLO 9 software version control;
10. CLO 10 software revision control.

## Required Texts/Readings

### Textbook

This course requires no purchased textbook. The instructor will provide material from online and his own.

Other Readings (reference)
Software Engineering: A Practitioner’s Approach, 9th Ed., Roger S. Pressman, McGraw Hill, 2019 at [http://www.amazon.com/Software-Engineering-Practitioners-Roger-Pressman/dp/1259872971/tag=sjsucs-20](http://www.amazon.com/Software-Engineering-Practitioners-Roger-Pressman/dp/1259872971/tag%3Dsjsucs-20).

### Other technology requirements / equipment / material

You will be required to have a wireless-network ready laptop computer to participate in the class. You will also need to use your own laptop with wireless access to submit your assignment inside the SJSU campus. Your laptop needs to have wireless capability and you need to register a free wireless account at

<https://one.sjsu.edu/>.The instructor is not responsible for providing either laptops or alternatives.

## 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.

a. Projects:

A final team project will be provided for you to practice software engineering principles.

This team project will be a collaborated group project. You are free to choose your own partners but you cannot change your partners in the middle of the project. Progressive design and implementation of the term project will be done through assignments as part of the learning objectives.

b. Exams:

There will be one midterm and one final.

c. Quizzes:

There will be 4-5 quizzes and each will be counted as a HW. Some of the quizzes are part of the online lesson activities.

d. Homework:

There will be 3-4 HWs. Intermediate milestones of your team project will also be counted as HW grades.

e. Tentative course exam and HW due dates:

(Please note that this is “subject to change with fair notice”)

HW/Quiz/Practice problems: One of these will be assigned every 2-3 class meetings.

Midterm: Thursday, Oct. 13, 2022

Final: (Per [SJSU Fall final schedule](https://www.sjsu.edu/classes/final-exam-schedule/fall-2022.php))

Section 1: 2:45-5:00 PM, Friday, December 9

Section 4: 2:45-5:00 PM, Tuesday, December 13

## Grading Information (Required)

Grades:

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| --- | --- |
| HW assignments and quizzes | 25 % |
| Midterm | 25 % |
| Final Team Project | 30 % |
| Final Exam | 20% |

### Determination of Grades

Grades will be assigned as described below. These intervals, however, may change (i.e., either way!) according to the performance of the class as a whole. C- is a passing grade.

• A: [ 93, 100 ]

• A-: [ 90, 93 )

• B+: [ 87, 90 )

• B: [ 83, 87 )

• B-: [ 80, 83 )

• C+: [ 75, 80 )

• C: [ 70, 75 )

• C-: [ 65, 70 )

• D+: [ 60, 65 )

• D: [ 55, 60 )

• D-: [ 50, 55 )

• F: [ 0, 50 )

## Classroom Protocol

You are expected to attend classes. If you cannot attend, it is your responsibility to get a copy of the lecture notes and class announcements from a reliable classmate. The instructor reserves the right to ignore frivolous or inappropriate e-mail inquiries. Students are expected to participate actively to provide improvement to presentations by other classmates. Students cannot attend different sections at will as there will be project activities with assigned members.

## University Policies (Required)

Per University Policy S16-9, university-wide policy information relevant to all courses, such as academic integrity, accommodations, etc. will be available on the Office of Graduate and Undergraduate Programs’ [Syllabus Information web page](http://www.sjsu.edu/gup/syllabusinfo/) at http://www.sjsu.edu/gup/syllabusinfo/. Make sure to review these policies and resources.

# CS160, Software Engineering, Sections 1&4, Fall, 2022 Course Schedule

**Online Zoom link**:<https://sjsu.zoom.us/j/82809293264> *(Need to login to your SJSU account to gain access to Zoom. All students must turn on the video to participate)*

*The schedule is subject to change at the discretion of the instructor*

## Course Schedule

| **Week** | **Date** | **Topics, Readings, Assignments, Deadlines** |
| --- | --- | --- |
| 1 | 8/23/2022 | Introduction to Software Engineering (reading: instructor slides and online material) |
| 1 | 8/25/2022 | Software Process and Process Models (reading: instructor slides and online material) |
| 2 | 8/30/2022 | Software Process and Process Models (reading: instructor slides and online material) |
| 2 | 9/1/2022 | Agile Development (reading: instructor slides and online material) |
| 3 | 9/6/2022 | Agile Development (reading: instructor slides and online material) |
| 3 | 9/8/2022 | Understanding Requirements (reading: instructor slides and online material) |
| 4 | 9/13/2022 | Web Engineering review (HTML and CSS) |
| 4 | 9/15/2022 | Database Engineering review (SQL) |
| 5 | 9/20/2022 | Understanding Requirements (reading: instructor slides and online material) |
| 5 | 9/22/2022 | Requirements Modeling: (reading: instructor slides and online material) |
| 6 | 9/27/2022 | Requirements Modeling: (reading: instructor slides and online material) |
| 6 | 9/29/2022 | Use cases and use case diagrams: (reading: instructor slides and online material) |

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| 7 | 10/4/2022 | Use cases and use case diagrams: (reading: instructor slides and online material) |
| 7 | 10/6/2022 | Software Design and Architecture (reading: instructor slides and online material) |
| 8 | 10/11/2022 | Software Design and Architecture (reading: instructor slides and online material) |
| 8 | 10/13/2022 | Midterm  |
| 9 | 10/18/2022 | Term Project introduction |
| 9 | 10/20/2022 | Term project requirement engineering (Milestone 1) |
| 10 | 10/25/2022 | UML and Object Design (reading: instructor slides and online material) |
| 10 | 10/27/2022 | UML and Object Design (reading: instructor slides and online material) |
| 11 | 11/1/2022 | Milestone 1 presentation |
| 11 | 11/3/2022 | Version Control (reading: instructor slides and online material) |
| 12 | 11/8/2022 | Version Control (reading: instructor slides and online material) |
| 12 | 11/10/2022 | Term Project Design (Milestone 2) |
| 13 | 11/15/2022 | Software Project Management (reading: instructor slides and online material) |
| 13 | 11/17/2022 | Software Project Management (reading: instructor slides and online material) |
| 14 | 11/22/2022 | Milestone 2 presentation |
| 14 | 11/24/2022 | Thanksgiving (no class) |
| 15 | 11/29/2022 | Software Testing |
| 15 | 12/1/2022 | Term Project Implementation (Milestone 3) |
| 16 | 12/6/2022 | Milestone 3 (final milestone) presentation |
| Final Exam |  | (Per [SJSU Fall final schedule](https://www.sjsu.edu/classes/final-exam-schedule/fall-2022.php)) Section 1: 2:45-5:00 PM, Friday, December 9 Section 4: 2:45-5:00 PM, Tuesday, December 13 |