

San José State University
Computer Science Department
CS161, Software Engineering Project, Section 1, Spring 2021

Course and Contact Information

Instructor:	Dr. Hema Nair (Srikanth)
Office Location:	Remote
Email:	Hema1900@gmail.com ; hema.nair@sjsu.edu
Office Hours:	TBD (by appointment)
Class Days/Time:	Section 1: TR 6:00 PM -7:15 PM PST
Classroom:	Online
Prerequisites:	Prerequisite: CS 146, CS 151, CS 160 (with a grade of "C-" or better in each); CS 100W (with a grade of "C" or better)

Course Description

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. Prerequisite: CS 146, CS 151, CS 161 (with a grade of "C-" or better in each); CS 100W (with a grade of "C" or better) or instructor consent. Computer Science and Software Engineering Majors only.

Course Objectives:

- Learn end-to-end practical software engineering approach to developing enterprise applications.
- Learn to work collaboratively and professionally in a software development project as it happens in the real job setting.
- Understand Software Engineering as a profession. Course prepares students for their first job in the industry.

Course Learning Outcomes (CLO)

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

1. CLO 1 – Apply different types of Software Development Life Cycle.
2. CLO 2 – Apply and Document Different Software Testing Phases.
3. CLO 3 – Define and write a Requirements Document while understanding and documenting dependencies, and security requirements
4. CLO 4 – Architecture and Write a Design Document
5. CLO 5 – Implement System Requirements Iteratively
6. CLO 6 – Understand Agile software process while working in a team project
7. CLO 7 – Create a comprehensive black box test plan, write and execute white box tests, automate test cases.
8. CLO 8 – Perform design, development, and QA for a sizable team project

9. CLO 9 – Manage Project risks and Understand Release Management Process

Textbook

Optional: An Introduction to Software Engineering, by Laurie Williams; Edition 1. (ISBN-10: 9780989864015)

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>.

Project: A team project will be completed in groups of four or five students. This course is based on reality, so the project will be as real-world as we can make it... which might intentionally cause you some heartache (such as ill-defined AND/OR changing requirements). Remember, it's for your own good as in reality customers change mind and requirements evolve continually.

Time: This class requires a lot of work outside of class meeting times. You are expected to spend, on average, 8 to 15 hours per week outside of class preparing and working on assignments.

NOTE that University policy F69-24 at <http://www.sjsu.edu/senate/docs/F69-24.pdf> states that “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.

Minimum Grade Requirement: To pass CSC161, you must have a passing grade in all aspects of course grading. Passing grade requires a weighted average of 70% or higher on the following elements below. The final "letter" grade will be determined from a curve at the end of the semester. However, Grade of “A” can be attained by having a weighted average of 90% or above, Grade of “B” by attaining average between 80-90%; Grade “C” with average between 70-80%, Grade “D” between 60-70%, Grade “F” average less than 60%. Details will be explained during first day of class.

Grading Policy

- **Team Project and Grading: 80%**
 - Requirements Document and Slides: 10%
 - Product Design, Design Flow Document and Slides: 10%
 - High level Test Plan and Slides: 10%
 - Final Project demo via Zoom: 5%
 - Peer Evaluation: 5%
 - Group Project: 40%. Evaluation will be based on some of the factors below
 - System quality
 - Functional code deployed to cloud/local server
 - Code structure
 - Code comments
 - Successful test completion on use cases listed in Requirements
 - Github code quality
- **Short Paper on Security Breaches: 10%**
- **Participation and involvement: 10%**

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

CS161, Software Engineering Project, Section 1, Spring 2021, Tentative Course Schedule (subject to change)

Event	Date	Class Time/Agenda	Topics, Readings, Assignments, Deadlines
First Day	01/28/2021	6 – 7:15 PM	Introduction and Overview
Week 1	02/01-02/05	Tuesdays: [Status call with Prof] Thursdays- Students must keep this slot to collaborate with team-members [collaborate on your own on projects]	Student Introductions, Syllabus and Deliverables [Q/A with Prof]
Week 2	02/01-02/05		Software Project [High level]; Team formation; Due: Talk to members of your team outside the class and identify roles for each team member.
Week 3	02/08-02/12		Review lecture: Requirements Engineering Due: Short summary of the system for your team project
Week 4	02/15-02/19		Due: Requirements Doc for your team project Team Update to class: Present system requirements and use cases [2-3 ppt slides]
Week 5	02/22-02/26		Review Lecture: SDLC Due: High level test plan for your team project Team Update to class: Present system requirements and use cases [2-3 ppt slides]
Week 6	03/01-03/05		Review lecture: Test Driven Development Status call with Prof on Tuesday; Scrum meetings on Thursdays
Week 7	03/08-03/12		Status call with Prof on Tuesday; Scrum meetings on Thursdays Due: Product demo on the iteration 1 completed
Week 8	03/15-03/19		Status call with Prof and Scrum Meetings
Week 9	03/22-03/26		Status call with Prof on Tuesday; Scrum meetings on Thursdays Due: High level Design Flow for project Team Update to class: Present system design flow [2-3 ppt slides]
Week 10	03/29-04/02	Spring Break [No Class]	Enjoy the break
Week 11	04/05-04/09		Status call with Prof on Tuesday; Scrum meetings on Thursdays Due: Technical Paper due via email to Prof
Week 11	04/012-04/16	Prof is OOO for a virtual event. Shradha (TA) will hold the status call	Status call with Shradha on Tuesday; Scrum meetings on Thursdays

Event	Date	Class Time/Agenda	Topics, Readings, Assignments, Deadlines
Week 12	04/19-04/23		Status call with Prof on Tuesday Scrum meetings on Thursday Due: Product demo on the iteration 2 completed
Week 13	04/26-04/30		Status call with Prof on Tuesday Scrum meetings on Thursday
Week 14	05/03-05/07		Status call with Prof on Tuesday; Scrum meetings on Thursdays Due: Teams will complete Black box testing on their systems and start fixing defects
Week 15	05/11/2021		Due: Teams Product demo Final Iteration to class on Tuesday
Last Day	05/13/2021	Final Demo to class and visitors (if any)	Due: All bugs reported by Prof / Shraddha must be fixed and incorporated in code Due: Project Demo and Code Submissions via Google Drive with Readme attached.