San José State University
Computer Science Department
CS161, Software Engineering Project, Section 1, Fall 2020

Course and Contact Information

Instructor:	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 10.30 AM -11.45 AM
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 – Understand different types of Software Development Life Cycle.
2. CLO 2 – Understand 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 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%. Details will be explained during first day of class.

Grading Policy

- **Team Project and Grading: 100%**
  - Requirements Document: 10%
  - Product Design and Design Flow: 10%
  - High level Test Plan for the Project: 10%
  - Project: 50%
  - Project demo to the team via Zoom: 10%
  - Peer Evaluation: 10%

Extra Credit project: Understand and test an end-to-end Cloud Application

- Software Testing and Bug reporting of an Enterprise Cloud Application Provided: **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 at http://www.sjsu.edu/gup/syllabusinfo/

CS161, Software Engineering Project, Section 1, Fall 2020, Tentative Course Schedule (subject to change)

Event	Date	Class Time/Agenda	Topics, Readings, Assignments, Deadlines
First Day	08/20/2020	10.30 -11.45 AM	Introduction and Overview
Week 1	08/25-8/27	Tuesdays: [Status call with Prof] Thursday- Teams collaborate on their own In addition, Prof will be sending separate invites to each team to discuss progress.	Project Kickoff; Description and Deliverables [Q/A with Prof] Due: Each team meets with Prof to discuss their system and project
Week 2	09/01-09/03		Requirements Engineering; Scrum Meetings Due: Short summary of the system for your team project
Week 3	09/08-09/10		Software Development life cycle Models Due: Requirements Document for your team project
Week 4	09/15-09/17		Software Development life cycle Models Contd
Week 5	09/22-09/24		Exploratory Testing, Bug Reporting; Scrum Meetings Due: High level Design for your team project
Week 6	09/29-10/01		Software Testing Overview; Scrum Meetings Due: Exploratory Testing and Bug Reporting for the Application Provided [Extra credit] Due: Product demo on the iteration completed
Week 7	10/06-10/08		Software Testing Overview contd; Scrum Meetings; Due: High level test plan for your team project Due: Product demo on the iteration completed
Week 8	10/13-10/15		Software Design & Scrum meetings Due: Product demo on the iteration completed
Week 9	10/20-10/22		TDD; Scrum Meetings & Checkpoints Due: Product demo on the iteration completed
Week 10	10/27-10/29		Black box testing; Scrum Meetings & Checkpoints Due: Product demo on the iteration completed
Week 11	11/03-11/05		Risk Based Testing; Scrum Meetings & Checkpoints Due: Product demo on the iteration completed
Week 11	11/10-11/12		Bug Reporting; Release/Iteration Planning; Scrum Meetings & Checkpoints Due: Product demo on the iteration completed
Week 12	11/17-11/19		System Metrics; Scrum Meetings & Checkpoints Due: Product demo on the iteration completed
Week 13	11/24/2020		Due: Product demo on the iteration completed
Week 14	11/26/2020	No class	Thanksgiving Holiday
Last Day	12/01-12/03	12/01: Practice Demo with Team	Due: Project Demo and Code Submissions via

		12/03- 10:30-11.15 am [Team Demo to classmates and Prof]	Google Drive with Readme attached.
Last Day	12/07/2020	Last Day Meeting	