SJSU SAN JOSÉ STATE UNIVERSITY

College of Science · Computer Science

Software Project Section 01

CS 161

Spring 2023   3 Unit(s)   01/25/2023 to 05/15/2023   Modified 01/25/2023

👤 Contact Information

Instructor(s):	Dr. Chung-Wen (Albert) Tsao
Office Location:	Duncan Hall Room 282
Telephone:	N/A
Email:	chung-wen.tsao@sjsu.edu (Once the class starts, use Canvas Inbox)
Class Days/Time:	T/TR: 1:30PM - 2:45PM
Classroom:	MacQuarrie Hall 233
Office Hours:	M/W/T/Th 3:00 – 3:30 pm (on ZOOM at https://sjsu.zoom.us/j/87620744697) T/Th: 3:30 – 4:00 pm (Duncan Hall Room 282)

💻 Course Description and Requisites

A substantial project based on material from an advanced area of computer science. Includes lectures on the project topic and the design and testing of software systems. At least 50% of the course grade to be based on the project.

Prerequisites: CS 160 (with a grade of "C-" or better) or instructor consent. Computer Science and Software Engineering Majors only.

Letter Graded

✳ Classroom Protocols

Classroom Protocol and Other Notes

- **Missing the first two lectures and quizzes may be dropped out from the class by the instructor.**
- Do not ask for special treatment. The rules for this course apply to everyone equally.
- Cheating will not be tolerable; a ZERO will be given to any cheated assignment/exams, and it will be reported to the Department and the University.
- Do NOT share/post online any course materials, PPT slides, or homework solutions.
- Use of electronic devices during exams is NOT allowed unless stated otherwise.
- You are required to check Canvas for reading/assignments.
- The information on this syllabus is subject to change; changes, if any, will be clearly explained in class, and it is your responsibility

to become aware of them.
- Once the class starts, use Canvas Inbox to email me for a faster response. I check the Canvas Inbox emails much more often than my school emails.

Program Information

Diversity Statement - At SJSU, it is important to create a safe learning environment where we can explore, learn, and grow together. We strive to build a diverse, equitable, inclusive culture that values, encourages, and supports students from all backgrounds and experiences.

Course Goals

Class Format

Course materials such as syllabus, handouts, notes, assignment instructions, etc. can be found on Canvas at http://sjsu.instructure.com. You are responsible for regularly checking the most updated messages and uploaded materials there.

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.

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 (CLOs)

Course Learning Outcomes (CLO)

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

- CLO 1 – Apply different types of Software Development Life Cycle.
- CLO 2 – Apply and Document Different Software Testing Phases.
- CLO 3 – Define and write a Requirements Document while understanding and documenting dependencies, and security requirements
- CLO 4 – Architecture and Write a Design Document
- CLO 5 – Implement System Requirements Iteratively
- CLO 6 – Understand Agile software process while working in a team project
- CLO 7 – Create a comprehensive black box test plan, write, and execute white box tests, automate test cases.
- CLO 8 – Perform design, development, and QA for a sizable team project
- CLO 9 – Manage Project risks and Understand Release Management Process

Course Materials

Textbooks

Software Engineering, 10th edition, Ian Sommerville, Published by Pearson (July 14th 2021) - Copyright © 2016

Optional Textbooks

- An Introduction to Software Engineering, by Laurie Williams; Edition 1.
  - (ISBN-10: 9780989864015)
- Loose Leaf for Software Engineering: A Practitioner's Approach. by Roger Pressman, Bruce Maxim, McGraw Hill; 9th edition,
  - ISBN-10: 126042331X,
  - ISBN-13 : 978-1260423310
- An Introduction to Statistical Learning: with Applications in R by Gareth James, Daniela Witten, Trevor Hastie, Robert Tibshirani
  - (free pdf available from authors' website: http://faculty.marshall.usc.edu/gareth-james/ISL/ISLR%20Seventh%20Printing.pdf)
- Hands-on Machine Learning with Scikit-Learn, Keras, and TensorFlow: Concepts, Tools, and Techniques to Build Intelligent Systems by Aurélien Géron Oct 6, 2019,
  - ISBN-10: 1492032646
  - ISBN-13: 978-1492032649
- Agile Software Development, Principles, Patterns, and Practices by Robert Martin, Prentice Hall, 2002,
  - ISBN-10: 01359744
  - ISBN-13: 978-0135974445

≡ Course Requirements and Assignments

Assignments

- **No late assignments will be accepted without advanced arrangement with the instructor.**
- All homework must clearly indicate each student's name, course, and assignment number.
- Students are allowed (and actively encouraged) to form study groups.
- You may discuss solutions, but you MUST write up the answers independently.
- If you use a website or reference book, you must cite it.
- If there are multiple similar submissions not exhibiting independent thought, or with words obviously lifted from a book or website, ALL such submissions will receive scores of 0.

✔ Grading Information

Breakdown

- Participation   5%
- Quiz   15%
- Programming Assignmeing   30%
- Project   50%

Criteria

The grading scale is as follows:

Grading Scale					
A+	97%	A	93%	A-	90%
B+	87%	B	83%	B-	80%
C+	77%	C	73%	C-	70%
D+	67%	D	63%	D-	60%

F	below 60.0%	

Final grades will not be adjusted in any way - so an 89.99% is still a B+. No incomplete grades will be given.

🏛 University Policies

Per [University Policy S16-9 (http://www.sjsu.edu/senate/docs/S16-9.pdf)](http://www.sjsu.edu/senate/docs/S16-9.pdf), 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 [Syllabus Information web page (https://www.sjsu.edu/curriculum/courses/syllabus-info.php)](https://www.sjsu.edu/curriculum/courses/syllabus-info.php) (https://www.sjsu.edu/curriculum/courses/syllabus-info.php). Make sure to visit this page to review and be aware of these university policies and resources.

📅 Course Schedule

Course Schedule (This schedule is subject to change. Any change will be communicated via Canvas with fair notice.)

Week	Date	Topics, Readings, Assignments, Deadlines
1	1/26	First day of class – Introduction and house keeping
2	1/31,2/2	Topic Discussion, Role Assignments, SCRUM Methodologies
3	2/7,9	Team Presentations (describing software project – high level) to class
4	2/14,16	Gits, Python, HTML/CSS, Database Basics
5	2/21,23	Flask/Django
6	2/28, 3/2	Customer: Phase 1 Deliverables - team reporting
7	3/7,9	Testing strategies, Validation/Quality, Bug Reporting
8	3/14,16	Java/Python Unit Tests andDocumentation

9	3/21,23	Customer: Team Status Updates
10	3/27 -31	Spring Break
11	4/4,6	Phase 2 progress presentations to class
12	4/11,13	Topics on Deployment/Docker
13	4/18,20	Customer: Phase 3 progress update
14	4/25,27	Maintenance topics, Bug Fixes, Field Issues, Customer Support
15	5/2,4	Project demo to class
16	5/9,11	Post-project discussion/Feedback
Final exam	05/17	12:15-2:30 PM Wednesday May 17

SJSU ACADEMIC YEAR CALENDAR 2022/23