Software Engineering Section 04 CS 160

Fall 2024 3 Unit(s) 08/21/2024 to 12/09/2024 Modified 08/26/2024

Course Information

Prerequisites

CS 146, CS 151 (with a grade of C- or better in each); CS 100W (with a grade of C or better)

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.

There will be two exams (2 midterms), one semester long group project with presentation, and homework. All the exams will be closed book but open notes unless noted. There will be no personal digital devices allowed. I strongly suggest that you attend each class and take good notes during the semester. There will be NO make-up exams.

All programming portions of the project/homework assignments and its related documentations must be handed in electronically. Additional information about the project and how to submit assignments will be given in a separate handout. Your project code must be able to compile and execute before you turn it in.

All submissions are due at midnight on the due date. The assignments are to be submitted on time and a penalty of 10% per day is applied to late submissions. No assignments will be accepted after a week past its due date.

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. Attendance per se shall not be used as a criterion for grading.”

Project

The majority of the final semester grade for this class will be based on the class project.

Homework assignments

In addition to the project work, you are required to do independent assignments. Details on what to submit and how to submit these assignments will be provided in class and on Canvas.

Exams

Exams will be used to evaluate understanding of the material throughout the semester. It will consist of multiple choice, true/false, and/or short answer questions.

There will be no final exams. Instead, the final presentations will be conducted in place of the exam during the exam hours.

Participation

Participation quizzes will be carried throughout the semester. These quizzes will be credit/no credit and mainly contain questions related to the lectures that benefit you in the future in your career as a software engineer.

Faculty Web Page and MYSJSU Messaging

Course materials such as syllabus, handouts, notes, assignment instructions, etc. can be found on Canvas Learning Management System course login website at https://sjsu.instructure.com. You are responsible for regularly checking the messaging system through MySJSU and Canvas (or other communication system as indicated by the instructor) to learn about any updates.

Course Description and Requisites

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(s): 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. Computer Science, Forensic Science: Digital Evidence, or Software Engineering Majors only.

Letter Graded

Classroom Protocols

Students are not allowed to record without instructor permission Students are prohibited from recording class activities (including class lectures, office hours, advising sessions, etc.), distributing class recordings, or posting class recordings. Materials created by the instructor for the course (syllabi, lectures and lecture notes, presentations, etc.) are copyrighted by the instructor. This university policy (S12-7) is in place to protect the privacy of students in the course, as well as to maintain academic integrity through reducing the instances of cheating. Students who record, distribute, or post these materials will be referred to the Student Conduct and Ethical Development office. Unauthorized recording may violate university and state law. It is the responsibility of students that require special accommodations or assistive technology due to a disability to notify the instructor.

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 Learning Outcomes (CLOs)

Course Goals

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

1. CLO 1 – Understand the different stages in a software development lifecycle.
2. CLO 2 – Apply agile practices throughout software development.
3. CLO 3 – Create features, scenarios, and stories for project planning.
4. CLO 4 – Prepare specifications and documentation for a software project.
5. CLO 5 – Design and implement a product from end to end.
6. CLO 6 – Use reliable programming and testing to ensure great product quality.
7. CLO 7 – Identify common security and privacy concerns.

Course Materials

Required Texts/Readings

Textbook (Optional); PDF can be found online)

Sommerville, Ian. Engineering Software Products: An Introduction to Modern Software Engineering. 1st Edition. Pearson Education, 2020.

ISBN-13: 978-0135210642

ISBN-10: 013521064X

Readings

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

Grading Information

Grading Information

The following categories comprise the overall earned grade at the end of the semester:

Category	Composition
Participation	15%
Homework	5%
Exams	20%
Group Project	60%

Each student's earned grade at the end of the semester will be based on the combined performance of each of the main grading categories. The final assigned letter grade will be based on the table below.

Grade	Percentage
A+	97.50 to 100%
A	92.50 to 97.49%

A -	90.00 to 92.49%
B +	87.50 to 89.99 %
B	82.50 to 87.49%
B -	80.00 to 82.49%
C +	77.50 to 79.99%
C	72.50 to 77.49%
C -	70.00 to 72.49%
D +	67.50 to 69.99%
D	62.50 to 67.49%
D -	60.00 to 62.49%
F	Below 60.00%

Grading Table (for end of semester total)

Note that "All students have the right, within a reasonable time, to know their academic scores, to review their grade-dependent work, and to be provided with explanations for the determination of their course grades." See University Policy F13-1 at http://www.sjsu.edu/senate/docs/F13-1.pdf for more details.

University Policies

Per University Policy 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 the Syllabus Information (https://www.sjsu.edu/curriculum/courses/syllabus-info.php) web page. Make sure to visit this page to review and be aware of these university policies and resources.

Course Schedule

CS 160 Software Engineering, Fall 2024, Course Schedule

*Subject to change with fair notice at least one class period in advance. Students will be notified in class and/or via course web site should any changes occur.

Week	Date	Topics / Readings	Assignments, Deadlines	Notes
1	8/21	8/21 Introduction to Software Engineering	8/21 HW 1 assigned	First day of class
2	8/26 - 8/28	8/26 Software products (Ch 1) 8/28 Waterfall/Agile intro	8/28 HW 1 due 8/28 HW 2 assigned	
3	9/2 - 9/4	9/2 Campus closed 9/4 Agile: Scrums, Stories, Personas (Ch 2 & 3)	9/4 HW 2 due & HW 3 and Survey assigned	
4	9/9 - 9/11	9/9 Agile topics continued 9/11 Wrap up on Agile topics	9/11 Survey due, HW 3 due	
5	9/16 - 9/18	9/16 Software Architectures (Ch 4 & 6) & Projects Overview 9/18 Exam 1	9/16 Assign HW 4 9/18 Exam 1	Groups formed
6	9/23 - 9/25	9/23 Continue Software Architectures (Ch 4 & 6) & Projects Overview 9/25 Testing (Ch 9)	9/25 Project design proposal due 9/25 HW 4 due	Sprint 1 Begin

7	9/30 - 10/2	9/30 Continue Testing (Ch 9) 10/2 Code management & DevOps (Ch 10)	9/30 Assign HW 5	
8	10/7 - 10/9	10/7 Continue Code management & DevOps (Ch 10)	10/9 HW 5 due	Sprint 1 End
9	10/14 - 10/16	10/14 Sprint 1 Demos 10/16 UI/UX		Sprint 2 Begin
10	10/21 - 10/23	10/21 Security (Ch 7) 10/23 Exam 2		
11	10/28 - 10/30	Cloud (Ch 5) & Virtualization	10/28 HW 6 assigned	Sprint 2 End
12	11/4 - 11/6	11/4 Git low level object model 11/6 Sprint 2 Demos	11/04 HW 6 due	Sprint 3 Begin
13	11/11 - 11/13	11/11 Veterans day (campus closed) 11/13 Distributed Systems		
14	11/18 - 11/20	11/18 Continue Distributed Systems 11/20 Internet of things		Sprint 3 End

15	11/25 - 11/27	11/25 Sprint 3 Demos 11/27 Non-Instructional Day (Thanksgiving Holiday 11/28-11/29)		
16	12/2 - 12/4	Machine Learning		
17	12/9	12/9 Review & The last day of instruction		
Final Exam	12/11	12/11 (Wednesday) Final Presentations	Section 4: 5:15-7:30 PM	