FRESNO STATE.

CSci 150 - Introduction to Software Engineering
Fall 2022

Course Modality: In-Person	
75488	Max J. Tsai
Units: 3	Department California State University, Fresno
Class Meeting Location & Time: IT101 | M/W 2:00pm - 2:45pm	Email / Telephone janq@csufresno.edu / 8-4180
Canvas: *fresnostate.instructure.com*	Office
Prerequisites: CSCI 41 Introduction to Data Structures (4)	W 5pm~6pm and via Emails

Course description: History, goals, and motivation of software engineering. Study and use of software engineering methods. Requirements, specification, design, implementation, testing, verification, and maintenance of large software systems. Team programming. (2 lecture, 2 lab hours)

Required Course Materials

The following textbooks will be *recommended* for this course in Fall 2022:
- Ian Sommerville, Software Engineering, the 10th edition, Addison- Wesley, 2015. [SE] in the course schedule table.
- Stephen R. Schach, Object-Oriented and Classical Software Engineering, McGraw-Hill, the 8th edition, 2010. [UML] in the course schedule table.
- Shih-Hsi \"Alex\" Liu, Software Engineering CSci 150/152 Curriculum design and Lab activities.

The following textbook will be *references* for this course in Fall 2022:
- Andrew Hunt and David Thomas, The Pragmatic Programmer: From Journeyman to Master, Addison Wesley, 1999. [PP] in the course schedule table.
- Steve McConnell, Code Complete: A Practical Handbook of Software Construction, the 2nd edition, Microsoft Press, 2004. [CC2] in the course schedule table.

- Martin, Robert C. Clean Code: A Handbook of Agile Software Craftsmanship. Prentice Hall, 2009.

Course Specifics

CSCI 150 and CSCI 152 are software engineering classes in sequence. In addition to the course description above, CSCI 150 will introduce a team-based environment for students to cultivate students' ability to learn from peers and gather, digest, analyze, and consolidate sources outside of class. Additionally, students will learn how to utilize software tools, framework and/or environments and apply "modularization" concepts to design, implement, test, and maintain small- to mid- size projects.

Student Learning Outcomes:

After successfully completing this course, students will be able to:
- Explain, analyze and design a variety of UML diagrams.
- Demonstrate how to elicit requirements informally, semi-formally, or formally.
- Demonstrate the capability to design, implement, and test a team-based software project.
- Demonstrate the capabilities of utilizing modern software tools/frameworks/environments.
- Compare and then apply different software processes and team organizations suitable for students' own needs.

Course requirements/assignments:
Your final grade for this course will be determined by the following items.

The final presentations of the term projects will be recorded and presented at the 2022 High Impact Practices Student Symposium (HIPS) (http://www.fresnostate.edu/academics/oie/assessment/hips/index.html). Videos should be submitted by December 2 (TBD). Suggestions for video preparations can be found here: http://www.fresnostate.edu/academics/cfe/toolsforteaching/hip/pbl.html

Lecture Components (50%)		
Activities/quizzes (individual)	10%	The format will be either asynchronous posted on Canvas or integrated as an activity in between mini-lectures of a module.

Midterm (individual):	15%	1 midterm
Final (individual):	25%	**Comprehensive**
Class participation (individual)	x%	**Bonus points (activities or questions in class to encourage class participation)**

Lab Components (50%) Lab attendance is mandatory. For each absence w/o proof of compelling reasons, the student (and maybe its team) will get a 0.5% penalty.		
Prepare a LinkedIn profile (individual)	1%	Act as a software professional to look for a job in the software industry.
Recruit a software team by a 5 min video (individual)	2%	Act as a project manager to look for a team to work for/with you.
Lab exercises (individual or pair)	10%	3 UML and 1 wireframe exercises (2%, 2%, 3%, 3%). Either individual or two-people work.
Project (Team)	14%	Evaluate performance as a team, 11% from me, 3% from your teammates and the whole class. A 5-minute video is required to submit to HIPS.
Project (Individual)	14%	Evaluate individual performance, 11% from me, 3% from your teammates and the whole class. A 5-minute video is required to submit to HIPS.
Project (Milestone presentations)	4%	Two milestone presentations for current project status. 2% each (1% to individual; 1% to

		team). Presentations are scheduled during Dr. Liu's office hours.
Project (Weekly update)	5%	5 mins weekly meeting with TA, 1% each for the entire team.

Grading policy:

Your final grade will be based on your total score according to the following scale. The instructor reserves the right to curve the final grade or not

SCORE GRADE

SCORE	LETTER MARK
85 ~ 100	A
75 ~ < 85	B
65 ~ < 75	C
55 ~ < 65	D
< 55	F

Course Policies & Safety Issues

Course/Lecture Policies:

- You are expected to arrive on time (physically and virtually) so that you do not cause a disruption in the middle of class. I would like to start the class at the scheduled time. If you cannot make it on time for some reason, please let me know. Persistent tardiness will be noted. Also, if you are late for a quiz or exam, you will not be given extra time to finish it.
- The Midterm exam is on Oct. 12 during class AND lab sessions. The final exam schedule is Dec 14, 2021 3:30pm-5:30pm. Please refer to the Fall 2022 Final Examination Schedule for further information. Midterm may be rescheduled based on lecture progress (*final exam cannot be rescheduled*). There will be NO makeup midterm or final exam once announced. Please see me well in advance

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of the exam date if you have a conflict. Both midterm and final exams are structured with close books and notes. Questions will be taken from the textbook as well as any possible supplemental materials (e.g., lab assignments, project, quizzes etc.)

- There will be a total of 10 activities/quizzes for 10 modules. An activity/quiz will be either asynchronously posted on Canvas or integrated as an activity in between mini-lectures of a module. Students are required to finish the activity/quiz by its predetermined deadline. **Activity/quiz schedule may be changed according to lecture progress**. **Makeup activities/quizzes will only be granted by the proof of compelling reasons**. Lecture attendance is encouraged. However, if you are absent from class, it is your responsibility to check on announcements and quiz schedules made while you were away. Extra questions/activities may be asked during lecture sessions. Correctness and engagement of these questions/activities will be treated as bonus points to be added to your overall score.
- Course materials will be available on Canvas. It is students' responsibility to check CSci 150 materials on Canvas.
- Assignments and Projects deadlines will be clearly specified. Submissions of homework/projects are through Fresno State Canvas. TurnItIn will be turned on to make sure students follow the honor code. *For team/term projects, your source code will be also compared with public repositories to make sure the code is your own*. No hardcopy or email submission is accepted. It is YOUR responsibility to verify if your submission is successful or not. Help regarding Canvas is available at http://fresnostate.edu/academics/canvas/
- For each submission, students will be randomly drawn to demonstrate and explain their submissions to the instructor.
- Some lecture sessions will be used for lecturing important Software Engineering concepts for team projects.
- Please frequently access campus emails and Canvas for any announcements. It is your responsibility to keep up to date about any change of the course.

Lab Policies: Teamwork in labs is a substantial part of the course. Read the following lab policies carefully.

- Lab attendance and participation is MANDATORY during the *entire* session. You are expected to arrive on time so that you do not cause a disruption in the middle of the lab. Due to the peer-learning environment, the lab instructor will start the lab at the scheduled time and students shall arrive at the lab on time. If you cannot make it on time for some reason, please let the lab instructor know in advance. Students should not leave the lab in the middle and then come back to proceed. Exceptions can be made only under specific circumstances with proofs and approved by the instructor well in advance. Due to intensive coding during lab sessions, tardiness is not acceptable.
- Lab attendance and participation is MANDATORY during the *entire* session. If a student is absent from a lab session without official proof, -0.5% penalty will be

given. If a student is >= 10 minutes late or leaves >=10 minutes earlier without official proof is considered absence, -0.5% penalty will be given. *Proofs should be submitted to both lecturer and lab instructor.* Cumulative absence penalties will be deducted from your overall score at the end of semester.

- **You are required to bring a laptop (you may borrow one from the library for a semester) for all lab sessions. Install all necessary software** required by your lab exercises and term project. Lab exercises and term project should be implemented using designated object-oriented (modeling) languages (e.g., UML, Java/C#/C++). Failure to follow exercise/term project requirements will result in **zero credit**.
- **For your term project, requirements, design, implementation (with comments), testing artifacts and project plan should be continuously and consistently updated to your Github repository**. (**All your source code needs to be committed to Github continuously during the entire semester. All your documentation should be written to WIKI or any other tools that show ownership and history. All your project plans should be written to *Github Project* or any other tools that show ownership and history**). *Each individual will be evaluated by the history of commits to the repository*. **Learn how to use commit, merge, branch, push, fetch commands for your project. You will get ZERO for your term project if you do not use Github correctly.**
- A small percentage of your grade will be based on my interpretation of peer reviews of your work.

Study/Project Expectations: Besides class and lab sessions, it is expected that students will spend approximately 2 hours of study/project time **outside** of class/lab for every one credit hour. Since Csci 150 is a 3-unit class, **you should expect to study course materials or implement projects an average of 6 hours outside of class each week**. Some students may need more outside study/implementation time and some less.

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The following sections regarding COVID are subject to change given changing circumstances on-campus and in the community. Please check the COVID website for the most up-to-date information at:
covid.fresnostate.edu

Vaccination: All Students who access Campus/Programs must be Fully Vaccinated (including the booster dose when eligible to receive it) in order to participate in any in-person course-related activities (either on-campus or off-campus). Students may select that they will not be participating in any in-person activities (which includes use of the Library, Student Union and/or Student Health & Counseling Center) and/or may attest to a Medical or Religious Exemption from the vaccine policy requirement in accordance with CSU and campus procedures. Students should go to the Student Portal to update their COVID self-certification form and vaccine documentation. Requests for

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exemptions can be found there. You are not to come to campus if any of the following are true:

- You are not considered fully vaccinated, and you have not attested to a medical or religious exemption.
- You have attested to an exemption, but you have not completed your mandatory weekly COVID-19 test.

Health Screening: Please do not come to campus or off-campus learning site if any of the following is true:
- If you have experienced COVID-19 symptoms (vaccinated or not).
- If you have tested positive within the past 10 days.

Please complete the campus [online reporting form (https://covid.fresnostate.edu/cases/reporting.html)](https://covid.fresnostate.edu/cases/reporting.html), and you will then receive further guidance.

Safety Measures: While masks will no longer be required, we strongly encourage their use, as face coverings are still a valuable tool in the fight against COVID-19, especially in large group settings. We fully support and respect those who wish to continue wearing face coverings.

Individuals can pick up face coverings, provided at no cost, at any of the following locations:
- Library
- University Student Union
- Student Health and Counseling Center
- Student Housing Atrium
- COVID Testing Site – check the below website for location

Please see university website for the most updated information:
www.fresnostate.edu/coronavirus

Please remember that the same student conduct rules that are used for in-person classroom instruction also apply for virtual/online classrooms. Students are prohibited from any unauthorized recording, dissemination, or publication of any academic presentation, including any online classroom instruction, for any commercial purpose. In addition, students may not record or use virtual/online instruction in any manner that would violate copyright law. Students are to use all online/virtual instruction exclusively for the educational purpose of the online class in which the instruction is being provided. Students may not re-record any online recordings or post any online recordings in any other format (e.g., electronic, video, social media, audio recording, web page, internet, hard paper copy, etc.) for any purpose without the explicit written permission of the faculty member providing the instruction. Exceptions for disability-related accommodations will be addressed by Student Disability Services working in conjunction with the student and faculty member.

Plagiarism Detection: The campus subscribes to Turnitin, a plagiarism prevention service, through Canvas. You will need to submit written assignments to Turnitin. Student work will be used for plagiarism detection and for no other purpose. The student may indicate in writing to the instructor that he/she refuses to participate in the plagiarism detection process, in which case the instructor can use other electronic means to verify the originality of their work. Turnitin Originality Reports WILL NOT be available for your viewing.

Dispute Resolution: If there are questions or concerns that you have about this course that you and I are not able to resolve, please feel free to contact the Chair of the department to discuss the matter.

Chair's name: Dr. Alex Liu
Department name: Computer Science
Chair's email: shliu@csufresno.edu
Department phone number: 559.278.4789

Intellectual Property: All course materials, including but not limited to the syllabus, readings, quiz questions, exam questions, and assignments prepared by the instructor are property of the instructor and University. Students are prohibited from posting course materials online (e.g., Course Hero) and from selling course materials to or being paid for providing materials to any person or commercial firm without the express written permission of the professor teaching this course. Doing so will constitute both an academic integrity violation and a copyright violation. Audio and video recordings of class lectures are prohibited unless I give you explicit permission in advance. Students with an official letter from the Services for Students with Disabilities office may record the class if SSD has approved that service. Otherwise, recordings of lectures are included in the intellectual property notice described above.

Student Ratings of Instruction: In the final weeks of the semester, you will be asked to complete a short survey to provide feedback about this class. The primary goal of student ratings is to help your instructor improve the class. Feedback will also be reviewed by the department chair and the college dean. You will be given 15 minutes of class time to complete student ratings. Please offer feedback honestly and thoughtfully. Your participation is appreciated. You can access your student rating surveys and get more information at:
https://sites.google.com/mail.fresnostate.edu/fresno-state-sri/fssri-for-students.

University Policies

Students with Disabilities: Upon identifying themselves to the instructor and the university, students with disabilities will receive reasonable accommodation for learning and evaluation. For more information, contact Services to Students with Disabilities in the Henry Madden Library, Room 1202 (278-2811).

The following University policies can be found on the web at:
- [Adding and Dropping Classes](#)
- [Cheating and Plagiarism](#)
- [Computers](#)
- [Copyright Policy](#)
- [Disruptive Classroom Behavior](#)
- [Honor Code](#)
- [Title IX](#)

University Services
The following University services can be found on the web at:
- [Associated Students, Inc.](#)
- [Students with Disabilities](#)
- [Dream Success Center](#)
- [Library](#)
- [Learning Center Information](#)
- [Student Health and Counseling Center](#)
- [SupportNet](#)
- [Survivor Advocacy](#)
- [Writing Center](#)

Subject to Change Statement
THIS SYLLABUS AND SCHEDULE ARE SUBJECT TO CHANGE IN THE EVENT OF EXTENUATING CIRCUMSTANCES.

Course Calendar

The calendar should include projected dates, topics covered, deadlines, and/or periods of time for readings, field trips, projects, exam dates (including the date and time of the final exam) and assignment due dates. The following statement is suggested to footnote the calendar: "The course schedule is subject to change in the event of extenuating circumstances."

If you plan to give your exam online or not to meet in class on the final exam day, please explicitly inform students in your syllabus. You also need to address a memo to that effect to your department chair and dean.

Tentative Course Schedule

Week	Lecture Date	Lecture Topic
1	8/22/2022	**Introduction + M1.** Motivation of Software Engineering
	8/24/2022	**M1.** Motivation of Software Engineering
2	8/29/2022	**M1.** Motivation of Software Engineering
	8/31/2022	**M2.** What Software Engineering Can Do
3	9/5/2022	Labor Day (No Class)
	9/7/2022	**M2.** What Software Engineering Can Do	**Q1**
4	9/12/2022	**M3.** Introduction of Software Development Life Cycle
	9/14/2022	**M3.** Introduction of Software Development Life Cycle
5	9/19/2022	**M3.** SDLC: Requirements
	9/21/2022	**M3.** SDLC: Design
6	9/26/2022	**M3.** SDLC: Implementation/Test
	9/28/2022	**M3.** SDLC: Review and Project Portfolio
7	10/3/2022	**M4.** Introduction of Software Processes
	10/5/2022	**M4.** Introduction of Software Processes	**Q2**
8	10/10/2022	Catch Up and Midterm Review
	10/12/2022	**Midterm**
9	10/17/2022	**M5.** Agile Development
	10/19/2022	**M5.** Agile Development (2)
10	10/24/2022	**M6.** Extreme Programming and Scrum
	10/26/2022	**Self-paced Lecture**	**Q3**

11	10/31/2022	**M6.** Extreme Programming and Scrum (2)
	11/2/2022	**Software Processes Review**
12	11/7/2022	**M7.** Software Design: Behavioral Model (Performance)
	11/9/2022	**M8.** Software Design: Structural Model
13	11/14/2022	Project Status Report (1)
	11/16/2022	Project Status Report (2)
14	11/21/2022	Project Q&A	Self-paced Lecture
	11/23/2022	No Class; No Lab (Thanksgiving)
15	11/28/2022	**Project Presentations (2 teams)**
	11/30/2022	**Project Presentations (2 teams)**
16	12/5/2022	**Project Presentations (2 teams)**
	12/7/2022	**Project Presentations (2 teams)**
17	12/8/2022	Consultation Day (1 hr.)
18	12/14/2022	Final (3:30 - 5:30)

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