University of Oklahoma Computer Science
CS 4203: SOFTWARE ANALYSIS & DESIGN
Spring 2026

Instructor – Dr. Ze Shi Li (DEH 244 zeshili@ou.edu)

Teaching Assistant – Nam Huynh (nam@ou.edu)

Class Meetings – Gallogly Hall 127, 1:00pm to 1:50 PM (Mon/Wed/Fri)

Office Hours – Dr. Li - Monday 2-3pm (starting week 2) in DEH 244

Dr. Li - Wednesday 2-3pm (starting week 2) in DEH 244

Or by appointment please email either Dr. Li or Nam Huynh

Office hours are for you. There are times in which you may ask questions about course content, delve deeper into the topic through conversation with me, share concerns you have about the course, and/or explore career or graduate school opportunities with me in this field. I often hear from students that they don't want to interrupt my time in my office, but please know that I want you to come by! In addition to our class time together, these hours not only help you but help me to know the questions my students have so that I may adjust my teaching approach as needed.

Course Website - Access through https://canvas.ou.edu

Course Prerequisite: CS 3203 Software Engineering

ABET Outcomes of Instruction in CS 4203:

1. Analyze a complex computing problem and apply principles of computing and other relevant disciplines to identify solutions.
2. Design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program's discipline.
3. Communicate effectively in a variety of professional contexts.
4. Function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.

Texts and Materials: No required book, however, different topics will be covered from the following books.

Optional Reading 1 (OR1) David Kung. (2024). Software Engineering, 2nd Edition. McGraw Hill.

Optional Reading 2 (OR2) Software Requirements (3rd edition) by Karl Wiegers and Joy Beatty (Microsoft Press)

Supplementary 2 Pressman, R. S., & Maxim, B. R. (2019). Software Engineering: A Practitioner's Approach.

Supplementary 3 Sommerville, I. (2015). Software Engineering. Addison-Wesley.

Required Work - The final grade consists of:

- **Attendance Questions (4%)** - Each class there will be a few questions via Top Hat, Canvas, etc. At some point during the lecture, you will be asked to provide your answers to a question within the slides. We will then discuss the question and answer. Your attendance is necessary to earn these points. To obtain 4/4 you must answer at least 90% of all questions, to obtain 3/4 you must answer at least 85% of all questions, to obtain 2/4 you must answer at least 80% of all questions, to obtain 1/4 you must answer at least 75% of all questions.
- **In class activities (4%)** - Each class there will be some in class activity that you will complete. To obtain 4/4 you must complete at least 90% of the activities, to obtain 3/4 you must complete at least 85% of the activities, to obtain 2/4 you must complete at least 80% of the activities, to obtain 1/4 you must complete at least 75% of the activities.
- **Quizzes (25%)** - You will have 10 quizzes throughout the semester; however, we will drop the lowest quiz score. The quizzes will be announced ahead of time.
- **Project (45%)** – The course project will be conducted in teams of 4-6 students. The project will give you the hands-on opportunity to develop essential course skills and assess your understanding of the material. Each milestone instruction along with its duration will be posted on the course Canvas page. Note: Your team's grade does not necessarily reflect your individual grade. Team assessments will be conducted throughout the semester.
    - **Client (10%)**:
        - **Request for Proposal (7%)** – You will write a request for proposal that documents a problem that can be solved with a software solution.

        - **Review of Designer Documents (3%) –** After each milestone, you as the client team will review your designer team's documents.
    - **Designer (35%)**:
        - Requirements document 1.0 (**8%**)
        - Requirements document 2.0 (**10%**)
        - Requirements document 3.0 (**12%**)
        - Final presentation (**5%**)
- **Team Assessments reports (2%)** – You will write 4 team assessment reports over the course of the semester, which allows you to provide assessment of each team member after every milestone.
- **Final Exam (20%) -** The final exam is scheduled for May 14 (Final Exam) from 8:00 am - 10:00 am in Gallogly Hall 127. The exam will be closed book on paper. The exam is cumulative and assesses your overall understanding of the course material and skills you developed throughout the semester.

Assessments

Methods	**Weighting**	**Who's Responsible**
Attendance	4%	Individual
In class Activities	4%	Individual/Group
Quizzes (10 total; drop 1 quiz score)	25%	Individual
Project	45%	Group
Team Assessment Reports	2%	Individual
Final Exam	20%	Individual
Total	**100%**	

Assigning Grades: The final letter grading for the course will be as follows: A ≥ 90%, B = 75-89%, C = 60-74%, D = 50-59%, F = < 50%. The instructor will round all averages to two significant figures (69.5 will round to 70 and 69.4 will round to 69) to determine the student's letter grade in the course (70 = C, 69 = D). Canvas is equipped with a grade book that preserves the raw data utilized for computing your course grade. It is crucial that you routinely verify the accuracy of your recorded grades. In the event of any identified discrepancies or disagreement, promptly notify me, and I shall promptly address and rectify the matter.

Teaching Philosophy: My teaching methods include a variety of up-to-date techniques including active participation via an inverted classroom and experiential learning through

project-based instruction and assessment. Through these methods, I seek to make courses imitate the work environment as much as possible in order to best prepare students for their careers.

Delivery Method: The course will be delivered with standard in-person lectures. Course materials such as slides, example files, sketches, and assignment instructions will be available for download in Canvas and may not be distributed (are considered property of the instructor and the University of Oklahoma). You are responsible for ensuring you have met all the material covered during lectures. NOTE: EMAIL is the primary form of communication for this class. Anything sent via email is to be considered a part of this class. You are responsible for checking your University of Oklahoma email at least once per day.

All necessary Zoom links, if applicable, will be posted to Canvas. Depending on weather, classes may move online (up to university policy).

Attendance Policy: In-person attendance is highly encouraged (questions via Top Hat will be given starting in Week 2). Typically, students who routinely attend class and have been seen taking notes have scored ~1 letter grade higher than the rest of the class.

Integrity: By taking this course, attending lectures, submitting quizzes, activities, and projects, and taking the exams, you acknowledge that you have not sought external help, beyond reasonable means, to any question or grade problem. Furthermore, it is strictly prohibited to search for help by posting assigned graded questions to online sites and similar resources.

Cheating is strictly prohibited at the University of Oklahoma, because it devalues the degree you are working hard to get. As a member of the OU community, it is your responsibility to protect your educational investment by knowing and following the rules. For specific definitions on what constitutes cheating, review the Students Guide to Academic Integrity can be found at https://www.ou.edu/integrity

Use of LLM and AI Assistance: Students are permitted to use Generative AI tools, such as ChatGPT and GitHub Copilot, to assist in understanding concepts and generating ideas. However, all submitted work must reflect the student's own understanding and effort.

While AI can be a valuable tool, it should complement learning rather than replace critical thinking and hands-on experience. If AI is used to assist in writing, problem-solving, or explanations, students must explicitly acknowledge its use by adding comments in their project submissions detailing what aspects were AI-assisted. Additionally, as part of the project evaluation, students must submit any prompts they used to generate or refine their work as a separate document. Since AI-generated work may not always be correct or optimal, students are responsible for ensuring their final submission is functional, accurate, and meets all project requirements. Directly copying AI-generated solutions without comprehension or modification is not acceptable and may be considered academic misconduct. Students should consult the instructor if they have any questions about appropriate AI usage.

When you use AI, you must:

1. CITE the AI you used.
2. Provide the prompt history used.
3. Explain what the AI contributed to your understanding of the problem, your solution, and why you used it.
4. Additionally, explain how the AI's result differs from your original understanding or work.

Schedule: The following is tentative and is subject to change due to timing, weather, or unforeseen events:

Week	M	W	F
1 Jan 19th		Software Engineering & Computer Science (OR1 Chapter 1.4) (Form your project groups)	Intro to software analysis (OR2 Chapter 1) Software Process Models (OR1 Chapter 2.5)
2 January 26th	What is System? (OR1 Chapter 3.1) What is System Engineering? (OR1 Chapter 3.2)	What is requirements elicitation? (OR2 Chapter 7) Importance of Requirements	Quiz 1 Work on RFP RFP document due Sunday 10pm

		elicitation (OR1 Chapter 4.2)	Team assessment 1 due Sunday 11pm
3 Feb 2nd	Analyze the RFP, prepare for elicitation	1st client meeting: Requirements Elicitation	System Requirements Definition (OR1 Chapter 3.3) Types of requirements (OR1 Chapter 4.3) Requirements Development Framework (OR2 Chapter 3)
4 Feb 9th	Writing excellent requirements (Guest Lecture)	Quiz 2 CrowdRE	Establishing the business requirements (OR2 Chapter 5) Requirements document 1.0 due Sunday 10pm Team assessment 2 due Sunday 11pm
5 Feb 16th	Quiz 3 Documenting requirements (OR2 Chapter 10)	Non-functional requirements (OR2 Chapter 14)	Work on requirements documentation
6 Feb 23rd	Quiz 4 Reviewing Requirements (OR2 Chapter 17)	Clients analyzing RD and writing feedback	Designer examine issues raised by clients. 2nd Client Meeting
7 March 2nd	Domain modeling (OR1 Chapter 5)	Domain modeling (OR1 Chapter 5)	Quiz 5 Domain modeling (OR1 Chapter 5)
8 March 9th	Archtectural design (OR1 Chapter 6)	Archtectural design (OR1 Chapter 6)	Quiz 6 Architectural design (OR1 Chapter 6) Requirements document 2.0 due Friday 10pm

			Team assessment 3 due Friday 11pm
9 March 16th	**SPRING BREAK**	**SPRING BREAK**	**SPRING BREAK**
10 March 23rd	Deriving use cases (OR1 Chapter 7)	Deriving use cases (OR1 Chapter 7)	Quiz 7 Deriving use cases (OR1 Chapter 7)
11 March 30th	Actor system interaction modeling (OR1 Chapter 8)	Actor system interaction modeling (OR1 Chapter 8)	Quiz 8 Actor system interaction modeling (OR1 Chapter 8)
12 April 6th	Object interaction modeling (OR1 Chapter 9)	Object interaction modeling (OR1 Chapter 9)	Quiz 9 Object interaction modeling (OR1 Chapter 9)
13 April 13th	Data flow diagram (OR2 Chapter 12)	Data flow diagram (OR2 Chapter 12)	Quiz 10 Data flow diagram (OR2 Chapter 12)
14 April 20th	Deriving a design class diagram (OR1 Chapter 11)	Deriving a design class diagram (OR1 Chapter 11)	Deriving a design class diagram (OR1 Chapter 11) Requirements document 3.0 due Sunday 10pm
15 April 27th	Final client meeting Validation and verification	Work on prototypes	Final presentation guidelines Full project with corrections due Sunday 10pm Team assessment 4 due Sunday 11m
16 May 4	Final Presentation	Final Presentation	Final Presentation
17 Final Exam			

Course Policies:

Make-up Policy

Unless explicitly stated otherwise specified in writing, please ensure all project milestones are submitted by the designated date in the instructions. In the event of a delay, a 10% deduction will be applied for each day beyond the specified deadline. This policy is in place to maintain fairness and consistency. It's worth noting that, as software engineering professionals, it's our responsibility to ensure timely submission, avoiding any delays that may result in fines for our workplace. Make-up exams will not normally be permitted, and they are only available when required by university policy.

Technology

In recognizing the lasting impact of AI tools, I encourage their use to improve your skills on using them. However, given that AI tools are not fully matured, it is the responsibility of the student to evaluate the content generated and learn how to effectively work with AI tools to achieve optimal results. This approach reflects our commitment to adapting and utilizing emerging technologies responsibly in the learning environment. It is essential to note that any direct copy-pasting without reading, understanding, analyzing, and actively working to enhance your skills will be considered academic misconduct.

Academic Integrity and Plagiarism

The goal of this course is your learning, so the work you submit must be your own. Write in your own words and cite sources to avoid plagiarism. Group work, tutoring, campus resources, or online tools (including AI) are fine, but your submissions must show your understanding. If you're unsure about academic integrity, ask me. Serious violations can mean a zero on the assignment or even expulsion, so please know the expectations.

Visit the OU Integrity Office for more information on what constitutes plagiarism

University Policies

Mental Health Support Services

Support is available for any student experiencing mental health issues that are impacting their academic success. Students can either been seen at the University Counseling Center (UCC) located on the second floor of Goddard Health Center or receive 24/7/365 crisis support from a licensed mental health provider through TimelyCare. To schedule an appointment or receive more information about mental health resources at OU please call the UCC at 405-325-2911 or visit University Counseling Center. The UCC is located at 620 Elm Ave., Room 201, Norman, OK 73019.

Title IX Resources and Reporting Requirement

The University of Oklahoma faculty are committed to creating a safe learning environment for all members of our community, free from sex-based discrimination, including sexual harassment, domestic and dating violence, sexual assault, and stalking, in accordance with Title IX. There are resources available to those impacted, including: speaking with someone confidentially about your options, medical attention, counseling, reporting, academic support, and safety plans. If you have (or someone you know has) experienced any form of sex-based discrimination or violence and wish to speak with someone confidentially, please contact OU Advocates (available 24/7 at 405-615-0013) or University Counseling Center (M-F 8 a.m. to 5 p.m. at 405-325-2911).

Because the University of Oklahoma is committed to the safety of you and other students, and because of our Title IX obligations, I, as well as other faculty, Graduate Assistants, and Teaching Assistants, are mandatory reporters. This means that we are obligated to report sex-based violence that has been disclosed to us to the Institutional Equity Office. This means that we are obligated to report sex-based violence that has been disclosed to us to the Institutional Equity Office. This includes disclosures that occur in: class discussion, writing assignments, discussion boards, emails and during Student/Office Hours. You may also choose to report directly to the Institutional Equity Office. After a report is filed, the Title IX Coordinator will reach out to provide resources, support, and information and the reported information will remain private. For more information regarding the University's Title IX Grievance procedures, reporting, or support measures, please visit Institutional Equity Office at 405-325-3546.

Adjustments for Pregnancy and Related Issues

Should you need modifications or adjustments to your course requirements because of pregnancy or a pregnancy-related condition, please request modifications via the Institutional Equity Office website or call the Institutional Equity Office at 405/325-3546 as soon as possible. Also, see the Institutional Equity Office FAQ on Pregnant and Parenting Students' Rights for answers to commonly asked questions.

Reasonable Accommodation Policy

The University of Oklahoma (OU) is committed to the goal of achieving equal educational opportunity and full educational participation for students with disabilities. If you have already established reasonable accommodations with the Accessibility and Disability Resource Center (ADRC), please log into iAdvise to request your semester accommodations as soon as possible and contact me privately, so that we have adequate time to arrange your approved academic accommodations.

If you have not yet established services through ADRC, but have a documented disability and require accommodations, please complete ADRC's pre-registration form to begin the registration process. ADRC facilitates the interactive process that establishes reasonable accommodations for students at OU. For more information on ADRC registration procedures, please review their website. You may also contact them at (405)325-3852 or adrc@ou.edu, or visit www.ou.edu/adrc for more information.

Note: disabilities may include, but are not limited to, mental health, chronic health, physical, vision, hearing, learning and attention disabilities, pregnancy-related. ADRC can also support students experiencing temporary medical conditions.

Religious Observance

It is the policy of the University to excuse the absences of students that result from religious observances and to reschedule examinations and additional required classwork that may fall on religious holidays, without penalty. [See Faculty Handbook 3.15.2]

Final Exam Preparation Period

Pre-finals week will be defined as the seven calendar days before the first day of finals. Faculty may cover new course material throughout this week. For specific provisions of the policy please refer to OU's Final Exam Preparation Period policy.

Emergency Protocol

During an emergency, there are official university procedures that will maximize your safety.

Severe Weather: If you receive an OU Alert to seek refuge or hear a tornado siren that signals severe weather.

1. Look for severe weather refuge location maps located inside most OU buildings near the entrances.
2. Seek refuge inside a building. Do not leave one building to seek shelter in another building that you deem safer. If outside, get into the nearest building.
3. Go to the building's severe weather refuge location. If you do not know where that is, go to the lowest level possible and seek refuge in an innermost room. Avoid outside doors and windows.
4. Get in, Get Down, Cover Up
5. Wait for official notice to resume normal activities.

Additional Weather Safety Information is available through the Department of Campus Safety.

The University of Oklahoma Active Threat Guidance

The University of Oklahoma embraces a Run, Hide, Fight strategy for active threats on campus. This strategy is well known, widely accepted, and proven to save lives. To receive emergency campus alerts, be sure to update your contact information and preferences in the account settings section at one.ou.edu.

RUN: Running away from the threat is usually the best option. If it is safe to run, run as far away from the threat as possible. Call 911 when you are in a safe location and let them know from which OU campus you're calling from and location of active threat.

HIDE: If running is not practical, the next best option is to hide. Lock and barricade all doors; turn of all lights; turn down your phone's volume; search for improvised weapons; hide behind solid objects and walls; and hide yourself completely and stay quiet. Remain in place until law enforcement arrives. Be patient and remain hidden.

FIGHT: If you are unable to run or hide, the last best option is to fight. Have one or more improvised weapons with you and be prepared to attack. Attack them when they are least expecting it and hit them where it hurts most: the face (specifically eyes, nose, and ears), the throat, the diaphragm (solar plexus), and the groin.

Please save OUPD's contact information in your phone.

NORMAN campus: *For non-emergencies call (405) 325-1717. For emergencies call (405) 325-1911 or dial 911.*

TULSA campus: *For non-emergencies call (918) 660-3900. For emergencies call (918) 660-3333 or dial 911.*

Fire Alarm/General Emergency

If you receive an OU Alert that there is danger inside or near the building, or the fire alarm inside the building activates:

1. *LEAVE* the building. Do not use the elevators.
2. *KNOW* at least two building exits
3. *ASSIST* those that may need help
4. *PROCEED* to the emergency assembly area
5. *ONCE safely outside, NOTIFY first responders of anyone that may still be inside building due to mobility issues.*
6. *WAIT* for official notice before attempting to re-enter the building.

OU Fire Safety on Campus