CMSC5283 Software Engineering I

	Role	Office hours	Office location	E-mail address	Phone
Jicheng Fu	Professor	11:10 – 12:00am on Monday, Wednesday, and Friday	STEM237	jfu@uco.edu	974-5704

Lecture Time & Location: Monday, Wednesday, and Friday 1:00 – 1:50pm, MCS111

Teaching Assistant: TBD

Course Web Page: http://cs2.uco.edu/~fu/SE4283/index.htm

Objectives

- Achieve advanced proficiency in UML, focusing on complex modeling scenarios and integration in the software development process.
- Master advanced concepts in project management, including agile methodologies and quality assurance.
- Analyze and evaluate different SDLC models, understanding their strengths and weaknesses in various contexts.
- Develop expertise in advanced techniques for requirement elicitation and analysis, focusing on complex and large-scale systems.
- Master advanced modeling techniques, emphasizing their application in the design of complex software systems.
- Deeply understand object design principles, focusing on their impact on system performance and scalability.
- Study advanced system design approaches, including distributed systems design and service-oriented architecture.
- Explore in-depth various design patterns, understanding their application in real-world software engineering problems.
- Gain expertise in comprehensive software testing methodologies, including automated testing, performance testing, and test-driven development.

Getting Help

General questions about the homework assignments should be directed to the instructor at the above e-mail address. You are encouraged to use the eLearning discussion group for the course on D2L. Therefore, you should check the discussion group whenever you have a question about the assignment as someone else may have already asked it and received an answer. In addition, you are welcome to drop by during the office hours.

Course Description

Software Engineering is the application of engineering and management disciplines to computer software projects. Topics discussed are the software lifecycle, CASE tools, requirement engineering, software models and architectures, software design and development, testing and validation, maintenance and evolution, project organization, management and cost estimation, and software quality assurance and risk analysis.

Text

Bernd Bruegge and Allen H. Dutoit, Object-Oriented Software Engineering: Using UML, Patterns and Java, 3rd Edition, Prentice Hall, ISBN-10: 0136061257 ISBN-13: 978-0136061250

eBook: https://www.vitalsource.com/referral?term=9780133002096

Prerequisite

CMSC 2613 Programming II

Grading

Homework assignments (10% of the course grade)
Since we will be using eLearning (D2L) for submission and grading, you must upload an electronic copy of your assignment by the due date. If you choose not to typewrite your assignment, you will need to scan and upload your submission and also provide me with a hardcopy of your submission.

Library research assignment (5% of the course grade)
In this research assignment, please use UCO library and database search facilities, locate, access, and read one article published within five years by the Association for Computing Machinery (ACM) or by the Institute of Electrical and Electronics Engineers (IEEE). The article must be relevant to topics of AI Augmented Software Engineering.

Quizzes (10% of the course grade)
There will be multiple short quizzes in this semester. The quizzes will be announced at least two days ahead of the test.

Midterm exam (30% of the course grade)
There will be one in-class midterm exam. The midterm exam is *tentatively* scheduled on Wednesday, March 12th, 2025.

Final exam (30% of the course grade)
There will be a **comprehensive** final exam.

Project (10% of the course grade)
The project is team-based. Each team consists of 3 ~ 4 persons. Besides finishing all the documents, e.g., system proposal, project plan, system design, test plan, test cases, etc., you need to develop a prototype with the major components of the system functioning correctly. There will be a final demonstration of your system by the end of the semester.

Class participation (5% of the course grade)

- A student is allowed to miss two complete classes or team meeting periods without penalty. After that, each unexcused absence will be counted.
- **For In-Person students,** attendance is required
- **For IVE students,** you MUST use your **real name** to join our online sessions
- **If you cannot make the class**, you must watch the video within **48 hours** after the class. Please update your attendance records in D2L accordingly.
    - In-person students should let the instructor know your absence ***before*** the class starts.
- To improve the learning quality, students are encouraged to actively ask questions, answer questions, and get involved in discussions. **Attitude is everything.**

Course Policies

Collaboration policy
Except being specified explicitly, the assignments and presentations are group works. Each group consists of three to four persons.

Academic integrity policy
You are expected to maintain the utmost level of academic integrity in the course, in accordance with the academic integrity policy of the University of Central Oklahoma. In particular, (a) it is your responsibility to protect your work from unauthorized access, and (b) the work you submit is expected to be your own. Academic dishonesty has no place in a university or anywhere else: it wastes our time and yours, and it is unfair to everyone else. Any violation of this code will be penalized, as we take this issue very seriously. Any student observed cheating will receive a grade of ***zero*** on the exam or assignment, and the appropriate college

administrative personnel contacted. A second offense will result in dismissal from the class with a grade of F.

Late assignment policy
Barring extenuating circumstances, all assignments and projects must be turned in on the date specified. You will be given three "free" late days, with the restriction that no more than two free late days can be spent on each homework assignment. If it is a group assignment, students of the entire group will be considered using the free late days. After you use up the free late days, your late submissions will be penalized as follows. Assignments turned in within 24 hours of the due date will receive 90% of its score. Assignments turned in within 48 hours of the due date will receive 70% of its score. Assignments more than 48 hours late will not be accepted.

If you decide to use free late day(s), please clearly indicate the number of free late days you have used when you submit your assignment. Without such a notification, your late submission will be penalized as discussed above.

Regrade policy
The TA and professor will grade your work carefully. However, questions about grading do occasionally arise. If so, first read the solutions. If questions persist, please see me of that problem (come to office hours or schedule an appointment). In the interests of smooth administration and to encourage you to look at your graded work soon after it is returned, regrade requests must be made within *two* weeks of when the work was returned. We reserve the rights to make regrade decisions "off-line" (i.e., not immediately at the time requested).

COURSE VIDEOS
Due to limitations on the disclosure of personally identifiable information under certain federal privacy laws, students are not permitted to record class sessions or allow non-students to view online class sessions. Sharing links of class videos or add class videos to a public list is also prohibited. Students registered with the UCO Office of Disability Support Services may request accommodation of the prohibition and must present a copy of the DSS letter to the instructor.

Title IX
The University of Central Oklahoma complies with Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990. Students with disabilities who need special accommodations must make their requests by contacting Disability Support Services, at (405) 974-2516. The DSS Office is located in the Nigh University Center, Room 305. Students should also notify the instructor of special accommodation needs as soon as possible. Per Title IX of the Education Amendments of 1972 ("Title IX"), pregnant and parenting students may request adjustments by contacting the Title IX Coordinator, at (405) 974-3377 or TitleIX@uco.edu. The Title IX Office is located in the Lillard Administration Building, Room 114D.

Important Dates

Week	Dates	Monday	Wednesday	Friday
1	01/13-01/17	Introduction	UML First Pass (1)	UML First Pass (2) Assignment released: UML Practice
2	01/20-01/24	**Martin Luther King Day**	UML First Pass (3)	Project Management (1)
3	01/27-01/31	Project Management (2) Assignment released: Meeting agenda & minutes	Project Management (3)	Project Management (4) Assignment released: Project plan
4	02/03-02/07	System Development Life Cycle (1)	System Development Life Cycle (2)	System Development Life Cycle (3)
5	02/10-02/13	Requirement Elicitation (1) Assignment released: Requirements Specification	Requirement Elicitation (2)	Functional Modeling (1) Assignment released: Functional modeling
6	02/17-02/21	Functional Modeling (2)	Functional Modeling (3)	Object Modeling (1) Assignment released: Object modeling
7	02/24-02/28	Object Modeling (2)	Object Modeling (3)	Object Modeling (4)
8	03/03-03/07	Object Modeling (5)	Dynamic Modeling (1) Assignment released: Dynamic modeling	Dynamic Modeling (2)
9	03/10-03/14	Dynamic Modeling (3)	**Midterm Exam**	Dynamic Modeling (4) Assignment released: Library research
10	03/17-03/21	**Spring Break**		
11	03/24-03/28	Dynamic Modeling (5)	System Design (1) Assignment released: Software design	System Design (2)
12	03/31-04/04	Object Design (1)	Object Design (3)	Object Design (4)
13	04/07-04/11	Object Design (5)	Design Patterns (1) Assignment released: Design pattern	Design Patterns (2)
14	04/14-04/18	Design Patterns (3)	Design Patterns (4)	Design Patterns (5)
15	04/21-04/25	Software Testing (1) Assignment released: Software testing	Software Testing (2)	Software Testing (3) Assignment released: Basis path testing

16	04/28-05/02	Software Testing (4)	Software Testing (5) + Review	Final Presentation
17	05/05-05/09			**Final exam**

This schedule (including exam dates) is subject to change. You are responsible for attending class and staying aware of announced schedule updates.