The UNIVERSITY of OKLAHOMA
GALLOGLY COLLEGE OF ENGINEERING
SCHOOL OF COMPUTER SCIENCE

READ ME 1. This Document Details the Course Content
2. Cells with a red triangle contain a note; hover to read it.

1	**Course Code**	CS5213
2	**Course Name**	Software Engineering Processes
3	**Version**	1.1

4	**Name(s) of Academic Staff**	**Instructor**	Mansoor Abdulhak	**Email**	m.hak@ou.edu
		Teaching Assistant	Ajisegiri SJ	**Email**	oluwasijibomi.ajisegiri@ou.edu
		Teaching Assistant		**Email**	

5	**Semester**	Spring
6	**Year**	2025
7	**Program Level**	MS
8	**Prerequisite Course**	C S 3113 or C S 3823 or C S 5005

9 — Contact Hours

	Delivery Methods	Hour per week	Implementation	Date	Time	Location
Asynchronous Online (Student Center Learning) Activities	Lecture	0 units	(0 hour(s) per week)			
	Tutorial	0 units	(0 hour(s) per week)			
	Laboratory	0 units	(0 hour(s) per week)			
	Supervision	0 units	(0 hour(s) per week)			
	Online Learning	3 units	(3 hour(s) per week)			Asynchronous Online
	Out Class	6 units	(6 hour(s) per week)			
	Student Hours	2 units	(2 hour(s) per week)	MW	09:30 am - 10:30 am	Devan Energy Hall 234 or Virtually
				TR	09:30 am - 10:30 am	Virtually with TA
	Final Exam	0 units	(2 hour(s) per Sem)			

10 — Course Synopsis

This course is a team project course focused on practical application of common, modern techniques to all aspects of software project development. Students will learn about effective processes for software requirements specification, planning, design, documentation, development, review, defect tracking, testing, product delivery, and product evaluation. There is some emphasis on resource tracking and software quality. Students will work in teams to develop, deliver, and evaluate software products.

11 — Student Outcomes

By the end of semester, students should be able to:

SO 1	Demonstrate advanced knowledge and skills in applying modern techniques to all aspects of software project development.
SO 2	Enhance problem-solving and critical thinking abilities to tackle intricate challenges encountered in software project development.
SO 3	Collaborate effectively in cross-functional teams to plan, deliver, and evaluate software products.
N/A	Not Applicable
N/A	Not Applicable
N/A	Not Applicable

12 — Assessment Methods

Methods		Weighting	SO 1	SO 2	SO 3	N/A	Letter Grades	
Project	Ticket1_SDP	10%	√	√			A	≥ 90
	Ticket2_SQP	10%	√	√			B	80-89
	Ticket3_SRS	10%	√	√			C	70-79
	Ticket4_USECASE	10%	√	√			D	60-69
	Ticket5_STP	10%	√	√			F	< 60
	Ticket6_TESTCASE	10%	√	√				
	Ticket7_SDD	10%	√	√				
Midterm Exam	Ticket8_SetupEnvironment	10%			√			
Final Exam	Ticket9_SprintExecution	20%			√			
Total		**100%**						

13 — Learning References

1 Required	David Kung. (2024). Software Engineering, 2nd Edition. McGraw Hill.
2 Supplementary	Sommerville, I (2019), Engineering Software Products: An Introduction to Modern Software Engineering, 1st edition, Pearson Education
3 Supplementary	Sommerville, I. (2015). Software Engineering. Addison-Wesley.
4 Supplementary	Pressman, R. S., & Maxim, B. R. (2019). Software Engineering: A Practitioner's Approach.

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1. This Document Details the:
   a) **Week**: Indicates the specific week of the course., b) **Topic**: The main subject or focus for the given week.,
   c) **Chapters-Reading**: Specifies the required reading for the week. Those Chapters reading are reflected from the required book however they can be found at any other online recourses.,

READ ME   d) **Weekly Activity**: Outlines the tasks or activities that you are expected to complete during the week.
   e) **SWEBOK v4.0**: Refers to the Software Engineering Body of Knowledge, version 4.0, which outlines the knowledge areas covered this week.,
   f) **Assessment Method**: The type of assessment (e.g., quiz, assignment) assigned for this week, g) **Total Marks**: The weight or points assigned to this week's activities
   2. Cells with a red triangle contain a note; hover to read it.

Week	Topic	Chapters-Reading	Weekly Activity	SWEBOK v4.0	Assessment Method	Total Marks
1	Introduction	2.1 Challenges of System Development 23 Software Project Management 23.1 Project Organization 23.2 Effort Estimation Method	1: Discussion on Canvas (Introduction) 2: Group Forming (Contact others) 3: Form a group of SEVEN students 4: SET YOURS GROUPS IN CANVAS 5: Go to 3.2 Student List 6: Select the weeks you will be in charge as a leader 5: Do the Chapters-Reading	Software Engineering Professional Practice (KA)	Participation	
2	Project Management	23.3 Project Planning and Scheduling 23.4 Risk Management 23.5 Process Improvement 23.6 Applying Agile Principles Scrum	1: Do the Chapters-Reading 2: Complete (Ticket 1) 3: Do the PeerReview (Evaluation Form)	Software Engineering Professional Practice (KA)	Ticket 1 Software Development Plan (SDP)	10
3	Software Quality Assurance & Configuration Management	19.2 Software Quality Attributes 19.4 Software Verification and Validation Techniques 19.5 Verification and Validation in the Life Cycle 19.6 Software Quality Functions 22.1 The Baselines of Software Life Cycle 22.4 Software Configuration Management Functions	1: Do the Chapters-Reading 2: Complete (Ticket 2) 3: Do the PeerReview (Evaluation Form)	Software Quality (KA) Software Engineering Professional Practice (KA)	Ticket 2 Software Quality Assurance Plan (SQAP)	10
4	Software Requirements Specification	4.3 Types of Requirements 4.4 Challenges of Requirements Elicitation 4.5 Steps for Requirements Elicitation 4.6 Applying Agile Principles 4.7 Requirements Management and Tools	1: Do the Chapters-Reading 2: Complete (Ticket 3) 3: Do the PeerReview (Evaluation Form)	Software Requirements (KA) Software Engineering Professional Practice (KA)	Ticket 3 SRS Standard	10
5	Use Case	7.1 What is an Actor 7.2 What is a Use Case 7.3 Business Process, Operation and Action 7.4 Steps for Driving Use Cases from Requirements 7.5 Applying Agile Principles 7.6 Tool support for Use Case Modeling	1: Do the Chapters-Reading 2: Complete (Ticket 4) 3: Do the PeerReview (Evaluation Form)	Software Requirements (KA) Software Engineering Professional Practice (KA)	Ticket 4 Use Case	10
6	Implementation	18.1 Coding Standard 18.2 Organizing the Implementation Artifacts 18.3 Generating Code from Design 18.5 Parin Programming 18.6 Test-Driven Development 18.7 Applying Agile Principles	1: Do the Chapters-Reading 2: Complete (Ticket 5) 3: Do the PeerReview (Evaluation Form)		Ticket 5 Software Testing Plan (STP)	10
7	Software Testing	20.1 What is Software Testing 20.2 Why Software Testing 20.5 Test Coverage 20.6 A Generic Software Testing Process 20.7 Object Oriented Software Testing 20.10 Software Testing In The Life Cycle	1: Do the Chapters-Reading 2: Complete (Ticket 6) 3: Do the PeerReview (Evaluation Form)	Software Quality (KA) Software Engineering Professional Practice (KA)	Ticket 6 Test Case	10
8	Software Architecture	6.3 Software Design Principles 6.5 Architectural Styles 6.6 Architectural Design Process 6.7 Architectural Style and Package Diagram 6.9 Applying Agile Principles	1: Do the Chapters-Reading 2: Complete (Ticket 7) 3: Do the PeerReview (Evaluation Form)	Software Design (KA) Software Engineering Professional Practice (KA)	Ticket 7 Architectural Design SDD Standard	10
9	Modeling and Design	9.2 UML Sequence Diagram 9.3 Steps for Object Interaction Modeling 11.3 Steps for Deriving a Design Class Diagram 11.4 Organize Classes with Package Diagram 12.3 Graphical User Interface Widget 12.4 User Interface Design Process	1: Do the Chapters-Reading 2: Complete (Ticket 8) 3: Do the PeerReview (Evaluation Form)	Software Design (KA) Software Engineering Professional Practice (KA)	Ticket 8 Setup Environment	10
10	Spring Break	Spring Break	Spring Break	Spring Break	Spring Break	Spring Break
11	Software Security	24.2 Security Requirement 24.3 Secure Software Design Principles 24.4 Secure Software Design Pattern 24.5 Seven Best Practices of Software Security 24.6 Software Security in the Life Cycle	1: Do the Chapters-Reading 2: Prepare for Sprint Execution		INFORMAL REVIEW	
12	Sprint 1	Research or Industry Project	Sprint Execution		Ticket 9 Sprint 1 Execution	
13	Sprint 2	Research or Industry Project	Sprint Execution		Ticket 9 Sprint 2 Execution	
14	Sprint 3	Research or Industry Project	Sprint Execution		Ticket 9 Sprint 3 Execution	
15	Sprint 4	Research or Industry Project	Sprint Execution		Ticket 9 Sprint 4 Execution	
16	FORMAL Review/ Demo					20
					Total Marks	**100**
Notes:	*Nothing for now					

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Read Me			1. This document outlines the policies for the course, school, and university. 2. Please review it thoroughly before beginning the course or reaching out to the instructor. 3. Note: If any text is in white color, it indicates content not related to this specific course.
1	**Instructor**	**1** About Instructor	Mansoor Abdulhak
		2 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.
2	**Course**	**1** Home Page	This class will use Canvas software for our home page. The URL for the home page is http://canvas.ou.edu. Login with your 4+4 using your standard OU password. If you have difficulty logging in, call 325-HELP. This software provides a number of useful features, including a list of assignments and announcements, an electronic mailing list, and grade book. The Canvas course site will be used for all updates. You should check the site regularly.
		2 Grade Checking	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 via email (follow the policy of **Communication**), and I shall promptly address and rectify the matter. Keep in mind Notifications must be submitted within the same week as the grade release; otherwise, changes will not be processed.
		3 Deadlines	Unless explicitly stated otherwise specified in writing, please ensure all assignments are submitted by the designated date in the Ticket 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.
		4 AI Tools	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.
		5 Exams	Follow the University Final Exam Policies
		6 Ownership of Course Materials	All original content used in this course is owned by Mansoor Abdulhak. This includes but is not limited to exams, lectures, quizzes, handouts, protocols, electronic documents, and syllabi. Original or transcribed content may not be copied, recorded, retransmitted, posted online, or sold without her and/or her expressed, written consent.
3	**Class**	**1** Communication	1.The primary method of communication will be through Discussion threads in Canvas. All general questions related to the learning outcomes, Tickets or reference are encouraged to be discussed openly within. 2.Urgent announcements will be communicated through Canvas. It is your responsibility to regularly check Canvas for updates. 3.For formal communication, please use email to contact me. To facilitate this communication PLEASE, Ensure that you include the semester, the course code ID, the group ID and your Sooner ID (e.g. Spring25-CS5213-GroupA-123456789) before the subject in your email. Without this information, your message may not be noticed or entertained.
		2 Class Attendance	As part of our commitment to student success, I offer two attendance tracks to accommodate diverse circumstances. The first track follows a traditional attendance policy. The second track, known as the double exam policy, is designed to support students who may face challenges in regular attendance. This alternative option allows students to demonstrate their understanding through exams, providing flexibility for those who may have commitments that prevent consistent attendance. Our aim is to ensure that all students have an opportunity to succeed, regardless of their individual circumstances. It's important to note that the cut-off for selecting your attendance track will be in week one, and switching tracks won't be allowed unless exceptional circumstances arise.
			Attendance (Track 1) This course follows a synchronous format, requiring your attendance at all scheduled class sessions and labs in person. Exceptions are made for illness, unforeseen caretaking duties, or if you feel uncomfortable being in group settings at the moment. In addition to the aforementioned policy, you have the option to opt for the **Double Exam (Track 2)** policy.
			Double Exam (Track 2) Attendance to classes and participation in group activities are not mandatory and won't be calculated. However, your final grade will be determined by a combination of an individual assignments scores and twice the exam score. This calculation will contribute to your overall assessment for the course, with the maximum achievable grade capped at a 'C'. As you will only be evaluated based on the ASO 4 & ASO 6 outcomes
		3 Classroom Conduct	permitted. In the case of disruptive behavior, You will be asked to leave the classroom and may charge you with a violation of the Student Code

		4	Grade	Your grade will be determined through 1: The assessment method detailed in the 1. Course Syllabus	2: Peer evaluations of teamwork • your contributions to the team homework • your enabling others to make contributions • may significantly impact your letter grade
		5	Online Class	See the Online Learning at OU	
4	University	1	Land Acknowledgement	Long before the University of Oklahoma was established, the land on which the University now resides was the traditional home of the "Hasinais" Caddo Nation and "Kirikirʔiːs" (audio available when opened in Chrome) Wichita & Affiliated Tribes. We acknowledge this territory once also served as a hunting ground, trade exchange point, and migration route	
		2	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 TELUS Health. To schedule an appointment or receive more information about mental health resources University Counseling Center	
		3	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 gender and 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, OU Advocates University Counseling Center Institutional Equity Office	
		4	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 submit your semester accommodation request through the ADRC as soon as possible and contact me privately, so that we have submit your semester accommodation request through the ADRC ADRC's pre-registration form Register with the ADRC www.ou.edu/adrc	
		5	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	
		6	Academic Integrity	See Academic Integrity Policy	
		7	Adjustments for Pregnancy/Childbirth Related Issues	Contact me or the Accessibility and Disability Resource Center at 405/325-3852 as soon as possible. Also, see the Institutional Equity Office FAQ on Pregnant and Parenting Students' Rights for answers to commonly asked questions.	
		8	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.	
		9	Emergency Protocol	During an emergency, there are official university procedures that will maximize your safety.	

		10	**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 Weather Safety Information
		11	**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. 1. **RUN**: Running away from the threat is usually the best option. If it is safe to run, run as far away from the
		12	**Fire Alarm/General Emergency**	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 OU Fire Safety on Campus
		13	**Office of Access and Opportunity's Belonging Statement**	Why You Belong at the University of Oklahoma: The University of Oklahoma fosters an inclusive culture of respect and civility, belonging, and access, which are essential to our collective pursuit of excellence and our determination to change lives. The unique talents, perspectives, and experiences of our community enrich the learning, and working environment at OU, inspiring us to harness our innovation, creativity, and collaboration for
		14	**Copyright Syllabus Statement for In-Person or Online Courses**	Sessions of this course may be recorded or live-streamed. These recordings are the intellectual property of the individual faculty member and may not be shared or reproduced without explicit, written consent of the faculty member. In addition, privacy rights of others such as students, guest lecturers, and providers of copyrighted material displayed in the recording may be of concern. Students may not share any course recordings with
		15	**Pre-Finals Week Policies**	During pre-finals week, all normal class activities will continue; however, no assignment, test, or examination accounting for more than 3% of the course grade may be assigned, unless it is assigned in advance of pre-finals week and worth less than 10%, or scheduled at least 30 days prior if worth more than 10%. No activity or field trip may be scheduled that conflicts with another class.