

1	Course Code	CS4273						
2	Course Name	Capstone Design Project						
3	Version	1						
4	Name(s) of Academic Staff	Instructor	Mansoor Abdulhak		Email	m.hak@ou.edu		
		Teaching Assistant	Ajisehiri SJ		Email	oluwasajibomi.ajisehiri@ou.edu		
		Teaching Assistant			Email			
5	Semester	Spring						
6	Year	2024						
7	Level	BS						
8	Course	None						
9	Contact Hours	Delivery Methods		Hour per week	Implementation	Date	Time	Location
		In-Person (Student Center Learning) Activities	Lecture	3 units	(3 hour(s) per week)	TR	1:30 pm - 2:45 pm	Dale Hall 206
			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	0 units	(0 hour(s) per week)			
			Out Class	6 units	(6 hour(s) per week)			
		Students Hour	2 units	(1 hour(s) per week)	TR	11:00 am - 12:00 pm	Devan Energy Hall 234 or Virtually	
Final Exam	0 units	(2 hour(s) per Sem)	M May 6	1:30 pm - 3:30 pm	Dale Hall 206			
10	Course Synopsis	This course offers you an in-depth exploration of the principles and practices of software engineering. With a strong emphasis on hands-on learning, you will delve into the entire software development lifecycle, mastering essential skills. Topics include methods and tools for software specification, design, and documentation, software development processes, professional ethics, responsibility, and liability in the software lifecycle. You will learn about current software engineering practices and tools, and complete team projects in the process. Interaction with project sponsors from industry, government, and academia will provide realistic experience with software engineering from a professional perspective. As part of the course outcome, you will also hone your abilities in both oral and written communication.						
11	ABET Student Outcomes	By the end of semester, students should be able to:						
		ASO 1	Analyze a complex computing problem and to apply principles of computing and other relevant disciplines to identify solutions.					
		ASO 3	Communicate effectively in a variety of professional contexts.					
		ASO 4	Recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles.					
		ASO 5	Function effectively as a member or leader of a team engaged in activities appropriate to the program's discipline.					
		Not Applicable	N/A					
12	Assessment Methods	Methods	Weighting	ASO 1	ASO 3	ASO 4	ASO 5	Letter Grades
		Presentations	10%		√			≥ 90 A
		Sprints (PeerReview) *4	80%	√	√	√	√	80-89 B
		Homework	0%					70-79 C
		Project	0%					60-69 D
		Assignments	0%					< 60 F
		Final Exam (Poster)	10%		√			
13	Learning References	Total 100%						
		1	David Kung. (2024). Software Engineering, 2nd Edition. McGraw Hill.					
		2	Sethi, R. (2022). Software Engineering. Cambridge University Press.					
		3	Sommerville, I. (2015). Software Engineering. Addison-Wesley.					
		4	Pressman, R. S., & Maxim, B. R. (2019). Software Engineering: A Practitioner's Approach.					

Notes:

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Week	Chapter/Topic	Syllabus	Class Activity	SWEBOK v4.0	Assessment Method	Total Marks
1	Domain Identification	1.1 Introduction & Welcome 1.2 Discuss the Spring2024Schedule 1.3 Discuss the tickets	1 KO presentation (Mansoor: discuss SW and 1H) 2 Group Meeting with Mentors	Software Engineering Professional Practice (KA)	Ticket 1 Group Presentation Evaluation	5
2	Technology Identification	2.1 Brainstorm the technologies 2.2 Identify TWO alternatives (Open Source) 2.3 Search for recourses for help	1 Schettler Brian, Tuesday 23rd 1.1 Presenting 3 min/group (Ticket 1) 2 Kanban Board 2.1 Group Meeting with Mentors	Software Engineering Management (KA)	Ticket 2 Group Presentation Evaluation	5
3	Sprint 1 Design & Develop	1 Brainstorm the user stories 2 Assign the tickets 3 Implement the tickets	1 Presenting 3 min/group (Ticket 2) 2 Group Meeting with Mentors 2.1 Writing Requirements: Stories and Features 2.2 Writing User-Experience Scenarios 2.3 Clarifying User Goals	Software Requirements (KA) Software Architecture (KA)	Ticket 3-S1 360 Feedback (5%) Mentor Evaluation (5%) Instructor Evaluation (10%)	20
4	Sprint 1 Develop & Test	1 Implement the tickets 2 Review and Retrospective	1 Group Meeting 2 Discuss the challenges	Software Design (KA) Software Construction (KA)		
5	Sprint 1 Test & Deploy	1 Implement the tickets 2 Review and Retrospective 3 Update the TRACKING PROGRESS	1 Discuss the challenges 2 Internal Code Review 3 Submit Ticket 3	Software Testing (KA) Software Configuration Management (KA)		
6	Sprint 2 Design & Develop	1 Brainstorm the user stories 2 Assign the tickets 3 Implement the tickets	1 Group Meeting with Mentors 1.1 Writing Requirements: Stories and Features 1.2 Writing User-Experience Scenarios 1.3 Clarifying User Goals	Software Requirements (KA) Software Architecture (KA)	Ticket 3-S2 360 Feedback (5%) Mentor Evaluation (5%) Instructor Evaluation (10%)	20
7	Sprint 2 Develop & Test	1 Implement the tickets 2 Review and Retrospective	1 Group Meeting 2 Discuss the challenges	Software Design (KA) Software Construction (KA)		
8	Sprint 2 Test & Deploy	1 Implement the tickets 2 Review and Retrospective 3 Update the TRACKING PROGRESS	1 Discuss the challenges 2 Internal Code Review 3 Submit Ticket 3	Software Testing (KA) Software Configuration Management (KA)		
9		PEER REVIEW SESSION	Invite mentors to review	Software Quality (KA) Software Engineering Operations (KA)		
10	Spring Break	Spring Break	Spring Break	Spring Break	Spring Break	Spring Break
11	Sprint 3 Design & Develop	1 Brainstorm the user stories 2 Assign the tickets 3 Implement the tickets	1 Group Meeting with Mentors 1.1 Writing Requirements: Stories and Features 1.2 Writing User-Experience Scenarios 1.3 Clarifying User Goals	Software Requirements (KA) Software Architecture (KA)	Ticket 3-S3 360 Feedback (5%) Mentor Evaluation (5%) Instructor Evaluation (10%)	20
12	Sprint 3 Develop & Test	1 Implement the tickets 2 Review and Retrospective	1 Group Meeting 2 Discuss the challenges	Software Design (KA) Software Construction (KA)		
13	Sprint 3 Test & Deploy	1 Implement the tickets 2 Review and Retrospective 3 Update the TRACKING PROGRESS	1 Discuss the challenges 2 Internal Code Review 3 Submit Ticket 3	Software Testing (KA) Software Configuration Management (KA)		20
14	Sprint 4 Design & Develop	1 Brainstorm the user stories 2 Assign the tickets 3 Implement the tickets	1 Group Meeting with Mentors 1.1 Writing Requirements: Stories and Features 1.2 Writing User-Experience Scenarios 1.3 Clarifying User Goals	Software Requirements (KA) Software Architecture (KA)	Ticket 3-S4 360 Feedback (5%) Mentor Evaluation (5%) Instructor Evaluation (10%)	
15	Sprint 4 Develop & Test	1 Implement the tickets 2 Review and Retrospective	1 Group Meeting 2 Discuss the challenges	Software Design (KA) Software Construction (KA)		
16	Sprint 4 Test & Deploy	1 Implement the tickets 2 Review and Retrospective 3 Update the TRACKING PROGRESS	1 Discuss the challenges 2 Internal Code Review 3 Submit Ticket 3	Software Testing (KA) Software Configuration Management (KA)		
17	Poster	PEER REVIEW SESSION	PEER REVIEW SESSION	Software Quality (KA) Software Engineering Operations (KA)	Ticket 4 Committee Evaluation Form	10
Class Points						
Total Marks						100
Notes:	*Nothing for now					



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

Weeks	Topics	Dates	Hours	Description	Skills	Comments
1	Domain Identification	16-Jan	9	01 What is the domain of the System? 02 What is the Purpose and Goals of the System? 03 Who Are the Primary Stakeholders? 04 What Are the Functional/Non Requirements? 05 What Data Is Involved? 06 What Are the Existing Workflows and Processes? 07 What Are the Legal and Regulatory Requirements? 08 What Are the User and Customer Expectations? 09 What Are the Pain Points and Challenges? 10 What Are the Future Trends and Needs? 11 What Are the Constraints? 12 What is the System's Scalability and Growth Potential? 13 How Will the System Be Maintained and Supported?	Observation Structuring correct Questions Research Understanding others	1. Prepare Group Signs with the group name at the beginning of the class so they can be grouped on the first day class 2.1 Invite Mentors to meet groups 2.2 Changing groups with strong justification
2	Technology Identification	23-Jan	9	01 What and Why Technology to use for (Design, Develop, Test & Deploy)? 02 How? (my level on the available tools: Do I need more to learn?) 03 What (free & easy) recourse available to learn from? 04 Is there an Open Source technology alternatives?	Adoption Fast Learning	Ticket 1 Submission (Jan 25/8:00 am) Presentation Form
3	S1 Design	30-Jan	5	01 What are the artefacts required to develop? 02 What are the deliverables? 03 When do they need to be delivered?	Analysis Design Critical Thinking	Ticket 2 Submission (Feb 1/8:00 am) Presentation Form
4	S1 Develop	6-Feb	9	01 What are the main entities or classes in the system? 02 What attributes and methods are associated with each class? 03 What relationships exist between classes? 04 What are the main components or modules of the system? 05 Are there any dependencies or associations between components?	Modeling Understanding of Software Architecture Object-Oriented Analysis and Design (OOAD)	
5	S1 Test	13-Feb	12	01 What is the Expected Behavior? 02 What Are the Test Cases? 03 How Can the Code Fail? 04 What is the Minimal Code to Pass the Tests?	Communication Time Control	
	S1 Deploy		1	01 What aspects of the software development lifecycle (SDLC) or infrastructure are currently automated, and to what extent? 02 What is DevOps and why I should know? 03 What tools and technologies are being utilized for automation in the DevOps pipeline? 04 How is continuous integration CI and continuous deployment CD (CI/CD) implemented in the development process? 05 What key performance indicators (KPIs) or metrics are currently being measured in the DevOps pipeline?	Team Player Leadership Creativity	Ticket 3-S1 Submission (Feb 20/8:00 am) 360 Feedback Form Mentor Evaluation Form
6	S2 Design	20-Feb	5			
7	S2 Develop	27-Feb	9			
8	S2 Test	5-Mar	12			
	S2 Deploy		1			Ticket 3-S2 Submission (Mar 12/8:00 am) 360 Feedback Form Mentor Evaluation Form
9	Peer Review	12-Mar	6	01 Provide brief overview of your capstone project? 02 What were the main challenges? 03 What is the key design and implementation decisions we made? 04 How did we approach testing and validation? 05 What are some potential future enhancements?		Review Form Schedule will be announced in Canvas
10		19-Mar		01 How can I use Student Experience Evaluation to make a difference? 02 What did we learn? 03 How awesome our group work and activity? 04 How can we improve?		Student Feedback Spring Vacation
11	S3 Design	26-Mar	5			
12	S3 Develop	2-Apr	9			
13	S3 Test	9-Apr	12			
	S3 Deploy		1			Ticket 3-S3 Submission (Apr 16/8:00 am) 360 Feedback Form Mentor Evaluation Form
14	S4 Design	16-Apr	5			
15	S4 Develop	23-Apr	9			
16	S4 Test	30-Apr	12			
	S4 Deploy		1			Ticket 3-S4 Submission (May 03/8:00 am) 360 Feedback Form Mentor Evaluation Form
	System & Lesson Learned	6-May	2	What did we do? How awesome our project is? How can we tell others in 3 min that our project is awesome? What did we learn?	Presenting, Utilizing visual Aids	Ticket 4 Submission (May 06/8:00 am) Poster Evaluation Form
	Total		134			



		1	About Instructor	Mansoor Abdulhak
1	Instructor	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. 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. Spring24-CS3032-GroupA-123456789) before the subject in your email. Without this information, your message may not be noticed or entertained.
		2	Class Attendance	Attendance (Track 1) 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
				Attendance (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
				Attendance (Track 3) 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	Disruptions of class will not be 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 of Responsibilities and Conduct.
		4	Grade	Your grade will be determined through 1: The assesment 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		
		1	Land Acknowledgement	The University of Oklahoma recognizes the historical connection our university has with its indigenous community.

4	University	2	Academic Integrity	See Academic Integrity Policy
		3	Religious Observance	See Faculty Handbook 3.15.2
		4	Accommodation of Disabilities	To discuss potential accommodations, please contact the ADRC at 730 College Avenue, (ph.) 405.325.3852, or adrc@ou.edu.
		5	Title IX	See Resources and Reporting Requirement
		6	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.
		7	Final Exam Preparation Period	See Faculty Handbook 4.10
		8	Weather Safety Information	See Information
		9	Emergency Protocol	See Procedures.
		10	Severe Weather	<ol style="list-style-type: none"> 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. Weather Safety Information
		11	Armed Subject/Campus Intruder	<ol style="list-style-type: none"> 1. Avoid: If you believe you can get out of the area WITHOUT encountering the armed individual, move quickly towards the nearest building exit, move away from the building, and call 911. 2. Deny: If you cannot flee, move to an area that can be locked or barricaded, turn off lights, silence devices, spread out, and formulate a plan of attack if the shooter enters the room. 3. Defend: As a last resort fight to defend yourself. visit OU's Active Shooter page
		12	Fire Alarm/General Emergency	<ol style="list-style-type: none"> 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
		13	Mental Health Support Services	<p>If you are experiencing any mental health issues that are impacting your academic performance, counseling is available at the University Counseling Center (UCC). The Center is located on the second floor of the Goddard Health Center, at 620 Elm Rm. 201, Norman, OK 73019. To schedule an appointment call (405) 325-2911. For more information, please visit University Counseling Center</p> University Counseling Center