CSCE 3444.400 _ Software Engineering

Course Information

Course Format: Asynchronous, Fully Online

Instructor: Bahareh M. Dorri

Office Hours: 10:00 am - 12:00 pm Tuesdays
(by appointment only; request via email 24 hours in advance)

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TA: Guna Sindhuja Siripurapu
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TA: Akhil Gupta Chigullapally
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Course Documents: All lecture notes, assignments, and announcements will be available on Canvas

Class Textbook:

- Software Engineering: A Practitioner's Approach 9th Edition by Roger Pressman and Bruce Maxim
- Software Engineering Edition 10, by Ian Sommerville, Pearson

Course Description

This course introduces students to the principles and practices of software engineering, with an emphasis on the complete software development lifecycle. Students will learn how to gather and document requirements, design software systems using modern tools such as UML, apply project management techniques, implement and test software, and create user and system documentation.
The course integrates collaborative group work on a large-scale project,

giving students hands-on experience with agile methodologies, accessibility considerations, and real-world software engineering challenges.

Why This Course Matters

Software engineering is more than just writing code. It's about building reliable, maintainable, and user-centered systems that solve real problems. This course will give you the skills and teamwork experience needed to design, develop, and deliver software in a professional setting.

Course Outcomes:

1. Use UML for design, such as use cases and class diagrams.
2. Conduct software testing, such as validation, integration, and unit testing.
3. Conduct usability testing, such as heuristic evaluations.
4. Participate in peer reviews such as code inspections.
5. Communicate software product and process results in oral and written form.

Prerequisite

CSCE 2110 with a grade of C or better.

Grading Criteria

Team Project & Presentation	**50%**
Group Assignments	**25%**
Individual Assignments	**15%**
Peer Evaluations & Instructor Performance Reviews	**10%**

Grade Assignments are made based on the following:

A = 90-100%

B = 80-89%

C = 70-79%

D = 60-69%

F = less than 60%

Course Schedule: (subject to change; updates will be posted on Canvas)

Week	Class Topic	Expected Team Work	Deliverables
1	Course introduction, syllabus review, team formation, project brainstorming	Form teams, exchange contact info, brainstorm 2 project ideas	**Team formation**
2	Software Product	Choose project, research similar apps, pick tech stack (languages/frameworks), watch tutorials, create Trello Kanban	**Project proposals**
3	Prototyping, GitHub Setup	Create UI mockups, start basic frontend, set up GitHub repo, create README	**Project Prototype, Team Setup**
4	Requirements gathering techniques, SRS writing		**SRS document GitHub repo**
5	Introduction to SDLC & UML	Code core features (1 per member), create class diagrams for existing code	**Individual Assignment 1** Status Report #1
6	Design Patterns	Refactor code using patterns, continue feature development	**Software Design**

Week	Class Topic	Expected Team Work	Deliverables
7	Code Quality, Testing basics, Code Review practices	Integrate all features, fix bugs, prepare prototype & presentation	**Test Plan outline** Status Report #2
8	Midterm project progress presentations with working prototype (live demos)	Reflect on presentation feedback, plan improvements for final	**Midterm report**
9	**Spring Break**	-	-
10	Test Plan, Usability testing concepts & planning	Write unit tests, document bugs found	**Complete Test Plan** **Individual Assignment 2**
11	Accessibility in software development	Add alt text, keyboard navigation, color contrast fixes, test with accessibility tools	**Accessibility audit** Status Report #3
12	Software testing methods, Usability and Accessibility testing	Write more unit tests, test each other's features, create test checklist	**Testing coverage report**
13	Heuristic Evaluation Overview	Heuristic Evaluation	**Heuristic Evaluation Report** Status Report #4
14	Software maintenance & evolution	Complete final features, write user guide, clean up code, add comments	**User manual** Feature freeze
15	Final project presentations	Presentations and Final Demo	**Final code & slides**

All submissions must be through Canvas. We do not accept assignments submitted via email.

AI Usage Policy:

AI tools (GitHub Copilot, Claude, ChatGPT) are encouraged as development aids and must be cited using code comments. You must understand and be able to explain all submitted code. Include AI usage in your status reports. AI cannot be used for peer evaluations or reflection writing.

The goal is to become an AI-augmented engineer, not AI-dependent. Uncited AI use or submitting AI-generated code without understanding constitutes academic dishonesty.

Project Guidelines:

THE PROJECT CAN:

- Be done in a language of your choosing (approval required if other than C/C++, C#, Python, Java, JavaScript)
- Be web-based or mobile app (you supply your own hardware)

THE PROJECT MUST:

- Have appropriate scope for 5 team members over the term
- Have a Graphical User Interface (GUI)
- Have some portion that is used by a person (hence needing the UI)
- Have at least one customer/user group you can gather requirements from

THE PROJECT MUST NOT:

- Be trivial (no simple calculators or to-do lists)
- Be static web pages or screens
- Be a game (Serious/educational games are OK with approval)
- Already exist (no cloning existing repositories)
- Harm the safety, security, or privacy of users
- Be primarily used by minors

Communication Expectations:

All course-related announcements will be on Canvas. Please set up your notification settings to
avoid missing any announcements. Please check CLEAR Online Communication Tips at https://clear.unt.edu/online-communication-tips.

- Email is the primary way to contact me or the TAs.
- Expect a reply within 24 hours on weekdays.
- Keep messages short and clear. No need for overly formal AI-generated text.
- For grade questions, contact the TA first; follow up with me if needed.

This course is **fully asynchronous**, meaning there are **no required live meetings** except for
assignment presentations. You can complete the coursework on your own schedule each week,
as long as you meet the posted deadlines.

Here's how the structure works:

- Each module will be released on Canvas.
- You'll find:
  - Weekly Announcements
  - Short lecture videos and narrated slides
  - Required readings and resources
  - Assignments
  - Discussion board prompts (if applicable)

Even though we don't meet live, you're expected to stay active each week.

Late Submission:

- Assignments are due on the posted deadline.
- Late work loses 20% per day, up to 24 hours late.

- After 24 hours, the assignment will not be accepted and will receive a zero.
- Technical issues (e.g., internet outage, computer crash) are not valid excuses; plan ahead.

Make-up Work Policy:

For most situations there will be no make-up work for any assessment in this course. However, in the event of an unavoidable absence for one of the reasons below, email me as soon as possible so we can work out a solution. The following events are grounds for make-up work: being a participant in a conference in which you are presenting; being in an athletic or other UNT associated event in which you are an active participant; a family emergency; a severe illness; military duty; or in certain cases and with some restrictions a religious event. Additionally, in the case of a missed assignment due to illness, make-up work will only be allowed by the instructor to receive further notification from the Dean of Students. Students are responsible for sending an email to the Dean of Students with a physical copy of a signed doctor's note. See the UNT Attendance Policy for more information.

A student is responsible for requesting an excused absence in writing, providing satisfactory evidence to the **Dean of Students (deanofstudents@unt.edu)** to substantiate excused absence, and the Dean of Students will send the notification to the faculty member assigned to the course for which the student will be absent. When an absence is excused, the faculty member will provide a reasonable time after the absence for the student to complete the assignment.

Project Grade Scaling:

- Group project grades will be scaled based on peer evaluations
- Speak up and volunteer – "my team didn't give me work" is not an excuse
- Every member must participate in coding
- Failure to participate in coding = 0 for project grade
- Contact the instructor or TA early if team issues arise

Academic Dishonesty/Plagiarism:

Students must follow the UNT Policy on Student Academic Integrity (Policy 06.003) and the CSE Department Cheating Policy. Academic dishonesty — including cheating, plagiarism, unauthorized collaboration, or using prohibited materials — will result in a failing grade for the course and a report to the Office of Academic Integrity.

Student Perceptions of Teaching (SPOT)

SPOT is your opportunity to provide feedback on this course and instructor. It will be available near the end of the semester.

Your responses help improve teaching and learning at UNT.

Syllabus Revisions

This syllabus may be modified as the course progresses should the instructor deem it necessary.

Disability Accommodation

The University of North Texas complies with Section 504 of the 1973 Rehabilitation Act and with the Americans with Disabilities Act of 1990. The University of North Texas provides academic adjustments and auxiliary aids to individuals with disabilities, as defined under the law. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring accommodation, please see the instructor and/or contact the Office of Disability Accommodation at 940-565-4323 during the first week of class.