CS 321: Software Engineering

Spring 2025

Contact Information

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Book Time With Me
(But feel free to pop in anytime my door is open!)

Course Overview

A project-based course to cover all phases of the software engineering lifecycle in as realistic as possible distributed team environment.

Learning Objectives

Upon completion of this course, students should have:

- An understanding of all phases of the software engineering lifecycle (requirements, design, implementation, testing, deployment, maintenance).
- An understanding of several lifecycle models including both prescriptive and agile methodologies and knowledge of tradeoffs among the methodologies.
- An ability to document software requirements and design artifacts.
- An ability to analytically evaluate software usability.
- An understanding of fundamental techniques used to lead a software team.
- An ability to apply software engineering techniques to create a minimum viable product.

Prerequisite

Grade of C or better in CS 310 AND ENGH 302

Course Materials

There is no required textbook for the class. I will teach from the Learning Modules on Canvas and provide supplementary reading material there as applicable.

Please also review the following Computer Requirements section of the syllabus.

Computer Requirements	**Hardware**: You will need a laptop computer that you can bring to class. Recommended specifications from the CS Department can be found here. **Software**: **You will need access to the CEC Git Lab as well as an appropriate git client for your laptop. To access the CEC GitLab server, you will need to use the GMU VPN if off campus. You will also need to install appropriate compilers and development environments for your term project.** Note: If you are using an employer-provided computer or corporate office for class attendance, please verify with your systems administrators that you will be able to install the necessary applications and that system or corporate firewalls do not block access to any sites or media types.

Grading Policy

Quizzes	10%
Group Term Project	30%
Writing Assignments	30%
Presentation and Discussion	10%
Exam	20%

Quizzes	**We will have short quizzes at the start of most class periods. These will be based on learning modules so you should come to class having reviewed the module for that week. I will then review the highlights of the learning module and cover additional related material as needed.**
Team Project	CS 321 will have a software engineering project that requires students to participate in working teams where students organize, manage, and practice the software engineering lifecycle. The team project will cover software requirements, architecture, design, coding, and testing. **Note**: For group project assignments, you are **NOT ALLOWED** to include "guest names." Every person listed as a collaborator must contribute. If someone is listed as a collaborator but did not contribute, all will be given a zero on the assignment and reported to the university honor committee. Bottom line – if you have a team member that is ghosting you, it's far better to let them take the zero for an assignment than for the entire group to be penalized. I will also provide a rubric for the team assignments to assess whether a team member can claim credit for that assignment.
Writing Assignments	CS 321 includes Writing Intensive (WI) activities that, together with those of CS 306, meet the GMU WI Requirements in the BS CS Program (http://wac.gmu.edu). GMU mandates that the writing assignments comprise 30% of your grade for the WI courses.
Presentation & Discussion	For this activity, you will work in pairs. You can pick your partner. This will be a 15-minute presentation. You will discuss with your partner and select a short paper, article, white paper etc. and present it in class. You should provide details of the material to be presented ahead of time. Everyone in class should read the material to be presented. Both you and your partner will present the material that you have chosen. It can be a PowerPoint/Google presentation or a talk followed by a discussion session. You and your partner will facilitate the discussion.
Exam	Practical test of your knowledge with respect to software engineering. I strive for less memorization and more application for my exams. More details to follow.

Email policy:

You must use your Mason email account for all email correspondence having anything to do with your work at Mason. Federal laws protecting your privacy rights require that we only communicate student information directly to students –and use of the university email system is our only way to validate your identity. You may forward your campus email elsewhere, but we can respond only to a Mason email account.

Honor Code

You are expected to abide by the University's honor code and the CS Department's Honor Code and Academic Integrity Policies during the semester. This policy is rigorously enforced. All class-related assignments are considered individual efforts unless explicitly expressed otherwise (in writing). Review the university honor code and present any questions regarding the policies to the instructor. Cheating on any assignment will be prosecuted and result in a notification of the Honor Committee as outlined in the GMU Honor Code. Cases of cheating will always result in far worse than simply a zero on the assignment and typically results in failing the overall course.

Special note from the instructor: Just to be clear, for my CS321 class, it is *perfectly acceptable* to use open source software or libraries or even use code that you find on sites such as Stack Exchange, etc. This is what you would be doing in the "real world" and I do not consider this cheating at all. ***However***, for any 3rd party software you use, you **must cite** that software in your source code comments and you must appropriately test that this software will work under the desired use cases of your project.

Disability Accommodations

Students with a learning disability or other condition (documented with GMU Office of Disability Services) that may impact academic performance should speak with me ASAP to discuss accommodations.

Safe Return to Campus

All students taking courses with a face-to-face component are required to follow the university's public health and safety precautions and procedures outlined on the university Safe Return to Campus webpage.

Students are required to follow Mason's current policy about facemask-wearing. Students who prefer to wear masks either temporarily or consistently will always be welcome in the classroom.

Campus Closure or Emergency Class Cancellation / Adjustment Policy

If the campus closes, or if a class meeting needs to be canceled or adjusted due to weather or other concern, students should check Canvas [or other instruction as appropriate] for updates on how to continue learning and for information about any changes to events or assignments.