CS 321: Software Engineering

Contact Information

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Office Hours:
before / after class – schedule as needed

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 Blackboard and provide supplementary reading material there as applicable.

Project groups may need to purchase equipment (e.g. a Raspberry Pi and sensors), depending on their assigned subsystem. Group costs should be kept to under $100 (or roughly the cost of a textbook).

Slack will be used for class / project communication.

Grading Policy

Class Participation	10%
Quizzes	10%
Team Project	40%
Writing Assignments	20%
Design Review	10%
Final Review	10%

Class Participation	This section of CS321 will primary use the "flipped" classroom approach with most of the learning materials being covered on Blackboard outside of class. Class time, then, will be primarily focused on project work and at least one day per week will be dedicated for this. Therefore, it is critical for each team member to be present and working together on the project. To earn full credit, you MUST participate in class with the group project work and MUST contribute to the bi-weekly sprint reflections for your group.
Quizzes	Each learning module will have an associated quiz to be completed online. Quizzes must be completed by the designated deadline – no late quizzes will be accepted. In-class pop quizzes may also be assigned at any time. There will be no make-ups for a pop quiz unless you made prior arrangements to miss that class period. Late arrivals for a pop quiz will not be able to take the quiz.
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. **Your final grade for this component will include peer evaluation grades provided by your teammates. (See "Final Assignment" in Blackboard.)**
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). This means you will write 1750 graded words (or about 7 standard pages). For this course, you will individually pick a topic from the learning modules in the first and second half of the semester and write a paper expanding on that topic to also include further literature review and citations. Additionally, as a group, you will write reflections on each 2-week sprint of the team project.

Design / Final Review	As a group, you will prepare a design review for your subsystem at the midterm and a project review at the final. This review will consist of a written summary along with slides and any applicable demonstration. To receive full marks, each group member MUST participate in the presentation.

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 instructor. Cheating on any assignment will be prosecuted and result in a notification of the Honor Committee as outlined in the GMU Honor Code.

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.