CS3300 Syllabus

Course Information

Course Prefix and Number: CS3300 A/GR

Course Name: Introduction to Software Engineering

Instructor: Roy, Nimisha

Course Description

The course covers fundamental software engineering processes, including requirements gathering, prototyping, design, and testing, while emphasizing hands-on experimentation with artificial intelligence (AI) tools throughout the software development lifecycle to enhance efficiency and innovation. Students will participate in two main projects that simulate real-world software development scenarios. These projects will not only apply conventional software engineering techniques but will also enable students to explore, evaluate, and contribute to research on the transformative potential of AI tools in automating and optimizing development tasks. This approach allows students to engage deeply with the material, applying their learning to practical challenges and participating in the creation of knowledge through their project work.

Some pre-requisites for success in this course include:

- Proficiency in Java programming
- Proficiency in using GIT - clone, add, commit, push, pull, branches, merge conflict, pull requests
- Basic client-side programming (JS, CSS, HTML)
- Basic introductory experience of using LLMs like Chat GPT
- Teamworking skills (being able to collaborate effectively with your teammates)
- Basic knowledge of UML diagrams and design patterns
- Cloud computing knowledge is a plus

Course Learning Outcomes

By the end of this course, students will be able to:

- Design, implement, and deliver **two substantial software systems** in a team environment
- Apply the **software development lifecycle (SDLC)** from requirements to deployment
- Design software using **architecture patterns, UML, and design patterns**
- Use modern tools and workflows, including **Git, code reviews, APIs, and cloud platforms**
- Develop and evaluate **software testing strategies** (black-box, white-box, TDD)
- Use and critically evaluate **AI tools** to support software development tasks
- Collaborate effectively and communicate work through **demos, reports, and presentations**

Grading Policy:

Letter grades are assigned according to the following convention:

- A = [90, 100) points (or more if bonus points are awarded)
- B = [80, 90) points
- C = [70, 80) points
- D = [60, 70) points
- F = [0, 60) points

Point values (fractional or otherwise) are NOT rounded to the next grade level. For example, 89.99 will be reported as "B." 90.00 (or higher) will be reported as "A." There are no exceptions.

Weights

Scores are calculated using the following assignment category percentages:

Assignments	20%
Project 1	35%
Project 2	30%
Team Collaboration	6%
Quizzes/Lecture Activities	6%
Surveys	3%

Extra Credit- Quizizz	1.5%
Extra Credit- Survey submissions	0.4%
Extra Credit in Project 1 and Project 2	TBD

Course Policies

Attendance and Class Participation

Participation in class is highly encouraged and may be considered in borderline classes (e.g., Ed postings, discussion in class, etc.). Engagement with the course is required to be successful in the course. Any in-class quizzes or individual assignments will be excused for absences that are verified by the Dean of Students Office (DoS). If a student misses class and feels it is excusable, they may submit their documentation to the Dean of Students office here: Public CARE Report | Georgia Tech Student Conduct Management System Please do not send me your documentation directly though you may notify me of your absence; I will not excuse any submission until I receive notification from the DoS Office. Participation in the projects is mandatory. Before the end of the course, student grades will be affected by peer evaluations from CATME.

Academic Integrity

Georgia Tech aims to cultivate a community based on trust, academic integrity, and honor. Students are expected to act according to the highest ethical standards. Review Georgia Tech's Honor Code and the student Code of Conduct.

Any student suspected of cheating or plagiarism on a quiz, exam, or assignment will be reported to the Office of Student Integrity, who will investigate the incident and identify the appropriate penalty for violations.

CATME Peer Evaluations & Team Policies

CATME peer evaluations contribute to your individual grade; students are expected to contribute equitably to their team projects.

Team Accountability & Conflict Resolution

Teams are expected to collaborate professionally and address issues early.

- Concerns about team contribution should be raised during mentor check-ins or anytime during office hours.
- If issues persist, teams may request a group change before the end of Sprint 2

- Requests must include documented evidence (e.g., CATME results, reflections, Git activity)
- Final decisions on grade adjustments or team changes are made by the instructor

Artificial Intelligence Policy

We recognize that generative AI tools (e.g., ChatGPT, Copilot) can support learning when used responsibly. In this course, you may use AI tools to brainstorm, explore ideas, or clarify concepts—similar to how you might collaborate with peers. However, All Submitted Work Must Reflect Your Own Understanding and Original Expression. You are responsible for ensuring that all submitted work is your own. Submitting content generated by AI tools will be treated as academic misconduct. If you're unsure whether your use of AI is appropriate, please ask.

Guidelines for Ethical AI Use:

- Use AI for Learning, Not for Writing Your Submission - Do not copy and paste AI-generated text into your assignment. You may consult AI tools to help you understand a topic or generate ideas. Instead, reflect on what you've learned and write your response in your own words.
- Separate Your Writing from AI Interactions - Do NOT work on your assignment and use an AI tool simultaneously. Treat your AI interaction as a preparatory step—like reading a source or discussing with a peer. After using AI, close the tool and write your assignment independently reflecting your revised knowledge.
- Avoid AI Tools That Auto-Generate Code and Content in Your Workspace
- Do not use AI features embedded in writing/coding platforms that insert content directly into your document/IDE (e.g. GitHub Copilot, ChatGPT, Tabnine Cursor, Replit AI, Sourcery, Jedi). This is equivalent to allowing someone else to write part of your assignment.

These guidelines are designed to help you stay within academic integrity boundaries. Deviating from them does not automatically mean misconduct, but it increases the risk.

Accommodations for Students with Disabilities

If you are a student with learning needs that require special accommodation, as soon as possible to make an appointment to discuss your special needs and to obtain an accommodations letter. I will respond to you via email to discuss your accommodation.

Student-Faculty Expectations Agreement

At Georgia Tech, we believe that it is important to strive for an atmosphere of mutual respect, acknowledgement, and responsibility between faculty members and the student body. This summarizes my expectations for you and what you can expect from me. In the end, simple respect for knowledge, hard work, and cordial interactions will help build the environment we seek. Therefore, I encourage you to remain committed to the ideals of Georgia Tech while in this class. Expectations of Advisors and Advisees