Recent Announcements



Problem Scenario Description for Exam #1

(https://gatech.instructure.com/courses/458304/discussion_topics/2258387)

This is the problem scenario description that you will use for the various exams during this session of the course. CS6310 Exam Problem Description part1 Fall2025.pdf You should familiarize yourself with these artifacts before the exams begin. In fact, we suggest that you review the description and develop some of these artifacts on your own. For example, working through a Design Class Model, Object Model, and/or Sequence Diagram is a good way for you to identify key issues and alternative approaches. Please note that this scenario is for the exams - it is (deliberately) NOT the same scenario that is used for the course project!!

← Reply
 — Reply
 —

(https://gatech.instructure.com/courses/458304/discussion topics/2258387)

Posted on:

Aug 18, 2025, 8:16 PM

Software Architecture & Design/CS-6310



Introduction:

Welcome to this session of CS6310: Software Architecture & Design, *including Sections O01 and OSZ*! I am Mark Moss, the Instructor of Record for this semester. Professor Spencer Rugaber (currently serving as an Adjunct Senior Research Scientist at Georgia Tech) is the original designer of this course, and he will present much of the course content through the pre-recorded course videos. I will work with our talented team of Teaching Assistants (TAs) to:

- 1. Facilitate discussions, and answer your questions using Ed Discussions and Office Hours (MS Teams); and,
- 2. Evaluate your assignment submissions using Canvas.

Our current TA Team includes Matt Carter and Roger Kerr as our co-Head TAs. Besides welcoming you and introducing the team, I also want to provide some important information about the course. This document includes all of the initial policy and scheduling information for this session of the course. If any of this information changes during the course, then we will update the document as soon as reasonably possible.

You must also review Ed Discussions and the weekly Office Hour discussions on a regular basis for any policy, scheduling and/or assignment updates.

Instructor:

Dr. Mark Moss, Office: Georgia Tech, College of Computing 217

Transition from Udacity to Canvas:

All of the materials that were previously available on Udacity (e.g., videos, quizzes and other resources) have been migrated here to our Canvas site. The materials have been configured to mimic the behavior and "look and feel" of the original site as much as reasonably possible. There are no requirements to access Udacity during this course.

Getting Started

(https://gatech.instructure.com/courses/458304/pages/getting-started)

Video Viewing & Reading Schedule:

• (https://gatech.instructure.com/courses/458304/pages/spring-and-fall-video-slash-reading-schedule)

cs6310 new Living Schedule Fall 2025.xlsx

(https://gatech.instructure.com/courses/458304/files/64565483?wrap=1)



(https://gatech.instructure.com/courses/458304/files/64565483/download?download_frd=1)

- cs6310 new Living Schedule Fall 2025.pdf
 (https://gatech.instructure.com/courses/458304/files/64565519?wrap=1)
- Spring & Fall Video / Reading Schedule
 (https://gatech.instructure.com/courses/458304/pages/spring-and-fall-video-slash-reading-schedule)

You should also view the Course Summary below to gain a better understanding of how the Assignments and Quizzes impact the flow of the course.

Assignment Quiz Guide:

Assignment Quiz Guide

(https://gatech.instructure.com/courses/458304/pages/assignment-quiz-guide) (https://gatech.instructure.com/courses/458304/pages/course-schedule)

Docker & Github Setup:

Docker & Github Setup

(https://gatech.instructure.com/courses/458304/pages/docker-and-github-setup)

Exams with Honorlock:

<u>Honorlock Practice Exam (TESTING ONLY - No Grade Impact)</u> (https://gatech.instructure.com/courses/458304/quizzes/702959)

There are two (2) exams in this course that use Honorlock as the proctoring system. *Please use this* practice exam to test your system and ensure that it's configured properly before attempting to take the exams.

Learning Goals and Outcomes:

This course teaches the principles and concepts involved in the analysis and design of large software systems. After completing this course, a student should have obtained the skills and knowledge necessary to accomplish the following:

- Express the analysis and design of an application using UML
- Specify and evaluate software architectures
- Select and use appropriate architectural styles
- Understand and apply object-oriented design techniques
- Select and use appropriate software design patterns
- Understand and perform a design review
- [Time Permitting] Specify functional semantics of an application using OCL

Prerequisites:

An undergraduate software engineering course or industrial software development experience is required. Although there are no formal prerequisites in terms of specific Georgia Tech courses (e.g. OMS CS6300: Software Development Process), you are expected to have a solid proficiency in writing computer programs. This course will require you to develop and implement programs in Java using sequence, selection and iteration-based control structures; and, implement methods to read from and write to external files. Also, you

will be required to express your designs using the Unified Modeling Language (UML). Though the lessons include a brief review of UML, you should have at least a basic understanding of UML syntax and principles, or some similarly well-defined design language.

Scoring/Grading:

The weights for the various assignments and quizzes are summarized below and also shown on the Canvas Assignments page.

- [40%] Course Project
 - o [15%] (A1) Analysis & Design Aspects (Team-Based)
 - [_%] (A2/E0) Design Peer Reviews/Exam Prep (Individual & Optional but Highly Recommended)
 [please see Note 1]
 - [25%] (A3) Design & Implementation Aspects (*Team-Based*)
- [35%] Exams and Quizzes (Individual)
 - [20%] Exams (Average of Mandatory Exam E1 and Optional Exam E2) [please see Note 2]
 - [10%] Assignment Quizzes (i.e., #1/Honor Code through #7/Software Architecture Foundations)
 - [5%] Practice Quizzes (i.e., P1L1/Introduction Practice Quiz through P4L6/Design Reviews Practice Quiz)
- [25%] Course Participation (Individual)
 - [5%] Team Participation Feedback (Provide peer feedback via CATME)
 - [15%] Team Participation Results (Based on the collected CATME feedback)
 - [5%] Ed Discussion Participation (Monitor frequently & post as appropriate)

[Note 1] Assignment A2/E0 is an individual peer review of the submissions from A1. You will receive multiple submissions from different teams, and then you'll be required to rank them from best to worst, and provide statements that compare the diagrams and support your proposed rank/ordering. This assignment is optional, but highly recommended: the process that you use for the peer review is very similar to the process you'll use for Exam E1 (where the exam uses a different problem scenario), so this assignment will serve as good practice for the exam. And the A2/E0 assignment will be scored from 0 - 20 points, and those points will be added onto your E1 score, with the E1 score limited to maximum of 100 points total.

[Note 2] Exam E1 is mandatory for everyone, while Exam E2 is optional. If you are are content with your E1 score, then you don't have to take Exam E2, and your overall Exam score will simply be your E1 score. If you do take E2, and score higher than E1, then your overall Exam score will be the arithmetic average of E1 and E2. Finally, if you take E2 and that score is lower than E1, then we will most likely ignore your E2 score.

The grades will be calculated based on a percentage scale from 0.00% through 100.00%:

- A: 90% 100%
- B: 80% 89.99%
- C: 70% 79.99%
- D: 60% 69.99%
- F: 0% 59.99%

Standard letter grade cutoffs apply. Final scores will NOT be "automatically rounded" to the next higher grade level. We normally do not offer other extra or bonus point assignments, so you should plan to do your best on the assignments as currently listed in the schedule.

Institute & Academic Honor Code:

Students are expected to abide by the Georgia Tech Honor Code and academic policies as specified in the Georgia Tech Catalog.

- Honest and ethical behavior is expected at all times All incidents of suspected dishonesty will be reported to and handled by the Office of Student Affairs
- You are to complete all assignments yourself, unless the assignment instructions explicitly state otherwise.
 You should feel free to discuss the assignments with your classmates at a conceptual level, but you should not copy any specific solution (either complete or partial lines of text or code) from your classmates
- Any use of AI / ML tools like ChatGPT, Copilot or otherwise to generate assignment solutions (or parts thereof) is strictly prohibited, even if the student edits or learns from it.
- If you do copy specific lines or text and/or code from another source classmate, text, website, etc. then you must clearly document the beginning and end of the copied portion, and cite the details of the source (e.g. name, address/URL, date, etc.)
- If you post your assignment work on any publicly-accessible websites (including but not limited to GitHub), and your materials are subsequently copied and used by other students, then you will likely be held responsible for fostering unwarranted collaboration
- You are welcome and encouraged to form informal study groups at any time, but please do not form formal project teams for the group assignments until directed
- If you are in an informal study group, discussing basic concepts and ideas contained in the course
 materials and lectures is generally O.K. and encouraged; however, you are not allowed to develop specific
 answers and/or program code with other students or people outside of the class
- Do not collaborate beyond what is allowed by the Georgia Tech Academic Honor Code
- Students should complete the GT OMS Orientation before the first day of class
- Readings should be completed before the lesson for which they are listed

You must check Canvas & Ed Discussions frequently (recommend every two days at a minimum) & watch & take notes from the weekly office hours to remain aware of updates to assignments, policies and other course announcements & communication. You do not have to attend the Office Hours if there is a scheduling or timing conflict, but you do need to watch them & take notes from them. This is mandatory this class. Failure to review the information present in any of these sources will not be considered as a basis for a regrade.

Submissions:

All assignment and project policies, due dates, and submission information will be listed on Canvas.

 Most assignment deadlines are set for 11:59 PM (2359 Hours) Anywhere-On-Earth (AOE), which generally corresponds to the following day at 8:00 AM Eastern Standard Time (EST)

- We recommend that you configure your time zones in Canvas appropriately, so that you can see all
 deadlines in your own local time zone. Being aware of the time zone differences is your responsibility late
 submissions will not be excused because of time zone misunderstandings/configuration issues
- Submissions must be made via Canvas; and, if Canvas is down, then you must alert us via e-mail (before the deadline/due date), and submit your files via e-mail or some alternate method
- It is your responsibility as the student to check (and double-check) your submission to ensure that all files have been uploaded and received by Canvas. Please feel free to take a screenshot showing the date of submission and the list of files uploaded for your records just in case. Also, almost all of the assignments allow for multiple uploads before the Due Date, so you can also upload the relevant files again if you have any doubts about the validity of the original upload attempt. (See the Late Submission Policies about re-uploading files after the Due Date).
- All submitted (non-source file) documents must conform to the CS6310 Writing Guidelines
- We normally publish assignments no earlier than the start date as listed on the schedule
- Submissions up to 24 hours late will result in your final score being limited to a maximum of 90% of the total possible score
- Submissions up to 48 hours late will result in your final score being limited to a maximum of 80% of the total possible score
- Submissions beyond 48 hours will not be accepted
- We will not support any other late submissions and/or extension requests. In a class of this size, supporting numerous individual extension requests for assignments based on personal scheduling conflicts (e.g. business trips, personal holidays, etc.) can cause tremendous administrative difficulties, and create conflicts of fairness for all students
- For team-based assignments, it is essential that you let your teammates know as early as possible about any availability and/or participation problems

These policies apply to all assignments, exams, projects, quizzes, or similar material with a due date. We will do our very best to avoid changing any assignment configurations or policies mid-semester that might have an otherwise negative impact on students without first notifying everyone via Canvas, Ed Discussions, and/or Office Hours ahead of time.

If you observe any assignment or quiz configurations that you feel might be in error, or that don't seem to be consistent with other previously stated policies, you must pause and reach out to us immediately to let us know your concerns upon realizing there is an issue, and before making any official submissions. This is very similar to the "See Something, Say Something" philosophy.

- If you alert us to a configuration error in a timely manner and with a reasonable time before the Due Date, then we will determine how to adjust the configurations while minimizing adverse impacts to you and other similarly affected students.
- By the same token, if you submit your assignment without raising the issue in an timely manner, then you will severely limit the changes we can make to support you. Identifying an issue like this very close to the Due Date, and/or after you've completed your final submission will NOT necessarily earn any more attempts, tries or submissions.

If truly exceptional and/or catastrophic circumstances arise, please feel free to contact The Dean of Students with the details of health emergencies, family emergencies, personal disabilities, or other significant events.

They are much better equipped to verify these situations than we are in our individual courses. Also please consult the Georgia Tech policies on Incompletes, Withdrawals, etc. as needed.

Making Regrade Requests and Asking Questions:

If you have any questions concerning a grade that you received in this course, use Ed Discussions to contact the Teaching Assistant who evaluated your submission. You should Make sure this is private and to all instructors & @ the specific instructor in the body of your message.

- You have one week after a given grade has been released to submit a regrade request contest; after which, we will consider the grade final
- Regrade requests are comprehensive: if the regrading reveals deductions or other issues that the TA had initially missed, then the regrading might result in a lower grade. Be careful about "cherry picking" issues for regrading requests, and take time to review your entire assignment before making a request

All revised grades get updated in "batch mode" after the grade contest period has been completed, and we will upload grade changes as quickly as reasonably possible.

- Use Ed Discussions, rather than email, for all class-related communications
- When sending questions (including regrade requests) via Ed Discussions, please include the Instructors
 group which will include all of the TAs this helps us balance the workload and respond as quickly as
 possible
- Ask questions publicly (visible to the entire class) whenever possible, rather than privately to the Instructors, since that maximizes your chances to get a prompt reply
- Ask questions privately (visible only to the Instructors) whenever your question includes material that might provide an answer to a specific assignment
- Ed Discussions includes a simple and effective keyword search feature, and you should search for answers to your question before posting duplicate questions - you might find that your question has already been answered

Check updated, unresolved, and unread posts on a regular basis - you are responsible for maintaining awareness of changes and clarifications, especially to assignment requirements

Class Participation:

Class participation will be determined by a number of factors:

- Completion of the Canvas Practice Quizzes
- Completion of the Canvas Video Lessons online
- Contributions on Ed Discussions, especially providing solid and well-thought out responses to fellow student's questions
- Actively participating and providing substantial contributions to you team during the group phases
- Other "above-and-beyond" initiatives that you take to improve the learning atmosphere for the course as judged by the Instructor(s) and TAs

You are not required to get the correct answer on the first try for the Canvas Practice Quizzes, and only your last submission will be checked. If you do not get the correct answer after several attempts, try watching the solution video, and then come back to the quiz. (https://gatech.instructure.com/courses/458304/pages/cs6310-course-syllabus)

Course Summary:

Date	Details	Due
Mon Aug 25, 2025	CS-6310 Weekly Office Hours (https://gatech.instructure.com/calendar? event_id=4804139&include_contexts=course_458304)	7pm to 8pm
Mon Sep 1, 2025	Quiz #1: Honor Code, Plagiarism and Collaboration Awareness (https://gatech.instructure.com/courses/458304/assignments/2164796)	due by 8am
	CS-6310 Weekly Office Hours (https://gatech.instructure.com/calendar? event_id=4804141&include_contexts=course_458304)	7pm to 8pm
Mon Sep 8, 2025	CS-6310 Weekly Office Hours (https://gatech.instructure.com/calendar? event_id=4804143&include_contexts=course_458304)	7pm to 8pm
Mon Sep 15, 2025	CS-6310 Weekly Office Hours (https://gatech.instructure.com/calendar? event_id=4804145&include_contexts=course_458304)	7pm to 8pm
Mon Sep 22, 2025	Assignment #1: Project Analysis & Design (https://gatech.instructure.com/courses/458304/assignments/2164836)	due by 8am
	CS-6310 Weekly Office Hours (https://gatech.instructure.com/calendar? event_id=4804147&include_contexts=course_458304)	7pm to 8pm
Mon Sep 29, 2025	CS-6310 Weekly Office Hours (https://gatech.instructure.com/calendar? event_id=4804149&include_contexts=course_458304)	7pm to 8pm
Thu Oct 2, 2025	Self- & Team- Feedback for Design Aspects (Assignment #1) (https://gatech.instructure.com/courses/458304/assignments/2164906)	due by 8am

Date	Details	Due
Mon Oct 6, 2025	Assignment #2/Exam #0: Design Peer Review/Mini-Exam Prep (https://gatech.instructure.com/courses/458304/assignments/2164838)	due by 8am
	CS-6310 Weekly Office Hours (https://gatech.instructure.com/calendar? event_id=4804151&include_contexts=course_458304)	7pm to 8pm
Mon Oct 13, 2025	Exam #1: Evaluate Design Class <u>Diagrams</u> (https://gatech.instructure.com/courses/458304/assignments/2164794)	due by 8am
	Quiz #2: SWEBOK Software Design (https://gatech.instructure.com/courses/458304/assignments/2164792)	due by 8am
	Quiz #3: Unified Modeling Language (UML) (https://gatech.instructure.com/courses/458304/assignments/2164786)	due by 8am
		due by 8am
	CS-6310 Weekly Office Hours (https://gatech.instructure.com/calendar? event_id=4804153&include_contexts=course_458304)	7pm to 8pm
Mon Oct 20, 2025	CS-6310 Weekly Office Hours (https://gatech.instructure.com/calendar? event_id=4804155&include_contexts=course_458304)	7pm to 8pm
Mon Oct 27, 2025	CS-6310 Weekly Office Hours (https://gatech.instructure.com/calendar? event_id=4804157&include_contexts=course_458304)	7pm to 8pm
Mon Nov 3, 2025	CS-6310 Weekly Office Hours (https://gatech.instructure.com/calendar? event_id=4804159&include_contexts=course_458304)	7pm to 8pm
Mon Nov 10, 2025	CS-6310 Weekly Office Hours (https://gatech.instructure.com/calendar? event_id=4804161&include_contexts=course_458304)	7pm to 8pm
Mon Nov 17, 2025		due by 8am

Date Details Due (https://gatech.instructure.com/courses/458304/assignments/2164784)

CS-6310 Weekly Office Hours

(https://gatech.instructure.com/calendar? event id=4804163&include contexts=course 458304) 7pm to 8pm

Mon Nov 24, 2025

Monitoring, Reading &

Submitting Posts (Based on Ed

Discussion Statistics)

(https://gatech.instructure.com/courses/458304/assignments/2164844)

P1L1 Introduction Practice Quiz

(https://gatech.instructure.com/courses/458304/assignments/2164846)

due by 8am

due by 8am

P1L2 Text Browser Exercise

(Analysis) Practice Quiz

(https://gatech.instructure.com/courses/458304/assignments/2164848)

due by 8am

P1L3 Design Concepts Practice

Quiz due by 8am

(https://gatech.instructure.com/courses/458304/assignments/2164850)

P2L1 Review of UML Practice

Quiz due by 8am

(https://gatech.instructure.com/courses/458304/assignments/2164852)

P2L10 Clock Radio Exercise

Practice Quiz due by 8am

(https://gatech.instructure.com/courses/458304/assignments/2164854)

P2L2 Object Oriented Analysis

Exercise Practice Quiz

(https://gatech.instructure.com/courses/458304/assignments/2164856)

due by 8am

P2L3 UML Class Models Practice

Quiz due by 8am

(https://gatech.instructure.com/courses/458304/assignments/2164858)

P2L4 Design Studies Practice

Quiz due by 8am

(https://gatech.instructure.com/courses/458304/assignments/2164860)

P2L5 Library Exercise (UML)

Practice Quiz due by 8am

(https://gatech.instructure.com/courses/458304/assignments/2164862)

Due Date

Details P2L6 Formal Specification **Exercise Practice Quiz** due by 8am (https://gatech.instructure.com/courses/458304/assignments/2164864) P2L7 OCL Practice Quiz due by 8am (https://gatech.instructure.com/courses/458304/assignments/2164866) P2L8 Library Exercise (OCL) **Practice Quiz** due by 8am (https://gatech.instructure.com/courses/458304/assignments/2164868) P2L9 Behavior Modeling Practice Quiz due by 8am (https://gatech.instructure.com/courses/458304/assignments/2164870) P3L10 Guest Interview: **LayerBlox Practice Quiz** due by 8am (https://gatech.instructure.com/courses/458304/assignments/2164872) **P3L1: KWIC Exercise Practice** Quiz due by 8am (https://gatech.instructure.com/courses/458304/assignments/2164874) P3L2 Overview of Architectural **Styles Practice Quiz** due by 8am (https://gatech.instructure.com/courses/458304/assignments/2164876) P3L3 Architectural Views **Practice Quiz** due by 8am (https://gatech.instructure.com/courses/458304/assignments/2164878) P3L4 Text Browser Exercise (Arch) Practice Quiz due by 8am (https://gatech.instructure.com/courses/458304/assignments/2164880) P3L5 Non-Functional Regs & **Arch Styles Practice Quiz** due by 8am (https://gatech.instructure.com/courses/458304/assignments/2164882) P3L6 Connectors Practice Quiz due by 8am (https://gatech.instructure.com/courses/458304/assignments/2164884)

P3L7 Acme Practice Quiz due by 8am (https://gatech.instructure.com/courses/458304/assignments/2164886)

Date **Details** Due

P3L8 Refinement Practice Quiz due by 8am (https://gatech.instructure.com/courses/458304/assignments/2164888) P3L9 Middleware Practice Quiz due by 8am (https://gatech.instructure.com/courses/458304/assignments/2164890) ■ P4L1 Components Practice Quiz due by 8am (https://gatech.instructure.com/courses/458304/assignments/2164892) P4L2 Coffee Maker Exercise **Practice Quiz** due by 8am (https://gatech.instructure.com/courses/458304/assignments/2164894) P4L3 Object Design Practice Quiz due by 8am (https://gatech.instructure.com/courses/458304/assignments/2164896) **P4L4 Design Patterns Practice** Quiz due by 8am (https://gatech.instructure.com/courses/458304/assignments/2164898) P4L5 Design Principles Practice Quiz due by 8am (https://gatech.instructure.com/courses/458304/assignments/2164900) P4L6 Design Reviews Practice Quiz due by 8am (https://gatech.instructure.com/courses/458304/assignments/2164902) Quiz #5: Design Patterns & **Related Issues** due by 8am (https://gatech.instructure.com/courses/458304/assignments/2164788) Quiz #6: Software Design **Principles** due by 8am (https://gatech.instructure.com/courses/458304/assignments/2164790) **Quiz #7: Software Architecture Foundations** due by 8am (https://gatech.instructure.com/courses/458304/assignments/2164782)

CS-6310 Weekly Office Hours

(https://gatech.instructure.com/calendar? event id=4804165&include contexts=course 458304) 7pm to 8pm

Date	Details	Due
Mon Dec 1, 2025	Assignment #3: Iterative Implementation (Functional & Non- Functional Aspects) (https://gatech.instructure.com/courses/458304/assignments/2164840)	due by 8am
	CS-6310 Weekly Office Hours (https://gatech.instructure.com/calendar? event_id=4804167&include_contexts=course_458304)	7pm to 8pm
Thu Dec 4, 2025	Self- & Team- Feedback for Design & Implementation Aspects (Assignment #3) (https://gatech.instructure.com/courses/458304/assignments/2164904)	due by 8am
Mon Dec 15, 2025	Supporting Your Team's Project Efforts (Based on CATME Feedback) (https://gatech.instructure.com/courses/458304/assignments/2164908)	due by 8am
	Exam with Optional Second Score (https://gatech.instructure.com/courses/458304/assignments/2164842)	