CS 2340 Objects and Design (Sections A/B/C/GR)

Fall 2026

CLASS SESSION TIME(S) AND LOCATION(S):

- Section A: Tuesdays and Thursdays – 2:00 PM – 3:15 PM.
  D. M. Smith | Room 115

- Section GR: Tuesdays and Thursdays – 2:00 PM – 3:15 PM.
  D. M. Smith | Room 115

- Section B: Tuesdays and Thursdays – 3:30 PM – 4:45 PM.
  D. M. Smith | Room 115

- Section C: Tuesdays and Thursdays -- 5:00 PM – 6:15 PM.
  D. M. Smith | Room 115

LEADING INSTRUCTOR: Dr. Pedro Guillermo Feijóo-García
(PS I am "Dr. Feijoo" or "Dr. Feijoo Garcia," but not "Dr. Garcia" - Feijoo is pronounced as Fay-Ho)

- Office location: CCB 257.
- Email address: pfeijoogarcia@gatech.edu (**you must use email subjects starting with ***Fall 2026 CS2340-Section<Your Section>:*** **). Emails missing this subject may not receive a response.

HEAD TEACHING ASSISTANT (TA): TBD.

TEACHING ASSISTANTS (TAS): TBD.

INSTRUCTOR'S OFFICE HOURS: TBD.

Please keep in mind that office hours with the instructor are to discuss concepts and issues related to our topics and curricula, or to handle situations that require individual attention. Technical issues must be addressed with TAs and via Ed Discussion.

TAS' OFFICE HOURS: Please coordinate with your client/mentor TA.

COURSE WEBSITE: Available on GT Canvas.

COURSE COMMUNICATIONS: Communication will and must take place exclusively via institutional GT channels: Email, Canvas, Ed Discussion, and Microsoft Teams.

REQUIRED TEXTBOOK

1. Correa, D., & Lim, G. (2024). Django 5 for the impatient: Learn the core concepts of Django to develop Python web applications.
2. Ko, A. J. (2025). Cooperative software development https://faculty.washington.edu/ajko/books/cooperative-software-development (Retrieved July 28, 2025)
3. Ko, A. J. (2025). Design methods. https://faculty.washington.edu/ajko/books/design-methods/ (Retrieved July 28, 2025)
4. Rozanski, N., & Woods, E. (2012). Software systems architecture: Working with stakeholders using viewpoints and perspectives (2nd ed.). Addison-Wesley.
5. Freeman, E., Robson, E., Bates, B., & Sierra, K. (2004). *Head First Design Patterns: A Brain-Friendly Guide*. " O'Reilly Media, Inc."

CLASS OBJECTIVES AND OUTCOMES

- **Catalog entry**: Object-oriented programming methods for dealing with large programs. Focus on quality processes, effective debugging techniques, and testing to ensure a quality product.

- **Informal Objective**: CS2340 takes students who know an object-oriented language and focuses on getting them to use that language in a true object-oriented style. The course achieves this goal by introducing a design methodology and notation, and covering standard principles and practice in design.

- **Core Outcomes:** The primary outcomes are:

    1. Improve existing object-oriented programming skills.

    2. Complete a team-based large-scale programming project as a team.

    3. Use industry tools and practices to implement a large-scale project.

    4. Conduct object-oriented analysis and design and document it with standard techniques (UML).

- **General Outcomes:**

    1. (Movement - Synthesis) Improve existing programming skills by developing much larger and more complex programs than in previous classes.

2. (Accomplishment - Synthesis) Given a requirements list, complete a team-based large-scale programming project that implements those requirements. The project will require at least 3000 lines of code and multiple compilation modules (or equivalent jars) to complete.

3. (Experience - Analysis) Reflect on the difficulties of team membership and the challenges of developing software in a team environment.

4. (Competency - Application) Demonstrate the ability to use a version control system such as Git to manage team code.

5. (Competency - Application) Demonstrate the ability to use standard tools to help with large-scale projects such as commercial quality development environments (e.g., PyCharm, IntelliJ, or Eclipse).

6. (Movement - Synthesis) Improve object-oriented development skills by learning to think about objects when faced with a design problem. This is evidenced by the minimal use of class methods and data and the proper use of abstraction, information hiding, and encapsulation.

7. (Competency - Synthesis) Given a specification of requirements, analyze those requirements using domain models, use cases, and robustness diagrams. Select appropriate candidate objects representing the problem domain.

8. (Competency - Synthesis) Given a set of use cases and domain models representing a customer problem, design an object-oriented solution and document that solution using the Unified Modeling Language (UML).

9. (Competency - Analysis) Apply standard design principles and patterns to a problem specification. Analyze a proposed design to determine its compliance with the standard principles (e.g., open-closed, dependency inversion, Law of Demeter) and make corrections as necessary.

10. (Achievement - Synthesis) Given a problem specification, design, document, and implement an object-oriented solution as a development team.

11. (Competency - Analysis) Demonstrate the ability to derive open and enclosed tests from code or specifications. Document those tests in a basic test plan and implement those tests using an automated test environment such as JUnit.

GRADING AND WEIGHTS

- **Letter grades:**
  Letter grades are assigned according to the following convention:
  - A = [90, 100) points.
  - B = [80, 90) points.
  - C = [70, 80) points.
  - D = [60, 70) points.
  - F = [0, 60) points.

  Keep in mind that 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**.

  - **Regrade Requests:**
    Once graded assignments and/or assessments are returned, there is a five-days window during which you can revise and request grade updates. The regrade period begins when the grades are released on Canvas. Late regrade requests will not be considered. The regrade period (i.e., five-days window) considers weekend days and holidays.

    Weights

First Project (Individual)	10%
Second Project (Team-based): Two sprints (10% each)	20%
Third Project (Team-based) Two sprints (15% each)	30%
Midterm Exam (Team-based)	15%
Final Exam (Team-based)	15%
Assignments (Quizzes, Homework, etc.)	10%

- **Quizzes Formats**
  1. Beginning in the second week of classes, we will have zero up to two quizzes per week covering the content already discussed by that day (it

does include topics previously discussed or introduced in the course).

2. Quizzes can be in person or take-home:
    - Take-home quizzes will feature an interview-based format with an embodied AI agent designed by the instructional team. Questions will be sequential and timed through Qualtrics (a tool provided by Georgia Tech). Questions will be communicated orally, and they may be close-ended or open-ended.

    - In-person quizzes will have different formats: They could be on Canvas, paper-based, or interview-based on Qualtrics (read the description above).

It is the student's responsibility to keep track of their performance in the course. The instructor's grades will be assumed to be accurate unless the student can prove otherwise. Always keep a digital copy of **ALL** work turned in to your instructional team. Any student wishing for a regrade **must submit** a **written** document indicating the specific section the student is requesting a regrade of and a complete explanation (rationale) of why the student considers why they deserve a different grade. Please consider:

- Verbal regrade requests **will not** be accepted.

- The instructional team reserves the right to regrade the entire submission and not just the specific portion in question. Regrade requests mean a potential update to the entire or partial submission. That is, the student's grade can be raised or lowered by the regrade request.

COURSE POLICIES

Attendance Policy

Attendance to class is **mandatory**, and your participation is **required**. Engagement with the course is required to be successful in the course. Lectures will cover material that may not be available on Canvas. It is the student's responsibility to catch up with fellow classmates on notes and topics missed in the case of an absence. Any participation activities will be excused for absences that are verified by the Dean of Students Office (DoS). If a student misses class and feels it is excused, they may submit

their documentation to the Dean of Students Office. All absences must be approved by the Dean of Students Office.

You may notify me (your instructor) about your absence, but please do not send me your documentation directly. I will only excuse the activity when I receive notification from the DoS Office. Excusing any activities may not be done on Canvas until the end of the semester to provide the student with a "worst-case scenario;" the student is encouraged to compute their grade offline outside of Canvas based on the weights outlined in Canvas.

Participation in all team-based assignments is required and expected, and your grades will be affected based on your contribution and response to your assigned tasks in your teams.

Collaboration Policy

Individual Assignments are just that, individual assignments. You can get help from others, but the code you write and deliverables you work on must be your own.

For the team milestones, help between teams is limited to conceptual and general help. **You may not just give other teams your code for their use**. You may show them helpful classes, methods, and packages, however--and show them how to use them. You cannot hand them your code directly.

Using third-party libraries or tools that are not explicitly mentioned requires the permission of the instructional team.

The use of copyrighted or offensive material in your projects is prohibited and will be sanctioned through the Office of Student Integrity (OSI).

Non-Discrimination Policy

The Institute does not discriminate against individuals based on race, color, religion, sex, national origin, age, disability, sexual orientation, gender identity, or veteran status in the administration of admissions policies, educational policies, employment policies, or any other institute-governed programs and activities. The Institute's equal opportunity and non-discrimination policy applies to every member of the Institute community.

The Institute's affirmative action program, Title IX program and related policies are developed in compliance with applicable law. Pursuant to Title IX, the Institute does not discriminate on the basis of sex in its educational programs and activities. As such, the University does not tolerate any kind of gender-based discrimination or harassment, which includes sexual violence, sexual harassment, and gender-based

harassment. Inquiries concerning the Institute's application of or compliance with Title IX may be directed to the Title IX Coordinator. Additionally, inquiries concerning the application of applicable federal laws, statutes, and regulations (such as Title VI, Title IX, and Section 504) may be directed to the U.S. Department of Education's Office of Civil Rights.

All employees, students, and contractors of Georgia Tech are covered by this policy.

Conduct Policy

- It is expected that everyone will follow the Student-Faculty Expectations document and the Student Code of Conduct. The instructional team expects a positive, respectful, and engaged academic environment inside the classroom, outside the classroom, in all electronic communications, on all file submissions, and on any document submitted throughout the duration of the course.

- No inappropriate language is to be used, and any assignment deemed by the instructional team to contain inappropriate or offensive language will get a zero (0). The Office of Student Integrity (OSI) will be involved in any of those cases.

- You are to conduct yourself professionally when attending office hours or lectures. You will be asked to leave, and the Office of Student Integrity will be involved if any inappropriate language, behavior, or tone with any member of the instructional team or peer takes place.

- You are to use professionalism in your work. Violations of this conduct policy will be turned over to the Office of Student Integrity (OSI) for misconduct.

Use of AI Tools Policy – Coding Tasks

We recognize that students will use AI - that they should use AI, as almost everyone in industry is encouraged and/or forced to do so. Our goal for students is to teach how to use AI more effectively than others to empower you to succeed in projects and work. In short, <u>we allow the use of AI in the context of writing code for those assignments and projects in which we explicitly say so</u>. We will have three levels concerning the use of AI for coding assignments and projects:

1. **AI encouraged:** The student can use any and all AI assistance as they desire. Please note that, at this level, the instructional team reserves the right to ask for proctoring and supervising mechanisms to ensure significant learning: i.e., worklogs, videos, prompt transcripts, etc.

2. **AI permitted:** The student can use AI for coding assignments and projects, but must use it under the "Use of AI Tools Policy - Non-code Tasks" guidelines. Additional constraints may apply per assignment or project, considering our instructional team's criteria.

3. **AI limited:** The student must not use any AI to complete the assignment.

AI removes the need for intimate understanding of every programming language you work in and expedites development. The trade-off for this is three primary **risks**:

1. **Stuck when debugging.** Often, students end up in a spot where the code doesn't work, but are unsure why; before when students wrote all of their code, debugging was much more intuitive and smoother because designers possessed a strong understanding of the system being developed because every step of the process was understood. Now with generative AI, students lose this intimate understanding.

2. **Incorrect/inefficient approach.** AI is prone to developing code in an inefficient or incorrect way when it lacks the context of the entire project. E.g. Asking AI to develop a filtering system on a list view page, but not telling the AI that there will be images involved in the future therefore lacking robustness in the solution.

3. **Reduced learning.** Quite simply, the more you rely on AI to write **for** you rather than **with** you, the less you will ultimately learn. AI should be treated as *scaffolding*: something that supports your growth, not something that replaces the work you must do to develop your own skills. In much the same way, when you go to a gym, the more you depend on assistance to reduce the rigor of your training, the less meaningful and effective that workout becomes. Growth only happens when you engage with difficulty rather than avoid it.

> Keep in mind that **integrity** is not about what you do when someone is grading you or watching you. Integrity means doing the right thing even when nobody is watching.

While you undergo your learning path in our course, please consider asking yourself: what, then, is **our role** as developers and how can we interact with AI to complete our assignments with the same or better understanding in less time?

1. **Planning the development approach**. Critically thinking about the optimal approach for development is paramount as it will be among the most valued, irreplaceable skills going into the future.

2. **Ensure understanding of code.** For the larger topics being used in code, do you understand them? E.g. AI writes a solution that relies on distributed caching; do you know what distributed caching is?

Use of AI Tools Policy – Non-Coding Tasks

We treat AI-based assistance the same way we treat collaboration with other people: you are welcome to talk about your ideas and work with other people, both inside and outside the class, and with AI-based assistants.

However, all work you submit must be your own. You should **never include in your assignment anything that was not written directly by you** without proper citation (including quotation marks and in-line citation for direct quotes). Including anything you did not write in your assignment without proper citation will be treated as an **academic misconduct** case and taken to the Office of Student Integrity (OSI).

If you are unsure where the line is between collaborating with AI and copying AI, we recommend the following heuristic: **never hit "Copy"** within your conversation with an AI assistant. You can copy your own work into your own conversation, but do not copy anything from the conversation back into your assignment. Instead, use your interaction with the AI assistant as a learning experience, then let your assignment reflect your improved understanding.

Deviating from these heuristics does not automatically qualify as academic misconduct; however, following these heuristics guarantees your collaboration will not cross the line into misconduct.

Canvas Policy

The Canvas assignment listing will always show the precise Due Date and Available Until Dates (late period) for each assignment or other deliverable. Canvas will prevent any submissions after the Available Until Date:

- No submission will be accepted outside of Canvas.
- No submission will be accepted after the Available Until Date.
- Students must ensure that their submission is delivered on time through Canvas. If any issues are present, students must communicate them before the Deadline and/or Available Until Date expires:
    - Notifications reported after the Deadline expires will immediately lead to a late penalty on the assignment.

    - Notifications reported after the Available Until Date expires will immediately lead to a zero (0) on the assignment.

- Students must ensure that their submission responds to format and naming requirements. Submissions that do not follow format and naming requirements will not be accepted and lead to a grade of **zero (0)** on the assignment.

Makeup Assignments and Exams Policy

The course follows the policy of the School of Computing Instruction (SCI) in regard to makeup exams:

- If a student has an approved excused absence from their professor for an exam, then the professor will replace the exam grade with the final exam score at the end of the semester. This is a ***one-time, single-use exception***.
- If you miss any exam without a valid excuse, then you will receive a zero (0).
- NOTE: If you take the exam, it is assumed you are well enough for your performance to accurately reflect your knowledge, and you will NOT be allowed to replace the exam.
- NOTE: If you miss more than one exam (with a valid excuse), then your professor will handle that situation on a case-by-case basis.

In order to be approved for an extension or an absence, whether due to an emergency or a planned, institute-approved event, you must fill out the Absence/Extension form (available here). This is a three-step process. (Failure to follow all three steps may result in a rejected request.)

Three-step Request Process (You must complete all steps for EACH assignment or exam for which you have a valid excuse. Failure to complete any step may result in a denied request.):

1. First: Fill out the "CS 2340 Fall 2026 Absence Notification and Request to be Excused Form" (available on Canvas). Do so promptly, as soon as you are aware that you will need an extension.
2. Second: Submit **documentation** to the Dean of Students Office (NOT the instructional team). Documentation should be on letterhead with the signature of a physician, supervisor, or any other appropriate official and must encompass the date(s) of any assignment or exam for which you are requesting an exception.
3. Third: Once you have received verification from the dean, upload it at the CS 2340 Fall 2026 Absence Notification and Request Follow-up Form, available

on Canvas. This step may take some time, as the dean may take several days (or weeks) to respond. This is okay.

Timeliness: The absence form and dean's request for verification (steps 1 and 2) should be filled out **before** the due date of the corresponding assignment or exam. If you are for some reason incapable of completing the form before the deadline, instead complete it as soon as you are able. Absence and extension requests submitted significantly later than the due date of the assignment or exam will be denied.

Interview Absences: For any absences due to interviews, you must note this on the CS 2340 Request to be Excused Form prior to the event with the exact day and time. Upload documentation from the employer on letterhead with the exact interview/travel dates in the form.

Georgia Tech Business Absences***:*** If you are absent due to official Georgia Tech business, upload the electronic official documentation the CS 2340 Request to be Excused Form prior to the event with the exact day(s) of the event(s). NOTE: For each date or sequence of consecutive dates, you must submit a separate entry to the form. Example: Sept 5-9, Oct 8-9 requires two forms to be filled out.

Religious Absences: If you will be observing any religious holidays during the semester, then you must submit the CS 2340 Request to be Excused Form in the ***FIRST*** week of the semester. As the date for most religious holidays is known well in advance, religious exemptions MUST be submitted at least two weeks before the actual holiday.

Military or Judicial Absences: If you have an official military or judicial absence, then you must submit the CS 2340 Request to be Excused Form.

Quizzes Policy

Quiz Attendance: Students who are not present in the classroom or arrive late for a quiz (i.e., after the quiz has begun) will not be allowed to and must not take it and will receive a grade of zero (0) on it. **Quizzes may take place during any time of the lecture.** Students who don't follow this policy will face the Office of Student Integrity (OSI).

Quiz Makeup: Quizzes will be delivered in-class or online and **are not optional.** Missed quizzes **CANNOT** be made up for any reason (will not be reopened on Canvas or Qualtrics).

Late Submissions Policy

Late penalties are assessed with the following policy:

- Up to one (1) day late (i.e., a 24-hour window): points are limited to 70% of the assignment total.
- More than one (1) day late (i.e., beyond a 24-hour window): 0 points.

Canvas accepts late assignments and stamps them with the time of submission.

At the beginning of the semester, each student (individually) will be issued two "free passes," which can be applied to any Canvas submission. Free passes are not applicable to in-person quizzes, take-home quizzes, or in-class activities. When applied, one free pass provides one 24-hour extension on an assignment's deadline, with no grade penalty. No explanation is required regarding the reason for using the free pass. Free passes are individual and non-transferable: that means that, in team submissions, a student's free pass would only affect that student's grade.

*Disclaimer***:** Late penalties or free passes do not apply to in-class assignments (released and due in class) or assessments. That means, in-class assignments and assessments will have hard deadlines (see Canvas Policy).

NOTIFICATION OF CHANGES

The instructor will make every effort to follow the guidelines of this syllabus as listed; however, the instructor reserves the right to amend this document and the course calendar as needed. In such instances, the instructor will notify students in class and/or via a Canvas announcement and will endeavor to provide reasonable time for students to adjust to any changes.

It is the student's responsibility to keep track of the class and its announcements by:

1. Not missing lectures and engaging in class accordingly.
2. Configuring Canvas and Ed Discussion to receive emails from announcements.
3. Checking Canvas, Ed Discussion, and their email inbox **at least three times a day**.
4. Proactively reaching out to the instructional team to ask about the class.

STUDENT RESOURCES

The **Center for Assessment, Referral, and Education (CARE)**, the **Counseling Center,** Stamps Health Services, and the Dean of Students Office will offer both in-person and virtual appointments. Student Center services and operations are

available on the **Student Center** website. For more information on these and other student services, contact the Dean of Students or the **Division of Student Life**.

Accommodations for Students at Higher Risk for Severe Illness with Covid-19
Students may request an accommodation through the Office of Disability Services (ODS) due to 1) the presence of a condition as defined by the Americans with Disabilities Act (ADA) or 2) identification as an individual of higher risk for Covid-19 as defined by the Centers for Disease Control (CDC). Registering with ODS is a 3-step process that includes completing an application, uploading documentation related to the accommodation request, and scheduling an appointment for an "intake meeting" (either in person or via phone or video conference) with a disability coordinator.

If you have been approved by ODS for accommodation, you are required to meet with me within the first three weeks of the semester so that I can work closely with you to understand your needs and make a good-faith effort to investigate whether or not the requested accommodations are possible for this course. If the accommodation request results in a fundamental alteration of the stated learning outcome of this course, ODS, academic advisors, and the school offering the course will work with you to find a suitable alternative that, as far as possible, preserves your progress toward graduation.