CS 6300: Software Development Process

Course Syllabus – Fall 2026

IMPORTANT:

PLEASE READ THE SYLLABUS IN ITS ENTIRETY DURING THE FIRST WEEK OF CLASS

It is a part of the course content and explains what is required
to successfully complete the course and its assignments.

Instructor Information

Instructor:	Benjamin Manning
Email:	Use only private messages on Ed Discussion during the semester
Office hours:	Weekly, online (live and recorded), day/time announced on Ed Discussion
TA Team:	See Canvas and Ed Discussion

General Course Information

Description

This is a graduate-level, hands-on course about software engineering. The goal of the course is to study and learn the way software is specified, designed, developed, verified, and maintained. Throughout the course, students will have to complete a set of individual assignments, a group project, and an individual project. By the end of the course, students will understand the role of software processes in the development of software and will have experienced several types of processes, from rigid to agile. Students will also be exposed to and become familiar with a variety of modern technologies and tools and understand their connection to software processes.

Prerequisites

There are some prerequisites we expect the students to satisfy to be successful in the class:

- You should have taken a software engineering course before or have some experience working as a software engineer in a company.
- You should be familiar with basic software engineering concepts, such as requirements, software design, and software testing.
- You should be familiar with Java and be comfortable writing code. Knowing another object-oriented language, such as C++ or C#, may be enough, but please keep in mind that all

assignments and projects are Java-based. (Every semester, there are students who take the class without satisfying this requirement, hoping to be able to catch up along the way, and they almost always end up regretting it.)
- You should also be comfortable, or even excited about, learning new technologies and working with software tools.
- You should have enough flexibility to work with a team that meets (remotely) on a regular basis. You and your teammates will be able to choose how and when to communicate.

If you don't satisfy one or more of these requirements, you should seriously consider taking the course in a later semester and refresh your knowledge of the above topics in the meanwhile. The most common reason why students struggle with this class is the fact that they do not satisfy the above prerequisites, so please do not take them lightly.

We would also like to add something that may be a bit controversial but about which we feel strongly. The online MS programs offered by Georgia Tech are not professional education programs. There are many such programs, but you applied to this one because you want to get an actual MS in CS from Georgia Tech, not a professional education certificate. In this spirit, we strive to offer a course that has the same quality as an on-campus one but is also just as demanding. We understand that most of you have daily jobs and families, but so do many on-campus students, and we do not treat them any differently. We hope this makes sense to you and helps you understand some of the decisions we make, with respect to deadlines and extensions.

Course Materials

The only materials required are the online lessons and a few additional readings that will be provided in due time. No specific textbook is required. Ideally, you should have access to a software engineering introductory book and/or online resources.

Platforms Used in the Course

You will have to use and be familiar with four platforms when taking this class: (1) Canvas, (2) Ed Discussion, and (3) Ed Lessons. We discuss these platforms below.

Canvas

Canvas is your main stop, where you will (1) get and submit all of your assignments (mostly through an external link to Gradescope) and project deliverables and (2) access your grades.

- Assignment deadlines: You can access all assignments by selecting the “Assignments” tab on Canvas. When in doubt about the deadline for an assignment, you can always check Canvas, as all assignments are listed there. To avoid problems, you should make sure to configure Canvas so that all deadlines reflect your local timezone. To do so, you should go to Canvas ➡️ Account ➡️ Settings ➡️ Edit Settings and Time Zone and select your local time zone. Also, please note that the deadline for assignments is the “Due” date, whereas the “Until” date indicates the late submission deadline (see the Late-Submission Policy section below).

Ed Discussion

Ed Discussion is our online forum, which you will use to communicate with us (and vice versa).

- **Accessing Ed Discussion:** To access the forum, click the Ed Discussion link on the Canvas page for this class (on the menu on the left). We will add registered students to Ed Discussion before the class starts. **If you have registered for (or been added to) the class after classes started, you may get a message that an access code is required** when using the Ed Discussion link until newly registered students are added to the Ed Discussion roster, which happens daily. In this case, please do not contact the instructors to ask for the code and instead allow a day for that process after you have been added to Canvas (and watch your official email for notice that you have been added).
- **Class-related communications: Make sure to use Ed Discussion, rather than email or Canvas messages, for ALL class-related communications**. We can miss email messages, but we are careful about checking messages on Ed Discussion and making sure that your questions are answered in a timely fashion. Most importantly, by asking questions on Ed Discussion, you can benefit from the collective knowledge of your classmates, instructors, and TAs. For this reason, we encourage you to ask questions publicly, rather than privately to the instructors, as that maximizes your chances to get a prompt reply and, most importantly, allows your classmates to see questions, answers, and discussions that can benefit them. In fact, sometimes we wait before responding to posts because we want to encourage student responses and discussions. It is just as important that you also check Ed Discussion postings regularly.
- **Keeping up with Ed Discussion:** Besides benefitting from questions, answers, and discussions, as mentioned above, **Ed Discussion is where we post announcements and other useful information about the class, and we assume that you read these announcements**. Finally, posts are clearly appreciated, but please don't feel like you must post at all costs. You can get 100% Ed Discussion participation by simply following the discussions on Ed Discussion. (Ed Discussion keeps track of each student's online presence.) In other words, just make sure that you check updated, unresolved, and unread posts on a regular basis, and you will be fine even if you do not post yourself.[1] This also helps to avoid duplicate postings, in which students ask questions that have already been asked (and often answered).
- **Duplicate posts: Please make sure to check the existing posts before asking a question**: duplicated posts waste both our and your time. For similar reasons, you should also **make sure to read the assignments and the syllabus carefully before posting questions about them on Ed Discussion**. Finally, many of the questions we receive on Ed Discussion can be answered with a simple web search, so please make sure to try that before posting on Ed Discussion, which frees up resources for more interesting questions, answers, and discussions.
- **Our response time on Ed Discussion:** We do our best to respond to Ed Discussion messages daily, or at most every couple of days (depending on volume and other factors). If you don't get an answer to a post within 48 hours, feel free to post a follow-up, but please avoid doing so a few hours after posting (i.e., we do our best to be responsive on Ed Discussion, but the forum is

[1] Although Ed Discussion allows students to receive posts by email, we discourage it because it prevents us from assessing Ed Discussion attendance directly.

not a 24/7 hotline :-). Please also avoid reposting the same message twice to get more attention; you should add a follow-up to your existing post instead.

- **Declines on Ed Discussion:** In line with what we mentioned above, we may decline (i.e., disregard) on Ed Discussion questions that are clearly answered in the syllabus or in the assignment description.

Ed Lessons

Ed Lessons is the place where you will watch the class videos.

- **Accessing Ed Lessons:** To access the lessons, click the Ed Lessons link on the Canvas page for this class (on the menu on the left).
- **Getting started:** Make sure to check the "Let's Get Started" page in the "Welcome to CS6300: Software Development Processes!" Module in Ed Lessons for information on navigating the different Ed Lesson features and settings.
- **Online lectures:** Although you may still be able to watch the lectures on other platforms or through "public access" courses on Ed Lessons, **you are required to watch the official course content on the designated Ed Lessons platform for this class during the current semester** (as contents may slightly change across semesters), so that we can track your "attendance" and ensure you are using the correct materials. **Watching lectures on any platform other than the official course on Ed Lessons, including "public access" versions, will reduce your participation grade** (see "Lesson completion" and "Grading" below). We also require that you watch the lesson following the provided schedule as much as possible. Although we allow for some flexibility, as we understand that there may be exceptional weeks, **going through many lessons on weeks other than those in which the lessons are scheduled will also affect your participation grade**. Avoid watching a large number of lessons during the last couple of weeks of the semester, which will not help you. There is a reason why we schedule the lessons as we do.
- **Lessons Completion**: Lecture lessons completion is a significant contributor to your participation grade. To complete a lesson, you must watch each topic online and take each quiz (with unlimited re-takes) to score 100%.

Office hours

Office hours will be held weekly. You will be able to attend the office hours synchronously or asynchronously (i.e., after the fact). The office hours will consist of two parts: announcements and Q&A. You will be able to post your questions beforehand on Ed Discussion. We strongly recommend you watch (and even better, participate in) the weekly office hours, as not watching them will likely result in you missing important information about the course, hints about the assignments, and so on. The day, time, and link for the office hours will be announced on Ed Discussion, but please note that there will be no office hours during:

- the first week of classes
- recess and/or holidays
- the week during Assignment 6 (A6) opens

Tools Used in the Course

We will use several tools in this class, including:

- Git
- Java Development Kit (version details provided later in the course)
  (freely available from either Oracle or Open JDK)
- IntelliJ IDEA Ultimate Edition
  (free for students: https://www.jetbrains.com/shop/eform/students)
- Android Studio
- A UML editor (of your choice)

Minimum Technical Requirements

- High-speed Internet connection
- Laptop or desktop computer with a minimum of a 2 GHz processor and 2 GB of RAM
- Windows, Mac OS X, or Linux operating systems
- Mozilla Firefox, Chrome, and/or Safari browsers

Grading, Assignments, and Projects

Assignments and Projects

To successfully complete the class, you will have to do a set of individual assignments, a group project, and an individual project. We will provide complete information about assignments and projects on Canvas and Ed Discussion in due time. For each assignment, be sure to read and understand the complete instructions before you begin work. You are welcome and encouraged to form study groups yourselves, but **project teams will be assigned by us based on the information you provide in the team matching survey, which allows us to create teams that are as much as possible balanced in terms of expertise and compatible in terms of schedule. Please do NOT ask us to form teams yourself or provide us with the names of other students that you would like to have on your team**. Please also note that your performance in the group project, which we will assess through a peer evaluation performed by all team members, will determine your collaboration grade.

Release Dates

We typically release most assignments slightly over one week before they are due. **Please do NOT ask us to post assignments in advance**, as we feel strongly about this, and it has been our experience that this approach works way better than releasing assignments early and having multiple assignments open at the same time. In particular, (1) there are dependencies between some of the assignments that prevent us from having overlaps, and (2) the interaction on Ed Discussion works considerably better if students are in sync.

Please also note that **we cannot post assignments in advance for individual students**. For a class that has hundreds of students, doing so would be a logistical nightmare and would likely be error-prone. Consider that we typically receive multiple requests, for different dates, and please imagine what it means to set up different release dates (and possibly keep track of the different deadlines) for different students.

We can assure you that we scope assignments so that they are very doable in a week's worth of work for a 3-credit-hour class, which should be about 10 hours. Some students may need a bit more time than that, and some students a bit less, but we solve all assignments ourselves before releasing them to make sure that we did not grossly underestimate their level of difficulty and the time required to complete them.

Due Dates

Most of the deadlines for assignments and deliverables are on Sunday at 11:59 PM AOE. (As stated above, we recommend that you go to Canvas ➡️ Account ➡️ Settings ➡️ Edit Settings and Time Zone and select your local time zone, to see all deadlines in your own time zone.)

Submission Instructions

We use Georgia Tech's GitHub for all submissions, and you should upload your work only to the two GitHub repositories we will provide for you: one for your individual work, and one for your teamwork. Posting your code on a different repository will prevent us from accessing and grading your work. Posting your work in any public repository, either during the course of the class or afterward, is a violation of the Honor Code and facilitates future students' cheating. We take this very seriously. Specific submission instructions will be included with the project and assignment descriptions on Canvas. Typically, this will include pushing all required files to the assigned repository and submitting a single, final commit ID to a submission server, either Canvas or Gradescope, as specified in the assignment instructions. All assignments must be submitted and acknowledged by the server (e.g., Gradescope, Canvas) by the due date and time listed in Canvas. Please note that for determination of on-time submission status, local timestamps (e.g., `git log`) will not substitute for server timestamps. Also, be sure that you have received a positive acknowledgement of your submission from the submission server. Every semester, we have cases of students receiving a zero on a Gradescope assignment because they fail to note a Gradescope response rejecting their submission. Please don't be one of those students.

Late-Submission Policy

After the submission deadline has passed, you won't be able to submit your assignment and will get 0 points for it. **To be fair to all students, we have a strict policy about extensions**. In very large classes, rare circumstances are not that rare, and in fact, we receive several valid requests for extensions for each assignment.

If **extreme and unforeseen circumstances** are preventing you from completing an assignment on time, please take the steps below before the assignment due date and as soon as possible:

1. Contact the office of the Dean of Students (DoS) and provide them with all the necessary details and documentation, by visiting the following link:

https://studentlife.gatech.edu/request-assistance (choosing Class Absence Verification)
In addition to being equipped to address emergencies that we lack the resources to handle, the DoS office can coordinate with you and alert all your classes at once.

2. Contact us via Ed Discussion and confirm that you have provided the required documentation to the office of the Dean of Students. In the same Ed post, please clarify how many more days you expect to need to complete the assignment.

The office of the Dean of Students should check your documentation and follow up with us. If they only send the follow up to you, contact us on Ed Discussion as soon as possible. At that point, we will be able to take the appropriate action and follow up with you. The Dean of Students is there to be an advocate and partner for you when you're in a crisis; we wholeheartedly recommend taking advantage of this resource if you are in need.

Notes:

- **Just to avoid misunderstandings, please note that going on vacation or getting married can hardly be considered extreme and unforeseen circumstances** :-).
- We require a 24-hour notice for non-emergency medical deadline extensions. In general, **waiting until a deadline is a few hours away or (even worse) has passed to report a situation of which you were aware long before is problematic, for obvious reasons, and will cause your request to be declined**.

Grading Timing

We normally return grades for an assignment within two weeks after it closes. Due to the size of the class, however, and to the number of consistency checks we perform to ensure homogeneous grading, some assignments may require a slightly longer time to be graded.

Grade Challenges

If you think we made a mistake in grading one of your assignments or projects, you have two weeks after a given grade has been released to contest it. After that, we will consider the grade final. Grade challenges must be submitted on Ed Discussion by sending a private question in the "Grade challenges" category. The message must provide (1) your GT username (e.g., jdoe44) (and your Team number, in case the grade is for a group project) and (2) a clear statement of what part of the grade is being disputed and why (i.e., a grade challenge is not a blank request for regrading). Incomplete grade challenge messages (e.g., messages missing clearly required information) may be automatically declined, in which case students must submit a new request with the necessary details.

It is important to note that grade challenges may lead to a review of the entire assignment, which could result in a higher, identical, or lower grade. If the challenge reveals that a student did not meet the learning objectives the assignment was designed to evaluate, the instructional staff reserves the right to make further deductions to reflect the student's actual level of understanding of the material. Additionally, frivolous grade challenges, such as disputing a grade without a substantive basis, solely to gain points, or without demonstrating how a grading error occurred, may result in further penalties.

Unless you have a specific reason to do so, please avoid sending private messages to individual instructional staff member, as that may cause the messages to be missed and responses delayed. Grade challenges will lead to a review of the entire assignment and may result in a higher, identical, or lower grade. If after contacting your TA and the instructor you do not feel your problem has been resolved, you may escalate the issue by emailing oms-advising@cc.gatech.edu and asking that your ticket be assigned to Jay Summet.

Grading

See the table below for how much each graded item counts toward the overall grade for the course. **Note that we may change these percentages during the semester**.

Item Description	**% Overall Course Grade**
Assignments (see Canvas for details)	44%
Group Project (team-based)	18%
Individual Project	25%
Collaboration	10%
Participation	3%

Your **Collaboration** grade reflects your group project contribution. It consists of a combination of timely submissions or your own collaboration-related assignments (GPD0, reviews, and weekly reports) and your teammates evaluation of your contributions to the application design and overall project execution.

Your **Participation** grade consists of three components: Ed Discussion, Ed Lessons, and the Participation quiz.

Canvas may list some assignments as contributing 0 points toward your final grade, but that is only because the assignment is a component of another grade. For example, there are multiple deliverable assignments that constitute the Individual Project. You must complete and submit each of these deliverables on time. We will evaluate them separately and combine their scores into your overall Individual Project grade. In short, **all class assignments contribute either directly or indirectly to your final grade**.

Your final grade will be assigned as a letter grade according to the following scale, indicatively, and possibly with some upward curving:

A	[90–100]
B	[80–90)
C	[70–80)
D	[60–70)
F	[0–60)

Extra Credit Opportunities

There are no extra credit opportunities for this class.

Accommodations for Students with Disabilities

If you are a student with learning needs that require special accommodation, contact the Office of Disability Services at (404) 894-2563 or http://disabilityservices.gatech.edu, as soon as possible, and make an appointment to discuss your special needs and obtain an accommodation letter. Please also create an Ed Dicussion private post as soon as possible in order to discuss your learning needs.

Class Policies

Academic Honesty

All Georgia Tech students are expected to know and abide by the Georgia Tech Academic Honor Code (https://osi.gatech.edu/students/honor-code). In this class, in particular, although we generally encourage the discussion of the course material, the exercises, assignments, and projects with your classmates, we draw a firm line regarding what sharing and copying are permissible in your coursework. Specifically, you must adhere to the following rules:

- **You may not, under any circumstances, copy any code from any current or former student in the class, or from any public sources addressing the same content as the course assignments/projects.**
- **The only source code you are permitted to borrow are isolated project-agnostic snippets**, meaning source code that serves a specific purpose and that are applicable outside the context of our projects (such as iterating through an array). In these cases, you must bracket the borrowed code with comments identifying the source exactly as follows:

  /* BEGIN CODE FROM (*source URL*) */
  … borrowed source code …
  /* END CODE FROM (*source URL*) *

  The source URL must link to a web page containing the borrowed source code snippet. We will not accept lists of sources provided without context.
- ***Using AI-powered tools to generate, suggest, or complete code for assignments is strictly prohibited. This includes but not limited to conversational AI tools (e.g., ChatGPT, Claude), code completion tools (e.g., GitHub Copilot, Amazon CodeWhisperer, Tabnine), and IDE-integrated AI features (e.g., IntelliJ AI Assistant, VS Code Copilot). You must disable all AI-powered code completion features in your development environment when working on course assignments.***
- You may reuse your own work or code from past private endeavors, such as previous course attempts or different class assignments. However, any reused code or work must strictly conform to the policies of the current semester. Even if past work did not violate a prior course's policies, if it violates this course's current policies (for instance, relating to the use of tools like ChatGPT), it cannot be reused without proper adjustments. Additionally, should any of your past work be publicly available, you must treat and cite it in the same manner as any other public

source, as specified above. **Collaborative works from the past, such as work done for a prior class group project, cannot be reused in this course.**

- There will often be watermark-type fields added to projects to date the project to a particular term. If an assignment is turned in with a prior term's watermark, we will assume that cheating has occurred and the penalties for cheating will be enforced.
- **Do not post publicly or share any content (solutions or parts thereof) with other students in the class**.
- When in doubt, don't hesitate to ask: in this case, it is NOT better to beg for forgiveness than to ask for permission.

Please keep in mind that we use plagiarism-detection software to identify similarities among submissions, between submissions and online materials (e.g., repositories of students from previous semesters), and between submissions and materials generated by tools based on machine learning generative models. Because we have access to the same resources to which you have access, our plagiarism detector will most likely identify these cases (as it has done countless times in the past).

Violations of this policy will be subject to the institute's Academic Integrity procedures, which may include a 0 grade on assignments found to contain violations, additional grade penalties, academic probation or dismissal, and prohibition from withdrawing from the class. The bottom line is that it is not fun for anybody when a case of academic misconduct is discovered, so please avoid collaborating beyond what is allowed by the Georgia Tech Academic Honor Code.

Important: If you are accused of academic misconduct, you are not permitted to withdraw from the class until the accusation is resolved; if you are found to have participated in the misconduct, you will not be allowed to withdraw for the duration of the semester. If you do so anyway, you will be forcibly re-enrolled without any opportunity to make up work you may have missed while illegally withdrawn.

Communication Policy

You are responsible for knowing the information provided in this syllabus (including the pages linked herein).

You are also responsible for checking your GT email and Ed Discussion for important announcements at least once a day, as the teaching team may post announcements via Ed Discussion or contact students in specific cases. This is especially important when students have ongoing communication with the teaching team (e.g., about requested extensions).

Send questions and personal concerns, including grading questions, privately to "instructors" on Ed Discussion. Do not submit posts of a personal nature or relating to your grades publicly on Ed Discussion.

The instructional team strongly discourages the use of any unofficial public communication channels created by students. In previous semesters, we witnessed how these channels easily end up being platforms for oversharing suggestions about assignments that border on violations of academic integrity. Ed Discussion, which includes a chat feature for real-time communication, should provide all you need for inter-student communication and be the only platform used. However, for private

discussions **related to group projects** students may use any communication medium of their choice. If you decide to set up a public unofficial channel anyway, then you assume responsibility for the content of all posts.

When posting messages on Ed Discussion, make sure to keep in mind the following rules/guidelines:

- Avoid language that may come across as strong or offensive. Language can be easily misinterpreted in written electronic communication. Review email and discussion board posts BEFORE submitting. Humor and sarcasm may be easily misinterpreted by your reader(s). Try to be as matter-of-fact and professional as possible.
- Follow the language rules of the Internet (e.g., do not write using all capital letters).
- Feel free to use emoticons, which can be helpful for conveying nonverbal feelings and avoiding misunderstandings.
- Consider the privacy of others. Ask permission prior to giving out a classmate's email address or other information.
- Do not post inappropriate material.

Note: The instructor reserves the right to remove posts that are not collegial in nature and/or do not meet the rules/guidelines listed above.

See the section on “Ed Discussion” above for additional communication policies.

Student-Faculty Expectations Agreement

At Georgia Tech we believe that it is important to strive for an atmosphere of mutual respect, acknowledgment, and responsibility between faculty members and the student body. See http://www.catalog.gatech.edu/rules/21 for an articulation of some basic expectations that you can have of us and that we have of you.

Closing Remarks

We modified the class based on our experience with its offerings so far and on the students' feedback. Whereas we can easily change assignments, schedules, and information on the syllabus, the video lectures require (much) more time to be edited. We did our best to update all the parts that could be easily updated, but it is possible that some lectures may contain outdated information about projects or assignments. Please make sure to always trust the information on Ed Discussion and Canvas over the information in the video lectures. And when in doubt, or if you spot any issue, please do not hesitate to ask and let us know. Also, please only watch the lessons listed on the class schedule, as you do not need to watch lessons not listed there (e.g., P1L5).

Subject to Change Statement

The syllabus may be subject to change. Changes will be communicated via Ed Discussion. It is the responsibility of students to check the Ed Discussion class forum to stay current in their online courses.
