Syllabus, CS 6515 (Introduction to Graduate Algorithms)
OMS GaTech
Fall 2024

Note: the syllabus and course schedule are subject to change. Any changes to the syllabus and/or course schedule after the semester begins will be relayed to the students on Canvas or EdDiscussions.

Textbook

The required textbook is Algorithms by S. Dasgupta, C. Papadimitriou, and U. Vazirani. The textbook Algorithm Design by J. Kleinberg and E. Tardos is an excellent reference that you might consider looking at as well.

Grading

The breakdown of the grading will be as follows

(i) Homework: 25%.

(ii) Formatting and Content Quizzes: 12%.

(iii) Logistic quizzes: 3%.

(iv) Exams: 60% (three total).

Grade assignments

After *all* grades are in and all overall percentage scores for students have been computed using the weights described above, grades are assigned. The cutoffs will be as follows.

A: [85%, 100%]   B: [70%, 85%)   C: [50%, 70%)   D: [40%, 50%)   F: [0%, 40%)

So, to guarantee an A, get 85% or better overall (not 84.9%)
To guarantee at least a B grade, get 70% or better overall (not 69.9%), etc.

These cutoffs are final. No adjustment or rounding will be applied.

Homework

There will be 10 homework assignments, consisting of written and/or coding components. The homework assignments are designed to be practice for the exams. Homework assignments will have a set of practice problems (ungraded) and one graded problem, clearly marked on each homework. Homework will be posted on Canvas, and announced in Ed Discussions with an associated discussion thread. Each assignment will be available for a week and due at 8am EST on the following Monday, unless announced otherwise. There will be no extensions except for approved emergency situations or disability accommodations, which must be coordinated with course staff. We will release solutions for the practice problems mid-week (typically Thursday). For written components of a homework assignment, you may collaborate with other current students and consult any other references (including online). However, you need to write up your solution from scratch as if you are in an exam without looking at resources or using advanced tools such as AI (this is how you will learn the material). You must cite your sources and collaborators at the top of your solutions. For the coding components of a homework assignment, you are allowed to use class official material (lectures, textbook, etc.) and general language level references. All other resources are prohibited.

Formatting and Content Quizzes

There will be six quizzes during the semester, different from the Logistic quizzes below. These quizzes are designed to (1) help you track your understanding of the covered material, (2) give you guidance on how to write your own solutions for the homework and exam questions, and (3) complement your homework. These quizzes are mandatory and graded, and will be delivered on Canvas. You cannot collaborate, but you can check your notes, textbook, and lectures. Public comments about these quizzes while they are open are not allowed.

Logistic Quizzes

This set of quizzes is designed to ensure you are aware of our policies and expectations, and focus on three main topics:

- **Course Communication** & **Logistics**, which details how the class is run (communication methods, how to submit assignments, what is and is not in scope, etc);

- **Academic Integrity**, which reviews our expectations in terms of collaboration and plagiarism; and

- **an Onboarding Exam (graded)**, which provides students a chance to test their environment to see if it meets our unique Exam Proctoring requirements.

These are mandatory and worth 3% of your final grade. You will have unlimited attempts at each quiz (with incorrect answers marked) until they are due. Please see the schedule and Canvas for official due dates.

Exams

Exams are administered on Canvas, through Honorlock. Exams are closed book, you cannot use any additional devices (no calculators, phones, etc. or other applications on your computer) and no additional references (no notes or books). The exam will typically be open for 4 days: starting on a Thursday, 10AM in the morning and closing at 8am EST on Monday. You need to finish uploading your exam by 8am EST on Monday so plan your start time accordingly. There are no extensions. We suggest doing the exam at least 24 hours before the deadline.

We will release abundant information about the proctoring system before the exam but here are some things we suggest you to look into now:

- Please refer to this important Honorlock technical requirements.

- Students must have a broadband internet connection.

- Students must have a webcam and microphone.

- Students must have a secure, private location to take an exam.

- Students will be asked to provide a picture I.D. as part of the exam process.

- Students will be asked to perform a 360-degree room scan.

- Honorlock is not compatible with Linux OS, Virtual Machines, tablets, or smartphones.

- Honorlock requires that you install the Honorlock Chrome extension into Google Chrome.

We will release more details about the proctoring of the exams the week of the first exam, **including a practice exam for you to set the technical part, and get familiar with the exact format you will see on exams**.

For proctoring violations, we reserve the right to enforce penalties and/or disqualify the exam.

There will be no **Final exam**.

<div align="center">Gradescope</div>

All assignments will be graded on Gradescope. We will import your information into Gradescope which will create a Gradescope account for you; **you are required to use this Gradescope account with the name and GTid that matches exactly with Canvas** (otherwise the systems won't sync and you won't get a grade). The default due date/time for all homeworks, exams and projects is Mondays at 8am; there are no extensions (so submit the day before in case of unexpected problems).

<div align="center">Regrade policy</div>

Regrades are an important mechanism to ensure students receive the grade they deserve with manually graded assignments. A regrade request must be made "in good faith" with the intention of correcting a mistake made in grading, and comply with the process detailed in Ed. Note that a regrade request can result in an overall lower grade in the event another, larger error is discovered during a regrade or as a consequence of abusing the regrade request process.

<div align="center">Students with Disabilities and/or in need of Special Accommodations</div>

If you have any accommodations you need to inform us as soon as possible, and provide us with the detailed accommodation approval letter from the GT Office of Disability Services. We will work as fast as possible to confirm that we can accommodate your requests.

<div align="center">Waitlists, Registration, Permits, etc.</div>

The instructional team is forbidden from doing anything regarding class registration. We cannot issue permits, remove students from waitlists, etc. For guidelines on such matters, please consult https://math.gatech.edu/permits-and-waitlists.

<div align="center">Academic Integrity policy</div>

Plagiarism, unauthorized collaboration, cheating in any form, and sharing course assignments outside of class are considered to be academic integrity violations and in violation of the GT honor code. Your homeworks and projects are subject to checks to ensure academic integrity. All violations will be reported to the GT Office of Student Integrity, and you will be given a 0 on that component of the grade (OSI may impose stricter penalties, especially if you have prior offenses).

For academic integrity violations, we reserve the right to enforce penalties and/or drop a student's letter grade.