Syllabus, CS 6515 (Introduction to Graduate Algorithms)
Spring 2023

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 Ed Discussions.

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

1. Homework: 12%.

2. Polls: 4%

3. Coding projects: 9%.

4. Logistic quizzes: 3%.

5. Three exams: 24% each.

6. Final exam (optional).

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, etc.

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

Homework

There will be 8 homework, with a week available to complete each. Homework will be posted on Canvas and submission will be due at 8am EST on Mondays. There will be no extensions. The homework are excellent practice for the exams. Only two problems will be graded. This will be clearly marked on each homework. You may work with other people on the homework and you can look at any other references (including online). However you need to write up your solution from scratch as if you are in an exam (this is how you will learn the material). You need to cite your sources and collaborators at the top of your homework.

Coding projects

There will be three small coding projects during the semester. The projects will be similar to the problems in the homework, you should consider it as a practical complement to your homework. You will have a week to complete each project. Details about the submission will be released via Canvas and Ed Discussions.

Polls

There will be 7-8 polls on the lecture material. Polls will be released on Monday, due the Monday after, at 8am EST, see the schedule for more details. Polls will be multiple choice/short answer and administered on Canvas and will be similar to the MCQs you will see on the exams. As with HWs, polls are confidential until the due date. In particular, please refrain from posting the questions on Ed.

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 which provides students a chance to test their environment to see if it meets our unique Exam Proctoring requirements. This semester we are making these mandatory and worth 3% of your final grade. The only way to miss these points is to not take the quizzes. These quizzes will be open for longer than a week, please see the schedule and Canvas for official 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 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.

- 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. See also the Logistic Quizzes.

Final exam The final exam is optional and, if taken, will substitute for your lowest score out of the three exams if it improves your overall grade. The Final exam will be cumulative. Students with an A and students who cannot improve a B will not be allowed to take the final exam. The Final Exam may not be used to replace an exam which was disqualified due to a violation of the class Academic Integrity Policy.

Gradescope

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.

Regrade policy

Regrade requests are a valuable tool and in many cases are justified - while our talented team of TAs does their best to grade accurately and consistently, mistakes do happen. In this class, regrade requests are also taken as an opportunity for peer learning and collaboration. Students are expected to solicit and review peer feedback, and only submit regrade requests when warranted. Note that if you submit a regrade request, the entire question will be reviewed and regraded - in rare occasions, this may result in a lower overall score for the submission. The regrade process will covered in more detail in Ed Discussions.

Students with Disabilities and/or in need of Special Accommodations

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.

Waitlists, Registration, Permits, etc.

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

Academic Integrity policy

Plagiarism and cheating in any form is a violation of the GT honor code. Any solution you submit must be your own original work. All resources outside of official class materials that are referenced or used to complete an assignment must be explicitly cited. Your solutions will be checked with automated tooling and manually reviewed to detect plagiarism and other academic misconduct. All violations will be reported to the GT Office of Student Integrity, and you will be given a 0 on that assignment. OSI may impose stricter penalties, especially if you have prior offenses.