

CS 3251A Syllabus

Computer Networking I

Fall 2026

Instructor Information

Instructor

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General Course Information

Description

The main objective of this course is to provide students with a rigorous understanding of computer networking concepts, protocols, and technologies using the current Internet as the specific case study. Even though we will cover the major Internet protocols in some detail, the emphasis will be on fundamental problems, ideas, and algorithms.

Course Learning Outcomes

Upon successful completion of this course, students should be able to:

- Understand the fundamentals of computer networks, how they are designed and how they operate.
- Utilize various network measurement and troubleshooting tools to better understand network behavior.
- Solve mathematical problems related to the analysis of network performance.
- Recognize challenges in the design and utilization of the state-of-the-art networking infrastructure, including wide area networks, datacenter networks, and wireless and cellular networks.
- Learn how to build networked applications and networks protocols.

Required Course Materials

- The following textbook is required for this class. We will provide reading guidance for the material in this text.

Computer Networking: A Top-Down Approach Featuring the Internet, Jim Kurose and Keith Ross, Addison Wesley, 9th Edition. You can get a kindle edition on Amazon or rent it at the publisher for the Fall (Pearson).

- We will also provide links and reading guidance for the following free on-line text

["Computer Networks: A Systems Approach" by Larry Peterson and Bruce Davie](#) available for free (Links to an external site).

- You may also find the following open-source on-line text useful:

[Computer Networking : Principles, Protocols and Practice](#) (Links to an external site). by Olivier Bonaventure.

- See the Modules section in Canvas for additional resources including Sockets programming references.

Grading Policy:

A>=90; 90>B>=80; 80>C>=70; 70>D>=60; 60>F

1. Homework assignments (3) - 7 each (21% total)
2. Programming assignment (1) - 10%
3. Midterm (in-class) - 25%
4. Programming quiz (in-class) - 12%
5. **Cumulative** Final exam - 32%

Description of Graded Components

There are three exams as part of the class. The Midterm, a Programming quiz and the Final. The Final is cumulative. All exams will be conducted in-person with pen and paper. Students are allowed one A4 sheet of paper for the midterm, one A4 sheet for the programming quiz and two A4 sheets of paper for the final. The Midterm and Programming quiz will be scheduled during regular class periods and the Final will be scheduled during Finals period as scheduled by the registrar.

Homework assignments will guide you in how best to reinforce your knowledge and understanding of class concepts. The Programming Assignment will guide you in enhancing your understanding of Sockets programming. The HW and Programming assignments will be delivered online and are to be submitted online on Canvas.

The Midterm and Final exams will test your understanding and knowledge of class topics. The Programming Quiz will test your understanding and knowledge of sockets programming topics.

AI tools, outside resources and collaboration among students are allowed (even encouraged) on HW and Programming assignments. For all the exams, on the other hand, you will only be allowed the sheets of paper as described above and you will not have access to the Internet nor any form of AI assistance.

Homework and Programming Assignment Grading

Homework assignments and the Programming assignment in this class are designed for practice and learning and should be attempted individually. For this reason, homework is graded entirely on completion and good-faith effort. We will verify that each assignment has been attempted thoughtfully and that *all questions have been addressed*, but we will not grade the correctness of individual answers.

Why Use This Policy?

The primary purpose of homework is to help you strengthen your understanding of the material covered in class and encourage you to explore related ideas. You are expected to use AI tools, textbooks, online resources, and discussions with your peers as part of your learning process.

Because these resources, particularly AI, can substantially assist in producing polished solutions, the submitted homework is no longer a reliable measure of your individual mastery of the material. Instead, its value lies in the learning that occurs while working through the problems, asking questions, verifying ideas, and identifying gaps in your understanding.

For that reason, we place little weight on the homework deliverables themselves. Your grade reflects your engagement with the learning process rather than the perfection of the final submission. Your actual understanding will instead be assessed through quizzes, exams, and other individual assessments where you demonstrate your own knowledge.

Getting Help. Ed Discussion will be our discussion forum. Students can interact with the instructor and all TAs through Ed Discussion, in addition to office hours. Office hours with TAs are strongly recommended.

USG Required Course Policies

Attendance and/or Participation

All lectures will be presented in person and may be recorded. Recordings and notes *may* be made available as a study aid, but this is not guaranteed for all materials. If recordings are made available, they are not meant to be a substitute for in-person attendance. *Note that because the class is designed to be primarily an in person class and because of potential technical glitches there are no guarantees of video/audio recording quality.* In-person attendance is strongly encouraged; live questions are highly encouraged. Note that the lectures will NOT be livestreamed, so live questions can only be done in person. **There may be delays in posting notes and recordings of up to 2 weeks after the lecture.**

Policy for overlaps between sections A and B

While the two sections will ultimately cover the same material and share the same set of TAs. There will be some differences in topic sequencing and emphasis, as well as the grading policy. *It is important that students attend the lectures, do the homework and programming assignments, and take the tests for the section the student is registered in.*

Academic Integrity

Georgia Tech aims to cultivate a community based on trust, academic integrity, and honor. Students are expected to act according to the highest ethical standards. Review [Georgia Tech's Honor Code](#) and the student [Code of Conduct](#).

Any student suspected of cheating or plagiarism on a quiz, exam, or assignment will be reported to the Office of Student Integrity, who will investigate the incident and identify the appropriate penalty for violations.

Additional Georgia Tech Required Policies

Accommodations for Students with Disabilities

If you are a student with learning needs that require special accommodation, [contact the Office of Disability Services](#) (404-894-2563) as soon as possible to make an appointment to discuss your special needs and to obtain an accommodations letter. Please also e-mail me as soon as possible in order to set up a time to discuss your learning needs.

Student-Faculty Expectations Agreement

At Georgia Tech, we believe that it is important to strive for an atmosphere of mutual respect, acknowledgement, and responsibility between faculty members and the student body. [The Student-Faculty Expectations](#) articulate some basic expectations that you can have of the instructor and that

the instructor will have of the students. In the end, simple respect for knowledge, hard work, and cordial interactions will help build the environment we seek. Therefore, students are encouraged to remain committed to the ideals of Georgia Tech while in this class.

Collaboration, Group Work, and Use of Generative AI

As mentioned above, outside resources including AI tools are allowed for Homework and Programming assignments. They are not allowed for any of the exams.

In addition, the following is not allowed:

- Copying, with or without modification, someone else's work when this work is not meant to be publicly accessible (e.g., a classmate's program or solution).
- Submission of material that is wholly or substantially identical to that created or published by another person or persons, without adequate credit notations indicating authorship (plagiarism). Note that solutions that involve cutting and pasting from public sources (including AI output) with appropriate citation are legal.

Any public material that you use (open-source software, help from a text, material you find on the web, material from a paper, substantial help from a friend, etc...) should be acknowledged explicitly in anything you submit to us.

If you have any doubt about whether something is legal or not, please do check with us.

You are strongly urged to familiarize yourselves with the Student Honor Code and Policies (see <https://osi.gatech.edu/>). All suspected violations of the Honor Code will be investigated and will need to be reported to OSI.

Extensions, Late Assignments, & Re-Scheduled/Missed Exams

Material will be due at 11:59pm on the specified date.

“No questions asked” late policy: There is a grace period of one hour after the deadline of any deliverable where no penalties are applied. Deliverables that are more than 1 hour and less than 24 hours late will receive a 10% penalty. Deliverables that are 24 hours to 48 hours late will receive a 20% penalty. No assignments will be accepted more than 48 hours late.

We will consider requests for a makeup exam (midterm, programming or final) as well as requests to waive the penalty for late deliverables or requests to extend the submission of deliverables on a case-by-case basis. ***Generally, documented illness, a note from the Dean of Students, and/or established ODS accommodation is required for the request to be viewed favorably.***

At Georgia Tech, some exceptions are made for “approved Institute activities” (e.g., field trips and athletic events) and religious observances. Read more about approved exceptions.

Campus Resources for Students

Undergraduate Student Academic Success Resources:

A list of resources for undergraduate students' academic success and information about advising can be found at Success at Tech.

Student Well-Being

At Georgia Tech, we are concerned about your overall physical, social, and mental well-being. A [comprehensive list](#) of wellness related resources has been compiled and maintained by the Office of the Vice President for Student Engagement and Well-being ([student-resource-guide \(gatech.edu\)](https://student-resource-guide.gatech.edu))