CS 3251B Syllabus

Computer Networking I
Fall 2026

Instructor Information

Instructor	Email
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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

- Syllabus Quiz - 1%
- Homework assignments (3) - 10% each (30% total)
- Programming assignments (2) - 10% each (20% total)
- Midterm (in-class) - 22%
- **Cumulative** Final exam - 27%

Description of Graded Components

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

Homework assignments will test your knowledge of class concepts and are delivered online.

Programming assignments are individually coded, significant network programming projects around core themes of the class. These will be auto graded and students are allowed unlimited attempts before the deadline.

A syllabus quiz will be required, testing knowledge of syllabus components.

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.

Policy for overlaps between sections A and B

While the two sections will ultimately cover the same material, share the same set of TAs, and use the same Ed Discussion. 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 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

Feel free (indeed, you are encouraged) to ask questions on Ed Discussion about homework questions and programming assignment issues. Feel free (indeed, you are encouraged) to answer each other's questions (on Ed Discussion or through any other mode of communication).

Write the answers to the homework and do the programming assignments yourself.

Specifically, 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. However, since they do not involve work on the student part beyond searching or prompting, they may receive a significantly diminished grade or zero.

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.*

AI-based Assistance Policy

We treat AI-based assistance, such as but not limited to ChatGPT and Copilot, 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, as well as 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. If you are unsure where the line is between collaborating with AI and copying AI, we recommend the following heuristics:

Heuristic 1: 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.

Heuristic 2: Do not have your assignment and the AI agent open at the same time. Similar to the above, use your conversation with the AI as a learning experience, then close the interaction down, open your assignment, and let your assignment reflect your revised knowledge.

This heuristic includes avoiding using AI directly integrated into your composition environment: just as you should not let a classmate write content or code directly into your submission, so also you should avoid using tools that directly add content to your submission.

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

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 or final) as well as request 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)