

# SYLLABUS

## CS 4590 Computer Audio Syllabus

Fall 2026

### Course Description

Instructor

Keith Edwards, [keith@cc.gatech.edu](mailto:keith@cc.gatech.edu) (<mailto:keith@cc.gatech.edu>)

### Course Objectives

This course focuses on giving students a broad overview of the principles and applications of computer-based audio as a medium. We'll cover the basic physical principles of sound as well as how human perception of sound works, before digging into the *how* and *why* of using computer audio. Students will gain practical experience in working with computer audio through a number of individual programming projects throughout the semester, largely focused on sound processing, manipulation, and synthesis, as well as a substantial project on auditory computer interfaces.

### Required Course Materials

There is no required textbook for this class.

We will use a variety of software tools in the class, including (but not limited to) the Web Audio framework, JavaScript, jQuery, the WebStorm IDE, and OcenAudio.

### Grading Policy and Weighting

<https://gatech.instructure.com/courses/521700/files/69329185?wrap=1>

Course grades will be based on the following weighting scheme:

- **Homeworks:** 5 @ 14%/each = 70% total
- **Quizzes:** 2 @ 15%/each = 30% total

For final letter grades, an overall average of 90-100 will result in an A, between 80-89 a B, between 70-79 a C, between 60-69 a D.

Students taking the class pass/fail must receive a C or better to pass. Students auditing the class will not be required to complete homework or exams (nor are they expected to do these assignments, so that the instructor and TAs can devote grading time to students taking the class for a letter grade or P/F).

## Course Policies

### Attendance and Participation

I expect regular attendance and engaged participation in the classroom, although I do not actively police attendance in the class. However, I have noticed a drastic difference in the performance between students who regularly attend class and those who don't. Please try to be present in class throughout the semester.

### Academic Integrity

Students are expected to follow Georgia Tech's [code of academic conduct \(https://policylibrary.gatech.edu/student-affairs/academic-honor-code\)](https://policylibrary.gatech.edu/student-affairs/academic-honor-code). Here's what that means for this class:

**All code submitted for homeworks must be written by you alone.**


- Do not give your code (or a portion of your code) to another student; do not allow another student to look at your code; do not look at or accept anyone else's code.
- Do not upload your code to GitHub or place it on repositories that may be accessible to other students.
- Do not use ChatGPT or other generative AI systems to help with the homework.
- You can (and are encouraged to!) ask other students questions about how they did the assignment, and explain using words, pictures, and diagrams how you did the assignment, as long as you do not share code. You can also look up resources on the Internet that may help. In these cases, please list details about who helped you or the URLs of what resources you used in your assignment.
- If two students submit code that's substantially similar, this will be considered a potential violation of the honor code and submitted to the Office of Student Integrity to adjudicate.

**All quizzes must be done by you alone and only relying on the materials provided in class.**

- o You're welcome to use your notes, lecture slides, and even Internet resources to find answers.
- o You are **not**, however, allowed to consult with others, or to use generative AI tools to answer the questions.

I am required to forward all suspected cases of academic misconduct to the Office of Student Integrity, where they will be pursued to resolution. This is a very unpleasant process for all involved, so please do not put us in this situation.

## Statement About Acceptable Student Conduct: 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](https://catalog.gatech.edu/rules/22/)  (<https://catalog.gatech.edu/rules/22/>) articulate some basic expectations that you can have of me and that I have of you. In the end, simple respect for knowledge, hard work, and cordial interactions will help build the environment we seek. Therefore, I encourage you to remain committed to the ideals of Georgia Tech while in this class.


## Late Assignments, Extensions, Regrades, and Missed Quizzes

Late homework will be penalized accordingly. Quizzes **must be taken the day listed in the class schedule**. The only exception to this for medical reasons with documentation approved by the Dean of Students.

For homeworks, any regrade requests must be made via email to the TA responsible for the original grade within 48 hours of the grades being released.

Extensions to homework due dates may be requested with a valid, documented reason, **before the homework's due date**. Granting of such extensions is at the prerogative of the instructor.

## Accommodations for Students with Disabilities

If you are a student with needs that require special accommodation, contact the Office of Disability Services at (404) 894-2563 or <http://disabilityservices.gatech.edu/>  (<http://disabilityservices.gatech.edu/>), as soon as possible, to make an appointment to discuss your special needs and to obtain an accommodations letter. This should ideally be done before the start of the class. Please also e-mail me as soon as possible so that I'm aware of any approved accommodations.