

# Georgia State University — CSC 4510 / 6510

Course Syllabus for CSC 4510 / 6510: *Automata*

Fall 2025

## Time

2:45pm–4:30pm on Tuesdays and Thursdays

## Room

Aderhold Learning Center, Room 212

## Instructor

**Name:** Murray Patterson  
**Email:** mpatterson30@gsu.edu  
**Office:** 1 Park Place, Room 948E  
**Zoom:** <https://gsu-edu.zoom.us/my/mpatterson30>

## Office Hours

- Wednesdays from 2:30pm–4:30pm in my office or via Google Meet <https://meet.google.com/kcg-dozq-qii> (I will also be online during this time) — add this event to your calendar at <https://tinyurl.com/3bt7wypw>
- After class: I will remain in the classroom
- By appointment: please discuss with me or send me an email to arrange a time

## Teaching Assistants (TAs)

**Name:** Sai Sarvagna Beeram  
**Email:** sbeeram1@student.gsu.edu

## Prerequisites

CSC 2720 with a grade of C or higher. Students must also meet the Computer Science Major Eligibility Requirement in order to enroll in this course.

## Reference Materials

Notes and other online resources will be provided as the course proceeds.

# Course Content

Georgia State University iCollege — <https://icollege.gsu.edu>

## Course Overview

Welcome to CSC 4510 / 6510 at Georgia State University! This course concerns the theory of computing devices and the languages they recognize. It will cover deterministic and non-deterministic finite automata, context-free grammars, pushdown automata, Turing machines and undecidability.

## Course Structure

- **Lecture** — Classes will be conducted in a traditional lecture format
- **Homework** — Assignments will build on the lecture content
- **Discussions** — Opportunities to share questions about key concepts, homework assignments, and more

## Exams

There will be a midterm and a final exam in this course. The exams will involve questions, problems, or programming assignments which cover lectures, homework assignments, and readings.

## Grade Scale

| Grade | Point Equivalent |
|-------|------------------|
| A+    | $\geq 97$        |
| A     | $\geq 90$        |
| B+    | $\geq 87$        |
| B     | $\geq 80$        |
| C+    | $\geq 77$        |
| C     | $\geq 70$        |
| D     | $\geq 60$        |
| F     | $< 60$           |

## Grading (*subject to change*)

- Homework Assignments (60%)
- Midterm Exam (20%)
- Final Exam (20%)

## Course Schedule (*subject to change*)

1. Regular Languages, Finite Automata
2. Context Free Languages, Pushdown Automata
3. Recursive and Recursively Enumerable Languages, Turing Machines

4. Other Models of Computing: Lambda Calculus, Recursive Function Theory, Random Access Machines

## Make-up Policy

### Exams

There are no make-up exams unless the student missed the exam due to a pre-arranged excused absence *e.g.*, participation in a GSU sports event, observance of a religious holiday (see <https://belonging.gsu.edu/religious-observances/>), or an emergency, etc. In all cases, documentation needs to be provided before or after, *e.g.*, a note from the coach, a mention of the religious holiday, or a slip from the doctor, etc. — only official excuses will be accepted. **Any uncoordinated, unexcused missed exam will result in a score of zero for that exam.**

### Homework

Each homework assignment is due at the beginning of class on the due date.

## Academic Honesty Policy

In academics, intellectual property is extremely important. This is one reason we hold students to the tenets of the Academic Honesty Policy — other topics related to student conduct are available at <https://codeofconduct.gsu.edu/>. But intellectual property goes beyond that when it comes to the materials created by your instructor and the publisher of your textbook. Your instructor has spent a great deal of time and energy developing materials for this course, and the publisher holds a copyright to all materials associated with the textbook. Please be aware that the GSU community takes this very seriously.

It is for this reason that GSU has a special policy regarding copyright, found at <https://cetl.gsu.edu/services/instructional-support/constructing-a-syllabus/>. This policy implies that the selling, sharing, publishing, presenting, or distributing of instructor-prepared course lecture notes, videos, audio recordings, or any other instructor-produced materials from any course for any commercial purpose is strictly prohibited unless explicit written permission is granted in advance by the course instructor (note that this includes homework assignments, labs, exams or their solutions). This includes posting any such materials on websites such as Chegg, Course Hero, OneClass, Stuvia, StuDocu and other similar sites, or using them as prompts in AI tools such as ChatGPT. Unauthorized sale or commercial distribution of such material is a violation of the instructor's intellectual property and the privacy rights of students attending the class, and is prohibited.

Sharing of any materials from the textbook, such as questions from publisher provided quizzes, is likewise prohibited.

## Course Evaluations

Your constructive assessment of this course plays an indispensable role in shaping education at Georgia State. Upon completing the course, please take the time to fill out the online course evaluation.

## Extended Absences

For students, the Dean of Students' Office will continue to provide faculty with notifications when students file **Professor Notification of Absences (PNAs)**. This notification indicates that the Dean of

Students office has reviewed the documentation related to a student's medical circumstances. For more information about this, and how to submit such a notification, see <https://deanofstudents.gsu.edu/student-assistance/#professor>.

## Students with Disabilities

Students who wish to request accommodation for a disability may do so by registering with the Access and Accommodation Center. Students may only be accommodated upon issuance by the Access and Accommodation Center of a signed **Accommodation Plan** and are responsible for providing a copy of that plan to instructors of all classes in which accommodations are sought.

## Basic Needs Statement

Any student who faces challenges securing their food or housing and believes this may affect their performance in the course is urged to contact the Dean of Students for support. Furthermore, please notify the professor if you are comfortable in doing so. This will enable us to provide resources that we may possess. The Embark program at GSU provides resources for students facing homelessness and Panther's Pantry provides resources for students facing food insecurity.

## Disclaimer

The course syllabus provides a general plan for the course — deviations may be necessary.