

Course Information

Course prefix and number: CS3510

Instructor Name: Frederic Faulkner

Credit Hours: 3

Course Description:

Continued introduction to the field of algorithms and the complexity analysis thereof. Students will use mathematical reasoning to prove algorithmic correctness and measure efficiency.

Course Learning Outcomes

Students will:

- Continue to develop their proof-writing and -reading skills in the context of algorithmic correctness.
- Sharpen their algorithmic analysis skills by applying big-O and other forms of complexity analysis to the algorithms seen in class as well as on assignments and exams
- Be introduced to many algorithmic design paradigms such as greedy, dynamic programming, and divide-and-conquer, etc.
- See a range of algorithms used to solve problems in many categories such as graph traversal and manipulation, data sorting, integer linear programming, etc.
- Become familiar with the idea of NP-hardness, and understand how to identify and prove that problems are NP-hard.

Course Materials Required to be Purchased

This class does not have any materials that are required to be purchased.

Grading Policy

This course uses a fixed grading scale. Grades are not curved. Final grades are calculated to the nearest tenth. Scores are not rounded up. For example, a final score of 89.9 will be recorded as a B, not an A. Scores are calculated using the following assignment category percentages:

Letter Grade Scale:

A	90.0 and above
B	80.0 – 89.9
C	70.0 – 79.9
D	60.0 – 69.9
F	Below 60.0

Pass/Fail Option: Students taking the course on a Pass/Fail basis must earn a minimum score of **70.0** to receive a Pass.

Attendance Policy

Attendance is required for all lectures. Failure to attend lecture without an institute-approved excuse (such as a medical emergency) may result in points being deducted from your grade or, depending on the severity of the case, failing the course.

Academic Honesty/Integrity Statement

Students are expected to read, understand, and abide by the Georgia Tech Academic Honor Code. Academic misconduct is taken very seriously in this class. **Any violations of the Honor Code related to graded work will be reported to the Office of Student Integrity.**

We strongly urge you to be familiar with these Georgia Tech sites:

- The Honor Code — <https://osi.gatech.edu/students/honor-code>
- Office of Student Integrity — <http://www.osi.gatech.edu/index.php/>

Accommodations for Students with Disabilities

Your access to this course is extremely important to us. The Institute has policies regarding disability accommodations. If you do not already have one, please request your accommodation letter from the Office of Disability Services in the first two weeks of the semester. Reach out to your instructor *promptly* (after receiving your letter, if relevant) so that we can discuss how to adjust your course experience according to your approved academic accommodation in lectures or recitation.