DATASCI 531: COMPUTING II
Spring 2026

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Office Hours : By appointment (Don't be intimidated by the phrase « by appointment » ! I am happy to schedule office hours !)

COMMUNICATION
I will make use of the "Announcements" feature in the course Canvas page to communicate assignment due dates and other important information. Please make sure to turn on Announcement notifications so that you receive these communications in a timely manner.

COURSE OBJECTIVES
This class is the second in a sequence of two DATASCI computing courses. In this course, we will take a deeper dive into computing, going beyond implementation of models using pre-existing libraries. Our goal is to gain the skills necessary for us to implement our own libraries, choose algorithms which ensure efficient and accurate computation, and develop new algorithms and models for data-driven tasks.. By the end of the course, students are expected to (1) be able to implement data structures and models through Python classes (2) analyze algorithms in terms of computational complexity and accuracy, (3) understand how computational cost, algorithmic stability, and hardware considerations affect implementation choices for data-intensive problems. Students will primarily write code in Python via Jupyter/IPython notebooks and Python scripts.

LECTURES and COURSE MATERIAL
The class will be primarily based on lectures provided by the instructor for each class and stored in the following Github repository:

https://github.com/sentz2/datasci531spring2026

There is no required textbook for the course. However, I will provide reading materials throughout the semester on the course Canvas page. These will either be hyperlinks to online materials or uploaded PDFs. We will begin with the online textbook "Problem Solving with Algorithms and Data Structures using Python" found at the following link:

https://runestone.academy/ns/books/published/pythonds3/

CLASS REQUIREMENTS

Grades will be based on

- homework assignments (60%)
  - 6 homeworks, worth 10% each
- Mid-term project (20%)
- Final project (20%)

COLLABORATION and AI POLICY

Working together on the homework assignments is encouraged, but you must submit your own work. It is highly recommended that you make your solo effort on all the problems before consulting others. You should not collaborate on the mid-term or final project.

In the strongest possible terms, I encourage you to NOT use ChatGPT/Co-pilot or any other LLM tools when working on assignments. Working through problems and correcting errors yourself will pay off in the long run. However, I will not forbid using these tools for general informative purposes such as documentation for programming interfaces, language syntax, broad conceptual questions, and exploration of topics.

According to Laney Graduate School Honor Code, the use of AI to generate any content for an assignment constitutes plagiarism unless the student appropriately acknowledges in the assignment the extent to which an artificial intelligence program contributed to the work. Please read Article III – Part 1 – Section 2 in the Laney Graduate School Student Handbook

It is considered an academic integrity violation to submit any part of a homework problem as a prompt to LLMs.

LATE ASSIGNMENT POLICY

Any assignment submitted after the due date/time will be considered for half points. Extensions for homework will only be given in the following cases: (i) accommodations through the Department of Accessibility Services, (ii) documented emergencies or documented long-term illnesses, (iii) religious observances.

GRADING

Your final grade will be assigned based on the grading scale below:

A	A-	B+	B	B-	C+	C	C-	D	F
93+	87-92	83-86	80-82	75-79	70-74	65-69	60-64	55-59	0-54

Grades will be rounded to the nearest integer (a 92.5 will be rounded to a 93, while a 92.4 will be rounded to a 92). Throughout the semester, I will keep the Canvas gradebook up to date so that you have an ongoing understanding of where your grades fall in this scale.

HONOR CODE

All students enrolled at Emory are expected to abide by the Laney Graduate School Honor Code. Any type of academic misconduct is not allowed which includes 1) cheating or obtaining unauthorized assistance in any academic assignment or examination 2) plagiarism, fabrication, or falsification of information. For the activities that are considered to be academically dishonest, refer to Article III – Part 1 of the Laney Graduate School Student Handbook:

https://gs.emory.edu/_includes/documents/sections/handbook/lgs-2025_26-handbook.pdf

DISABILITY ACCOMMODATIONS

If you are seeking classroom accommodations or academic adjustments under the Americans with Disabilities Act, you are required to register with Office of Accessibility Services (OAS), https://accessibility.emory.edu/. Once registration is finalized, students must request accommodation needs to be communicated or facilitated. Students are expected to give two weeks' notice of the need for accommodations for any class activities including the projects. For more information, please see https://accessibility.emory.edu/students-accommodations/registration.html. Please make sure to contact me with the relevant letter at the beginning of the semester.

TENTATIVE COURSE SCHEDULE

The tentative schedule of covered topics will be

1. Defining classes in Python
2. Algorithm Analysis
3. Basic Data Structures
4. Recursion
5. Searching and Sorting
6. Advanced Data Structures
7. Conditioning and Stability of Algorithms
8. Parallel and High Performance Computing

Due dates for homework and projects will be given by Announcement in the course Canvas page.