New York University Tandon School of Engineering
Department of Computer Science and Engineering
Course Outline CS-UY 1134 Data Structures and Algorithms
Summer 2024
Professor Daniel Katz-Braunschweig
Tu,Th, Fr 9:30-12:45

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Office hours: by appointment
Zoom: https://nyu.zoom.us/my/**csprofkatz**

Course Pre-requisites:
CS-UY 1114 (C- or better) or equivalent

Course Description
This course covers abstract data types and the implementation and use of standard data structures along with fundamental algorithms and the basics of algorithm analysis.

Course Objectives
At the completion of this course a student will:

1. Be familiar with basic techniques of algorithm analysis
2. Be able to design and analyze recursive algorithms
3. Be familiar with fundamental data structures, their implementation and performance: dynamic arrays, stacks and queues
4. Master the implementation of linked data structures such as linked lists and binary trees
5. Be familiar with advanced data structures such as search trees, hash tables, priority queues and graphs
6. Have a practical understanding of the concepts of data abstraction.
7. Be familiar with several searching and sorting algorithms including insertion-sort, merge-sortand heap-sort

Course Structure
Students will be expected to attend each lecture, participate and complete homework assignments and exams.

Course requirements
See chart below

Midterm 30%
The Midterm exam will include all material covered from the first 3 weeks of the course

Final Exam (date TBD by Tandon) 35%
The Final will cover all material in the course

Homework 15%
Homework will be issued at least week. Due to the short 6 week nature of the course, there may be times when less than 1 week is given to complete homework assignments.

Lab 20%
Labs are held each week and students are expected to attend during the normally scheduled lab time.

Tuesday Day	Tuesday Topic	Thursday Topic	Friday Lab
21-May-24	Review and Asymptotic Analysis	Asymptotic Analysis and Iterators	Asymptotic Analysis
28-May-24	Iterators and Generators	Searching and Sorting	Array List
4-Jun-24	Iterators/Generators/Sorting/Searching	Recursion	Arrays and Recursion
11-Jun-24	Midterm	Stacks and Queues	Stacks and Queues
18-Jun-24		Linked Lists	Linked Lists
25-Jun-24	Trees/Maps/BSTs	Hash Tables/Heaps	Trees/Maps
2-Jul-24	Final Exam		
	Lecture	Exam	Lab

Late Policy
Late homework will not be accepted under ANY circumstance; any homework which is not turned in on time will receive a grade of zero. Make-up examinations will be given only in the case of emergencies and will require prior approval and verification of the reason for the absence. Lateness on arrival to class will not be tolerated.

Moses Center Statement of Disability

If you are student with a disability who is requesting accommodations, please contact New York University's Moses Center for Students with Disabilities (CSD) at 212-998-4980 or mosescsd@nyu.edu. You must be registered with CSD to receive accommodations. Information about the Moses Center can be found at

www.nyu.edu/csd. The Moses Center is located at 726 Broadway on the 3rd floor.

NYU School of Engineering Policies and Procedures on Academic Misconduct – complete Student Code of Conduct here

A. Introduction: The School of Engineering encourages academic excellence in an environment that promotes honesty, integrity, and fairness, and students at the School of Engineering are expected to exhibit those qualities in their academic work. It is through the process of submitting their own work and receiving honest feedback on that work that students may progress academically. Any act of academic dishonesty is seen as an attack upon the School and will not be tolerated. Furthermore, those who breach the School's rules on academic integrity will be sanctioned under this Policy. Students are responsible for familiarizing themselves with the School's Policy on Academic Misconduct.

B. Definition: Academic dishonesty may include misrepresentation, deception, dishonesty, or any act of falsification committed by a student to influence a grade or other academic evaluation. Academic dishonesty also includes intentionally damaging the academic work of others or assisting other students in acts of dishonesty. Common examples of academically dishonest behavior include, but are not limited to, the following:

1. Cheating: intentionally using or attempting to use unauthorized notes, books, electronic media, or electronic communications in an exam; talking with fellow students or looking at another person's work during an exam; submitting work prepared in advance for an in-class examination; having someone take an exam for you or taking an exam for someone else; violating other rules governing the administration of examinations.
2. Fabrication: including but not limited to, falsifying experimental data and/or citations.
3. Plagiarism: intentionally or knowingly representing the words or ideas of another as one's own in any academic exercise; failure to attribute direct quotations, paraphrases, or borrowed facts or information.
4. Unauthorized collaboration: working together on work meant to be done individually.
5. Duplicating work: presenting for grading the same work for more than one project or in more than one class, unless express and

prior permission has been received from the course instructor(s) or research adviser involved.

6. Forgery: altering any academic document, including, but not limited to, academic records, admissions materials, or medical excuses.

NYU School of Engineering Policies and Procedures on Excused Absences – complete policy here

A. Introduction: An absence can be excused if you have missed no more than **10 days of school**. If an illness or special circumstance has caused you to miss more than two weeks of school, please refer to the section labeled Medical Leave of Absence.

B. Students may request special accommodations for an absence to be excused in the following cases:

1. Medical reasons
2. Death in immediate family
3. Personal qualified emergencies (documentation must be provided)
4. Religious Expression or Practice

Deanna Rayment, deanna.rayment@nyu.edu, is the Coordinator of Student Advocacy, Compliance and Student Affairs and handles excused absences. She is located in 5 MTC, LC240C and can assist you should it become necessary.

NYU School of Engineering Academic Calendar – complete list here.
The last day of the final exam period is 2 July 2024. If you have two final exams at the same time, report the conflict to your professors as soon as possible. Do not make any travel plans until the exam schedule is finalized.
Also, please pay attention to notable dates such as Add/Drop, Withdrawal, etc. For confirmation of dates or further information, please contact Susana: sgarcia@nyu.edu