CS/MA 591– Algorithm Analysis & Data Structures

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Office: Megerle Science Bldg, Room 115
Office Hours: T/Th 9:15-11:15AM,
M/W 11:15-12:15AM
Or By Appointment

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Course Description:

Provides a survey of classic and modern computer algorithms and data structures, demonstrates techniques to analyze algorithm performance and illustrates the design methodologies used to develop computer algorithms.

Course Objectives:

- Explain the mathematical concepts used in describing the complexity of an algorithm and demonstrate how to measure complexity and explain its effects on performance
- Demonstrate understanding of the fundamental data structures used in computer science including linear data structures and non-linear data structures
- Implement a subset of data structures and classic algorithms for solving problems such as sorting, searching, shortest-path computation, minimum spanning tree, etc
- Select data structures and algorithms appropriate for application requirements and be able to explain the trade-offs that exist among different data structures and algorithms that produce the desired result
- Describe and provide examples of different strategies for algorithm design and employ one or more of these techniques for solving a given problem

Textbook:

Data Structures and Algorithm Analysis in C++, 3rd Edition, by M. A. Weiss
ISBN: 9780321441461

Grading Policy:

- Midterm (20%)
- Final Exam (30%)
- Homework/Class Participation (50%)

Grading Scale:

Letter grades will be determined by the following scale:

Average	Grade
93 - 100	A
90 - 92	A-
87 - 89	B+
83 - 86	B
80 - 82	B-
77 - 79	C+
73 - 76	C
70 - 72	C-
67 - 69	D+
60 - 66	D
< 60	F

Course Policies:

- You are expected (and strongly encouraged) to attend and participate in all lectures. However, your attendance (physical presence) is not a formal requirement and, therefore:
    - ***You are responsible*** for all material covered including all lectures, handouts, and announcements given via email, during class, or on the course web page
    - ***There will be no make-up examinations.***
        - *If an exam is missed due to an emergency, the final will be counted twice; once as a final, and once in place of the missed exam.*
- Late homework will be graded ***late***.
- Any preceding policies may be waived at my discretion

Disabilities:

If you have a disability for which you may be requesting an accommodation, you are encouraged to contact both your instructor and the Academic Advisement Center in the Union Building at (718) 390-3278 as early as possible in the term.

Academic Honesty:

The Wagner College faculty and student body take seriously the academic integrity of this institution. The Academic Honesty Committee (AHC), comprised of both faculty and student representatives, hears cases of academic dishonesty. If a professor is concerned that a student has acted dishonestly with regard to his or her academic work, the professor can turn the case over to the AHC for investigation. The Student Government Association (SGA) also wrote an approved student honor code in 2007 that reflects the commitment of the student body to academic integrity. All students are expected to be aware of and abide by Wagner's guidelines for academic integrity. If you have questions about these guidelines, it is your responsibility to ask.

Etiquette:

- Come to class on time. If you do come late, quietly find a seat and take it with as little disturbance as possible. If you must leave the room – do so quietly.
- As you walk into class, kindly silence all beepers, cell phones, and any other noise-producing equipment.
- Depending on the overall punctuality and attendance patterns, I may institute stricter policies over the semester (these policies will not be retro-active).

How to succeed in this class:

- Read the assigned reading ***before and after*** the class.
- Pay attention and participate in the class discussions.
- ***Asking for permission vs Asking for forgiveness → permission*** always wins!
- ***If you don't understand something get help early!***