BOSTON UNIVERSITY
METROPOLITAN COLLEGE
COMPUTER SCIENCE DEPARTMENT

MET CS 566 ANALYSIS OF ALGORITHMS

Course Overview

Algorithm design and analysis provide the theoretical background for designing and analyzing algorithms including sorting, searching, dynamic programming, greedy algorithms, graph algorithms (shortest path, spanning trees, tree traversals), etc.

Prerequisites

MET CS 248 Discrete Mathematics and MET CS 341 or MET CS 342 Data Structures or instructor's consent

Learning Objectives

By the end of this course the student will have a solid background in the design and analysis of the major classes of algorithms.

Textbook T.H. Cormen, C.E. Leiserson, R.L. Rivest, and C. Stein, "Introduction to Algorithms," 3rd Ed., MIT Press, 2009, ISBN-13: 9780262033848.

With some Problems from

S. Baase, A.Gelder, "Computer Algorithms",
3rd Ed., Addison Wesley, 2000, ISBN: 0-201-61244-5

Evaluation and Grading

There will be two exams. If any grading criteria event will be missed it will be the responsibility of the student to arrange a mutually agreeable schedule for completion of work.

Grades will be based on:

Class participation	10%
Midterm Exam	50%
Final Exam	40%

Assignment

About six homework will be assigned. The number of assignments may change according to actual progress of the class.
Solutions will be discussed in class when graded papers are returned.

Academic Honesty

The course is governed by the Academic Conduct Committee policies regarding plagiarism (any attempt to represent the work of another person as one's own). This includes copying (even with modifications) of a program or segment of code. You can discuss general ideas with other people, but the work you submit must be your own. Collaboration is not permitted

Instructor Information

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Office Hours: Before each class meeting

Classes are scheduled at Room CAS203

Schedule of Classes

9/11	Welcome, Administrative Issues, Introduction to Algorithms	Chapter 1,2
9/18	Algorithm growth, Big-Oh and similar notations. Recurrence equations and their solution.	Chapter 3
9/25	Divide and Conquer technique. Heapsort	Chapter 4.6
10/2	Quicksort. Linear-time sorting	Chapter 7,8
10/9	Columbus Day	Holiday
10/16	Medians and order statistics. Hash tables	Chapter 9. 11
10/23	Binary search trees	Chapter 12
10/30	**Midterm Exam**	
11/6	Dynamic Programming	Chapter 15
11/13	Greedy Algorithm	Chapter 16
11/20	Elementary Graph Theory	Chapter 22
11/27	Minimum spanning trees	Chapter 23
12/4	Shortest paths, Maximum flow	Chapter 24, 26

12/11 Project Presentations, Review

12/18 Final Exam

NOTE: Syllabus is subject to change as we go…