BOSTON UNIVERSITY METROPOLITAN COLLEGE COMPUTER SCIENCE DEPARTMENT

MET CS 566 C1 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.

Course Format On Campus
Time and location Wednesday 6:00 – 8:45 PM, Room CAS 226

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.

Courseware

Blackboard Learn, URL: https://learn.bu.edu

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.2
Final Grades will be assigned based on the following weighting:

Class participation	20%
Midterm Exam	40%
Final Exam	40%

Assignment

About six homework will be assigned. The number of assignments may change according to actual progress of the class. Reviews, exercises and homework solutions will take place in discussion. Participation in the discussions is recommended and may result in extra credit. Late homework will not be accepted unless permission bt the instructor was given prior to the due date. No predetermined scale will be used.

There will be no make-up exam for the final exam. If a student cannot take the final exam on the designated day, she/he will receive an incomplete grade.

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. See link below

http://www.bu.edu/met/metropolitan_college_people/student/resources/conduct/c ode.html.

Instructor Information

Dr. Alexander Belyaev
Computer Science Department,
Metropolitan College Boston
University, 808 Commonwealth
Ave, Room 250 Boston, MA 02215
Office: 617-353-2566,
Email: abelyaev@bu.edu

Office Hours: After each class meeting

Tentative Schedule

- The schedule is subject to change according to the actual progress of the class. Some topics may be skipped and some topics may be added.

- Students are encouraged to review book chapters assigned for each lecture before coming to class.

1	1/24	Introduction to algorithms	Chapters 1 and 2
2	1/31	Growth of functions, Divide and conquer	Chapters 3 and 4
3	2/07	Divide and conquer, Heapsort	Chapters 4 and 6
4	2/14	Quicksort, Linear-time sorting	Chapters 7 and 8
5	2/21	Medians and order statistics, Hash tables	Chapters 9 and 11
6	2/28	Binary search trees	Chapter 12
7	3/07	**No class (spring break)**	
8	3/14	**Midterm**	
9	3/21	Dynamic programming	Chapter 15
10	3/28	Greedy algorithms	Chapter 16
11	4/04	Elementary graph algorithms	Chapter 22
12	4/11	Minimum spanning trees	Chapter 23
13	4/18	**No class (substitute for Monday classes)**	
14	4/25	Shortest paths, Maximum flow	Chapters 24 and 26
15	5/02	Project Presentation. Review for Finals	
16	5/09	**Final Exam**	

Communication

- All official announcements will be made in the class.
- All assignments will be posted on the class web page.
- **Important:** The primary method of communication is through in-class announcements. So, if you miss a class you need to talk to a friend in the class or contact me to find out whether there was any important announcement.