MET CS 566 Analysis of Algorithms Instructor: Eric Braude Format: On campus Course website: https://learn.bu.edu Office hours: Thursdays 2:30-5:30 Contact: see http://www.bu.edu/csmet/braude/contact/

↓ Prerequisites
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MET CS 248

and

MET CS 341 or MET CS 342

--or consent of instructor

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Course Description

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Basic methods for designing and analyzing efficient algorithms, emphasizing methods used in practice. Topics include sorting, searching, dynamic programming, greedy algorithms, advanced data structures, graph algorithms (shortest path, spanning trees, tree traversals), matrix operations, string matching, NP completeness.

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‡ Textbook

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

[‡] Class Policies

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Enabled: Statistics Tracking

1) Attendance & Absences

Attendance is encouraged at all classes because at classes, learning goes on, not all of which is tested. There are also in-class exercises. Excessive absences may adversely affect grades. 2) Assignment Completion & Late Work

All assignments should be submitted via this Blackboard site. Late assignments with a compelling reason may be graded pass/fail. If an assignment is late without a compelling reason, no credit will necessarily accrue but I will make a note of this, and the assignment may or may not factor into your grade.

3) Cheating and plagiarism will not be tolerated in any Metropolitan College course. They will result in no credit for the assignment or examination and may lead to disciplinary actions. Please

take the time to review the Student Academic Conduct

Code: http://www.bu.edu/met/metropolitan_college_people/student/resources/conduct/code.htm 1. This should not be understood as a discouragement for discussing the material or your particular approach to a problem with other students in the class. On the contrary – you should share your thoughts, questions and solutions. Naturally, if you choose to work in a group, you will be expected to come up with more than one and highly original solutions rather than the same mistakes.

[‡] Grading Criteria

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Grade weighting will be as follows: Assignments: 70% Final: 30% Assignments will be evaluated according to the following table.

Criterion	D	С	В	Α
Correctness	No justification of correctness	Tests or explanation justify mostly correct	Tests or explanation justify correctness; good commenting	Tests or explanation justify correctness extremely well; complete and thorough justification
Clarity in presentation	Unclear	Somewhat clear	Clear	Entirely clear
Understanding	Minor understanding evidenced	Satisfactory understanding evidenced	Evidence of good understanding throughout	Evidence throughout of entirely thorough understanding
Use of resources	Some, but few resources used	Resources clearly used	Significant set of resources used effectively – textbook and others	Excellent, wide set of resources used very effectively – textbook and others

The resulting grade is the average of these, using A=95, A-=90, B+=87, B=85, B-=80 etc. To obtain an A grade for the course, your weighted average should be >93. A-:>=90. B+:>=87. B:>83. B-:>=80 etc.

Class Meetings and Lectures

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(For assignments, see the "Assignments" section; for notes, see "Course Documents")

Lecture number / Date / Topic / Readings

- 1. May 22: Introduction + Divide&Conquer.(Cormen et al Chapters 1-4)
- 2. May 29: Sorting(Cormen et al 6-8)
- 3. June 5: Multi-threading(Cormen et al 27)
- 4. June 12: Advanced Data Structures(Cormen et al 11-13)
- 5. June 19: Dynamic Programming(Cormen et al 15)
- 6. June 26: Greedy Algorithms(Cormen et al 16)
- 7. July 3: Minimum Spanning Trees(Cormen et al 23)
- 8. July 10: Shortest Paths(Cormen et al 24)
- 9. July 17: Matrix Operations(Cormen et al 28)
- 10. July 24: Linear Programming(Cormen et al 29)
- 11. July 31: String Matching(Cormen et al 32)
- 12. August 7 Final Exam