

Analysis of Algorithms

CS566 SC1, Summer 2017

- **Course Format:** On Campus
- **Time and Location:** Wednesday 6:00 – 9:30 PM, MCS B33

- **Instructor:** Jae Young Lee
- **Office:** Room 250, 808 Commonwealth Ave.
- **Phone:** 617-358-5165, **E-mail:** jaeylee@bu.edu
- **Office Hours:** 4:00 – 5:30 PM, Wednesday

- **Course Objectives**
 - To study basic methods for designing and analyzing algorithms
 - To study basic computer algorithms, including sorting, searching, dynamic programming, greedy algorithms, graph algorithms (shortest path, spanning trees, tree traversals), etc.

- **Prerequisites:** MET CS 248 and MET CS 341 or MET CS 342 (or instructor's consent).

- **Text:** 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>

- **Grading:**
 - Midterm: 30%, Final: 40%
 - Assignment: 30%

- **Letter Grade:**
 - $90 \leq G < 94$: A- $94 \leq G$: A,
 - $80 \leq G < 83$: B- $83 \leq G < 87$: B $87 \leq G < 90$: B+
 - $70 \leq G < 73$: C- $73 \leq G < 77$: C $77 \leq G < 80$: C+
 - $60 \leq G < 70$: D
 - $G < 60$: F

- **Assignment**
 - About eight homework assignments will be assigned (the number of assignments is subject to change according to the actual progress of the class). Some assignments will include programming.
 - Solutions will be discussed in the class when graded papers are returned.

- **Academic Integrity Policy**
 - 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.html.
- 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.
- **Attendance and Absence:** Attendance is not required but strongly encouraged. If a student misses a class it is his/her responsibility to catch up with the material discussed during the missed class.
- **Late Policy**
 - All assignments are due at the beginning of the class on the due date.
 - A late homework is subject to a penalty of 10% per day. An exception may be made if a student is in an unusual/urgent situation and obtains permission from the instructor before the due date.
- **Make-up Exam**
 - A make-up examination for the midterm can be arranged only when a student has an emergency (e.g., a medical emergency or an urgent family matter). Students may need to provide the instructor with an appropriate document (such as a letter from a physician).
 - 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.
- **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 strongly encouraged to read book chapters assigned for each lecture before coming to the class.

Week	Date	Lecture	Reading Assignment
1	5/24	Introduction to algorithms, Growth of functions	Chapters 1, 2, and 3
2	5/31	Divide and conquer	Chapter 4
3	6/7	Heapsort, Quicksort	Chapters 6 and 7
4	6/14	Linear-time sorting, Medians and order statistics	Chapters 8 and 9
5	6/21	Hash tables, Binary search trees	Chapters 11 and 12
6	6/28	Midterm	
7	7/5	Red-black trees	Chapter 13
8	7/12	Dynamic programming	Chapter 15
9	7/19	Greedy algorithms, Elementary graph algorithms	Chapters 16 and 22
10	7/26	Minimum spanning trees, Shortest paths	Chapters 23 and 24
11	8/2	Maximum flow, P and NP	Chapter 26 and note
12	8/9	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.
- **Email communication:** When it is necessary to communicate to you, I will send an email to your **BU email** account. So, you need to check your BU email regularly (e.g., once a day).