CS 473/573 - Algorithms I - 2017-2018 Fall

Instructor: Cevdet Aykanat

Schedule:
Section 1: EE-04 Tuesday 09:40-10:30, Thursday 10:40-12:30
Section 2: EE-04 Tuesday 13:40-15:30, Thursday 15:40-16:30
Spare hours are going to be used as needed. Check course web page for announcements.


Assistants: M. Ozan Karsavuran, Nabil Abubaker, Gündüz Vehbi Demirci, Mehmet Basaran

Course Web Page: http://cs.bilkent.edu.tr/~ozan.karsavuran/473

Credits: 3, ECTS Credits: 6
Prerequisites: CS 202

Grading:
● Midterm: 25%
● Final: 25%
● Mid-week exams: 45%
● Attendance: 5%

Mid-week exams: Time & Classroom TBD

Course Contents
WEEK(1): Introduction: analyzing algorithms, designing algorithms.
WEEK(2): Asymptotic notation.
WEEK(3): Divide and conquer: Strassen
WEEK(4): Randomized quicksort: analysis.
WEEK(5): Medians and order statistics.
WEEK(6): Heaps: heapsort, priority queues.
WEEK(7): Sorting in linear time.
WEEK(9): Dynamic programming: 0/1 Knapsack problem, resource allocation problem.
WEEK(12): Elementary graph algorithms: BFS, DFS.
WEEK(13): Elementary graph algorithms: topological sort, SCC.
WEEK(14): Review

Remarks
● Copying or communicating during an exam is considered as cheating. Students caught cheating in an exam will be subject to disciplinary action, as explained in the “Student Disciplinary Rules and Regulation.”
● Students failing to obtain 20 points out of 75 points until final exam will get FZ.
● There will be 6 mid-week exams.
● Mid-week exam dates and classrooms will be announced later.
● In mid-week exams, books are open but any other resources are forbidden. (Books must be clean and unused. Books containing any written text are strictly not allowed. Sharing books during exam is strictly forbidden.)
● In all exams, smart watches, phones, and any other electronic devices must be turned off.
● Each mid-week exam will contain questions about the topics covered in the last two weeks.
● One of these mid-week exams having least grade will be omitted at final grading. The least grade is determined for each student individually.
● All students are strictly encouraged to attend all mid-week exams.
● For students missing $m \geq 2$ mid-week exams due to health problems (all of which are reported officially) there will be $m - 1$ makeups at the end of semester. Topics of makeups are as same as topics of the final exam.