CS 473/573 - Algorithms I

2020-2021 Fall

Instructor: Cevdet Aykanat

Schedule:
16-30 September
Section 1: EE-412 Thursday 15:30-17:20, Sunday 8:30-9:20
Section 2: EE-412 Thursday 17:30-20:20, Sunday 9:30-10:20

1 October – 27 December
Section 1: EE-412 Thursday 17:30-19:20, Sunday 8:30-9:20
Section 2: EE-412 Thursday 20:00-21:50, Sunday 9:30-10:20


Assistants: Nabil Abubaker, Mustafa Duymuş, Orhun Çağlayan, Selçuk Gülcan
Course Web Page: http://bilkent.edu.tr/~nabil.abubaker/473
Check course web page regularly for announcements.

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

Grading:
- Midterm: 30% (Face-to-face)
- Final: 30% (Face-to-face)
- Mid-week exams: 20% (Online via Zoom)
- Assignments: 20% (Offline)

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): Amortized analysis : aggregate and accounting methods
WEEK(13): Amortized Analysis : potential method
November 7-15: Midterm week

Disclaimer: The instructor holds the right to change the grading and assignment policies because of the possible changes in pandemic conditions.

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 15 points out of 70 points until final exam will get FZ.
- There will be 4 mid-week exams and 2 assignments.
- Assignments can be partially or fully programming-based, and the programming language to be used in those assignments will be restricted to C.
- Mid-week exam dates will be announced later.
- In all face-to-face exams, smart watches, phones, and any other electronic devices must be turned off.