

Course Syllabus for Introduction to Algorithm (SWE2016)

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Official Language: English

Course Description:

This course introduces asymptotic analysis of algorithms, advanced data structures, and key algorithms essential for solving problems with computers. Refer the following course topics for details.

Recommended Prerequisites: Data Structures, C/C++ Programming Language

Tentative Topics:

- Quick review of data structures: lists, stacks, queues, trees, ...
- Sorting algorithms: insertion, bubble, heap, merge, quick, bucket, and radix sorts
- Algorithm analysis: growth of functions, asymptotic analysis, recurrences, amortized analysis
- Dynamic programming
- Greedy algorithms
- Graph algorithms: minimum spanning trees, shortest paths, maximum flows, ...
- Geometric algorithms
- NP-completeness
- Approximation algorithms

Grading:

Five or six assignments will be given.

Depending on the COVID-19 status, one of the following two rules will be applied:

- 1) Assignment 50% + Final Exam 50%
- 2) Assignment 100%

Class Attendance Rule:

- Every two absences will lower your grade by one. (e.g., A+ \rightarrow A)
- No credit for any lateness.
- Exemption for the first absence.
- Example: late + absence 3 – 4 times (1 lower grade), 5 – 6 times (2 lower grade), ...