Course Code   Course Title
COMP 3071   **Honors Competitive Programming**

Course Description

Intensive programming laboratory to equip students with creative problem solving and competitive programming skills. International programming competition-type problems will be used to motivate the study of algorithms, programming, and other topics in computer science. Enrollment in the course requires approval of the course instructor.

List of Topics

1) Sorting
2) Search algorithms
3) Dynamic programming
4) Balanced binary trees
5) Maximum flow
6) Greedy algorithms
7) Computational geometry
8) Graph algorithms
9) Search algorithms
10) Competitive programming skills

Textbook

N/A

Reference books

-   [Competitive Programming Book (cpbook.net)](cpbook.net)

Assessment approach and Weight

This course is designed for HKUST ACM programming teams. The grading is based on the performance in ACM-ICPC regional contests.

Course Intended Learning Outcomes

1) Solve a programming problem with a programming language within a short time
2) Learn advanced algorithms and data structures
3) Participate in programming contests

Assessment Rubric

N/A