The Hong Kong University of Science and Technology

UG Course Syllabus (Spring 2025-26)

[Course Title] Honors Competitive Programming

[Course Code] COMP3071

[No. of Credits] 2 credits

[Any pre-/co-requisites] Enrollment in the course requires approval of the course instructor and is only for HKUST ICPC programing teams.

Name: [Instructor(s) Name] Qifeng Chen

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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 and is only for HKUST ICPC programing teams.

Intended Learning Outcomes (ILOs)

On successful completion of the course, students will be able to:

1. Develop advanced algorithmic thinking and efficient coding techniques by tackling complex problems under time constraints.

2. Improve teamwork and collaboration to develop effective communication, role distribution, and collaborative problem-solving.

3. Study advanced and efficient algorithms and data structures.

4. Develop time management to solve multiple challenging problems at the same time.

Assessment and Grading

This course will be assessed using criterion-referencing and grades will not be assigned using a curve. Detailed rubrics for each assignment are provided below, outlining the criteria used for evaluation.

Assessments:

Grades are based on the performance in the ICPC programming contests.

Mapping of Course ILOs to Assessment Tasks

Assessed Task	Mapped ILOs	Explanation
Participation in ICPC regional contests or ICPC Asia East Continent Final Contest	**[ILO1, ILO2, ILO3. ILO4]**	**Participating ICPC enhances participants' abilities to develop advanced algorithmic thinking and efficient coding techniques by solving complex problems under time constraints. It also improves teamwork and collaboration, fostering effective communication and role distribution among team members. ICPC provides exposure to advanced algorithms and data structures, deepening participants' understanding and application of these concepts. The contest's strict time limits require effective time management skills, enabling participants to solve multiple challenging problems simultaneously.**

Grading Rubrics

If the student receives a gold/silver/bronze medal in ICPC, the grade will be in the A range.

Final Grade Descriptors:

[As appropriate to the course and aligned with university standards]

Grades	Short Description	Elaboration on subject grading description
A	**Excellent Performance**	**[Example: Demonstrates a comprehensive grasp of subject matter, expertise in problem-solving, and significant creativity in thinking. Exhibits a high capacity for scholarship and collaboration, going beyond core requirements to achieve learning goals.]**
B	**Good Performance**	**[Example: Shows good knowledge and understanding of the main subject matter, competence in problem-solving, and the ability to analyze and evaluate issues. Displays high motivation to learn and the ability to work effectively with others.]**
C	**Satisfactory Performance**	**[Example: Possesses adequate knowledge of core subject matter, competence in dealing with familiar problems, and some capacity for analysis and critical thinking. Shows persistence and effort to achieve broadly defined learning goals.]**

D	**Marginal Pass**	**[Example: Has threshold knowledge of core subject matter, potential to achieve key professional skills, and the ability to make basic judgments. Benefits from the course and has the potential to develop in the discipline.]**

F	**Fail**	**[Example: Demonstrates insufficient understanding of the subject matter and lacks the necessary problem-solving skills. Shows limited ability to think critically or analytically and exhibits minimal effort towards achieving learning goals. Does not meet the threshold requirements for professional practice or development in the discipline.]**

Course AI Policy

No AI is allowed.

Communication and Feedback

Email the instructor for any communication or feedback

Resubmission Policy

N/A

Required Texts and Materials

[List required textbooks, readings, and any other materials]

Competitive Programming Book (cpbook.net)

Academic Integrity

Students are expected to adhere to the university's academic integrity policy. Students are expected to uphold HKUST's Academic Honor Code and to maintain the highest standards of academic integrity. The University has zero tolerance of academic misconduct. Please refer to Academic Integrity | HKUST – Academic Registry for the University's definition of plagiarism and ways to avoid cheating and plagiarism.

[Optional] Additional Resources

[List any additional resources, such as online platforms, library resources, etc.]

N/A