The Hong Kong University of Science and Technology

UG Course Syllabus

Introduction to Computer Science

COMP 1021

3 Credits

Exclusion(s): COMP 1022P, COMP 1022Q (prior to 2020-21), COMP 2011, COMP 2012H

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Course Description

This course introduces students to the world of computer science. Students will experience a range of fun and interesting areas from the world of computing, such as game programming, user interface design and computer graphics. These will be explored largely by programming in the Python language.

List of Topics

- Introduction to Python
- Introduction to Turtle Graphics
- Comments and Text
- Making Decisions
- Loops
- Lists and Tuples
- Slicing
- Functions
- Data Types
- File Handling
- Dictionaries
- State Diagrams
- Turtle Object Creation
- Event Handling
- Advanced Operators
- Objects
- Recursion

Intended Learning Outcomes (ILOs)

On successful completion of this course, students are expected to be able to:

ILO1. Demonstrate programming skills, with an emphasis on the Python programming language

ILO2. Write programs in interesting areas such as game programming, computer graphics and user interface design

Assessment and Grading

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

Assessments:

Assessment Task	Contribution to Overall Course grade (%)
Labs x 3	42% (14% for each lab)
Final examination	58%

Mapping of Course ILOs to Assessment Tasks

Assessed Task	Mapped ILOs	Explanation
Labs	ILO1, ILO2	Assesses students' ability to apply lecture materials in problem solving through structuring solutions and requirements in Python programming (ILO1) and developing Python codes to implement the intended tasks (ILO2)
Final examination	ILO1, ILO2	Evaluates students' understanding of Python codes and the flow logic (ILO1), and their ability to develop Python codes in correct syntax (ILO2).

Grading Rubrics

Criteria for evaluation	Labs	Final examination
Exemplary	Submitted codes can run without error and generate correct outputs from all test case inputs.	Answers provided are all in line with intended results and demonstrated proficient understanding of Python language.
Competent	Submitted codes can run and generate outputs in line with majority of test case inputs. Program may crash or behave incorrectly under some harsh tests.	Majority of answers provided are compatible with intended results, showing satisfactory knowledge of Python language.
Needs work	Submitted codes can run but may not be able to generate results that meet the requirements.	Answers reflected a basic understanding of Python codes.
Unsatisfactory	Submitted codes can not run properly or achieve intended purpose.	Answers provided reflected lack of knowledge to program in Python language.

Final Grade Descriptors:

Grades	Short Description	Elaboration on subject grading description
A	Excellent Performance	Demonstrates proficient knowledge of the Python programming language and ability to generate through debugging error free codes that meet specified functional requirements and produce correct output on various input instances.
B	Good Performance	Possesses good understanding of Python language and the relevant syntax requirements, with ability to identify and correct coding bug when developing codes that meet specified functional requirements while producing correct output on general usage input cases.
C	Satisfactory Performance	Shows knowledge of the Python coding structure and syntax and ability to program in accordance with specified functional requirements in majority of instances.
D	Marginal Pass	Has basic understanding of Python language and marginal ability to write programs that behaves correctly on typical input instances.
F	Fail	Lack of understanding of the Python programming language and unable to program given specified application requirements.

Course AI Policy

The use of generative AI tools (such as ChatGPT) are prohibited in this class including all lab assignments.

Communication and Feedback

Assessment marks for individual assessed tasks will be communicated via Canvas within two weeks of submission. Feedback on assignments will include test cases results. Students who have further questions about the feedback including marks should consult the instructor within five working days after the feedback is received.

Resubmission Policy

N/A

Required Texts and Materials

Interactive Python Programming for Beginners, written by Gibson Lam and David Rossiter

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.

Additional Resources

N/A