The Hong Kong University of Science and Technology

UG Course Syllabus

Python Programming Bridging Course

COMP 1029P

1 Credit

Exclusion(s): COMP 1021

Prerequisite(s): COMP 1002 OR COMP 1004 OR COMP 1022P OR COMP 1022Q OR ISOM 3230 OR ISOM 3320

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Course Description

This course introduces the Python programming language. It is intended for students who already have some experience in computer programming but wish to learn how to apply those programming skills to the Python language. The course covers basic programming topics, such as variables, functions and loops, to more advanced topics. Students explore these by self-learning of course materials together with guided programming exercises. Students without the prerequisites but possess relevant programming knowledge may seek instructor's approval for enrolling in the course. Graded P or F.

List of Topics

Introduction to Python
- Variables
- Strings and Lists
- Booleans

Essential Programming in Python
- Functions and Making Decisions
- Variable Scope
- For Loops
- While Loops

2D Arrays and the Game of Life
- Two Dimensional Arrays
- Conway's Game of Life
- Print, Clear Screen and Delay

Advanced Features
- Dictionaries
- User Input and Dealing with Errors
- File I/O
- Object-Oriented Programming

Recursion and Turtle Graphics

- Recursion
- Turtle Graphics

Intended Learning Outcomes (ILOs)

1. Define basic programming elements such as variables, loops and functions in Python
2. Describe data structures and data abstraction in Python
3. Implement advanced programming concepts in Python
4. Design, write and debug computer programs in Python

Assessments:

Assessment Task	Contribution to Overall Course grade (%)
Online exercises	50%
Final examination	50%

Required Texts and Materials

N/A

Additional Resources

Online course content to be published in HKUST canvas when the semester begins.