THE CHINESE UNIVERSITY OF HONG KONG
Print Course Catalog Details

Academic Org: Dept of Computer Sci & Engg – Subject: AI: Systems & Tech

Course: AIST1110 **Course ID:** 013180 **Eff Date:** 2024-07-01 **Crse Status: Active** **Apprv. Status:** Approved **[**Course Rev**]**
Introduction to Computing using Python 計算導論（Python）

This course aims to provide an intensive hands-on introduction to the Python programming language. Topics include Python programming language syntax, basic data types, operators for various data types, function definition and usage, file and operating system support, object-oriented programming, functional programming, module creation, visualization, multi-threaded programming, networking, cryptography, web/database access. The course will go through some important Python packages for artificial intelligence and machine learning applications, e.g., NumPy and SciPy, and use these packages to accomplish some simple artificial intelligence and machine learning tasks.

本科旨在為Python編程語言提供密集的實踐介紹。主題包括基本的Python語言語法、基本數據類型、各種數據類型的基本運算符、函數定義和使用、文件和操作系統支援、物件導向編程、函數式編程、模塊創建、可視化、多線程編程、網絡、密碼學、網絡 / 數據庫存取。本科還將簡介重要的Python軟件包，用於人工智能和機器學習應用，如Numpy和Scipy及使用這些軟件包來完成一些簡單的人工智能及機器學習任務。

Grade Descriptor: A

EXCELLENT – exceptionally good performance and far exceeding expectation in all or most of the course learning outcomes; demonstration of superior understanding of the subject matter, the ability to analyze problems and apply extensive knowledge, and skillful use of concepts and materials to derive proper solutions.

有關等級說明的資料，請參閱英文版本。

B

GOOD – good performance in all course learning outcomes and exceeding expectation in some of them; demonstration of good understanding of the subject matter and the ability to use proper concepts and materials to solve most of the problems encountered.

有關等級說明的資料，請參閱英文版本。

C

FAIR – adequate performance and meeting expectation in all course learning outcomes; demonstration of adequate understanding of the subject matter and the ability to solve simple problems.

有關等級說明的資料，請參閱英文版本。

D

MARGINAL – performance barely meets the expectation in the essential course learning outcomes; demonstration of partial understanding of the subject matter and the ability to solve simple problems.

有關等級說明的資料，請參閱英文版本。

F

FAILURE – performance does not meet the expectation in the essential course learning outcomes; demonstration of serious deficiencies and the need to retake the course.

有關等級說明的資料，請參閱英文版本。

Equivalent Offering:
Units: 3 (Min) / 3 (Max) / 3 (Acad Progress)
Grading Basis: Graded
Repeat for Credit: N
Multiple Enroll: N
Course Attributes:

Topics:

COURSE OUTCOMES

Learning Outcomes:

At the end of the course of studies, students will have acquired the ability to
1. write, compile and execute Python programs;
2. make use of Python's object-oriented programming methodology;
3. make use of Python's functional programming methodology;
4. design and create applications using Python modules;
5. include other programming languages (e.g., C programming language) into Python;

6. use Python for database and web access;
7. use Python for 2D and 3D visualization.

Course Syllabus:

This course aims to provide an intensive hands-on introduction to the Python programming language. Topics include Python programming language syntax, basic data types, operators for various data types, function definition and usage, file and operating system support, object-oriented programming, functional programming, module creation, visualization, multi-threaded programming, networking, cryptography, web/database access. The course will go through some important Python packages for artificial intelligence and machine learning applications, e.g., NumPy and SciPy, and use these packages to accomplish some simple artificial intelligence and machine learning tasks.

Assessment Type:

Essay test or exam	: 60%
Lab reports	: 40%

Feedback for Evaluation:

1. Quiz and examinations
2. Course evaluation and questionnaire
3. Question-and-answer sessions during class
4. Student consultation during office hours or online

Required Readings:

1. Exploring Python by Timothy A. Budd
2. Think Python: How to Think Like a Computer Scientist, by Allen B. Downey
3. Python for Informatics: Exploring Information, by Chuck Severance
4. Artificial Intelligence: Foundations of Computational Agents, by David Poole, Alan Mackworth

Recommended Readings:

OFFERINGS

1. AIST1110 — Acad Organization=CSD; Acad Career=UG

COMPONENTS

LAB : Size=50; Final Exam=N; Contact=2

LEC : Size=50; Final Exam=Y; Contact=2

ENROLMENT REQUIREMENTS

1. AIST1110

Enrollment Requirement Group:

Pre-requisite: ENGG1110 or ESTR1002
Not for students who have taken CSCI1040 or CSCI1120 or CSCI1130 or CSCI1510 or CSCI1520 or CSCI1530 or CSCI1540 or CSCI1550 or CSCI2040 or ESTR1100 or ESTR1102

New Enrollment Requirement(s):

Pre-requisite = no change
Exclusion = Change from "CSCI1040 or CSCI1110 or CSCI1120 or CSCI1130 or CSCI1510 or CSCI1520 or CSCI1530 or CSCI1540 or CSCI2040 or ESTR1100 or ESTR1102" to
"CSCI1040 or CSCI1120 or CSCI1130 or CSCI1510 or CSCI1520 or CSCI1530 or CSCI1540 or CSCI1550 or CSCI2040 or ESTR1100 or ESTR1102"

Additional Information

eLearning hrs for blended cls 0
VTL-Onsite face-to-face hrs 0
VTL-Online synch. hrs 0
VTL-Online asynch. hrs 0
No. of micro-modules 0
Research components (UG) 0%

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