THE UNIVERSITY OF HONG KONG
HKU BUSINESS SCHOOL

IIMT2602 Business Programming
2022-23, Semester 2, Subclass A

General Information

Instructor:	Dr. DING Chao (丁超)
Email address:	chao.ding@hku.hk
Office location:	KK807
Consultation time:	by appointment
Teaching Assistant:	TBD
Pre-requisites:	None
Course Website:	Moodle
Mutually exclusive:	COMP1117 Computer programming and ENGG1330 Computer programming I

Course Description

With today's fast-paced digital transformation, massive trails of data have been generated as the by-product of our day-to-day activities. In virtually all business sectors, decision-making is increasingly data-driven. This course aims at teaching students how to write computer programs using Python to collect, analyze, and interpret data from real-world applications. It is designed for absolute beginners. Students will build essential skills from scratch. The focus of the course will be on the fundamentals of Python, data manipulation, visualization, and analysis.

Course Objectives

1. Understand the basic programming concepts
2. Understand the basic syntax and semantics of the Python language
3. Understand the primitive data types built into Python
4. Understand the control structures and repetition structures
5. Understand the principles of data storage and manipulation
6. Be able to design, write and debug simple programs to handle real-world data

Textbooks

Required textbooks:

- *Python for Everybody* -- Charles R. Severance
  Free access at: https://www.py4e.com/book
- *Python for Data Analysis* -- Wes McKinney
  Free code at: https://github.com/wesm/pydata-book

Optional textbook:

- *Think Python 2nd Edition* -- Allen Downey
  Free access at: https://greenteapress.com/wp/think-python-2e/

Faculty Learning Goals (FLGs)
FLG1: Acquisition and internalization of knowledge of the programme discipline FLG2: Application and integration of knowledge FLG3: Inculcating professionalism FLG4: Developing global outlook FLG5: Mastering communication skills FLG6: Cultivating leadership

Course Learning Outcomes (CLOs)		**Aligned FLGs**
CLO1	Students will become fully proficient in Python programming for data analysis and analytics, including a conceptual and operational understanding of object oriented programming.	1
CLO2	Students will be exposed to and used to many of the advanced Python libraries for data analytics and manipulation.	1 & 2
CLO3	Students will learn how to transform, clean up, and conduct data-munging for a wide variety of messy real-world data using NumPy and Pandas, so that it can be analyzed via advanced analytics in Python.	1 & 2
CLO4	Students will be encouraged to solve unexpected analytics problems in a creative yet logically disciplined manner using Python and data science skills, and to communicate their ideas with their classmates and instructor.	2, 3 & 5
CLO5	Students will demonstrate professionalism and originality in finding an interesting real-world problem of global importance (e.g., healthcare, security, business, social media) that they attempt to solve with original analytics methods that they apply through a full application of Python and other tools.	2, 3, 4 & 5

Course Teaching and Learning Activities (T&L)	**Expected contact hours**	**Study load (% of study)**
T&L1. Interactive lectures and discussions	25	29%
T&L2. In-class quizzes	5	6%
T&L3. Assignments	15	18%
T&L4. Course readings	25	29%
T&L5. Self-study and self-training	15	18%
Total	85	100%

Assessments	**Brief Description**	**Weights**	**Aligned CLOs**
A1. Participation	Interactions and discussions.	10%	1 & 2
A2. Quizzes	In-class quizzes.	15%	1 to 3
A3. Assignments	Take-home assignments.	25%	1 to 4
A4. Midterm exam	One midterm examination.	20%	1 to 5
A5. Final exam	One final examination.	30%	1 to 5
	Total	100%	

Course Grade	Grade Descriptors
A+, A, A-	The student is able to apply all the methods learned in the course to new, unexpected situations, independently and in a novel manner that goes beyond expectations of a good student. Student has achieved an impressive mastery of course content.
B+, B, B-	The student is able to apply the methods learned in the course, but only under partial guidance. Student has achieved a basic mastery of course content, and thus meets expectations.
C+, C, C-	The student understands conceptually most of the methods learned, but cannot apply them all, even under guidance. Performance is that of an average student and content knowledge is that of a novice, which is below expectations.
D+, D	The student has shown some effort but has a highly limited understanding of course content. Performance and content knowledge are poor and not to the level expected for a future data analytics professional.
F	The student has shown little effort or understanding toward course content. Performance and content knowledge are completely unacceptable.

Course Policies

1. Midterm exam and final exam are not to be missed unless under exceptional circumstances.
2. Attendance of all lectures is not mandatory but strongly encouraged.
3. Plagiarism and copying of copyright materials are serious offences and may lead to disciplinary actions. For details concerning plagiarism, please refer to: http://www.hku.hk/plagiarism/page2s.htm
4. Late penalty of assignments: 25% deduction for 1 day overdue, 50% deduction for 2 days overdue, and 100% deduction for 3 days overdue.

Means/Processes for Student Feedback on Course

x Participation in SFTL around the end of the semester.

Week	Topics	Readings
1	Course overview Variables Expressions Statements	Severance – Ch. 1, 2
2	Lunar New Year, no class	
3	Conditional execution	Severance – Ch. 3
4	Functions	Severance – Ch. 4
5	Modules and packages	Severance – Ch. 4
6	Loops and iterations	Severance – Ch. 5
7	Strings	Severance – Ch. 6
8	Reading week, no class	
9	Lists	Severance – Ch. 8
10	Dictionaries	Severance – Ch. 9
11	Tuples	Severance – Ch. 10
12	Files I/O	Severance – Ch. 7
13	Regular expression	Severance – Ch. 11
14	NumPy	McKinney – Ch. 4
15	Pandas	McKinney – Ch. 5