City University of Hong Kong
Course Syllabus

offered by Department of Information Systems
with effect from Semester A 2021 / 2022

Part I Course Overview

Course Title:	Introduction to Business Programming in Python
Course Code:	CB2240
Course Duration:	One Semester
Credit Units:	3
Level:	B2
Proposed Area: *(for GE courses only)*	☐ Arts and Humanities ☐ Study of Societies, Social and Business Organisations ☐ Science and Technology
Medium of Instruction:	English
Medium of Assessment:	English
Prerequisites: *(Course Code and Title)*	Nil
Precursors: *(Course Code and Title)*	Nil
Equivalent Courses: *(Course Code and Title)*	IS2240 Python Programming for Business
Exclusive Courses: *(Course Code and Title)*	Nil

Part II Course Details

1. Abstract

(A 150-word description about the course)

This course will introduce fundamental programming concepts and applications in business services. The main topics include basic concepts of expressions, variables, functions, logic, and conditional statements. Python modules will be used to solve business problems through data analyses and visualizations.

After completing the course, students will be able to write simple Python programs to solve real and practical problems in various business disciplines. As an introductory programming course, the concepts and skills will help students understand how information technologies (Python programming) facilitate data-driven decision-making processes in modern organizations.

With the looming transformative impacts of AI and machine learning in areas such as auditing, FinTech, digital marketing, and supply chain 4.0, this introductory Python course will pave ways for all business students to pursue more advanced skills necessary to adapt to the changing labor market. Students wishing to advance their programming skills in Python and basic machine learning can take the advanced course of IS2240 Python Programming for Business.

2. Course Intended Learning Outcomes (CILOs)

(CILOs state what the student is expected to be able to do at the end of the course according to a given standard of performance.)

No.	CILOs#	Weighting* (if applicable)	Discovery-enriched curriculum related learning outcomes (please tick where appropriate)		
			A1	*A2*	*A3*
1.	Explain the structure of a Python program and understand the basics of computer programming.	20%	✓		
2.	Read, analyze, test and debug Python programs.	20%	✓	✓	
3.	Identify, characterize, and analyze a problem, and write Python programs to solve the business problem.	30%		✓	✓
4.	Apply Python programming knowledge and techniques to facilitate data-driven decision-making through data analyses and visualization.	30%		✓	✓
		100%			

** If weighting is assigned to CILOs, they should add up to 100%.*

 # Please specify the alignment of CILOs to the Gateway Education Programme Intended Learning outcomes (PILOs) in Section A of Annex.

A1: Attitude
Develop an attitude of discovery/innovation/creativity, as demonstrated by students possessing a strong sense of curiosity, asking questions actively, challenging assumptions or engaging in inquiry together with teachers.

A2: Ability
Develop the ability/skill needed to discover/innovate/create, as demonstrated by students possessing critical thinking skills to assess ideas, acquiring research skills, synthesizing knowledge across disciplines or applying academic knowledge to self-life problems.

A3: Accomplishments
Demonstrate accomplishment of discovery/innovation/creativity through producing /constructing creative works/new artefacts, effective solutions to real-life problems or new processes.

3. Teaching and Learning Activities (TLAs)

(TLAs designed to facilitate students' achievement of the CILOs.)

TLA	Brief Description	CILO No.				Hours/week (if applicable)
		1	2	3	4	
TLA1: Lecture	Concepts and general knowledge of programming techniques in Python are explained.	✓	✓	✓	✓	Lecture: 1 Hour/Week
TLA2: Laboratory Exercise	Hands-on computer exercises related with business domains are designed to help students apply what they have learned in lectures. Assignments involve individual work or teamwork by a group of students in the same laboratory group to solve a specific business problem.		✓	✓	✓	Laboratory: 2 Hours/Week
TLA3: Tutorial	Concepts, techniques, and good practices of programming are discussed.	✓	✓	✓	✓	
TLA4: Class Discussion and Presentation	Perform online quizzes in lectures, tutorials, and laboratory sessions to get immediate feedback from students. These are followed by discussions of quizzes to reinforce the learning of the materials tested. Presentation of laboratory results and assignments may be required.	✓	✓	✓	✓	

4. Assessment Tasks/Activities (ATs)

(ATs are designed to assess how well the students achieve the CILOs.)

Assessment Tasks/Activities	CILO No.				Weighting*	Remarks#
	1	2	3	4		
Continuous Assessment: 60%						
AT1: Participation and Laboratory Exercises Each laboratory has in-class exercises to assess students' hands-on programming skills of the topics covered.	✓	✓	✓	✓	20%	
AT2: Individual Assignment The individual assignment, including programme codes, results, written reports and presentation, is required to assess the technical analysis and implementation skill sets of the students.		✓	✓	✓	20%	
AT3: Weekly Quiz The quizzes serve the purpose of continuous assessment of students' understanding of the critical domain areas and as an indicator of how well the students have performed.	✓	✓	✓	✓	20%	
Examination: 40% (duration: one 2-hour exam)						
AT4. Final Examination Students will be assessed via the examination on their understanding of concepts learned in class, textbooks, reading materials, and their ability to apply subject-related knowledge.	✓	✓	✓	✓	40%	
** The weightings should add up to 100%.*					100%	

Remark: Students must pass BOTH coursework and examination in order to get an overall pass in this course.

5. Assessment Rubrics

(Grading of student achievements is based on student performance in assessment tasks/activities with the following rubrics.)

Assessment Task (AT)	**Criterion**	**Excellent (A+, A, A-)**	**Good (B+, B, B-)**	**Fair (C+, C, C-)**	**Marginal (D)**	**Failure (F)**
AT1: Participation and Laboratory Exercises	Ability to accurately describe and understand the basic concepts in Python programming	High	Significant	Moderate	Basic	Not even reaching marginal levels
	Ability to quickly understand and analyze a Python program	High	Significant	Moderate	Basic	Not even reaching marginal levels
	Ability to creatively, effectively and efficiently write Python programs	High	Significant	Moderate	Basic	Not even reaching marginal levels
	Capability to creatively and effectively develop applications that involve advanced techniques to solve business problems	High	Significant	Moderate	Basic	Not even reaching marginal levels
AT2: Individual Assignment	Ability to effectively test and debug Python programs	High	Significant	Moderate	Basic	Not even reaching marginal levels
	Ability to creatively, effectively and efficiently write Python programs	High	Significant	Moderate	Basic	Not even reaching marginal levels
	Capability to creatively and effectively develop applications that involve advanced techniques to solve business problems	High	Significant	Moderate	Basic	Not even reaching marginal levels
AT3: Weekly Quiz	Ability to accurately describe and understand the basic concepts in Python programming	High	Significant	Moderate	Basic	Not even reaching marginal levels
	Ability to accurately understand and analyze a Python program	High	Significant	Moderate	Basic	Not even reaching marginal levels
	Ability to creatively, effectively and efficiently write Python programs	High	Significant	Moderate	Basic	Not even reaching marginal levels
	Capability to creatively and effectively develop applications that involve advanced techniques to solve business problems	High	Significant	Moderate	Basic	Not even reaching marginal levels
AT4: Final Examination	Ability to accurately describe and understand the basic concepts in Python programming	High	Significant	Moderate	Basic	Not even reaching marginal levels
	Ability to accurately understand and analyze a Python program	High	Significant	Moderate	Basic	Not even reaching marginal levels
	Ability to creatively, effectively and efficiently write Python programs	High	Significant	Moderate	Basic	Not even reaching marginal levels

	Capability to creatively and effectively develop applications that involve advanced techniques to solve business problems	High	Significant	Moderate	Basic	Not even reaching marginal levels

Part III Other Information

1. Keyword Syllabus

(An indication of the key topics of the course.)

This is an introductory course, and basic concepts of expressions, variables, functions, logic and conditional statements, and modules will be covered. The course will focus on programming skills with practical applications to business disciplines.

2. Reading List

2.1 Compulsory Readings

(Compulsory readings can include books, book chapters, or journal/magazine articles. There are also collections of e-books, e-journals available from the CityU Library.)

1.	David I. Schneider, An Introduction to Programming Using Python, 1st edition, Pearson, 2016.

2.2 Additional Readings

(Additional references for students to learn to expand their knowledge about the subject.)

1.	Cay S. Horstmann, Rance D. Necaise, Python for Everyone, 2nd Edition, Wiley, 2016.
2.	Mark Lutz, Learning Python, 5th Edition, O'Reilly Media, 2013.
3.	Eric Matthes, Python Crash Course: A Hands-On, Project-Based Introduction to Programming, 1st Edition, No Starch Press, 2015.
4.	Al Sweigart, Automate the Boring Stuff with Python: Practical Programming for Total Beginners, 1st Edition, No Starch Press, 2015.
5.	Mahesh Venkitachalam, Python Playground: Geeky Projects for the Curious Programmer, 1st Edition. No Starch Press, 2015.
6.	Data Visualization with Python for Beginners: Visualize Your Data using Pandas, Matplotlib and Seaborn, AI Publishing LLC, 2020.