The Hong Kong Polytechnic University

Subject Description Form

Please read the notes at the end of the table carefully before completing the form.

Subject Code	LGT5419
Subject Title	Coding for Management with Python
Credit Value	3
Level	5
Pre-requisite/ Co-requisite/ Exclusion	Nil
Objectives	In response to the emerging trend of digitalisation and analytics in business, it has widely been recognised today that managers are required to learn how computer coding can be applied for business management. More and more coding languages, such as Python, become easier for managers to learn and use. This subject introduces the basics of Python language and computer coding skills, as well as their various applications in business management, such as task automation, data analysis, and decision support. It is friendly to students who do not have coding experience. The objective of this subject is to enable students to: 1. Learn basics of Python language and coding skills; 2. Learn how computer coding is used for business management; 3. Apply basic coding knowledge and skills for management applications; 4. Develop ability, interest, and confidence in exploiting all the benefits of computer coding for management applications.
Intended Learning Outcomes *(Note 1)*	Upon completion of the subject, students will be able to: a. Establish strong ability to read and analyse Python programmes; b. Establish strong ability to develop, test, and debug basic Python programmes; c. Identify applications of computer coding for business management; d. Apply the basic coding knowledge and skills studied in class to enhance real-life business management.
Subject Synopsis/ Indicative Syllabus	<table><tr><th>Topics</th><th>Sub-topics</th><th>Remarks</th></tr></table>

<table>
<tr><td>(Note 2)</td><td colspan="3"><table>
<tr><td rowspan="6">Basics of Coding in Python</td><td>Getting Started: Python and its applications to business</td><td rowspan="6">Lectures and Lab Tutorials</td></tr>
<tr><td>Variables and Simple Data Types</td></tr>
<tr><td>Basic Flow Control: Conditions and Iterations</td></tr>
<tr><td>Functions</td></tr>
<tr><td>Strings, Lists, and Dictionaries</td></tr>
<tr><td>Testing and Debugging Python Programs</td></tr>
<tr><td rowspan="2">Applications of Python for Management: Task Automation</td><td>Organizing, Reading, and Writing Working Files</td><td rowspan="2">Lectures, Case Study, and Lab Tutorials</td></tr>
<tr><td>Working with CSV Files and Excel Spread Sheets</td></tr>
<tr><td rowspan="2">Applications of Python for Management: Data Analysis</td><td>Acquiring, Cleaning, Exploration Data</td><td rowspan="2">Lectures, Case Study, and Lab Tutorial</td></tr>
<tr><td>Manipulating and Visualizing Data</td></tr>
<tr><td>Applications of Python for Management: Decision Support</td><td>Solving optimization problems</td><td>Lectures, Case Study, and Lab Tutorial</td></tr>
</table></td></tr>
<tr><td>Teaching/Learning Methodology
(Note 3)</td><td colspan="3">• During lectures, basic knowledge of python language, coding skills, and their application for management will be introduced and discussed.
• During tutorials, students will be guided to practice the basic usages and development of Python programmes for management applications in a computer lab.
• Case studies will be used in lectures and/or tutorials.</td></tr>
</table>

Assessment Methods in Alignment with Intended Learning Outcomes

(Note 4)

Specific assessment methods/tasks	% weighting	Intended subject learning outcomes to be assessed (Please tick as appropriate)					
		a	b	c	d		
1. Coursework	50%	✓	✓	✓	✓		
2. Examination	50%	✓	✓	✓	✓		
Total	100 %						

To reflect the significant technology content in this subject, 10% (or more) of the overall weighting of this subject is based on individual assessment concerning technology-related knowledge

Explanation of the appropriateness of the assessment methods in assessing the intended learning outcomes:

The coursework includes a series of written assignments to assess the subject outcomes (a) and (c), a series of tutorial exercises for practicing the development of Python programs to assess the subject outcome (b), and a course project for developing management applications of Python programs for assess the subject outcome (d). The final exam is based on questions relevant to basic concepts, knowledge, and skills about Python language and its management applications, to access subject outcomes (a)-(d).

Student Study Effort Expected

Class contact:	
▪ Lectures / Tutorials	39 Hrs.
▪	Hrs.
Other student study effort:	
▪ Self-Study, Assignment, Course Project	50 Hrs.
▪ Additional Exercises on Python Programming After Tutorials	37 Hrs.
Total student study effort	126 Hrs.

Reading List and References

<u>Reference Textbook</u>

Charles Russell Severance, Sue Blumenber, Elliott Hauser, and Aimee Andrion . (2016) *Python for Everybody: Exploring Data in Python 3*. CreateSpace Independent Publishing Platform.

Al Sweigart. (2019) *Automate the Boring Stuff with Python, 2nd Edition: Practical Programming for Total Beginners*, No Starch Press.

	Wes McKinney. (2017) Python for Data Analysis: Data Wrangling with Pandas, NumPy, and IPython (2nd Edition), O'Reilly Media.

Note 1: Intended Learning Outcomes
Intended learning outcomes should state what students should be able to do or attain upon subject completion. Subject outcomes are expected to contribute to the attainment of the overall programme outcomes.

Note 2: Subject Synopsis/Indicative Syllabus
The syllabus should adequately address the intended learning outcomes. At the same time, overcrowding of the syllabus should be avoided.

Note 3: Teaching/Learning Methodology
This section should include a brief description of the teaching and learning methods to be employed to facilitate learning, and a justification of how the methods are aligned with the intended learning outcomes of the subject.

Note 4: Assessment Method
This section should include the assessment method(s) to be used and its relative weighting, and indicate which of the subject intended learning outcomes that each method is intended to assess. It should also provide a brief explanation of the appropriateness of the assessment methods in assessing the intended learning outcomes.