



Course Outline

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| Programme | : Certificate Programme in Python Programming |
| Course Code | : 242-179010-02 |
| Module Name | : Python Programming |
| Number of Lesson | : 10 |
| Contact Hours/lesson | : 3 |
| Instructor | : Mr. Edward Szeto (Email: edward.class.hk@gmail.com) |
| Commencing Date | : Wednesday, 24 Jul, 2024 |

Course Content:

This module aims to introduce to participants the process of setting up the Python environment, running a Python programme, improving Python coding, and applying Python execution model behind object-oriented programming. The ways of applying Python in a variety of technical fields will also be explored. Topics include:

1. Sequence and file operations
2. Working with files
3. Debugging
4. Object-oriented programming in Python
5. Techniques of web scraping
6. Python libraries and matrices for data cleaning and processing
7. Input evaluation
8. Adding Zip
9. Handling Binary file
10. Introduction to data analysis and visualization techniques

Learning Outcomes

Upon completion of this module, participants will have acquired the ability to:

1. illustrate Python object types;
2. develop object-oriented skills in Python
3. acquire and process data from the internet
4. explain the basics of data analysis and visualization

Lesson Plan

| Week | Date | Course Content | Activities |
|------|--------|--|----------------------------|
| 1 | 24 Jul | <ul style="list-style-type: none">- Python Basic Review- Python File Handling | Lec / Lab |
| 2 | 31 Jul | <ul style="list-style-type: none">- Working with Files: Read / Create / Write /Delete Files- Debugging | Lec / Lab |
| 3 | 7 Aug | <ul style="list-style-type: none">- Introduction of Object-Oriented Programming- Classes and Instances | Lec / Lab |
| 4 | 14 Aug | <ul style="list-style-type: none">- Inheritance- Introduction to Web Scrapping | Lec / Lab Assignment #1 |
| 5 | 21 Aug | <ul style="list-style-type: none">- Libraries and Tools used in Web Scrapping- Web Scrapping Implementation | Lec / Lab |
| 6 | 28 Aug | <ul style="list-style-type: none">- Input Evaluation- Zip File Handling | Lec / Lab |
| 7 | 4 Sep | <ul style="list-style-type: none">- Binary File Handling- Libraries: Pandas and Numpy | Lec / Lab |
| 8 | 11 Sep | <ul style="list-style-type: none">- Data Processing and Cleaning Operations- Data Analysis | Lec / Lab Assignment #2 |
| | 18 Sep | - No class – Public Holiday | |
| 9 | 25 Sep | <ul style="list-style-type: none">- Data Visualization with Graph Plotting- Review | Lec / Lab |
| 10 | 2 Oct | - Examination | Exam (2hr) |

Remark: The above teaching schedule is just an outline of the course and the instructor can make adjustment where appropriate.

Venues:

- CUSCS Central Learning Centre – 1/F Bank of America Tower, 12 Harcourt Road, Central.

Assessment Method

1. Exam – 40%
2. Assignment – 30%
3. Case Studies – 20%
4. Class participation – 10%

Suggested Reading

1. Knapp, M. (2017). Python programming for intermediates: Learn the fundamentals of Python in 7 Days. Independently Published.
2. Philips, D. (2018). Python 3 object-oriented programming: Build robust and maintainable software with object-oriented design patterns in Python 3.8 (3rd ed.). Birmingham: Packt Publishing.
3. Chen, D. Y. (2017). Pandas for everyone: Python data analysis. Addison-Wesley Professional.

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