科目ナンバリング	U-LAS30 20042 SE11						
授業科目名 <英訳>	Programming Practice (Python) -E2 Programming Practice (Python) -E2			担当者所属 職名・氏名	情報学研究科 特定准教授 SEO Stela Hanbyeol		
群	情報学科目群		分野(分類)	(各論)		使用言語	英語
旧群		単位数	2単位	週コマ数	1コマ	授業形態	演習（対面授業科目）
開講年度・開講期	2025・前期	曜時限	水5/木5	配当学年	全回生	対象学生	全学向

[授業の概要・目的]

This course is an introduction to the programming practice in Python, for students without prior programming experience. In this course, students learn how to write simple Python scripts, understand programming practices, and study common programming designs. At the end of the course, they would have a programmer mindset to write good code and basic programming skills in Python. As Python is widely used in many fields including academia and has a large collection of high-quality libraries, students may find their programming skills in Python useful for the rest of their academic years and possibly for their career in the future.

[到達目標]

In this course, students will first learn the syntax of the Python language and the structure of a Python program. Then, they will learn to use some of the standard data structures provided by the Python language and some of its popular libraries. Finally, students will train in designing, writing, and testing their own programs.

After attending the course, students should be able to:

- Understand and modify existing simple programs.
- Design, implement, and test their own simple programs.
- Design, implement, and test their own simple graphical interfaces.

[授業計画と内容]

Introduction (1 session)

- Computer hardware and programming languages,
- Python in today’s programming landscape,
- Example of real-world Python use.

Part 1: Learning Python and Programming Practices (10 sessions)

In this part, students will learn the fundamentals of the Python programming language by studying small example programs and completing simple programming tasks. For each topic, when applicable, we discuss common programming practices.

The presentation will include the following topics:

- Discover Python using the interactive mode
- Running a Python script
- Numeric data and Boolean
- Naming and comments
- Control structures
- Data structures (list, dictionary, string)
- Object oriented programming with Python
- Input and Output
- Error handling
- Using Python modules
- Graphical User Interface (GUI) for Python

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- Scientific computation with Python

Part 2: Programming Exercise (3 sessions)
The goal is to put in application the knowledge acquired in part 1 and experience real-world software development challenges.
The students will have to:

- Propose a solution,
- Implement the solution,
- Test the solution.

The schedule and contents are subject to change based on class progress.

Total 14 classes and one feedback class.

[履修要件]

For this course, no prior programming experience is required. Sample programs will be provided as needed. For practicality, some may contain mathematical concepts and calculations, while there are no explanations for mathematical foundations.

Students must bring their own computer to participate in this course (BYOD).
The course will be using Python 3, available for free on any recent versions of the main operating systems (Windows, Mac, or Linux). Installation is straight-forward; if needed, the instructor will provide extra help to students.

[成績評価の方法・観点]

The evaluation will be based on:

1. An assignment given during part 1 (50%)
2. A final programming task done during part 2 (50%).

The notation criteria will be explained during the classes.

[教科書]

使用しない

[参考書等]

（参考書）

For an application-oriented presentation, you can see [1] for an in-depth presentation you can refer to [2].
There are many on-line resources about Python, check the official Python website (https://www.python.org/).

[1] Al Sweigart, Automate the Boring Stuff with Python, 2nd edition, (No Starch Press) ISBN: 978-1593279929 (Python3)
[2] Mark Lutz, Programming Python, 5th Edition, (O'Reilly Media, Inc.) ISBN: 9781449398712 (Python2 & Python3)

（関連ＵＲＬ）

https://www.python.org/(Python Software Foundation)

[授業外学修（予習・復習）等]

Students are expected to review the class material during the delivery week to follow the course materials.

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Students who cannot complete the tasks given during a class should complete them before the next class to follow the course materials.

[その他（オフィスアワー等）]

There are no specific office hours. Students can send emails to communicate with the instructor regarding their assignments, questions, and other inquiries.