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 EVEN, Jani Juhani luc		
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・後期	曜時限	水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 Python programming language for students without prior programming experience.
Python is beginner friendly as it is designed to create easily readable programs. However, it is possible to rapidly develop various types of applications because Python has a very large collection of high-quality libraries. Python is also extensively used in academic research. In addition, Python is open source and freely available for all major platforms.

[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 the syntax of Python (10 session)
In this part, the students will learn the fundamentals of the Python programming language by studying small example programs and completing simple programming tasks.
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
- Scientific computation with Python

Programming Practice (Python) -E2(2)へ続く↓↓↓

Programming Practice (Python) -E2(2)

Part 2: Programming practice (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]

This is a beginner course: no prior programming experience is required. It is a practical course: The mathematical foundations are not presented and concepts are presented using simple programs. Simple programs will be provided to introduce and explain all the concepts that are presented.
Students must bring their own computer to participate to this course (BYOD).
The course will be using Python 3 (Anaconda's Python environment) which is available for free on any recent versions of the main operating systems (Windows, Mac, or Linux) and is easy to install.

[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]

do not use

[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)

[授業外学修（予習・復習）等]

Students should review the class material during the delivery week in order to smoothly follow the course.
Students who could not complete the tasks given during a class should complete them before the next class in order to smoothly follow the course.

[その他（オフィスアワー等）]

There is no specific office hour. Students can use e-mails for important communications, assignments, and questions.

Programming Practice (Python) -E2(3)へ続く↓↓↓

Programming Practice (Python) -E2(3)

[主要授業科目（学部・学科名）]