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	人間・環境学研究科 特定講師 THIES, Holger		
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	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 Python programming language for students without prior programming experience. Python is a beginner friendly programming language that is widely used in academic research and industry. In the course students will learn about basic programming concepts and how to write their own simple programs using Python.

[到達目標]

Students will learn the basics of programming using the Python programming language, including data types, conditionals and loops, basic data structures, functions and the fundamentals of object oriented programming. They will also learn how to solve real-world problems by designing, writing and testing their own Python programs.
After attending the course students should be able to:
- Understand the fundamentals of programming (variables, control structures, data types, etc.)
- Understand and modify simple Python programs
- Design, implement and test their own simple programs

[授業計画と内容]

The course consists of 14 class sessions and one feedback session.
The tentative schedule is as follows:

Introduction (1 session)
- Computer hardware and programming languages
- Installing and using Python
- Editing, saving and running a script.

Basic syntax and data types (1 session)
- Variables, naming rules and comments
- Assignments and basic data types
- Input and Output

Control structures (2 sessions)
- Boolean values and Conditional statements
- Loops
- Logical and Bitwise Operations
- Lists and Collection data types

Functions (1 session)
- Writing and Calling Functions
- Function Inputs and Outputs
- Scope

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Modules and packages (1 session)
- Concept of modules
- Importing modules
- Some important built-in modules

I/O and error handling (1 session)
- Reading data from a file
- Writing data to a file
- Error handling and exceptions

Object oriented programming with Python (2 sessions)
- Classes, Properties and Methods
- Inheritance

GUI application development (2 sessions)
- Learn how to write simple Graphical User Interfaces (GUIs)

Practice Project (3 sessions)
Students will use the knowledge acquired during the first part of the course to solve a small programming project.
They will be required to
- Select and define a problem
- Propose and implement a solution
- Test the solution

The precise course schedule and contents are subject to change depending on class progress.

[履修要件]

Students need to bring their own laptops.

[成績評価の方法・観点]

Evaluation will be based on in-class and homework assignments (70%) and final project (30%).

[教科書]

No textbook is required. Relevant materials will be distributed in class.

[参考書等]

（参考書）
Mark Lutz 『Learning Python, 5th edition』（O’Reilly Media, Inc.）ISBN:978-1449355739
Allen B. Downey 『Think Python: How to Think Like a Computer Scientist, 2nd edition』（O’Reilly Media, Inc.）ISBN:978-1491939369

[授業外学修（予習・復習）等]

Students should review the material after each class and solve weekly homework assignments.

[その他（オフィスアワー等）]

There is no specific office hour. Students can contact the instructor by email in case of questions.

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[主要授業科目（学部・学科名）]

総合人間学部