科目ナンバリング	U-LAS30 10036 SE11						
授業科目名 <英訳>	Practice in Basics of Informatics and AI Practice in Basics of Informatics and AI			担当者所属 職名・氏名	工学研究科　准教授　ZHU Fan 工学研究科　教授　岸田　潔 防災研究所　准教授　上田　恭平 工学研究科　准教授　岩井　裕正		
群	情報学科目群			分野(分類)	(基礎)	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	2026・前期	曜時限	火4	配当学年	主として1回生	対象学生	理系向

[授業の概要・目的]

The aim of this class is to learn the basic computing skills needed to operate computer software at Kyoto University. A Linux-based OS (Ubuntu) will be used in virtual computers (VDI) administrated by the Institute for Information Management and Communication (IIMC).

[到達目標]

At the end of the semester, you should be able to use virtual computers (VDI) at Kyoto University, operate Linux system and perform file management, create documents using LaTeX, create 2D and 3D graphics using gnuplot, write simple programs in Python, and use common artificial intelligence (AI) tools.

[授業計画と内容]

A brief explanation of the main topic will be given at the beginning of each session, and students will have the rest of the class to practice the acquired skills solving a given problem under the guidance of the instructor.

The following topics will be covered:
1. GUIDANCE: Connecting to VDI. Using a Terminal. Basic operations.
2. UNIX: Introduction to Linux commands. File System.
3. UNIX: Redirections. Pipes. GREP. Scripts.
4. LaTeX: Introduction to LaTeX.
5. LaTeX: Typesetting in LaTeX.
6. LaTeX: Mathematical formulas in LaTeX.
7. GNUPLOT: Creating 2D and 3D graphics with Gnuplot.
8. Review & Exercise: UNIX, LaTex, gnuplot
9. LIBRARY*: Accessing library resources. Searching. Reference Managers.
10. Python: Basics, variable type.
11. Python: Conditional branching, loops.
12. AI Tools: Exercises with Gemini and NotebookLM.
13. EXERCISE: Final Exercise (Part1).
14. EXERCISE: Final Exercise (Part2).
15. FEEDBACK

*The library session may be arranged at a different time slot and details will be announced in advance.

Practice in Basics of Informatics and AI(2)へ続く↓↓↓

Practice in Basics of Informatics and AI(2)

[履修要件]

Bring your own device (BYOD)
In this course, you will access a virtual computer (Virtual Desktop Infrastructure VDI) running Ubuntu Linux, using your own personal computer.

[成績評価の方法・観点]

Grading will be based on weekly exercises (30%), a course project (40%), and a final exam (30%). For the weekly exercises the answers/code/programs you submit will be evaluated. When compilation is necessary, it will be a condition sine qua non to get a passing grade. Comments and commentaries are expected. Particularly interesting solutions to common problems will receive extra points.
For the course project, your capability of using all tools learned in class to solve the proposed problem will be assessed. Comments and commentaries (within the code and in the report) are expected. Details will be further explained in class.

[教科書]

The textbook will be provided during the first week of classes. You are expected to read the corresponding chapters ahead of each class.

[参考書等]

（参考書）
Stefan Kottwitz 『LaTeX Beginner's Guide』（Packt Publishing）
Philipp Janert 『Gnuplot in Action: Understanding Data With Graphs』（Manning Publications）ISBN: 9781933988399
Sanjiban Sekhar Roy 『PYTHON FAST TRACK : a complete guide to rapidly mastering and applying python programming』（MORGAN KAUFMANN , 2025）ISBN:9780443338243
Reference books can be found from Kyoto University libraries.

[授業外学修（予習・復習）等]

You are expected to read the corresponding chapter ahead of each class. A brief explanation of the main topic will be delivered at the beginning of each session, but you are expected to come prepared ahead of time.
You will be given the rest of the class to practice the acquired knowledge by solving a proposed problem under the supervision of the instructor. You will be given several days to submit your answers, so you can keep practicing after the session is over.

[その他（オフィスアワー等）]

This class requires the use of virtual computers (VDI) administrated by the Institute for Information Management and Communication (IIMC), for which a valid account for the Educational Computers System of Kyoto University (ECS-ID) is required. You will receive your corresponding username and password as part of the admission procedures. Please, be sure to bring them along from the first session, or you won't be able to participate in class.
Office hours will be provided during the first day of classes.
Students who take this class are strongly recommended to take "Basics of Informatics and AI" and "Computer Programming in Civil, Environmental and Resources Engineering" the following semester.
Students must complete Information Security e-Learning provided by the Institute for Information Management and Communication(IIMC), Kyoto University including the final test of the course, and confirm its feedback. No class hour is assigned to take this e-learning, and students have to take this e-learning outside the class hours. All the members of the Kyoto University are asked to take this e-learning every year, and hence student in the second grade and above also should complete this e-learning.

Practice in Basics of Informatics and AI(3)へ続く↓↓↓

Practice in Basics of Informatics and AI(3)

[主要授業科目（学部・学科名）]