		U-LAS30 10008 SE11			
< >		Practice of Basic Informatics Practice of Basic Informatics			ZHU Fan
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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).

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At the end of the semester, you should be able to understand the basics of using virtual computers (VDI) at Kyoto University, Linux operation, file management, how to create documents using LaTeX, how to create 2D and 3D graphics using Gnuplot, and the principles of programming in Fortran.

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A brief explanation of the main topic will be given at the beginning of each session, and then you 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. LIBRARY*: Accessing library resources. Searching. Reference Managers.
5. LaTeX: Introduction to LaTeX.
6. LaTeX: Typesetting in LaTeX.
7. LaTeX: Mathematical formulas in LaTeX.
8. REVIEW 1 & EXERCISE: Basic UNIX, LaTex.
9. GNUPLOT: Creating 2D and 3D graphics with Gnuplot.
10. FORTRAN: Introduction to Programming. Intrinsic functions.
11. FORTRAN: Iterations. Conditionals.
12. REVIEW 2 & EXERCISE: Gnuplot, Fortran.
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.

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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.

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Grading will be based on class attendance and participation (20%), weekly exercises (30%), and a final report (50%). This class will have no final exam.
For class participation you will be evaluated on your comments/answers/discussions with instructors, on your collaborative spirit when working in group with other students, and on your suggesting of new ways to understand the topics discussed in class.
For 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 final report, 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. Late reports will receive negative points. Details will be further explained at the time.
In general, as a minimum requirement to obtain a passing grade in this class, you should be able to comfortably manage files using Linux terminals, create and format simple documents using LaTeX, create and format graphics using Gnuplot, and write simple programs in Fortran.

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

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Stefan Kottwitz   LaTeX Beginner's Guide   ISBN:1847199860
Philipp Janert   Gnuplot in Action: Understanding Data With Graphs   ISBN:1933988398
Brian Harn   Fortran 90 for Scientists & Engineers   ISBN:0340600349
All additional reference books are available at the Library of the School of Global Engineering, in Yoshida Campus, and also at other Kyoto University libraries.

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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.

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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 "Basic Informatics" and "Computer

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Programming in Global 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.

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