Course number	G-LAS15 80011 LB18

Course title (and course title in English)	Theory for Designing Artifacts	Instructor's name, job title, and department of affiliation	Graduate School of Engineering Professor,SAWARAGI TETSUO

Group	Interdisciplinary Graduate Courses	Field(Classification)	Interdisciplinary Courses

Language of instruction	Japanese and English	Old group		Number of credits	2

Number of weekly time blocks	1	Class style	Lecture (Face-to-face course)	Year/semesters	2025 Second semester

Days and periods	Wed.5	Target year	Graduate students	Eligible students	For all majors

Students of Graduate School of Engineering cannot take this course as liberal arts and general education course. Please register the course with your department.

[Overview and purpose of the course]

The activity of design is fundamentally similar across a wide variety of domains. I use artifact in a broad and atypical sense to describe any product of intentional creation, including physical goods, services, information systems, buildings, landscapes, organizations, and societies. The central theme of this lecture is that a unifying framework informs the human activity of design across all domains. Especially, understanding user needs is a key element of problem definition, and that understanding is usually best developed with interactive and immersive methods. In this lecture, a variety of methodologies for participatory systems approach and an idea of user-experience are provided, and its contributions to the design process are discussed.

[Course objectives]

This course is aimed at developing the ability to apply methods for identifying problems and interactively analyzing/evaluating systems, based on understanding of the principles of artifact design and on systematic thinking.

[Course schedule and contents)]

1. Introduction of Artifact Design
2. Artifact Functions and Purposes
3. Design of Human-Machine Systems(HMS)(1)
4. Design of Human-Machine Systems(HMS)(2)
5. Methodologies for HMS Design
6. Design Principles for Artifact Design(1)
7. Design Principles for Artifact Design(2)
8. Methodologies for Interface Design(1)
9. Methodologies for Interface Design(2)
10. Cognitive Task Analysis
11. Semiotic Design for Artifacts(1)
12. Semiotic Design for Artifacts(2)
13. Design of Socio-Technical Systems(STS)
14. Methodologies for Design/Analysis of STS
15. Feedback Lecture

(2)

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[Course requirements]

None

[Evaluation methods and policy]

Students will be evaluated based on the following criteria, in the order listed. (1) Homeworks/Exercises assigned in class: approx. 80% (2) Attendance ratio. 10% (3) Contributions to classwork (e.g., asking good questions): approx. 10%

[Textbooks]

(2018)

ISBN:978-4-320-00602-7

[References, etc.]

References, etc.

Vladimir Hubka and W. Ernst Eder [1995]　Design Science　　Springer　ISBN:978-1-4471-3091-8

Simon,H.[1996]　The Sciences of the Artificial Third edition　　　　　　　　[1999]
　　　　　　　　　　　　　ISBN:978-4893621672

H　A　　　　　[1979]　　　　　　　　　　　　　　　，

Hutchins, Edwin [1995]　Cognition in the Wild　　MIT Press　ISBN:978-0262581462

Klein, G., Orasanu, J., Calderwood, R., and Zsambok, C.E. [1993]　　Decision Making in Action: Models and Methods　　Ablex Publishing Co., Norwood, NJ　ISBN:978-0893917944

D　　　　　　[1986]　The Design of Everyday Things,　　　　　　　　　　　　　　?
　　　　　　　　　　　　　ISBN:978-4788503625

　　　　　　[1981]
ISBN:978-4526013225

[Study outside of class (preparation and review)]

Lectures will provide conceptual frameworks and methodologies using a number of actual examples from the everyday life. Students are requested to find the related problems to be resolved and to consider how that could be resolved using the learned method and/or methodologies.

[Other information (office hours, etc.)]

This lecture will be given in distant learning facilities connecting Katsura campus and Yoshida campus. The lecturer will give lectures from Katsura campus in principle and TA will take care of the students attending at Yoshida campus.

[Essential courses]