科目ナンバリング	U-LAS70 10002 SE50						
授業科目名 <英訳>	ILAS Seminar-E2 :Logic, critical thinking and argument（自然科学・工学に関する論理的・批判的思考法と議論） ILAS Seminar-E2 :Logic, critical thinking and argument (Natural Sciences and Engineering)			担当者所属 職名・氏名	エネルギー科学研究科 准教授 AU Ka Man		
群	少人数群	単位数	2単位	週コマ数	1コマ	授業形態	ゼミナール（対面授業科目）
開講年度・開講期	2026・前期	受講定員 (1回生定員)	20 (15) 人	配当学年	主として1回生	対象学生	全学向
曜時限	木5	教室	共西02			使用言語	英語
キーワード	Cognitive science / Philosophy and ethics / Science education / Logic / Argument						

[授業の概要・目的]

Science is not restricted to the academic world - it flows-over into the mass media (both factual and fictional). Logic is vital to the presentation of academic research findings and also to analyzing the communication of science in the media.

The aim of this course is for students to understand basic concepts of logic, and to learn and practice critical thinking with respect to science and its broader reporting in the mass media.

Students will participate in extracting themes, understanding bias in documents, videos and in their own work. They will practice how to critically analyze documents and to develop their own writing skills, particularly in the area of justification of arguments and the logical structuring and linking of content.

This course is suitable for all students who are interested in philosophy, logic and critical thinking. Although examples may be selected from science and engineering topics, students without a science background are welcome.

[到達目標]

The goal of the course is for students to be able to present logical written arguments and to be able to critically assess the validity and structure of literature in the natural sciences and engineering. This will be based on a variety of scientific literature in the academic realm as well as in the media.

[授業計画と内容]

The course will broadly cover logic and critical thinking, including the following themes:

1. Introduction
2. Logical fallacies
3. Proof, argument and opinion
4. Definitions
5. Causality and causal arguments
6. Making the most of information
7. Belief and knowledge
8. Comprehension and meaning analysis
9. Reasoning and emotion (and AI)

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10. Case studies: science in the media / specialized topics
11. Writing Workshops (3 weeks)
12. Conclusion

The course overall consists of 14 classes and one feedback session.

Each of the above topics normally covers 1 week, with one class per week. The exact topics may vary, depending on students' ability and topics of societal and scientific interest at the time.

[履修要件]

特になし

[成績評価の方法・観点]

In-class exercises and short assignments (50%)
Final report (50%)

[教科書]

使用しない

[参考書等]

（参考書）
授業中に紹介する

[授業外学修（予習・復習）等]

Out of class preparation may be required.

[その他（オフィスアワー等）]

Consultation is available by prior arrangement.

[主要授業科目（学部・学科名）]