科目ナンバリング	U-LAS70 10002 SE50						
授業科目名<英訳>	ILAS Seminar-E2 :How to make scientific Breakthrough- Learning from Nobel discoveries（基礎生物学の発見から疾患の理解へ） ILAS Seminar-E2 :How to make scientific Breakthrough- Learning from Nobel discoveries			担当者所属職名・氏名	医学研究科　准教授　KIM, Minsoo		
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・後期	受講定員(1回生定員)	12 (12) 人	配当学年	主として1回生	対象学生	全学向
曜時限	金5	教室	共北3C			使用言語	英語
キーワード	Medical science / Molecular biology-related / Pharmaceutical chemistry and drug development sciences-related / Biomedical engineering-related / Human diseases						

[授業の概要・目的]

Since 1901, the Nobel Prize has served as an acknowledgement of major contributions to the life sciences. In this ILAS seminar, we will focus on several contributions to the fields of Medicine/Physiology and Chemistry that have been recognized by the Nobel Prize. The course will begin with two classes that review the philosophy and sociology of such scientific discoveries. Subsequent classes will shift to an exploration of the application of these theories to specific cases. By studying the work and careers of laureates, students will become familiar with the philosophies and methods that have led to great breakthroughs in twentieth-century science. The course will end with a discussion of the future prospects of medical innovations. During the course, students will practice to read research papers and actively participate in group discussions.

[到達目標]

To understand the philosophy and methodology of the Nobel laureates
To gain basic knowledge of the life sciences and biotechnology
To improve critical thinking skills and the discussion and presentation of scientific topics

[授業計画と内容]

Week 1. Introduction of course: Nobel lecture
Week 2. History of scientific discoveries
Week 3-6. Nobel stories of “Gene to Cell”: Chromosome, Reverse Transcription, Protein folding, Protein degradation, cell division
Week 7. Student practice: Let's make a "3D-DNA model"
Week 8. Novel biotechnology in medicine: RNA interference, polymerase chain reaction, green fluorescent protein
Week 9. Student practice: Reading Nobel papers
Week 10-13. Discovery of the causes of diseases (and therapies): tuberculosis (and streptomycin), malaria, cancer, immune cells, and immune therapy
Week 14. Innovations in medical sciences: What is the next innovation?
Week 15. Student presentations on selected Nobel prizes
Week 16. Feedback

ILAS Seminar-E2 :How to make scientific Breakthrough- Learning from Nobel discoveries (基礎生物学の発見から疾患の理解へ) (2)

[履修要件]

特になし

[成績評価の方法・観点]

Evaluation will be based on class attendance and participation (60%) and a final presentation (40%).

[教科書]

授業中に「プリント配付」する。

[参考書等]

（参考書）

Bruce Alberts　et al. 『Molecular Biology of the Cell』ISBN:978-0815344643

[授業外学修（予習・復習）等]

To achieve the course goals students review the course handouts.

[その他（オフィスアワー等）]

Please feel free to come to my office any time.
This course is conducted in a seminar format, and students are required to attend classes face to face.

[主要授業科目（学部・学科名）]