

科目ナンバリング		U-LAS70 10002 SE50					
授業科目名 <英訳>	ILAS Seminar-E2 :From Traditional Herbal Remedies to Robotics and Gene Editing - Breakthroughs in Medical Treatments (漢方からロボット手術と遺伝子編集まで -治療におけるブレイクスルー) ILAS Seminar-E2 :From Traditional Herbal Remedies to Robotics and Gene Editing - Breakthroughs in Medical Treatments			担当者所属 職名・氏名	医学研究科 助教 AKHMETZIANOVA, Renata		
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)	10 (10) 人	配当学年	主として1回生	対象学生	全学向
曜時限	水5	教室	共北29			使用言語	英語
キーワード	Healthcare / Medicine / Treatment / Technology / Therapy						
[授業の概要・目的]							
Medicine has undergone tremendous changes in recent years, leading to groundbreaking innovations, personalized approaches, and the integration of cutting-edge technologies. However, every modern breakthrough is built on a rich and fascinating history. In this course, students will explore the evolution of medicine - from the era of traditional herbal remedies and the contributions of major medical pioneers to the development of advanced medical techniques. Through this journey, students will gain a deeper understanding of how breakthroughs in virology, genetics, immunology, and other disciplines are transforming the treatment of diseases and routine medical practices. We will discuss the assessment of the effectiveness of modern therapies, alongside the ethical considerations surrounding medical breakthroughs. Classes combine lectures with collaborative group work and discussions. In seminars, students will engage with the latest scientific achievements through presentational activities, develop skills to critically evaluate emerging therapies, and discover the prospects and potential of medicine.							
[到達目標]							
1. Examine the history of medicine and the contributions of its founders 2. Analyze the biological principles behind modern medical technologies 3. Investigate cutting-edge research and its implications for future medical practices 4. Identify limitations and potential challenges in the implementation of scientific and technological advancements in medical practices 5. Develop critical thinking and communication skills							
[授業計画と内容]							
1. Course Introduction. Overview of medical innovations 2. Evolution of Medicine: herbal traditions, founders, and historical timeline 3. Battling Microorganisms: understanding of bacteria, viruses, and fungi 4. Problem of Antibiotic Resistance: causes, consequences, and strategies for the future 5. Viruses that impact Global Health 6. Critical Role of Vaccines in Controlling Infectious Diseases 7. Cancer Fundamentals: from biology to disease progression							

8. Tackling Cancer. Advances in therapy
9. Cancer Resistance: how and why treatments fail
10. Breakthroughs in Medicines. Immunotherapy
11. Breakthroughs in Medicines. Stem cell therapy
12. Breakthroughs in Medicines. Regenerative medicine
13. Breakthroughs in Medicines. Genetic revolution: gene editing and genetic therapies
14. Breakthroughs in Medicines. Advancements in surgical techniques. Applying AI to healthcare
15. Feedback

Changes in order and/or content may occur depending on the number of students and the specific needs of the class.

【履修要件】

Open to students from all majors. This seminar provides an overview of cutting-edge scientific and technological innovations that contribute to the advancement of medicine.

【成績評価の方法・観点】

Attendance and active participation: 30%
Midterm assignment: 30%
Quality of student presentations and discussions: 40%

【教科書】

Engs, R. C. 『Health and Medicine through History: From Ancient Practices to 21st Century Innovations (3#8239vols.)』 (Greenwood / Bloomsbury Publishing, 2019) ISBN:978-1440858918

【参考書等】

(参考書)

Additional literature and references will be introduced during the lectures.

【授業外学修（予習・復習）等】

Reviewing lecture slides, completing quizzes, and doing homework will enhance understanding and reinforce learning in class. Lecture slides will be provided.

【その他（オフィスアワー等）】

If you have any questions, please feel free to email me or schedule a time to meet in person.

【主要授業科目（学部・学科名）】