

科目ナンバリング		U-LAS61 10021 LE14									
授業科目名 <英訳>		Climate Change and Human Activities-E2 : Introduction to Humansphere Climate Change and Human Activities-E2 :Introduction to Humansphere					担当者所属 職名・氏名		生存圏研究所 教授 Luce , Hubert		
群	統合科学科目群				分野(分類)	環境			使用言語	英語	
旧群		単位数	2単位		週コマ数	1コマ		授業形態	講義 (対面授業科目)		
開講年度・ 開講期	2025・前期		曜時限	金4			配当学年	主として1・2年生		対象学生	全学向
【授業の概要・目的】											
Knowledge of the Earth's past climates and understanding the mechanisms responsible for their variations are crucial to a better understanding of current climate change. The aim of this course is to provide students with the knowledge necessary to discuss the mechanisms of climate change and the possible societal and environmental impacts of climate change using historical examples. The course will focus on: (1) known past changes in the Earth's climate and the natural mechanisms responsible for these changes, (2) current climate change and how its causes differ significantly from past events, (3) historical examples of the impact of climate disruption on human civilisations and societies during the Holocene and contemporary history, (5) possible future impacts of current climate change on human society and its environment (i.e. the humansphere).											
【到達目標】											
In this lecture, students will learn about the Earth's past climates and their possible causes. They will also learn about the importance of climatic hazards to human civilisations and societies. They will be given some tools to assess the possible societal impacts of current climate change on the humansphere through the description of historical and recent climate disruption events. The lecture will also address issues related to the United Nations Sustainable Development Goals (SDG13: Climate Action).											
【授業計画と内容】											
1. (Week 1-2) - An overview of present-day climate conditions - Importance of Studying Past Climates: Reasons for studying historical climate patterns, including understanding long-term changes and improving prediction models. 2. (Weeks 3-5) Natural and anthropogenic causes of climate change - Natural Causes: o Solar activity o Milankovitch cycles o Volcanic activity o Continental drift o Albedo effects o Greenhouse gas concentrations o Internal climate variability - Anthropogenic Causes: o Greenhouse gas emissions o Deforestation											

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3. (Week 6)

The importance of the feedback loops and tipping points in climate change.

4. (Week 7-8)

Past Climates:

- How we collect evidence about past climate (methods)
- The Evolution of Earth ' s Atmosphere: From primitive conditions to the present.
- Major Ice Ages: Overview of significant ice ages and their possible natural causes.

5. (Week 9-10)

The Holocene Epoch:

- Climate changes during the Holocene and their effects on early human societies and civilizations.

7. (Week 11-12)

Societal Impacts of Climate Disruptions Since Medieval Times:

- Examination of how climate events affected economies and societies in Europe, America, and Japan.

8. (Week 13-14)

Lessons from the Past on Current Climate Change Impacts

- Assessing potential societal instabilities
- Strategies for mitigation and adaptation.

9. (Week 15)

Final Examination

10. (Week 16)

Feedback

【履修要件】

This lecture only requires scientific backgrounds in natural sciences of high school levels

【成績評価の方法・観点】

Evaluation will be:

Active participation in class: 20 pts

Assignments/projects at home: 40 pts

Final examination: 40 pts

【教科書】

There is no specific textbook for this course. Its content will be based on multiple references (books, websites) that will be mentioned during the course.

【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】

Course materials are made available before class.

Students are encouraged to study the materials before and after each class in order to assimilate technical or

uncommon words.

Depending on the topic, the study of the lecture and the preparation of the report for the assessment may take several hours per week.

【その他（ オフィスアワー等 ）】

Lecture materials will be made available on the KULASIS website. Communication by e-mail is possible for questions outside school hours.

【主要授業科目（ 学部・ 学科名 ）】