

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 Humanosphere Climate Change and Human Activities-E2 :Introduction to Humanosphere					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回生	対象学生	全学向		
【授業の概要・目的】											
<p>The knowledge of the past Earth ' s climates and the understanding of the mechanisms responsible for their variations are crucial to a better understanding of the current climate change. The aim of this course is to provide students with the knowledge they need to discuss climate change mechanisms and the possible societal and environmental impacts of a climate change based on historical examples. The course mainly describes: (1) the known past Earth ' s climate changes and the natural mechanisms responsible for these changes, (2) the current climate change and how its causes differ significantly from past events, (3) historical examples of the impacts of climate disruptions on human civilizations and societies during the Holocene and contemporary history, (5) possible future impacts of the current climate change on the human society and its environment (i.e. the humanosphere).</p>											
【到達目標】											
<p>In this lecture, the students will learn the past Earth ' s climates and their possible causes. They will also learn about the importance of climatic hazards on the human civilizations and societies. They will get some tools for assessing possible societal impacts of the current climate change on the humanosphere from the description of historical and recent events of climate disruptions. This lecture tackles topics of concern of the Sustainable Development Goals (SDG) of the United Nations (SDG13: climate action).</p>											
【授業計画と内容】											
<p>1. (Week 1) Introduction to the Earth's current climate. - Description and reasons for studying past climates.</p> <p>2. (Weeks 2-4) The causes of climate change. - The natural causes: solar activity, Milankovitch cycles, volcanic activity, continental drift, albedo, greenhouse gases, internal variability, ... - The anthropogenic causes of current climate change.</p> <p>3. (Week 5) The importance of the feedback loops and tipping points in climate change.</p> <p>4. (Week 6-7) The past climates. - The primitive Earth ' s atmosphere and its evolution until today and comparisons with the other telluric planets of the solar system. - The main ice ages and their possible (natural) causes.</p>											
<div style="text-align: right;">Climate Change and Human Activities-E2 :Introduction to Humanosphere(2)へ続く</div>											

5. (Week 8)

Past climates: how do we know?

-Different techniques used to reconstruct past climates.

6. (Week 9-10)

The Holocene epoch.

- Holocene climate variations and their impacts on the first human societies and civilizations.

7. (Week 11-12)

Societal impacts of past climate disruptions since medieval times.

- Impacts on economies and human societies in Europe, America and Japan.

8. (Week 13-14)

What lessons from the past about the possible societal impacts of the current climate change?

- Can we fear societal instabilities? What will the possible manifestations be?

- What can be done to avoid them?

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】

未定

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 materials before and after each class for assimilating technical or uncommon words.

Depending on the topic, the study of the lecture and the preparation of the report for the evaluation may take a few hours a week.

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【その他（オフィスアワー等）】

Lecture materials are made available on KULASIS website. Communication by emails is possible for questions outside of school hours

【主要授業科目（学部・学科名）】