

Course number		U-LAS15 10002 LE58					
Course title (and course title in English)		Introduction to Earth Science A Introduction to Earth Science A			Instructor's name, job title, and department of affiliation		
Group	Natural Sciences			Field(Classification)		Earth Science(Foundations)	
Language of instruction	English			Old group	Group B	Number of credits	2
Number of weekly time blocks	1	Class style	Lecture (Face-to-face course)			Year/semesters	2025 • First semester
Days and periods	Fri.2		Target year	Mainly 1st year students		Eligible students	For science students
[Overview and purpose of the course]							
<p>Year after year, the effects of climate change (extreme heat waves, rising sea-levels, changes in patterns of precipitation, floods, droughts, intense hurricanes, etc.) are increasingly affecting--directly and indirectly--the physical, social, and psychological health of humans.</p> <p>As a student of sciences, you will be responsible--at some point of your future professional career, be it in the public or private sector--to device strategies, methods, and/or techniques to mitigate its effects, either globally or locally. But, in order to do so, you first need to understand how our planet works, how its diverse parts are interrelated, and how changes in the working of some of its elements could disrupt complete systems.</p> <p>This lecture will introduce, therefore, the tools needed to study the Earth as a system, and will focus on three of its main subsystems (Atmosphere, Hydrosphere, and Geosphere) and their interactions in different time scales.</p>							
[Course objectives]							
At the end of the semester, you should be able to understand the concept of systems, the basics of our planet's energy balance, and also the principles behind of the behavior--as systems and subsystems--of the Atmosphere, the Hydrosphere, and the Geosphere.							
[Course schedule and contents)]							
<p>The Earth System is broadly divided into four subsystems: Atmosphere, Hydrosphere, Geosphere, and Biosphere. There is exchange of both matter and energy within those subsystems, in different time scales.</p> <p>The main contents of this lecture are:</p> <ol style="list-style-type: none"> 1. Introduction to Earth Systems 2. Global Energy Balance 3. Atmosphere 4. Hydrosphere 5. Geosphere <p>The contents of each topic will be delivered in two or three lectures each. At the end of each topic, you will be requested to submit a corresponding report. At the end of the semester we will have one final feedback session (details will be given in class).</p>							

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[Course requirements]

None

[Evaluation methods and policy]

Submission of a report will be requested after finishing each of the main five topics. Deadlines will be strictly enforced. No exams will be taken. Details will be explained during the first lecture.

[Textbooks]

Handouts will be provided for each class.

[References, etc.]

(References, etc.)

Lee R. Kump, James F. Kasting, Robert G. Crane 『The Earth System』 ISBN:9780321597793

Brian J. Skinner, Barbara Murck 『The Blue Planet : An Introduction to Earth System Science』 ISBN: 9780471236436

Frederick K. Lutgens, Edward J. Tarbuck 『The Atmosphere : An Introduction to Meteorology』 ISBN: 9780321756312

Edward J. Tarbuck, Frederick K. Lutgens 『Earth : An Introduction to Physical Geology』 ISBN: 9780321814067

All additional reference books are available at the Library of the School of Global Engineering, in Yoshida Campus, and also at other Kyoto University libraries. Previous editions of the same books can also be used.

[Study outside of class (preparation and review)]

Handouts will be provided at the beginning of each session. You are expected to use them to follow the lectures, to take notes, and as a starting point to further your personal self-learning.

At the end of each one of the five topics in which this class is divided, you will be given one week to submit a report answering four to five questions specific to the topic. Answering them will require doing some additional research on the recommended bibliography or other resources. Full references will be expected.

[Other information (office hours, etc.)]

Office hours will be provided during the first lecture.

[Essential courses]