

<b>Course number</b>		U-LAS15 20007 LE58			
<b>Course title (and course title in English)</b>	Introduction to Engineering Geology Introduction to Engineering Geology		<b>Instructor's name, job title, and department of affiliation</b>	Graduate School of Engineering Professor, KISHIDA KIYOSHI Graduate School of Engineering Associate Professor, PIPATPONGSA, Thirapong Graduate School of Engineering Assistant Professor, MIYAZAKI YUSUKE	
<b>Group</b>	Natural Sciences		<b>Field(Classification)</b>	Earth Science(Development)	
<b>Language of instruction</b>	English		<b>Old group</b>	Group B	<b>Number of credits</b> 2
<b>Number of weekly time blocks</b>	1	<b>Class style</b>	Lecture (Face-to-face course)		<b>Year/semesters</b> 2024 • Second semester
<b>Days and periods</b>	Tue.5	<b>Target year</b>	Mainly 2nd year students	<b>Eligible students</b>	For science students
<b>[Overview and purpose of the course]</b>					
<p>Geology comes from the Greek geo, "Earth", and logos, "discourse". This class provides a basic knowledge of our planet's components (matter, minerals, rocks, etc.) and their main processes (mineral formation, plate tectonics, volcanic activity, earthquakes, etc.) from the viewpoint of engineering.</p> <p>The correct understanding of the Earth and its many interacting parts, in different physical and time scales, using the basic knowledge and principles of geology, will help us confirm that all important geological factors are adequately considered when designing, constructing, and operating engineering works.</p>					
<b>[Course objectives]</b>					
By the end of the semester, you should be able to not only understand and have a basic knowledge of geology, but also to think about its application when designing, constructing, and operating engineering works, when using natural Earth resources, and when trying to solve geoenvironmental problems.					
<b>[Course schedule and contents)]</b>					
This course consists of 15 classes including one time feedback class.					
The main contents of this lecture are:					
1. Introduction to Engineering Geology [2 classes] Guidance, Introduction to Engineering Geology, Earth Science, Plate Tectonics)					
2. Earth Matter [4 classes] Matter and Minerals, Igneous Rocks, Volcanic Activity, Weathering, Sedimentary Rocks, Metamorphism, Metamorphic Rocks)					
3. Geologic Time [1 class] Geologic Time)					
4. Plate Tectonics and Mass Wasting [3 classes] Crustal Deformation and Earthquakes, Earth ' s Interior, Divergent Boundaries and Ocean Floor, Convergent Boundaries, Mountains)					
5. Water and the Geosphere [2 classes]					
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## Introduction to Engineering Geology(2)

Running Water, Groundwater, Glaciers and Glaciation, Deserts)

6. Earth Resources [2 classes]  
Energy and Mineral Resources)

7. Achievement confirmation [1 class]

8. Feedback [1 class]

### [Course requirements]

None

### [Evaluation methods and policy]

Grading will be based on weekly quizzes (30%, lowest score is eliminated), a midterm report (30%), and a final exam (40%)

### [Textbooks]

Not used

### [References, etc.]

#### ( References, etc. )

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

Stephen Marshak 『Essentials of Geology』 ISBN:9780393919394

Edward A. Keller 『Introduction to Environmental Geology』 ISBN:9780132251501

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

Kent C. Condie 『Earth as an Evolving Planetary System』 ISBN:9780123852274

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

### [Study outside of class (preparation and review)]

During the Guidance (first class of the semester), you will be provided with a list of research topics, minimum questions to answer, and a list of initial resources to find the corresponding information, for all the scheduled sessions of the semester. You are expected to research these topics ON YOUR OWN and come prepared to the corresponding class.

At the beginning of every class, individual and group quizzes will be given to test the self-acquired knowledge.

### [Other information (office hours, etc.)]

Office hours will be provided during the first lecture.