Course number	U-LAS15 20007 LE58		
Course title (and course title in English)	Introduction to Engineering Geology Introduction to Engineering Geology	Instructor's name, job title, and department of affiliation	Graduate School of Engineering Associate Professor,Zhu Fan
Group	Natural Sciences	Field(Classification)	Earth Science(Development)
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 • Second semester		
Days and periods	Tue.5	Target year	Mainly 2nd year students
Eligible students	For science students		

[Overview and purpose of the course]

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.

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.

[Course objectives]

By the end of the semester, you should have a basic knowledge of geology, and be able to think about its application when designing, constructing, and operating engineering works.

[Course schedule and contents)]

This course consists of 15 classes including one feedback class. The main topics are:
1. Guidance, introduction to Earth science
2. Plate tectonics
3. Matter and minerals
4. Igneous rocks, volcanic activity
5. Weathering, sedimentary rocks
6. Metamorphism, metamorphic Rocks
7. Principles of relative dating and numerical dating
8. Mountain building process
9. Earthquakes and crustal deformation
10-11. Geologic structures and mapping
12. Surface water and groundwater
13. Energy and mineral resources
14. Review and student presentation
15. Feedback

Continue to Introduction to Engineering Geology(2)↓↓↓

Introduction to Engineering Geology(2)

[Course requirements]

None

[Evaluation methods and policy]

Grading will be based on a research report (25%), a final exam (50%), and performance during regular classes (such as homework and class participation) (25%). Details will be explained in class.

[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)]

Assignment may be given after a class and students are expected to complete the assignment before the next class. Additionally, submission of a research report will be required for this class. To complete the report, students will need to do additional research on a selected topic after the class.

[Other information (office hours, etc.)]

Consultation arrangement will be provided during the first lecture.