

Course Title	Credits	Semester	Course Classification	Course No.
Geo-Trip in Japan	2	Fall	Elective	F-8
Instructor	Suitable Number of Students	Keywords		
(Faculty of Science) ISHIWATARI Akira KAMIYA Takahiro HASEGAWA Takashi ARAI Shoji MORISHITA Tomoaki FURUMOTO Muneyoshi HIRAMATSU Yoshihiro SUMITA Ikuro KIHARA Kuniaki OKUNO Masayuki TAZAKI Kazue (Inst. Nature & Environ. Tech.) KASHIWAYA Kenji SATO Tsutomu HASEBE Noriko	20	Volcano, Earthquake, Active Fault, Fossil, Environment		
Course Subject				
Introduction to geological and environmental sciences using natural examples in Japan. Students will get familiar with the basic concept and useful knowledge on the natural objects and materials such as volcanoes, earthquakes, active faults, rocks, minerals, fossils, rivers, lakes, hot springs, and many other interesting things in our environment.				
Purpose of Course				
The purpose of this lecture is to let the students have the accurate knowledge about the mechanism and scale (both in time and space) of the natural phenomena in our environment, and let them think about what they see in their environment and get scientific concept on the basis of physical and chemical principles as well as in the framework of the structure and history of the natural world.				
Goal of Study				
Understand the nature and mechanism of earthquake in relation to the active fault movement, formation of the characteristic landscape, and plate tectonics. Understand the nature and mechanism of volcanic activities in relation to the rocks, minerals, and internal structure of the earth. Understand fossil records on the evolution of life, environmental changes in rivers, lakes, and oceans, and history of the earth.				
Outline of Course				
Week 1: Geo-trip in Japan: landscapes and geological processes (Ishiwatari)	Week 8: Isotopic age measurement and its application to geology (Hasebe)			
Week 2: Earthquakes and volcanoes in Kanazawa (Ishiwatari)	Week 9: Introduction to minerals and crystals (Kihara)			
Week 3: Microfossils: their evolution and geological applications (Kamiya)	Week 10: Introduction to natural and artificial glass (Okuno)			
Week 4: Cretaceous environment in Japan (Hasegawa)	Week 11: Volcanic rocks and mantle xenoliths in Japan (Arai)			
Week 5: Lake sediments and climate changes in Japan and East Asia (Kashiwaya)	Week 12: Geological interests on jade used as a cultural jewel for 7000 years in Japan (Morishita)			
Week 6: Biomineralization in hot springs (Tazaki)	Week 13: Seismic wave analyses and deep underground structures (Hiramatsu).			
Week 7: Geological disposal of nuclear waste in Japan (Sato)	Week 14: Mechanism of volcanic eruption (Sumita)			
	Week 15: Seismic and tsunami hazards in Japan (Furumoto)			
Grading				
The grading will be based on participation in lectures (30%) and reports (70%). There will be no exams.				
Textbooks				
There will be no textbooks. Each lecturer will provide copies of his (her) materials for every student.				
In Addition				
Some lectures may include practice in calculation, natural observation in or near the campus, and easy experiment.				
Office Hours				
Questions and comments will be accepted by the coordinator through e-mail (geoishw@kenroku.kanazawa-u.ac.jp). Your full name and ID number should be marked, and the purpose should be briefly titled in each e-mail.				