授業科目名(英文名) ／Course title	サステイナビリティ環境理学基礎／Essentials of Environmental Science for Sustainable Societies				
担当教員(所属)／Instructor	榎本　勝成(理学部),張 勁(理学部),和田 直也(サステイナビリティ国際研究センター),倉光 英樹(理学部)				
授業科目区分／Category	専門教育科目　グローバルSDGs専門科目				
地域課題解決型人材育成プログラム科目／COC+Course ※平成28年度入学者から適用	-	授業種別／Type of class	講義科目		
開講学期曜限／Period	2026年度／Academic Year 第１ターム／Term 1　月/Mon 5	対象所属／Eligible Faculty	持続可能社会創成学環（修士課程） グローバルSDGsプログラム／Graduate School of Sustainability Studies Graduate Program in Global Sustainability Science		
時間割コード／Registration Code	D43201	対象学年／Eligible grade	1年 ,2年	単位数／Credits	1単位
ナンバリングコード／Numbering Code					
Moodleコース統合時間割コード ／Moodle course join Registration Code					
Moodleコース登録教員名 ／Moodle course registered Instructor	張　勁,和田　直也,倉光　英樹,榎本　勝成				
MoodleコースURL ／Moodle course URL	https://moodle52.u-toyama.ac.jp/course/view.php?idnumber=2026_D43201				
各種教育プログラム1 ／Various educational programs1					
各種教育プログラム2 ／Various educational programs2					
各種教育プログラム3 ／Various educational programs3					
各種教育プログラム4 ／Various educational programs4					
各種教育プログラム5 ／Various educational programs5					
SDGsとの関連／Related SDGs					

昨年度からの改善点／Changes from last year

リアルタイム・アドバイス／Real-time advice	更新日	

Students are expected to read through the materials uploaded on Moodle prior to class and review them after class to deepen their understanding.

授業のねらいとカリキュラム上の位置付け（一般学修目標） ／Course Objectives	教育目標 ／Educational Goals	

A sustainable society can only be realized when economic and social systems are designed in harmony with natural systems, i.e., the energy flow and material circulation systems that drive the various ecosystems existing on the earth. In order to transform the current economic and social systems into more sustainable forms, it is necessary to fully understand the origins and functions of the natural systems that make up the regional and global environment, and to assess the environment and take environmental policy accordingly. In this course, students will learn the fundamentals of environmental science from the viewpoints of biology, geology, chemistry, and physics, which are necessary to understand the environmental policies that are indispensable for building sustainable societies.

達成目標／Course Goals

Understand the fundamentals of environmental science from the viewpoints of biology, geology, chemistry, and physics, which are necessary to grasp the environmental policies that are indispensable for building sustainable societies.

授業計画（授業の形式、スケジュール等）／Class schedule

01st: Physics to decipher environmental issues (physics understanding in the use of energy to support the activities of human society I) (Enomoto; Monday, 1st period) 02nd: Physics to decipher environmental issues (physics understanding in the use of energy to support the activities of human society II) (Enomoto; Monday, 1st period) 03rd: Concept of ecology for the terrestrial ecosystems (characteristics of organisms that make up natural systems) (Wada) 04th: Concept of ecology for the terrestrial ecosystems (energy flow and material cycle) (Wada) 05th: Concept of chemistry to prevent environmental pollution (characteristics of chemicals loaded on natural systems) (Kuramitz) 06th: Concept of chemistry to prevent environmental pollution (dynamics and monitoring of chemical substances) (Kuramitz) 07th: Concept of geochemistry for the hydrosphere (role of the ocean in natural systems I) (Zhang) 08th: Concept of geochemistry for the hydrosphere (role of the ocean in natural systems II) (Zhang)	
授業時間外学修（事前・事後学修）／Independent Study Outside of Class	
Out-of-class study is about 0.5 to 2 hours of self-study for each topic. In order to enhance the learning effect, in the pre-study, the literatures are mainly read carefully, and in the post-study, homework and reports are completed.	
キーワード／Keywords	Ecology, Geochemistry, Analytical chemistry, Environmental physics
履修上の注意／Notices	This lecture is performed by English and Japanese.
教科書・参考書等／Textbooks	**■教科書** **■参考書** **■教科書・参考書に関するその他通信欄** Use of electronic journals and government statistics related to the assignment as teaching materials.
成績評価の方法／Evaluation	Evaluating answers to questions during this lecture, and reports for the subjected topics.
関連科目／Related course	
リンク先URL ／URL of syllabus or other information	
備考／Notes	