


2025-Fall Global Environment (EVSE575-01) The course syllabus

1. Course Information

Course No.	EVSE575	Section	01	Credit	3.00
Category	Major elective	Course Type		prerequisites	
Postechian Core Competence	<input type="checkbox"/> Interpersonal Relationship <input type="checkbox"/> Global Citizenship <input type="checkbox"/> Knowledge Research <input type="checkbox"/> Digital Literacy <input type="checkbox"/> Self Management <input type="checkbox"/> Creative Convergence				
Hours	TUE, THU / 11:00 ~ 12:15 / Environ Bldg[208]Seminar Room			Grading Scale	G

2. Instructor Information

	Name	Lee Kitack	Department	Div. of Environmental Science & Eng.
	Email address	ktl@postech.ac.kr	Homepage	http://climate.postech.ac.kr/
	Office		Office Phone	054-279-2285
	Office Hours			

3. Course Objectives

This course examines the critical environmental challenges shaping the Earth today. It focuses on the biogeochemical cycles of key pollutants—particularly carbon and nitrogen—tracing their movement through the biosphere, atmosphere, hydrosphere, and lithosphere. Students will explore the processes that regulate seawater and atmospheric composition, the dynamic exchanges between the ocean, atmosphere, and solid Earth, and the role of marine organisms in these systems. Special emphasis is placed on the transformations of the carbon and nitrogen cycles in the Anthropocene and their implications for global environmental change.

4. Prerequisites & require

College Chemistry
College Biology

5. Grading

Midterm Exam	Final Exam	Attendance	Assignment	Project	Presentation/Discussion	Laboratory/Practice	Quiz	Others	Total
비고		(1) two examinations (40%) (2) Reports (25%) (3) Paper presentation (15%) (4) Group Discussion (20%)							

6. Course Materials

Title	Author	Publisher	Publication Year/Edition	ISBN
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7. Course References

- (1) M.E. Pilson, An Introduction to the Chemistry of the Sea, Prentice Hall, 1998.
 (1) J.P. Riley & R. Chester, "Introduction to Marine Chemistry", Academic Press, 1981.(2) W.S. Broecker & T.-S. Peng, "Tracers in the Sea", Columbia University, 1982.

8. Course Plan

- Topic 1: Origin of the Earth and ingredients for life
 Topic 2: Habitable Earth
 Topic 3: Venus versus Earth
 Topic 4: Complex Earth systems
 Topic 5: Atmospheric oxygen and carbon dioxide-Measure of Earth biosphere
 Topic 6: Gas exchange processes at the air-water interface
 Topic 7: Seawater compositions (Major and minor components)
 Topic 8: Gases other than carbon dioxide
 Topic 9: Marine carbonate system
 Topic 10: Fossil-fuel carbon dioxide in the ocean
 Topic 11: Nutrients for life
 Topic 12: Organic matter in the ocean
 Topic 13: Radioisotopes-environmental applications
 Topic 14: Stable isotopes-environmental applications
 Topic 15: Large-scale earth processes

9. Course Operation

10. How to Teach & Remark

11. Supports for Students with a Disability

- Taking Course: interpreting services (for hearing impairment), Mobility and preferential seating assistances (for developmental disability), Note taking(for all kinds of disabilities) and etc.
- Taking Exam: Extended exam period (for all kinds of disabilities, if needed), Magnified exam papers (for sight disability), and etc.
- Please contact Center for Students with Disabilities (279-2434) for additional assistance