EAS4803 Chemical Oceanography

Instructor: Takamitsu Ito

3 Credits: 3 lecture hours per week

Course description: Fundamental principles of chemical oceanography for advanced undergraduate and graduate students interested in marine sciences.

Evaluation: [50%] homework; [30%] exams (15% midterm, 15% final) [20%] Term Project.

Grading: I encourage cooperation including sharing of knowledge & computer codes, and collaboration among the students. The write-ups and reports must be entirely your own work (i.e. copying another student's work in parts or whole is not permitted). Your final grade will be assigned as a letter grade according to the following scale:

A:90-100% B:80-89% C:70-79% D:60-69%

Reference text: Chemical Oceanography, elemental fluxes in the sea by S. R. Emerson and R. C. Hamme, 2022, Cambridge University Press.

Schedule:

Week	Lecture topic	
Week 1:	Oceanography background	
Week 2/3:	Geochemical Mass Balance	
Week 4/5:	Biological Production and Export	
Week 6/7:	Biological Respiration	**Midterm (up to week 7 material)**
Week 8/9:	Marine Carbonate Chemistry	
Week 10:	Stable Isotope Tracers	
Week 11:	Radioisotope Tracers	
Week 12-14:	Global Carbon Cycle	
Week 15:	Term Project Presentations	
		Final Exam (cumulative)