EART 128: Spring 2017
Stable Isotope Geochemistry:
Fundamentals and Applications in Earth and Marine Science
Monday, Wednesday 4-5:30 PM, D226

Syllabus:

Week#	Date:	Topic
1	April-3:	Isotope Properties, Nucleosynthesis, Notation, Fractionation
2	April-10:	Hydrogen & Oxygen Isotopes, & Hydrologic Cycle
3	April-17:	Carbon Isotopes & Carbon Cycle
4	April-24:	C-isotopes (cont), Nitrogen Isotopes & N Cycle
5	May-1:	Mass Spectrometers and Preparations Systems
	Mid-Term exam (May 3rd)	
6	May-8	S, Fe and B Isotopes
7	May-15	Li, Ca, & Radiogenic Isotopes (Sr, Nd)
8	May-22	Isotopes in Marine/terrestrial Environments: Case Studies
9	May-29*	Isotopes in Marine/terrestrial Environments: Case Studies
10	June-5	Project Presentations

*Monday Holidays (No class)

Instructor:

Prof. James Zachos
Office: Earth and Marine Sciences A260
Email: jzachos@ucsc.edu
Office Hours: 12-2 Fri

Readings:

Will be posted on Canvas
Password: *hydrogen*
Recommended Texts:
There are a number of General Isotope Texts. If you plan on doing research involving isotopes I recommend the following:

- ***Isotopes: Principles and Applications***, 3rd Ed., by G. Faure and T. Mensing, Wiley Publishing, ISBN: 978-0-471-38437-3
- ***Isotope Geochemistry*** by W.M. White; ONLINE ACCESS http://www.geo.cornell.edu/geology/classes/Geo656/656notes09.html
- ***Stable Isotope Geochemistry***, 7th Ed., by J. Hoefs. Springer Verlag, ISBN-13: 978-3319197159

Evaluation

Problem Sets (4)	50%
Mid-term Exam	20%
Project/Term Paper	30%

READING LIST:

Week 1: Nucleosynthesis, Isotopes, Fractionation
- Readings: FM Chap 1; Mook Chap 2 & 3.pdf; J. Hayes IsoCalcs.

Week 2: Hydrogen and Oxygen Isotopes & the Hydrologic Cycle
- Readings: Mook Chap 4 & 7

Week 3: Carbon Isotopes and the Carbon Cycle
- Readings: FM Chap 27; White Chap 36 & 37;

Week 4: Carbon (cont.) and Nitrogen Isotopes
- Readings: FM Chap 28;

Week 5: Mass spectrometry
- Readings: Mook Chap 11 (pg. 179-190); Mattey Mass Spec Basics (pg. 154-165)

Week 6: S, Fe and Boron Isotopes
- Readings: FM Chap 30

Week 7: Li, Ca, & Radiogenic Isotopes (Sr, Nd); TBA
- Readings: TBA

Week 8: TBA

Week 9: TBA

Supplemental Readings:

TBA