

Geology 5050: Isotope Geology Fall 2007

Instructor: Carol Frost
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The course: This course provides background to the field of isotope geology, including principles of radioactive decay and stable isotope fractionation, geochronology and isotopes as tracers of geologic processes.

Texts:

Clark, I.D., Fritz, P., 1997, Environmental Isotopes in Hydrogeology. (*on reserve in geology library*)

Dickin, A.P., 1995, Radiogenic isotope geology. Cambridge. (*on reserve in geology library*)

Faure, G., 1986, Principles of Isotope Geology, 2nd ed. Wiley and Sons. (*on reserve in geology library*)

Faure and Mensing, 2005, *Isotopes: principles and applications*, 3rd ed. Wiley and Sons. (*on reserve in geology library*)

White, W., *Geochemistry*. Available in pdf format on the web at
<http://www.geo.cornell.edu/geology/classes/geo455/Chapters.HTML>

Grading:	2 hour exams	40%
	6 weekly homework problems	20%
	class presentation + research paper	40%

Obligatory Messages from the Dean:

- 1) Cheating. University Regulation 802, revision 2, defines academic dishonesty as “an act attempted or performed which misrepresents one’s involvement in an academic task in any way, or permits another student to misrepresent the latter’s involvement in an academic task by assisting the misrepresentation.” There is a well-defined procedure to judge such cases, and serious penalties may be assessed. In this class, your exams are expected to be your work ONLY. You may work together on problems, but the work you turn in must represent your own thinking on the subject.
- 2) Conduct. University Regulation 29, change 1, states that the instructor can “establish reasonable standards of conduct for each class which should be made known at the outset.” In this class I expect engagement and participation, including regular attendance, and that we all treat each other with courtesy and respect. This does not mean we have to agree with each other!
- 3) College of Arts and Sciences document, **A&S - Students and Teachers Working Together**. A 5-page document is available at:

uwadmnweb.uwyo.edu/a&s/Current/students_teachers_work.htm

This document lays out the guidelines for the course syllabus, attendance, classroom deportment (no sleeping or cell phone use!), phone and email protocol, office hours and how to make appointments outside of office hours. Good stuff.

- 4) Disabilities. If you have a physical, learning, or psychological disability and require accommodations, please let the instructor know immediately. You will need to register with, and provide documentation of your disability to, University Disability Support Services (UDSS) in SEO, room 330 Knight Hall, 766-6189, TTY: 766-3073.

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Date	Topic	Reading	Proposed due date
27-Aug	Introduction to course		
29-Aug	Atomic structure	White Ch 8.2.1 (F&M Ch 1 or F Ch 2)	
31-Aug	<i>RMFT-no class</i>		
3-Sep	<i>Labor Day holiday</i>		
5-Sep	Spontaneous nuclear processes	White Ch 8.2.2 (F&M Ch 2 or F Ch 3))	
7-Sep	Radioactive decay	White Ch 8.3 (F&M Ch 3 or F Ch 4)	
10-Sep	Analytical methods	Dickin p. 15-18	Problem set 1 due
12-Sep	Mass spectrometry	Dickin p. 19-36; F&M Ch 4.4	
12-Oct	Test 1		
26-Nov	Test 2		
28-Nov	Student presentations		
30-Nov	Student presentations		
3-Dec	Student presentations		
5-Dec	Student presentations		
7-Dec	Student presentations		

F&M = Faure and Mensing
F = Faure