GLY 4043/5044: Cosmochemistry – Fall 2025 – 3 credit hours

M Period 3-4 (9:35 – 11:30am EST), W Period 3 (9:35 – 10:25am EST)

Williamson Hall, Room 214

Instructor: Dr. Stephen Elardo
Williamson Hall - 229
selardo@ufl.edu
352-392-2634

Office hours:
Wednesday 10:30 – 12:30am EST or by appointment

Course Website: http://elearning.ufl.edu

Course Materials (Suggested): Cosmochemistry by McSween and Huss (Cambridge Univ. press, 2010)
Other course materials will be provided by the instructor on Canvas.

Course Objectives

1) Identify the key components of planetary materials and their significance in the early Solar System.
2) Quantitatively apply principles of radiogenic dating to analyze early Solar System age relationships.
3) Identify the key factors that led to differences between planetary bodies.
4) Apply theories of elemental fractionation during planetary formation quantitatively.
5) Apply and synthesize various aspects of planet formation and differentiation into a quantitative model of planetary composition.

Grading Scheme:

A = 93.0-100%	A- = 90.0-92.9%	
B+ = 87.0-89.9%	B = 83.0-86.9%	B- = 80.0-82.9%
C+ = 77.0-79.9%	C = 73.0-76.9%	C- = 70.0-72.9%
D+ = 67.0-69.9%	D = 63.0-66.9%	D- = 60.0-62.9%
F = below 60%		

	POINTS POSSIBLE
ATTENDANCE AND PARTICIPATION	20%
HOMEWORKS	20%
PAPER DISCUSSIONS	25%
FINAL PROJECT:	35%

Undergraduate/Graduate Work Distinction: The graduate section of this course (GLY 5044) will be responsible for additional homework questions. All other components of the course will be identical.

Lecture Schedule: The tentative schedule for lecture topics, and reading assignments is below, and will also be posted separately on Canvas.

Homework: Throughout the semester, homework exercises will be assigned through Canvas. These assignments should be completed and submitted through Canvas.

Late Work Policy: Work turned in late will be subject to a grade reduction of 20% per day.

Makeup Policy: If you have a preexisting conflict with one of the scheduled exams, an alternative meeting time must be arranged with Dr. Elardo made at least one week prior to the exam. In case of sudden illness or family emergency, please notify the instructor as soon as possible (within no more than 1 week). Appropriate documentation may be required. No make-ups will be permitted for other, unexcused absences.

Email: ALL email communications MUST be sent from (and will be sent to) your Gatorlink accounts, or be sent through the Canvas email tool. I will respond to email within 24 hours Monday through Friday. **Before sending Dr. Elardo a question via email please check the syllabus and class website for the answer to your question.**

Course Evaluation
Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at https://gatorevals.aa.ufl.edu/. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at https://gatorevals.aa.ufl.edu/.

This course complies with all UF academic policies. For information on those polices and for resources for students, please see this link.

Schedule of Topics

ToG: Treatise on Geochemistry – See Canvas

Week	Day	Date	Topic	ToG Rec
2	M	Aug-25	**Course Intro, Nuclides, Elements, Tools**	2.1
	W	Aug-27	**Nuclides, Elements, Tools/***Paper Discussion*	
3	M	Sep-1	**Holiday – No Class**	
	W	Sep-3	**Nucleosynthesis and Solar System Composition**	2.2
4	M	Sep-8	**SS Composition/ Planetary Materials**	1.1
	W	Sep-10	*Paper Discussion*	
5	M	Sep-15	**Bulk Composition of Planets**	3.1
	W	Sep-17	*Paper Discussion*	
6	M	Sep-22	**Dr. Elardo Work Travel – No Class**	
	W	Sep-24	**Dr. Elardo Work Travel – No Class**	
7	M	Sep-29	**Solar Nebula Processes and Condensation**	1.9, 1.10, 2.3
	W	Oct-1	*Paper Discussion*	
8	M	Oct-6	**Volatile Depletion**	
	W	Oct-8	*Paper Discussion*	
9	M	Oct-13	**Short Lived Chronometers**	1.11
	W	Oct-15	*Paper Discussion*	
10	M	Oct-20	**Long Lived Chronometers and Model Ages**	1.12
	W	Oct-22	*Paper Discussion*	
11	M	Oct-27	**Planetary Accretion and Source Materials**	2.4, 1st ½ of 2.8
	W	Oct-29	*Paper Discussion*	
12	M	Nov-3	**Planetary Materials - Chondrites**	1.2, 1.3
	W	Nov-5	*Paper Discussion*	
13	M	Nov-10	**Planetary Materials - Achondrites**	1.6
	W	Nov-12	*Paper Discussion*	
14	M	Nov-17	**Planetary Differentiation**	3.16
	W	Nov-19	*Paper Discussion*	
15	M	Nov-24	**Thanksgiving – No Class**	
	W	Nov-26	**Thanksgiving – No Class**	
16	M	Dec-1	**Project Presentations and Discussions**	
	W	Dec-3	**Project Presentations and Discussions**	

---Above schedule is tentative and subject to change---