

GLY 4930/6932: Cosmochemistry – Fall 2023 – 3 credit hours

MWF Period 3 (9:35 – 10:25am EST)

Williamson Hall, Room 218

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 (GLY6932) 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/>.

Students Requiring Accommodations

Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, <https://www.dso.ufl.edu/drc>) by providing appropriate documentation. Once registered, students will receive an accommodation letter which must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.

University Honesty Policy

UF students are bound by The Honor Pledge which states, "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment." The Honor Code (<https://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/>) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor in this class.

University Policy on Accommodating Students with Disabilities: Students requesting accommodation for disabilities must first register with the Dean of Students Office (is <http://www.dso.ufl.edu/drc/>). The Dean of Students Office will provide documentation to the student who must then provide this documentation to the instructor when requesting accommodation. You must submit this documentation prior to submitting assignments or taking the quizzes or exams. Accommodations are not retroactive, therefore, students should contact the office as soon as possible in the term for which they are seeking accommodations.

University Policy on Academic Misconduct: Academic honesty and integrity are fundamental values of the University community. Students should be sure that they understand the UF Student Honor Code at <http://www.dso.ufl.edu/students.php>.

Netiquette: Communication Courtesy: All members of the class are expected to follow rules of common courtesy in all email messages, threaded discussions and chats. [Describe what is expected and what will occur as a result of improper behavior – <http://teach.ufl.edu/docs/NetiquetteGuideforOnlineCourses.pdf>

Campus Resources:

Health and Wellness

U Matter, We Care: If you or a friend is in distress, please contact umatter@ufl.edu or 352-392-1575 so that a team member can reach out to the student.

Counseling and Wellness Center: <http://www.counseling.ufl.edu/cwc>, and 392-1575; and the University Police Department: 392-1111 or 9-1-1 for emergencies.

Sexual Assault Recovery Services (SARS)

Student Health Care Center, 392-1161.

Software Use

All faculty, staff, and students of the University are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against University policies and rules, disciplinary action will be taken as appropriate. We, the members of the University of Florida community, pledge to uphold ourselves and our peers to the highest standards of honesty and integrity.

Student Privacy

There are federal laws protecting your privacy with regards to grades earned in courses and on individual assignments. For more information, please see: <http://registrar.ufl.edu/catalog0910/policies/regulationferpa.html>

Schedule of Topics

ToG: Treatise on Geochemistry – See Canvas

Week	Day	Date	Topic	Paper Leader	ToG Reading Rec
1	W	Aug-23	Course Intro, Nuclides, Elements, Tools		
	F	Aug-25	Nuclides, Elements, Tools		
2	M	Aug-28	Nucleosynthesis and Solar System Composition		2.1, 2.2
	W	Aug-30	Nucleosynthesis and Solar System Composition		
	F	Sep-1	<i>Paper Discussion</i>		
3	M	Sep-4	Holiday – No Class		
	W	Sep-6	Overview of Planetary Materials		1.1
	F	Sep-8	<i>Paper Discussion</i>		
4	M	Sep-11	Bulk Composition of Planets		3.1
	W	Sep-13	Bulk Composition of Planets		
	F	Sep-15	<i>Paper Discussion</i>		
5	M	Sep-18	Solar Nebula Processes and Condensation		1.9, 1.10, 2.3
	W	Sep-20	Solar Nebula Processes and Condensation		
	F	Sep-22	<i>Paper Discussion</i>		
6	M	Sep-25	Determining Early Solar System Event Ages		1.11, 1.12
	W	Sep-27	Determining Early Solar System Event Ages		
	F	Sep-29	<i>Paper Discussion</i>		
7	M	Oct-2	Planetary Accretion		2.4, 1 st ½ of 2.8
	W	Oct-4	<i>Paper Discussion</i>		
	F	Oct-6	Homecoming – No Class		
8	M	Oct-9	Planetary Materials - Chondrites		1.2, 1.3
	W	Oct-11	Planetary Materials - Chondrites		
	F	Oct-13	<i>Paper Discussion</i>		
9	M	Oct-16	Planetary Materials - Achondrites		1.6
	W	Oct-18	Planetary Materials - Achondrites		
	F	Oct-20	<i>Paper Discussion</i>		
10	M	Oct-23	Planetary Differentiation – Core Formation		3.15, 3.16
	W	Oct-25	Planetary Differentiation – Core Formation		
	F	Oct-27	<i>Paper Discussion</i>		
11	M	Oct-30	Planetary Differentiation – Magma Oceans		
	W	Nov-1	Planetary Differentiation – Magma Oceans		
	F	Nov-3	<i>Paper Discussion</i>		
12	M	Nov-6	Magmatic Evolution – 1: The Moon		2.9
	W	Nov-8	Magmatic Evolution – 1: The Moon		
	F	Nov-10	Holiday – No Class		
13	M	Nov-13	Magmatic Evolution – 2: Mars		2.10
	W	Nov-15	Magmatic Evolution – 2: Mars		
	F	Nov-17	<i>Paper Discussion</i>		
14	M	Nov-20	Magmatic Evolution – 3: Mercury and Venus		2.6, 2.7
	W/F	22/24	Thanksgiving – No Class		
15	M	Nov-27	Magmatic Evolution – 3: Mercury and Venus		
	W	Nov-29	<i>Paper Discussion</i>		
	F	Dec-1	Project Presentations and Discussions		
16	M	Dec-4	Project Presentations and Discussions		
	W	Dec-6	Project Presentations and Discussions		

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