Course Description: This course discusses the origins, abundances, distributions, and behaviors of the chemical elements in the Solar System.

Schedule: We will meet M and W from 9:00 to 10:15AM in Kuiper Space Sciences, Rm. 312. Course materials will be made available online as the semester progresses.

Instructor: (Prof.) Tom Zega, tzega@lpl.arizona.edu, 520-626-1356, Kuiper Space Sciences, Room 522. Office Hours, MW 10:15 to 11:15 AM or by appointment.

Required Textbook: *Cosmochemistry* (H. Y. McSween Jr. and Gary R. Huss), 2010. Cambridge University Press, 549 p.

Couse Objectives and Expected Learning Outcomes: The objective of this course is to provide students with an understanding of the origins and evolution of our solar system from a chemical perspective. Learning outcomes will be assessed based on class participation, problem sets, and mid-term and final written examinations.

Absence and Class Participation Policies: Absences for any sincerely held religious belief, observance, or practice will be accommodated where reasonable. See http://policy.arizona.edu/human-resources/religious-accommodation-policy. Absences pre-approved by the UA Dean of Students (or dean's designee) will be honored.

Performance Metrics:

Mid-term Exam:	35%
Final Exam:	35%
Problem sets:	20%
Class participation:	10%

Grading Scale (%):

A	≥ 90
B	80 to 89
C	70 to 79
D	60 to 69
E	< 60

Credit is not given for assignments that are turned in late.

- See for http://registrar.arizona.edu/courses/final-examination-regulations-and-information?audience=students&cat1=10&cat2=31 final-exam regulations.
- See http://www.registrar.arizona.edu/students/courses/final-exams for the final exam schedule.
- The final exam for our class is scheduled for **December 12, 2017 from 10:30AM to 12:30pm**.

Classroom Behavior: No mobile phone use during class unless it is somehow involved in the lecture/discussion. Computers are allowed to take notes or otherwise for lecture-relevant content. No Facebook or other social media activities are permitted or anything else that might be construed as behavior that distracts from the lecture.

Threatening Behavior Policy: The UA policy on threatening behavior prohibits threats of physical harm to any member of the University community: policy.arizona.edu/education-and-student-affairs/threatening-behavior-students.

Academic Integrity Policy: The Student Code of Academic Integrity prohibits plagiarism: deanofstudents.arizona.edu/policies-and-codes/code-academic-integrity.

Nondiscrimination and Anti-Harassment Policy: Please see University Policy 200E on prohibited behaviors: http://policy.arizona.edu/human-resources/nondiscrimination-and-anti-harassment-policy

Accommodations for Students with Disabilities: For students with disabilities, reasonable accommodations will be provided by the Disability Resources Center: drc.arizona.edu/instructors/syllabus-statement

Disclaimer: The information contained in this course syllabus, other than the grade and absence policies, may be subject to change with reasonable advance notice, as deemed appropriate by the instructor.

Schedule	**Lecture Topics**
Week 1/Chp 1:	Introduction to Cosmochemistry
Week 2/Chp2:	Nuclides and elements: The building blocks of matter
Week 3/Chp3:	Origin of the elements: Big Bang and Stellar Nucleosynthesis
Week 4/Chp 4:	Solar system abundances of the elements and isotopes
Week 5:/Chp5:	Presolar grains: recorders of stellar and interstellar processes
Week 6:	Chemical Bonding, Crystallography, and Mineralogy
Week 7/Chp6:	Meteorites: Components and classification
Week 8/Chp 7:	Chemical Fractionation I. Condensation/Igneous/Volatile/Physical

Mid-term Exam – Wednesday October 18, 2017

Week 9/Chp 7:	Chemical Fractionation II. Stable Isotopes, Mass-dependent and –independent fractionation
Week 10/Chp 8:	Radiogenic Isotopes – Basic principles; Long-lived nuclides
Week 11/Chp 8:	Radiogenic Isotopes – Short-lived nuclides
Week 12/Chp 9:	Solar system chronology
Week 13/Chp 10:	Volatile components: Organics, Ices, and Noble Gases
Week 14/Chp 11-12:	(Thanksgiving) Planetesimals and Comets
Week 15/Chp 13:	Geochemistry of Moon and Mars
Week 16/Chp 14:	A cosmochemical model of solar system formation

Final Exam – Tuesday, December 12th, 10:30 to 12:30