Geology and Geophysics of the Solar System

PTYS 411 Syllabus – Spring 2014

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Times and locations:

- Two lectures per week on Tuesday and Thursday from 11am to 12:15pm.
- First lecture on Thursday, January 16th.
- Lectures will be held in room 312 of the Kuiper Space Sciences building.

I will be available for questions and discussion after lectures and up to 4pm on Thursdays. If you need help and cannot make this time then please contact me by email to make another arrangement. I have a general open door policy too; but if you don't email in advance then there's no guarantee that I'll be available.

What students should know coming into this course:

There are no explicit course prerequisites and anyone may enroll; however, this course is intended for juniors and seniors and as such contains advanced material. Many of the lectures will contain material of a mathematical nature and at least a basic knowledge of calculus will be necessary to understand it. Some background knowledge of terrestrial geology would be of great benefit, but is not required.

Students may attempt the course without a mathematical or geological background, although extra effort will be required on their part. Please speak to the instructor if you have any questions.

What students should know coming out of this course:

The goals of this course are to give the student a thorough understanding of geologic processes operating on planetary bodies and how they have shaped the geologic history of solar system bodies.

In this class we will explore how a variety of geologic processes, such as impact cratering, volcanism, tectonics, fluvial and atmospheric, shape planetary landscapes. Interspaced with these lectures we will review the geologic history of solar system bodies and processes unique to these individual bodies.

Course Website:

Lectures, homework assignments and general information on the course will be posted on a class website at:

http://www.lpl.arizona.edu/~shane/PTYS_411

Textbooks:
There are no required textbooks in this class. Any reading assigned will be provided in hardcopy or electronic form.

I recommend the newly published "Planetary Surface Processes" by H.J. Melosh published by Cambridge Press. There should be copies in the bookstore. Again, this is optional – but a great book!

Other textbooks such as "The new solar system", edited by Beatty, Peterson and Chaikin, or "Encyclopedia of the solar system" by McFadden, Weissman and Johnson are recommended as good background reading.

Course credit:
There will be no final or mid-term exam in this course.

Homework will be assigned every two weeks in class on Thursdays. In general, this homework will be due two weeks from the date on which it is assigned. Some of these assignments may be based on analysis of spacecraft data and will require students to utilize the computational resources here at the Lunar and Planetary Laboratory. Late homework receives half credit and homework submitted a week or more after the due date receives no credit. If you are unable to complete a homework assignment on time (and have a good reason) you must discuss this with the instructor *before* the due date to avoid losing credit.

A final course project will be required of all students on some subject relevant to the content of the course. Students are encouraged to interact with the instructor early in the semester to choose a topic for their project. A 10-15 minute oral presentation and written report on this project will be due at the end of the semester. This project may be a (thorough) literature review of a chosen topic. It may also be original research (for which there is generous extra credit).

Final grades are determined from:

Homeworks/Labs	75%
Final project - Oral	10%
Final project - written	15%

Grades will be assigned according to the following scale. Grades won't be rescaled to ensure that any particular statistical distribution is met.

85-100%	A
70-84%	B
60-69%	C
50-59%	D
0-49%	E

General Policies:

Attendance is required from all students at all lectures. While in class, students are expected to conduct themselves in a considerate manner. Late arrivals and early departures from class are disruptive and not permitted. Students must disable cell phones for the duration of the class and refrain from answering calls (please take any emergency calls outside and explain them later). Students that persistently disrupt the class may be removed through the administrative drop procedure.

Students are encouraged to discuss approaches to solving homework problems and their class projects with each other; however, all work submitted must be the student's own. Copying of homework from other students, text from previously published papers without reference or solution sheets from previous years is not acceptable. Previously completed course projects may not be submitted for credit in this course. Plagiarism of published research for a class project will result in zero credit for that portion of the course. All students are expected to follow the UA code of academic integrity, which can be read here:

http://deanofstudents.arizona.edu/codeofacademicintegrity

The classroom is a communal resource that should be treated with care and respect. No food or drink (except water) is permitted in this room. Please clear up your seating area after use and don't leave any debris that others will need to clean up.

Students with Disabilities:

If you anticipate barriers related to the format or requirements of this course, please meet with me so that we can discuss ways to ensure your full participation in the course. If you determine that disability-related accommodations are necessary, please register with Disability Resources (621-3268; drc.arizona.edu) and notify me of your eligibility for reasonable accommodations. We can then plan how best to coordinate your accommodations.