

Physics 160/360: Planetary Science: Prioritizing Exploration Spring 2012

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Planetary Science is funded by your tax dollars. Who decides how the money is spent and what the priorities are for space exploration? Last year, a prestigious group of planetary scientists, with input from the entire community, published the 2012 Decadal Survey, a plan for priorities in planetary science for the next decade. What are the science goals? How were they prioritized? Would you have prioritized them differently?

Class meetings: T Th 11:00 AM – 12:20 AHON 117

Office hours: T Th 2:00 pm -3:00 pm You are welcome and encouraged to meet with me at any time which is mutually agreeable, even if it is not during my official office hours. My class schedule (so you know when I'm busy) is posted on my web page. I do my research off campus most days this semester, but I am always available by e-mail. If your question is urgent, please e-mail me a phone number and I will call you as soon as possible.

Required Text: *Vision and Voyages for Planetary Science in the Decade 2013-2022* An electronic version is available for free at http://www.nap.edu/catalog.php?record_id=13117. I recommend that you download the free pdf (you can also just read online) just in case the site is broken or down when you need it. Additional information is available at http://sites.nationalacademies.org/SSB/CurrentProjects/ssb_052412.

Prerequisites: Physics 232 for 360, none for 160. While students do not need any science background, each group will have at least one “science expert” to consult. The non-science components will be equally important, helping with writing, clarity of explanation, and their own unique perspective on government spending.

Goals:

After completing this course, students will be able to

1. To discuss the goals of planetary science research.
2. To discuss how planetary measurements are made and used to answer scientific questions.
3. To determine how planetary science goals are prioritized by the community.
4. To find, use, and understand data from some planetary spacecraft instrument.

Grading:

Final grades will be based on the following:

Attendance & Participation	40%
Homework assignments	35%
Presentation	10%
Final Papers	15%

Class Web page: Assignments are listed at http://newton.uor.edu/facultyfolder/julie_rathbun/explore.html.

Attendance & Participation: As you can see on the web page, this class will involve a lot of discussion, writing, and student presentation. Active participation in every class assignment is mandatory. This does not mean merely showing up, but also includes asking thoughtful questions of presenters (not just the instructor), sharing thoughts and insights about the reading, and giving your opinion and backing it up with facts. A student who attends nearly all classes, demonstrates that they have done the assignment by asking thoughtful questions and making interesting comments will receive an A for this part of class. Being late, sleeping, using your cell phone, carrying on side conversations, and otherwise not engaging in the class will lower your grade.

Presentation: As you can see from the class web page, there will be several class periods where students are giving presentations of their groups' work. Each student must give at least one of these presentations (approximately 10 minutes in length). The entire group will contribute to the information in the presentation. Each presentation will be graded on two criteria. First will be content and that grade goes to the entire group. The second will be presentation and will go only to the presenter. It will be graded on clarity, completeness, and sticking to the time limit. It should be practiced (it is very easy to tell because the presentation goes more smoothly and the presenter is engaging).

Homework assignments: As you can see from the class web page, there will be short writing assignments associated with nearly every class (twice a week). These assignments must be e-mailed to the instructor. Early, short assignments can be simply typed into the message. Longer assignments must be written in a word processor and send as a Microsoft word or pdf file. Late assignments will lose a full letter grade for each hour they are late. Assignments will only be graded with full letter grades (no +/-). A paper that shows evidence of original thought, is easy to read, and clearly demonstrates that the assignment was read and thought about will receive an A.

Final papers: Three short final papers are due by April 19th at 9 am, no late papers will be accepted. These papers will synthesize what you learned over the course of the semester. They should show evidence of original thought, be clear, neat, and easy to read, and demonstrate what you have learned over the semester. The topics of the papers are described on the class web page.