EART 160: Planetary Science

MWF 11:00-12:10 E&MS D236

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Office hours: MWF 12:10-1:10 or by appt.

Course Goals: To provide an introduction to the observational and quantitative techniques used to infer the origins and characteristics of solar system bodies, from dust grains to gas giants.

Text: Hartmann, *Moons and Planets*, (5th edition). This is useful but not essential; all examinable material will be covered in the lectures.

Grading scheme (approximate):
40% Weekly homeworks (due each Friday)
20% Midterm
40% Final

Late homeworks will have their scores reduced by 10% per day.

Prerequisites:
One of: Math 11B or 19B; and
One of: Phys 6A or Phys 5A.

WARNING: I am going to assume a good working knowledge of single-variable calculus and freshman physics. You will need to be able to set up and solve "word problems". Don't be under any illusions – this is a *quantitative* course.

Plagiarism:
Collaboration on homework assignments is permitted and encouraged. But the work that you hand in must be your own i.e. if I ask you to reproduce your work on the board without your notes, you must be able to do so. If you are ever unsure about the appropriate level of collaboration, please ask.

If you use the textbook or other outside sources (such as web sites) then you must cite the source that you use.

Preliminary Course Outline:

Week 1 (Jan 7): Introduction, solar system formation

Week 2 (Jan 14): Planetary surfaces (cratering)

Week 3 (Jan 21): Planetary surfaces (volcanism & tectonics) [2 lectures]

Week 4 (Jan 28): Planetary interiors

Week 5 (Feb 4): **Midterm**; Planetary atmospheres

Week 6 (Feb 11): Orbits and gravity

Week 7 (Feb 18): Giant planets & extra-solar planets

Week 8 (Feb 25): Moons/Satellites

Week 9 (March 4): Asteroids, meteorites and comets [2 lectures]

Week 10 (March 11): Recap [2 lectures]

Final: Weds March 18th 8-11 am in D226