

EOSC355 "The Planets"

Development of a new course

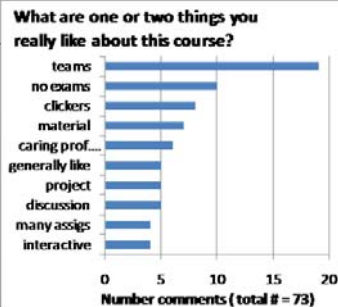


1. Goal & Audience

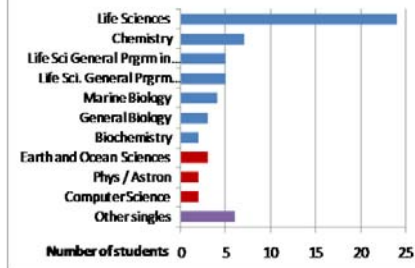
Consider problems in planetary science by thinking like specialists to integrate concepts from physics, geology, geophysics, and atmospheric science.

2. Assessments & feedback

- 3 diagnostic surveys (skills, experience).
- midterm student feedback survey →
- In-class feedback - clickers & teams
- Graded online & hand-in homework
- Posters worth 40% (no exam)
- Peer assess't at 2 of 3 production stages.



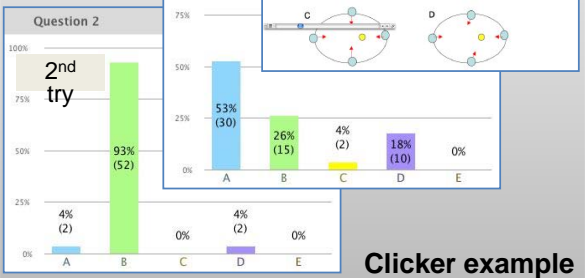
Demographics, first time offered in '09



3. Pedagogy (active with multiple assessments)

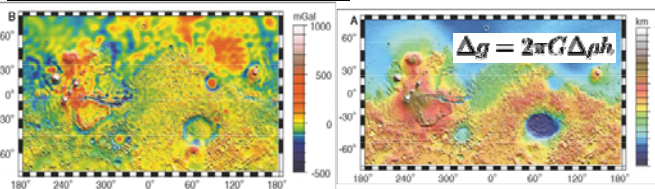
- Active class (similarities to Team Based Learning): mixed lecture (clickers) & teams / individ. work.
- Student-generated lecture content
- Homework (mixed readings, assignments)
- Major poster project (below)

Which sketch correctly describes position of a point on the surface as the moon orbits the planet?



Clicker example

Example in-class team activity



Use the data & relation given to estimate density of Olympus Mons rocks. Compare to volcanic rocks on Earth, & comment on implications for material type.

3a. Posters – A science mission proposal

- 3 parts delivered & graded with feedback
- Part 1 done twice to ensure progress is OK.
- Final grade = (instr)+(peers)+(assessed peer work)



Photo: posters. Instructor, TA & peers assessing poster present'ns.

Topic: "Propose a science mission of your choice."

4. Instructor: Re. CWSEI support, what did you find ...

- ... exciting
 - Implementing active learning.
 - Figuring out how to run team work in a larger class.
- ... challenging
 - Diverse (weak?) student background (i.e. finding commonalities), & challenging strong students.
 - Volume & spectrum of deliverables (time).
- ... problematic
 - Time; transferability, scaling up

5. Sustaining success – in future we will ...

- Use team worksheets to "demo" harder assigns.
- Give more individual (and team) quizzes
- Use less overnight homework
- Request more TA time
- Change posters to challenge top students.

6. Course development process.

Perhaps not "by the book", but constrained by time & practicalities.

