Astro 342: Syllabus for Fall semester 2005

Course staff:

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Office hours TBD Office hours TBD

Course components:

Lecture – Room 38, Physics – MWF 2:10-3PM
WebCT – some HW, some unit tests, grade records

Course plan and grading algorithm:

There are 15 weeks in the semester. We will use them to discuss in some depth five major topics in solar system astronomy, thus devoting 3 weeks to each topic. For each unit, there will be lectures, a problem set, another activity, and (for the first four units) a unit test. There will also be, for each unit, at least 5 opportunities to earn credit from “Lecture challenge” questions. You must be present in lecture to obtain full credit for lecture challenges; ½ credit is possible by emailing in the answer before the next class meeting. (Brief lecture notes – more of an outline of topics covered with the lecture challenge question included – will be posted on WebCT usually within 24 hours of the lecture time. The five major topics, the corresponding dates of the semester, and the relevant chapters of Hartmann’s book are listed on page 2.

For each topic there will be 1 problem set, 1 other assignment whose character will vary from one unit to another, and, for units 1-4, one exam. There will then be a final consisting half of material from Topic 5, and half of comprehensive review questions. For each unit there will be at least 5 lecture challenge questions each worth 2 points.

Grading:
5xHomework = 5x10 = 50
4xAssignment = 5x10 = 40
5xlecture challenges = 5x5x2 = 50
4xUnitTest= 4x20 = 80
Final or project = 1x20 = 20
Total: 240

Scores vs. letter grades will be handled as follows: At the end of each unit, a range for A, B, C, D will be indicated for that unit. To get an A, you need a score that is ≥ the sum of the minimum A scores for each unit. So: You can always see immediately what score you will need to get a given grade, but also you could get the lowest A on 4 units, the highest B on the fifth, and at that point be earning a B grade. It’s not the average of the subscores, but rather, the subscores indicate the minimum number of points needed.

Students with disabilities: Any student who feels s/he may need an accommodation based on the impact of a disability should contact me privately to discuss your specific needs. Please also contact the Disability Resources Office at 515-294-6624 in room 1076, Student Services Building. I will work with you and the DRO to coordinate reasonable accommodations for documented disabilities.
Topic 1: Overview, orbital mechanics, and where things are in the solar system. August 22 – September 9.

Relevant chapters: 1, 2, 3
Due August 26: “Brainstorm” a list of 15 topics you might consider for the optional project.
Due September 2: First problem set.


Relevant chapters: 6, 7, 8
Due September 16 Write ½ to 1 page outlines, containing at least 5 items and two levels of detail, for three of the topics from assignment 1.
Due September 23: Problem set 2.

Topic 3: Surfaces and interiors of terrestrial bodies. Geological processes, measuring the ages of rocks and surfaces, planetary magnetic fields. October 3 - 21

Relevant chapters: 6, 7, 8, 9, 10, 11
Due October 7: Do a detailed project proposal for one topic from your list, taking into account feedback received on the list.
Due October 14: Problem set 3.


Relevant chapters: 8, 11 and supplementary reading about the Sun.
Due October 28: Assignment 4 (to be announced)
Due November 4: Problem set 4.

Topic 5: What all the above tells us about solar system formation, and new insights from extrasolar planetary systems. November 14-December 9.

Relevant Chapters: 4, 5, 12
Due November 18: Assignment 5 = (optional) projects
Due December 2: Problem set 5

December 12-16: Finals week including Astro 342 final.

Note:

All project-related assignments are to be typed or word-processed. Problem sets may be hand-written.