

Test One Preview

AST 102 Stars, Galaxies, Universe — Lecture Classes

For each test you will use the Course Outline as your guide. You should first study your notes, whether taken personally by you or purchased at the bookstore. Then go through the assignments again, followed by a rereading of the assigned texts or articles.

Review of Introductory Course Note Set

The gist: Study your Foundational Assignment answers for all the Introductory Course Notes Units, except for Units IV and VI, which were covered in class. Details follow...

In your review of the Introductory Note Set, read over the goals/benefits to attain in this course in Unit I.

In Unit II (on the teaching of science) just know the calls by experts, commissions and the like, for improvements in science teaching. I focused on these in class.

Skim Unit III (U.S. scientific illiteracy). By “skim,” I mean just note the interesting survey results.

Focus especially on Unit IV (science) You must understand the aspects of science as presented in its definition in Section A of Unit IV, and in later sections, the “Heart of Science” and the “Scientific Attitude.” In Unit IV, note especially, well, everything.

In Unit V memorize the 8 aspects of critical thinking; they will be on the test. (You may be helped by the article “Thinking Creatively and Critically.” See side cabinet in the classroom for a copy.)

In Unit VI, note especially the characteristics of pseudoscientific thinking and the differences between science and pseudoscience. At the end, recognize those pseudosciences related to astronomy.

I don’t expect for you to pick up a lot of the detailed information in unit VIII, just be able to briefly describe the three dangers of pseudoscience.

In Units IX and X, covering non-psychological and psychological factors that influence us into accepting pseudoscientific claims, make sure you are familiar with the first factor in each unit. I don’t expect you to be well familiar with all the factors I cover, though most are fairly straightforward and you should be able to mention several on the test.

Unit XI? Casinos.

Regarding the brightness factor, you should be comfortable with the use of magnitude numbers. You also need to be aware of their logarithmic (exponential) nature, resulting from the work of Pogson.

Know the relation between light energy and wavelength. Also know the regions of the electromagnetic spectrum. Know what multiple of a meter is a(n) Ångstrom, nanometer, micrometer.

You should know the scale factor and zero point for each of the three temperature scales. Be sure you know the surface temperature of our sun, something you will need to know for the rest of the course.

You will have several math problems dealing with Wien's and Stefan-Boltzmann laws. The numbers will be simple; you won't need a calculator. You just need to know what to do with the numbers. Same for the Luminosity relation, which tells you how to calculate a star's luminosity from its size and temperature.

Finally, understand Kirchhoff's Laws, covered in class and presented on the left page of the color spread "Atomic Spectra". "Understand" means to at least connect a type of light source with its corresponding type of resulting spectrum.

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