Astronomy 1 – Introductory Astronomy
Spring 2014

Course Information

Content:

Astro 1 assumes no particular prerequisites beyond high school algebra. It is intended for any Swarthmore student with an interest in how the natural world works and, specifically, what we can learn about it by quantitative study of the Universe beyond the Earth's atmosphere.

We'll see how a small number of rules and building blocks lead to the incredible diversity of phenomena we see in the natural world. And we'll see how the Universe and the things in it – planets, stars, galaxies – change over time. Understanding this enables us to study the origins of astrophysical objects, including our own solar system and Earth itself.

Science has a narrative, just like any other human activity, and we'll see how the history of astronomy has traced – has in many ways *driven* – the evolution of human thought from a small and insular view, to a much more expansive and also humble view. It is, after all, astronomy that taught humans that we are not literally at the center of the Universe.

We will start the class by learning about stars and how they work. Then we'll move on to the solar system including the theory of the formation of stars and planetary systems. We will relate our Solar System's properties to those of the many exoplanetary systems that have been discovered in the last two decades. We'll then learn some of the history of astronomy. We'll observe the night sky throughout the semester, including in labs but also on your own, outside of class, and with just your naked eyes. Finally, we'll end up the semester talking about scales bigger than stars: our Milky Way Galaxy, other galaxies, and the Universe as a whole.

Contact Information:

Student can call me David or Professor Cohen. Or Dr. Cohen.

Prof. David Cohen
SC 125
Phone: x8587
Email: dcohen1

Class Website: http://astro.swarthmore.edu/astro1/
This is the primary source and repository of information about the class. We will use Moodle a little bit, too.

Communication: I will communicate with you by email. And via the class website. You must check both on a daily basis.

Office Hours: posted on the class website, and variable from week to week, but almost always Tuesday and Thursday afternoons, with one other MWF time, depending.

Textbook: Bennett et al. *The Cosmic Perspective* (6^{th} ed.) is on reserve in Cornell Library (ask for it at the front desk). Note that is not the most current edition.

Labs: Six evening labs, meeting every other week. Students will be assigned to one section (M, T, W, Th) and will attend that section throughout the semester.

Homework assignments will be weekly, most weeks. The homework will count for a lot of your grade – the single biggest component.

Observing assignments are distinct from labs. They'll be done outside of class, and will involve sketching the night sky. There will be a small number of them.

Exams: We will have two in-class midterms and a final exam. I do not expect students to memorize constants and equations – they will be provided

for you on exams. But it is certainly up to you to know how to *use* the provided equations.

Grading and grades: Late homework will be accepted up to 24 hours after it's due with a 10% penalty and up to three days late with a 25% penalty. Later than three days and up to a week, it will receive only 50% of the possible points and may not actually be graded. No permission needs to be asked and no excuse given, you can just hand your work in late and accept the penalty. If on the other hand, you have an emergency that will require you to miss a deadline, I'll do everything I can to accommodate you – get in touch with me as soon as you know there'll be a problem.

Your final grade will be based on the following weighting: homework and observing exercises (30%), labs (20%), midterms (25%), final (25%).

Accommodations: If you believe that you need accommodations for a disability, please contact Leslie Hempling in the Office of Student Disability Services (Parrish 113) or email lhempli1@swarthmore.edu to arrange an appointment to discuss your needs. As appropriate, she will issue students with documented disabilities a formal Accommodations Letter. Since accommodations require early planning and are not retroactive, please contact her as soon as possible. For details about the accommodations process, visit the Student Disability Service website at http://www.swarthmore.edu/student-life/academic-advising-and-support/student-disability-service.xml. You are also welcome to contact me privately to discuss your academic needs. However, all disability-related accommodations must be arranged through Leslie Hempling in the Office of Student Disability Services.