Astronomy (Physics 205)

Semester: Fall 2008
Professor: Victor Kriss
Office Hours: 11:00 - 11:45 T,Th, and 1:30 - 2:15 M, W (In the SUB)
and by appointment
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Labs: Tuesday, 7:00 - 9:00, (Room -- MLH B10)

Description of Course:

The material that this course will attempt to cover will range from the early history of astronomy (and therefore science) to the current models of cosmology that describe the origin and evolution of the universe. We will examine the observational evidence recently made available on the planets and moons of our solar system, and learn about the models that describe the evolution of stars and galaxies.

Very often in reports of science seen on news programs, or science information taught in courses or found in books, there are seemingly outlandish statements presented as facts (Example: The galaxy of Andromeda is 2.2 million light-years away, or the age of the universe is of the order of 13.7 billion years old). To understand the validity, accuracy, or origin of such statements it is necessary to know the source material and techniques used in determining the specific model. These techniques and skills are universal among the sciences. As a consequence of learning the rational behind the techniques and skills used in finding astronomical information, students taking this class can learn the patterns or techniques used to determine all natural information, and begin to understand the extent of reliability in all natural enterprises.

A particular goal of this course will be to allow students to learn their "geographical" place in the universe, and have a feeling of their surroundings ranging from elementary particles to clusters of galaxies.

Because this is an introductory course, the scope of material taught will lean more heavily upon descriptive content. Skills in observation and critical analysis will be offered in small doses since there are no physics prerequisites. However, the "model of science" will be illustrated by example over and over, and examples of pseudosciences will be offered for comparisons.

If you need course adaptations or accommodations because of disability, if you have emergency medical information to share with me, or if you need special arrangements in case the building must be evacuated, please make an appointment with me as soon as possible.

Grading:

Grading will be based on a 500 point scale normalized to 100 points. There will be 100 points for each of three exams (On the final exam there will be and extra 50 points for 10 additional questions that are similar to the previous two exams), another 50 points for homework. Homework should be turned in at the beginning of the next

class period following its assignment. There will be 100 points for the laboratory reports, which are due the following lab period.

The normalized, final grades will be determined using the following grading scale:

94 -100	A	90 - 93	A-
87 -89	B+	84 - 86	B
80 - 83	B-	75 - 79	C+
70 - 74	C	60 - 69	D

Text: **The Cosmos, by Jay Pasachoff & Alex Felippenko, 3nd edition**

August	25	Introduction - Our Address
	27	Ancient Astronomy I
Sept	1	**Labor Day**
	3	Light
	8	Fundamental Particles and Forces
	10	Telescopes
	15	Observing Stars and planets
	17	Greek and Early Historical Astronomy
π	22	Kepler's Laws **22 Autumnal Equinox**
	24	**Test 1**
October	1	The Terrestrial Planets
	3	The Terrestrial Planets
	8	Mars in Particular
	10	Jovian Planets
	15	Jovian Planets
	17	Pluto, Comets and the New Planet
	22	The Solar System and Others
	24	The Sun
π	27	Stars - Distant Suns
	29	How Stars Shine (Halloween)
November	3	**Test 2**
	5	The Deaths of Stars
	10	Black Holes and Neutron Stars
	12	The Milky Way

	17	Galaxies
	19	Quasars and Active Galaxies
		Thanksgiving Break November
December	1	Cosmology
	3	The Birth of the Universe
	8	The End
π	10	Life in the Universe

Final Exam

Monday 10:30 PM December 15 th