Astronomy 104 **Spring 2007** Instructor: Dr. Don Summers 915-7032
Lewis Hall 101 TTh 1:00-1:50 Text: Cosmic Perspective, 4th, J. Bennett et al.
Office: Lewis Hall Room 221 Monday Lab Section Sec. 1: 7-9pm Sec. 2: 9-11pm
Office Hours: TTh 2-3 Tuesday Lab Section Sec. 3: 7-9pm Sec. 4: 9-11pm
Lab: Kennon Observatory Lab Instructor: Brooke Rankin

Date	Subject	Read These Chapters Before Class
16 Jan	Introduction, Distances, light years, constellations	Chapter 1 & 2
18 Jan	Kepler's 3 laws, Newton's Laws, Gravity, orbits	Chapter 3 & 4
23 Jan	Matter, Energy, Temperature, Atomic energy levels	Chapter 5
25 Jan	Light, Wavelengths, Spectral Lines, Doppler Shift	Chapter 5
30 Jan	Spectroscopes, Wien's Law, Black Body Radiation	Chapter 5
1 Feb	Making the 200" Telescope at Mount Palomar	Chapter 6
6 Feb	Black Body Radiation	Chapter 5
8 Feb	Telescopes: Optical, Radio, X-ray...	Chapter 6
13 Feb	FIRST HOUR EXAM	
15 Feb	Why does the sun shine?, Sunspots, Neutrinos	Chapter 14
20 Feb	Distances, Luminosity, Temperature, and Size of Stars	Chapter 15
22 Feb	HR Diagram	Chapter 15
27 Feb	Stellar Masses & Binary Stars	Chapter 15
1 Mar	Gas --> New Stars, Old stars Move off the Main Sequence	Chapter 16
6 Mar	Variable Stars, Red Giant and White Dwarf Stars	Chapter 17
8 Mar	SECOND HOUR EXAM	
20 Mar	Two kinds of Supernovae can explode	Chapter 18
22 Mar	Neutron Stars and Gravity Waves, Black Holes	Chapter 18
27 Mar	Crab Nebula	Chapter 18
29 Mar	Our Milky Way Galaxy, Globular Star Clusters	Chapter 19
3 Apr	100 Billion Galaxies	Chapter 20
5 Apr	Finding Distances with Cepheid Variables, Galaxies	Chapter 20
10 Apr	Hubble's Law, Redshifts, and Distances	Chapter 20
12 Apr	Quasars and Active Galaxies	Chapter 21
17 Apr	Dark Matter in Galaxies and Galaxy Clusters	Chapter 22
19 Apr	What is Dark Matter?	Chapter 22
24 Apr	THIRD HOUR EXAM	
26 Apr	Cosmology, Expanding Universe, Big Bang, 3 K Radiation	Chapter 23
1 May	Early Universe, Inflation, Big Bang, Sub-Atomic Particles	Chapter 23 S4
3 May	Search for Extraterrestrial Civilizations	Chapter 24
8 May	COMPREHENSIVE FINAL EXAM, 4:00pm, Tuesday, not earlier!	

Grading: Lab 25% You must do at least 70% of the labs to pass.

Scheme			
	1st Exam	12%	Bring a picture ID to tests.
	2nd Exam	12%	
	3rd Exam	12%	You will need a scientific pocket calculator. The
	FINAL EXAM	24%	Texas Instruments TI-30Xa is a good choice.
	Pop Quizes	15%	

Extra Credit (~5%) Read Stephen Hawking's book, "A Brief History of Time."
Write one page summarizing and commenting on each chapter. Due May 3.

Please come to the lab night and time you have signed up for. Labs are a required part of the course. You must do at least 70% of the labs to pass.
Labs start on Monday night, January 22.
Bring a scientific calculator lab.

Adding exponents (11+11=22). $10^{11} \times 10^{11} = 10^{22}$

stars/galaxy x galaxies = stars in the universe

Learning Objectives: To learn how stars, galaxies, and other wonders of the Universe work and to find out how astronomers made these discoveries and to do some of the actual experiments.