

Astronomy 104 Spring 2009 Instructor: Dr. Don Summers 915-7032  
 Lewis 101 TTh 1:00-1:50 Office Hours: Lewis 221 TThF 2-3  
 Lab: Kennon Observatory Text: Cosmic Perspective, Bennett et al., 5th Ed.  
 Lab Section: 1,2 Monday 7-8:50, 9-10:50 TA: George Richardson  
 Lab Section: 3,4 Tuesday 7-8:50, 9-10:50 TA: David Sedorook  
<http://www.phy.olemiss.edu/~kakukk/Astro/Lab/Lab.html>

Date	Subject	Read These Chapters Before Class
22 Jan	Introduction, Distances, light years, constellations	Chap 1 & 2
27 Jan	Telescopes and Observatories	Chap 6
29 Jan	Kepler's 3 laws, Newton's Laws, Gravity, orbits	Chap 3 & 4
3 Feb	Matter, Energy, Temperature, Atomic energy levels	Chap 5
5 Feb	Light, Wavelengths, Spectral Lines, Doppler Shift	Chap 5
10 Feb	Spectroscopes, Wien's Law, Black Body Radiation	Chap 5
12 Feb	Telescopes: Optical, Radio, X-ray...	Chap 6
17 Feb	FIRST HOUR EXAM	
19 Feb	Why does the sun shine?, Sunspots, Neutrinos	Chap 14
24 Feb	Distances, Luminosity, Temperature, and Size of Stars	Chap 15
26 Feb	HR Diagram, Stellar, Masses and Binary Stars	Chap 15
3 Mar	Gas --> New Stars, Old stars Move off the Main Sequence	Chap 16
5 Mar	Variable Stars, Red Giant and White Dwarf Stars	Chap 17
10 Mar	Two kinds of Supernovae can explode	Chap 18
12 Mar	Neutron Stars, Gravity Waves, and Black Holes	Chap 18
24 Mar	Crab Nebula	Chap 18
26 Mar	SECOND HOUR EXAM	
31 Mar	Our Milky Way Galaxy, Globular Star Clusters	Chap 19
2 Apr	100 Billion Galaxies	Chap 20
7 Apr	Finding Distances with Cepheid Variables, Galaxies	Chap 20
9 Apr	Hubble's Law, Redshifts, and Distances	Chap 20
14 Apr	Quasars and Active Galaxies	Chap 21
16 Apr	Dark Matter in Galaxies and Galaxy Clusters	Chap 22
21 Apr	THIRD HOUR EXAM	
23 Apr	Cosmology, Expanding Universe, Big Bang, 3 K Radiation	Chap 23
28 Apr	Early Universe, Inflation, Big Bang, Sub-Atomic Particles	Chap 23 S4
30 Apr	Search for Extraterrestrial Civilizations	Chap 24
5 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.  
 FINAL EXAM 24% The Texas Instruments TI-30Xa is a good choice.  
 Pop Quizzes 15%

Extra Credit (~5%). Read Stephen Hawking's book, "A Brief History of Time."  
 Write one page summarizing and commenting on each chapter. Due April 28.

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 26 rain or shine. Wear a warm coat.

Bring a scientific calculator lab. 11 11 22

Adding exponents (11+11=22). 10 x 10 = 10

stars/galaxy x galaxies = stars in the universe

Reasonable accommodations for students with disabilities will be provided.

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.