

# ASTRONOMY 104 Spring 2005

## Monday and Wednesday from 8:00 - 8:50

**Instructor:** Dr. Henry Bass  
**Office:** Room 2001, NCPA Building  
**Office Hours:** M 9-9:50 (no appointment needed) or by appointment at any time  
**Phone:** 915-5840  
**Text:** J. Bennett et al, *The Cosmic Perspective*, Addison Wesley 1999 (with CD-ROM)  
**Lab:** Kennon Observatory  
**Lab Instructor:**

19 Jan	Introduction to the course and syllabus; Quick overview	Ch. 1, Sec. 1-4
24 Jan	Introduction to the sky: The celestial sphere, objects, motions	Ch. 1, Sec. 5
26 Jan	Overview of the Solar System and scales in astronomy	Ch. 2
31 Jan	Constitution of matter and forms of energy	Ch. 5
2 Feb	Motion: Kepler's laws and Newton's laws	Ch. 6
7 Feb	Properties of light and radiation; Spectra	Ch. 7
9 Feb	Telescopes: Properties, types	Ch. S2
<b>14 Feb</b>	<b>Test 1</b>	
16 Feb	The Sun: Structure, surface features, and energy production	Ch. 14
21 Feb	Stars: Main properties	Ch. 15, Sec.1-4
23 Feb	Stars: The HR diagram; Star clusters	Ch. 15, Sec.5-6
28 Feb	Stars: Star formation, Evolution of low-mass stars	Ch. 16, Sec.1-3
2 Mar	Stars: Evolution of massive stars; close binary star systems	Ch. 16, Sec.4-5
7 Mar	White dwarfs and neutron stars	Ch. 17, Sec.1-3
<b>9 Mar</b>	<b>Test 2</b>	
	<b>Spring Break March 14-18</b>	
21 Mar	Black holes and Einstein's view of gravity; Gamma ray bursts	Ch. 17, Sec.4-5
23 Mar	The Milky Way: Structure, nebulae	Ch. 18, Sec.1-3
28 Mar	The Milky Way: Evolution, spiral arms, galactic center	Ch. 18, Sec.4-5
30 Mar	Galaxies: Types, properties, distances	Ch. 19, Sec.1-2
4 Apr	Galaxies: The age of the universe and cosmological expansion	Ch. 19, Sec.3-4
6 Apr	Galaxies: Evolution	Ch. 20, Sec.1-3
11 Apr	Galaxies: Active galaxies and quasars	Ch. 20, Sec.4-6
13 Apr	Dark matter: Distribution in galaxies and clusters	Ch. 21, Sec.1-3
18 Apr	Dark matter: Types and relationship with structure formation	Ch. 21, Sec.4-6
20 Apr	Video: Galaxies and cosmology	
<b>25 Apr</b>	<b>Test 3</b>	
27 Apr	Cosmology: The Big Bang and main stages of universe evolution	Ch. 22, Sec.1-3
2 May	Cosmology: Problems and possibilities	Ch. 22, Sec.4-6
4 May	Interstellar Travel	Notes
<b>12 May</b>	<b>Final Exam 8:00 am</b>	

<b>Grading Scheme:</b>	Lab	35%	You must do at least 70% of the labs to pass
	Pop Quizzes	10%	
	1st Exam	10%	
	2nd Exam	10%	
	3rd Exam	10%	
	Final Exam	25%	

**Laboratory:** Please come on the night you have signed up for. Labs are a required part of the course.