

## **Astronomy 103 Fall 2012**

Instructor: James Hill 662-547-6970, [jhill6333@gmail.com](mailto:jhill6333@gmail.com)

Class: Lewis 101 M & W 4:00 pm or 5:00 pm

Office Hours: M & W 3:00-3:45, Kennon Observatory

Text: Cosmic Perspective, Bennett et al., 6th Edition

### Learning Objectives:

1. To learn how planets, the sun, and other wonders of the solar system work and
2. find out how astronomers made these discoveries
3. And to do some actual experiments

Lab Sections: for questions contact Tibor Torma. Come at the correct time!

Monday-Thursday 7-8:50 or 9-10:50 at Lewis 1 or Kennon Observatory

For information: <http://www.phy.olemiss.edu/~kakukk/Astro/Lab/Lab.html>

ASTR 103 Lab Manual is required. You will need a scientific pocket calculator. The Texas Instruments TI-30Xa is a good choice. Bring the calculator to labs.

Read the assigned chapter before class. The schedule below is subject to adjustment.

Date	Subject	Chapter
20 Aug	Introduction, Cosmic address, light year	1
22 Aug	Stars, Constellations, Long/Lat., Seasons, Precession	2
27 Aug	Lunar phases, eclipses, retrograde motion, parallax	2
29 Aug	Earth Size, Kepler's Laws, Venus' Phases, Jupiter's Moons	3
5 Sept	Time, Calendar, RA, Dec., Star Tracks, Long., Lat.	S1
10 Sep	Energy, Temperature, Matter Phases, atoms, energy levels	4
12 Sep	Motion, orbits, Newton's & Kepler's Laws	4
17 Sep	Gravity, Escape Velocity, Weight and Mass, Tides	4
19 Sep	Light waves, spectra, thermal radiation, Doppler shift	5
24 Sep	FIRST HOUR EXAM	1-5
26 Sep	Telescopes: Optical, Radio, and X Ray; Diffraction Limit	6
1 Oct	Solar System Tour and Formation, Radioactive Dating	7,8
3 Oct	Terrestrial Planets, tectonics, volcanoes, magnetism	9
8 Oct	Planet Earth: S-waves, P-waves, Continental Drift	9
10 Oct	Terrestrial Atmospheres, O <sub>2</sub> , CO <sub>2</sub> , Ozone	10
15 Oct	Greenhouse effect, Ozone, Escape Velocity	10
17 Oct	SECOND HOUR EXAM	6-10
22 Oct	Solar System Epic Adventure, Voyager Spaceflight	11
24 Oct	Interiors/Atmospheres: Jupiter, Saturn	11
29 Oct	Interiors/Atmospheres: Uranus, Neptune	11
31 Oct	Rings & Moons: Jupiter, Saturn, Uranus, Neptune	11
5 Nov	Rock and Ice: Asteroids and Comets	12
7 Nov	Pluto and Charon, Kuiper Belt, Meteors, Meteor Showers	12
12 Nov	Planets around stars beyond the sun	13
14 Nov	THIRD HOUR EXAM	11-13
26 Nov	Sunspots, Solar Magnetism, Flares, Energy Transport	14
28 Nov	Why does the sun shine? Nuclear fusion, neutrinos	14
3 Dec	COMPREHENSIVE FINAL EXAM 5:00 pm class, 7:30 pm	1-14
7 Dec	COMPREHENSIVE FINAL EXAM 4:00 pm class 4:00 pm	1-14

Grading Scheme: Bring a picture ID to tests

Labs 25% You must do at least 75% of the labs to pass.

Quizzes 15% expect quizzes at any class.

1st Exam 12%

2nd Exam 12%.

3rd Exam 12%

FINAL EXAM 24% Plan for the final exam on correct date, not earlier.

$$10^{11} \times 10^{11} = 10^{22}$$

stars/galaxy x galaxies = stars in the universe.

Reasonable accommodations for absences and for students with disabilities may be provided with advance notice.