

## **Astronomy 103 Summer 2013: Introduction to Astronomy and The Solar System**

Instructor: James Hill 662-392-1862, [jhill6333@gmail.com](mailto:jhill6333@gmail.com)

Class: Lewis 101 M-Th 1:00 pm to 2:50 pm

Office Hours: M-Th 3:00-5:00 (mornings by appointment)

Labs: Two evenings/week day M-W or T-Th, 8:30-10:50

Text: Cosmic Perspective, Bennett et al., 7th Edition, 2013

### 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

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

Date	Subject	Chapter
29 May	Introduction, scale and history of the universe, spaceship Earth	1
29 May	Constellations , Seasons	2
30 May	Lunar phases, eclipses, retrograde motion, parallax	2
30 May	History of astronomy, Copernicus, Kepler, Galileo,	3
3 June	Astronomical time, Calendar, RA-Dec., Star Tracks, Long., Lat.	S1
3 June	Energy, Temperature, Matter Phases, atoms, energy levels	4
4 June	Newton's Laws, Gravity, Escape Velocity, Weight and Mass, Tides	4
4 June	Light waves, spectra, thermal radiation, Doppler shift	5
5 June	<b>First hour test</b>	1-5
5 June	Afternoon Lab	
6 June	Telescopes: Optical, Radio, and X Ray, Diffraction Limit	6
6 June	Afternoon Lab	
10 Jun	Solar System Tour and Formation, Radioactive Dating	7-8
10 Jun	Terrestrial Planets, tectonics, volcanoes, magnetism	9
11 Jun	Planet Earth: S-waves, P-waves, Continental Drift	9
11 Jun	Terrestrial Atmospheres, O <sub>2</sub> , CO <sub>2</sub> , Ozone	10
12 Jun	Greenhouse effect, Ozone, Escape Velocity	10
12 Jun	<b>Second hour test</b>	6-10
13 Jun	Solar System Epic Adventure, Voyager Spaceflight	11
13 Jun	Afternoon Lab	
17 Jun	Planetary Interiors/Atmospheres: Jupiter, Saturn	11
17 Jun	Planetary Interiors/Atmospheres: Uranus, Neptune	11
18 Jun	Rings & Moons: Jupiter, Saturn, Uranus, and Neptune	11
18 Jun	Rock and Ice: Asteroids and Comets	12
19 Jun	Pluto and Charon, Kuiper Belt, Meteors, Meteor Showers	12
19 Jun	Planets around stars beyond the sun	13
20 Jun	<b>Third hour test</b>	11-13
20 Jun	Afternoon Lab	
24 Jun	Sunspots, Solar Magnetism, Flares, Energy Transport	14
24 Jun	Why does the sun shine? Nuclear fusion, neutrinos	14
25 Jun	<b>COMPREHENSIVE FINAL EXAM 1:00-2:30 pm</b>	1-14

### Semester Grade Algorithm:

25% Labs: You must do at least 75% of the labs to pass. (max 3 missed)

16% Quizzes/Homework: expect short quizzes for most classes.

13% 1st Test

13% 2nd Test

13% 3rd Test

20% FINAL EXAM: Plan for the final exam on correct date, not earlier.

Mid-term grade if needed will be 1/3 labs, 1/3 quizzes, 1/3 test 1

Attendance at all classes is expected. Hard copies of chapter outlines and homework/quizzes will be handed out at the end of classes. Scantron answer sheets to homework/quiz answers will be due the next class day. You may only turn in your own work - not that of others.

Answers to HW/quizzes and tests will be posted on "Blackboard". Keep back quizzes and tests to correct and use as study guides for the final exam.

Missed tests or homework/quizzes must be made up during my office hours at Kennon within 2 class days of being given unless special permission is granted.

Lab Sections: for questions contact John Rock. Missing more than 30% of labs (3) will cause failure for the course.

Come at the correct time! Monday & Wednesday or Tuesday & Thursday at Lewis 1 or Kennon Observatory.

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

ASTR 103 Lab Manual is **required**. Available at the Printing Office across from the Police Station. You will need a scientific pocket calculator. The Texas Instruments TI-30Xa is a good choice. Bring the calculator to labs.

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