Astronomy 103 Spring 2018: Intro. to Astronomy and The Solar System rev 1/3/18

Instructor: James Hill 662-547-6970 (H), 662-392-1862 (C) jhill6333@gmail.com
Class Location: Lewis 101 MW 4:00 pm to 4:50 pm (sec 1-4) or 5 to 5:50 (sec 5-8)
Lab: One evening/week M through Th, 7:00 pm-8:50 or 9:00-10:50
Office Hours: M and W 9:30 am-3:40 pm Lewis Hall #122 (other times by appointment)

Texts: Cosmic Perspective, Bennett et al., 8th Edition, 2017
Astro 103 Lab Manual

Learning Objectives:

1. To learn the physics background and history of astronomy,
2. to learn the characteristics and science of solar system bodies, and
3. to participate in observing and astronomical experiments

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

Date	Subject	Chapter
22 Jan	Introduction, scale and history of the universe, spaceship Earth	1
24 Jan	Patterns in the sky: Constellations, Seasons	2
29 Jan	Patterns in the sky: Lunar phases, eclipses, retrograde motion, parallax	2
31 Feb	Foundations of modern astronomy: Copernicus, Tycho. Kepler	3
5 Feb	Foundations of modern astronomy: Galileo	3
7 Feb	Physics background: Energy, temp, matter, phases, atoms	4
12 Feb	Physics background: Newton's Laws, Gravity, Mass, Tides	4
14 Feb	Physics Background: Light, spectra, thermal radiation	5
19 Feb	Physics background: How Light tells us about objects	5
20 Feb	**First Hour test**: **Brevard Hall auditorium 5:30 pm**	**1-5**
21 Feb	Telescopes: types, characteristics, calculations	6
26 Feb	Our Solar System: Tour and Patterns	7
28 Feb	Our Solar System: Formation and age of the solar system	8
5 Mar	Terrestrial Planets: planet shaping processes, Moon & Mercury	9
7 Mar	Terrestrial Planets: Earth and Venus	9
19 Mar	Terrestrial planets: Mars	9
21 Mar	Terrestrial planet atmospheres:	10
26 Mar	Terrestrial planet atmospheres: Greenhouse effect, Ozone,	10
27 Mar	**Second Hour Test: Brevard Hall auditorium 5:30 pm**	**6-9**
28 Mar	Giant Planets: Formation and characteristics	11
2 Apr	Giant Planets: Jupiter's mysteries	11
4 Apr	Giant planets: Planetary Interiors/Atmospheres: Jupiter, Saturn	11
9 Apr	Giant planets: Planetary Interiors/Atmospheres: Uranus, Neptune	11
11 Apr	Giant planets: Rings & Moons: Jupiter, Saturn, Uranus, and Neptune	11
16 Apr	Small solar system bodies: Asteroids and Comets	12
18 Apr	Small solar system bodies: Pluto, Kuiper Belt, Meteors	12
23 Apr	Extrasolar Planets: worlds around stars beyond the Sun	13
24 Apr	**Third Hour Test: Brevard Hall auditorium 5:30 pm**	**10-13**
25 Apr	Our Star-the Sun	14
30 Apr	Our Star-the Sun	14
1 May	Life in the Universe	24
7 May	**COMPREHENSIVE FINAL EXAM 7:30 pm** (sec 5-8)	**1-14 & 24**
11 May	**COMPREHENSIVE FINAL EXAM 4:00 pm** (sec 1-4)	**1-14 & 24**

Semester Grade Algorithm:

25% Labs: You must do at least 75% of the labs to pass.
20% Daily Quizzes/Homework and Discussion: expect short in class quizzes too.
35% Average of the 3 tests
20% Final exam: Plan for the final exam on correct date.

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

Attendance at all classes is expected. The Automated Attendance System using your Ole Miss ID card will be used. Always have your ID with you. Excess unexcused absences will affect your grade. Contact me about having absences excused.

No cell phone use allowed in class. No laptops in class without permission. It's more important to focus on the lecture and ask questions. Chapter outline notes are provided on blackboard.

Homework/quizzes will be handed out at each class. Scantron answer sheets for quizzes will be due the class day after finishing a chapter. There will also be short in-class quizzes. Bring a scantron to class with the back correctly filled in. Get the purple scantrons form **18465**.

Answer keys to HW/quizzes and tests will be posted on Blackboard. Quiz scantrons will not be accepted after answers are posted. Keep back quiz and test hard copies to correct and use as study guides. Quizzes and tests will be mainly based on the text though other topics will be covered during the lectures.

The course syllabus, chapter outlines, & quiz and test keys are posted on Blackboard.

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

Lab Sections: for questions contact the lab TA. Missing more than 25% of labs will cause failure for the course. Come on time for labs!
Some off campus observing sessions at the dark sky site will be held during lab times.
ASTRO 103 Lab Manual is **required**. Available at the Printing Office across from the Police Station. You will also need a scientific calculator for labs. The TI-30Xa is a good choice.

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

Optional extra credit points for the unit tests can be obtained by participating in lab discussions. Extra points can be added to your exam score by journaling an approved book on planetary science or watching after class astronomy related videos on Wednesdays at 6:00 pm.

Recommended web sites: (I'm always looking for other good sites to check out. Let me know)
APOD (Astronomy Picture of the Day) at **apod.nasa.gov** daily images and information
Interesting site to subscribe to is **universetoday.com** for space news.
Get monthly sky maps and info at **skymaps.com**
NASA Planetary Science podcasts **https://www.nasa.gov/gravity-assist**

Recommended Supplementary Books: (available used at online booksellers)
The New Solar System, ed. Beatty et al, Cambridge, 4th ed., 1999
The Cambridge Guide to the Solar System, Lang, Cambridge. 2nd ed., 2011