

Course Syllabus
PHY 317 – Section 1
Astronomy Lab
1 Credit Hour
Spring 2008

Location of Class: Farrington Bldg. 205 & Campus Observatory

Class Meeting Times: Wednesday 6:30pm – 8:20pm

Lab Supervisor: Dr. Brian Oetiker

Office: Farrington Bldg. Rm. 316

Lab Instructor: Brian Niefeld

Email: stdbpn12@shsu.edu

Office Hours: n/a

Course Description: This course is designed to allow you to apply some of the astronomical techniques and concepts discussed in PHY 397. You are not required to enroll in both PHY 317 and PHY 397 simultaneously, but it is strongly encouraged. An attempt has been made to correlate the material in this laboratory to the PHY 397 class, however this might not always be possible. You are encouraged to read the lab before coming to class so you can ask your lab instructor for any information you feel you need in order to complete the lab. This lab is designed to make use of the Campus Observatory whenever the sky is clear. On cloudy nights, you will do indoor lab exercises as outlined below.

Course Objectives: The following laboratory exercises will be done in this course (roughly in order):

- Introduction to the night sky using the planetarium.
- Astrometry and celestial coordinates.
- Parallax.
- Telescopes and lenses.
- Kepler's Laws from geometrical perspective.
- Kepler's Laws from observational/physical perspective.
- Nature of light.
- Measuring light in astronomy (photometry).
- Observing and interpreting stellar spectra.
- Observing using various techniques.
- Outdoor observing projects.

Required Textbook: None.

Required Supplies: Scientific calculator, flash drive.

Attendance: In order to complete enough lab exercises to pass this class, you need to show up to every class.

Grade Breakdown: Your grade will be based on a point system. Each lab exercise is worth either 100, 200, or 400 points, depending on the level of difficulty. You will choose which (and how many) lab exercises you wish to do to earn points towards your lab grade. Your lab grade will be determined from the following scale:

1350 - 1500 Points: A
1200 – 1349 Points: B
1050 – 1199 Points: C
900 – 1049 Points: D
<900 Points: F

Lab Reports: Your lab reports will be written in a format similar to most scientific papers. The report will consist of: *Introduction*, which presents the background information related to the experiment, motivation, and significance of the experiment in astronomy. *Experimental design*, which includes an list of the equipment used, how it is set up, and a discussion of the errors (uncertainties) inherent in your measurements. *Results*, which includes a table (or summary) of your results, along with an estimate of the error (uncertainty) in the measurement. *Discussion* of your results (Are you close to the expected result or not very close? What factors may have contributed to any deviation from the expected value?). *Conclusion*, which describes how your experimental results relate to the problem posed in the introduction. You may also include any future work or suggestions in this section. *References* should include at least 3 references (online resources, your textbook, articles in journals, etc.)

Due Dates: There are two due dates:

Mid-semester: March 6th – 800 points.

End of Semester: April 21st – 700 points.

Lab reports are due upon completion. **Because we meet only 12 times, time management is essential. You do not want to plan on submitting all of your work on the two deadlines.** *You should plan to submit a lab report every week or two, to avoid becoming overwhelmed with work.*

Role of Lab Instructor: YOUR LAB INSTRUCTOR IS REQUIRED TO MEET WITH YOU ONLY DURING SCHEDULED LAB TIMES. *Don't expect to get a private tutorial outside class on information that you missed. In extenuating circumstances, either the lab instructor or the lab supervisor may choose to brief you on the missed material and allow you access to the lab equipment for completion of your write-up.*

Academic Dishonesty: Students are expected to maintain honesty and integrity in the academic experiences both in and out of the classroom. *See Student Syllabus Guidelines.*

Classroom Rules of Conduct: Students are expected to assist in maintaining a classroom environment that is conducive to learning. Students are to treat faculty and students with respect. *Students are to turn off all cell phones while in the classroom. Under no circumstances are cell phones or any electronic devices to be used or seen during times of examination.* Students may tape record lectures provided they do not disturb other students in the process.

Student Absences on Religious Holy Days: Students are allowed to miss class and other required activities, including examinations, for the observance of a religious holy day, including travel for that purpose. Students remain responsible for all work. *See Student Syllabus Guidelines.*

Students with Disabilities Policy: It is the policy of Sam Houston State University that individuals otherwise qualified shall not be excluded, solely by reason of their disability, from participation in any academic program of the university. Further, they shall not be denied the benefits of these programs nor shall they be subjected to discrimination. Students with disabilities that might affect their academic performance should visit with the Office of Services for Students with Disabilities located in the Counseling Center. *See Student Syllabus Guidelines.*

Visitors in the Classroom: Only registered students may attend class. Exceptions can be made on a case-by-case basis by the professor. In all cases, visitors must not present a disruption to the class by their attendance. Students wishing to audit a class must apply to do so through the Registrar's Office.