COURSE SYLLABUS - PHY 1404
SOLAR SYSTEM ASTRONOMY LAB
SPRING 2018

Location of Class: Farrington Bldg. 201 or 211

Lab Instructor: _____ **Lab Supervisor: __Dr. Scott Miller_____**
(Please write your lab instructor's name here)

Email: _____ **Email: ___stm009@shsu.edu_____**
(Please write your lab instructor's email address here)

Course Description: This course is designed to allow you to apply some of the astronomical techniques and concepts discussed in the lecture portion of PHYS 1404. You are required to enroll in both the lecture and lab components of PHYS 1404 concurrently. The grade you earn in the lab will count as 25% of your overall PHYS 1404 course grade. An attempt has been made to correlate the material in this laboratory to the PHYS 1404 class. Because each PHYS 1404 class covers material at a slightly different pace, you may encounter topics in the lab that were not yet covered in the lecture, or were introduced in lecture but will be addressed in further detail in lab. To help you prepare for lab, a series of pre-lab questions are included in the lab manual. You should answer these questions using your lecture notes from PHYS 1404, your textbook, or reputable websites on the internet.

Course Objectives: Please refer to the lab schedule below for course objectives.

Required Textbook & Supplies: Laboratory manual available from bookstore, scientific calculator, ruler, protractor.

Attendance: Attendance is mandatory for all scheduled lab classes. If you miss a lab, then it is incumbent upon you to make the necessary arrangements with your lab instructor to make up any missed work as soon as possible. Only in the case of a University-excused absence will you be allowed to make up any work.

- If you miss lab for a legitimate reason, you must contact your TA as soon as possible. Failure to do so will forfeit your right to make up the lab.
- When possible, you must notify your TA before the lab in question.
- Missing lab is not an excuse for turning a lab report in late. Late lab reports will not be accepted.
- Ultimately, it is up to your lab instructor whether or not you will be allowed to make up any missed work.

Grade Breakdown: Your grade will be based on the successful completion of the following:

Quizzes:	**21%**
Post-lab Questions:	**21%**
Lab reports:	**42%**
Observatory:	**16%**

While Blackboard will display all of your grades, and the Total will reflect your raw score, the Weighted Total will more accurately reflect your grade, and is the best reflection of your status in the lab.

Quizzes: A brief (5-10 question) short answer quiz will be given at the ***beginning*** of each lab period. The quiz will cover the pre-lab questions that are contained in each lab. It is essential that you complete the pre-lab questions before coming to class.

Post-lab Questions: At the ***end*** of every lab, before leaving, you will turn in your answers to the post-lab questions found at the end of every lab. Answers should be written on a separate, full sheet of paper in complete sentences. Make sure you include your name, email address, section and the title of the lab on each submission. Make sure your handwriting is legible. Credit will not be given for illegible work.

Lab Reports: Each week you will perform a series of activities, and you are required to synthesize the information. Please refer to the attached "Lab Report Guide" for instructions regarding your lab reports. In addition to your summarize lab report, you must turn in the work you completed during lab. You may do so by simply tearing the lab out of your lab manual and stapling it to your lab report. Make sure your name and lab section are legibly written on your lab report.
Lab reports are due at the beginning of the lab period. Late work will not be accepted.

Observatory: As part of your grade, you must attend one night-time observing session at the SHSU observatory (near Riverside, TX). The schedule of nights is posted on Blackboard. The observatory lab can be found at the end of your lab manual, make sure you bring it with you to the observatory. You will need to get it stamped for verification that you attended. DO NOT wait until the last minute. Observatory nights do get cancelled on occasion and will not be rescheduled. Failure to complete the observatory assignment because of cancellation, work schedule, lack of a ride, or any other reason will NOT be accepted as an excuse. It is your responsibility to plan ahead and make sure you complete this assignment. To encourage early attendance, students can earn a bonus based on the date the assignment is turned in. Late observatory assignments will receive a procrastination penalty. See the schedule below for complete details. Observatory assignments MUST be handed directly to the instructor and may not be left in their mailboxes.

Academic Dishonesty: Students are expected to maintain honesty and integrity in the academic experiences both in and out of the classroom. Work you turn in is expected to be original. Do not turn in lab reports that are copied directly from another. I don't mind if you work on the lab reports together, but it should be in your own words. **YOU WILL RECEIVE AN AUTOMATIC F FOR THE ENTIRE SEMESTER IF YOU CHEAT ON LAB REPORTS.** *See Student Syllabus Guidelines* for details.

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.*

Student Absences on Religious Holy Days: Students are allowed to miss class and other required activities for the observance of a religious holy day, including travel for that purpose. Students remain responsible for all work. You must inform your lab instructor at least the week before the event of your absence, and you are responsible for scheduling a time to make up the 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 register with the Office of Services for Students with Disabilities located in the Lee Drain Annex (telephone 936-294-3512, TDD 936-294-3786, and e-mail disability@shsu.edu). They

should then make arrangements with their individual instructors so that appropriate strategies can be considered and helpful procedures can be developed to ensure that participation and achievement opportunities are not impaired.

SHSU adheres to all applicable federal, state, and local laws, regulations, and guidelines with respect to providing reasonable accommodations for students with disabilities. If you have a disability that may affect adversely your work in this class, then I encourage you to register with the SHSU Services for Students with Disabilities and to talk with me about how I can best help you. All disclosures of disabilities will be kept strictly confidential. NOTE: No accommodation can be made until you register with the Services for Students with Disabilities. For a complete listing of the university policy, see:

http://www.shsu.edu/dept/academic-affairs/documents/aps/students/811006.pdf

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.

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*. The lab instructors hold office hours during the week to answer general lab questions, and you are free to visit any lab instructor. Office hours are posted on Blackboard.

It is *not* the lab instructor's responsibility to teach you all the material you need to complete the lab. Your lab instructor will provide you with a brief summary of the key points covered in the lab. During the lab, your lab instructor will circulate around the room and provide you with tips and hints to help you complete the exercise. *Do not expect your lab instructor to provide quick answers to all your questions. You are expected to make every effort to discover the answers on your own.*

LAB SCHEDULE FOR SPRING 2018:

Dates of	Lab Exercise	Work Due	Observatory Credit
Jan 29th – Feb 2nd	Lab #1: Nature of Science	none	N/A
Feb 5th – Feb 9th	Lab #2: Planetarium	Lab #1 write up	N/A
Feb 12th – Feb 16th	Lab #3: Seasons	Lab #2 write up	125% (25% extra credit)
Feb 19th – Feb 23th	Lab #4: Lunar Phases	Lab #3 write-up	120% (20% extra credit)
Feb 26th – Mar 2nd	Lab #5: Kepler: the Orbit of Mercury	Lab #4 write-up	115% (15% extra credit)
Mar 5th – Mar 9th	Lab#6: Kepler: the Moons of Jupiter	Lab #5 write-up	110% (10% extra credit)
Mar 12th – Mar 16th	**No lab (Spring Break)**		
Mar 19th – Mar 23th	Lab #7: Tides	Lab #6 write-up **Observations due**	100% (0% extra credit)
Mar 26th – Mar 30th	**No lab (Week of Good Friday)**		
Apr 2nd – Apr 6th	Lab #8: Solar Phenomena	Lab #7 write-up	90% **(10% pp*)**
Apr 9th – Apr 13th	Lab #10: Extrasolar Planets	Lab #8 write-up	80% **(20% pp*)**
Apr 16th – Apr 20th	Lab #9: Atmospheric Retention	Lab #10 write-up	70% **(30% pp*)**
Apr 23th – Apr 27th	No lab	Lab #9 write-up (to be submitted via Blackboard)	0% **(100% pp*)**

Notes:

1. **There is no lab the week of Spring Break, or the week of Good Friday.**
2. **Observatory work is due the week of March 19th. Observations will be accepted after the week of March 19th, subject to a procrastination penalty. (*pp = procrastination penalty). Observatory credit is based on when you hand the assignment in, not based on when you complete it. If you forget to turn it in for a few weeks, then you receive a grade based on the date that you finally submit it.**

All work MUST be turned in DIRECTLY to the TA during lab. In the case of extenuating circumstances, you may turn in material to the TA's mailbox, located in 204 Farrington, but ONLY if you have authorization from your TA to do so.

- **Mailboxes are located <u>below</u> the TA's name, not above.**
- **If you place anything in your TA's mailbox, you must notify him/her by email.**
- **You take full responsibility for any assignments turned in to the mailbox. The TA is <u>not</u> responsible for any lost assignments, or assignments turned in to the incorrect mailbox.**
- **DO NOT turn in any assignments to Dr. Miller's mailbox. They will NOT be forwarded to your TA.**

Lab Report Guide

42% of each lab report grade comes from your lab summary. Lab summaries MUST be turned in with the rest of your lab report unless otherwise noted. LATE LAB SUMMARIES WILL NOT BE ACCEPTED!

The purpose of the lab report is ***not*** for you to summarize what you did during the lab period. It ***is*** for you to synthesize the information you obtained from the lab exercise. (Generally, this is when you fully understand what you did, or realize you don't have a clue what you did). For labs that are more informational than experimental, you should do research using your textbook or the internet to expand on the topic.

The lab report must be written in complete, grammatically correct sentences. At the very least, you should use grammar and spell check. If you have problems writing, visit the writing center on the first floor of the Farrington Building. ***Your lab report must be typed with a 12-point font, double-spaced, and at least a page in length.*** There is no excuse for not typing your report as there are computers in all buildings on campus!

You should run your lab summary past someone who has NO idea what you've been doing and see if they get anything from it. People at the Writing Center do this for a living, so take it there when in doubt. If they read it and STILL have no idea what you've been doing, then your lab summary needs some work.

<u>The lab report should be formatted as follows:</u>

Introduction: Briefly outline the topic and purpose of the lab. It needs to introduce the topic the lab covered and define any key terms. For instance, if the lab topic had to do with the phases of the moon, you would need to state each phase and explain (briefly) why we see different moon phases. If the lab topic is parallax, then you should define the term parallax. You should also introduce why it's important to understand the concepts being addressed in the lab. In other words, state why it was important for you to do this lab! **This needs to be more than a sentence long.** *(1 paragraph)*

Procedure: This should be a general overview of what you did during lab and how it relates to the topic you stated in the introduction. Make sure this is not a step-by-step set of instructions of what you did. This section should focus more on WHY you followed the procedures instead of simply stating that you followed them. Put the instructions in the perspective of what you were trying to accomplish. You should be able to have someone who is not in the class be able to read this portion and understand exactly what you did in lab. **It is not a step by step copying of the lab booklet.** *(1-2 paragraphs)*

Conclusion: Discuss your results and comment on what you learned from the lab. Be specific! Don't simply state that you learned more about parallax or the phases of the Moon. If the purpose of the lab was to explore parallax, you need to tell me what you discovered, not just that you learned more about parallax. This is your personalized portion of the report. Talk about what you found confusing, interesting, and/or helpful in relation to what you've learned in lecture. *(1 paragraph)*

*Do not label each paragraph (i.e. "Introduction", "Procedure", and "Conclusion"), it should be one cohesive paper

**Lab reports CANNOT be just one paragraph

***Each TA has the right to specify certain other things they look for in reports, it's YOUR job to write these down and include them within the report.