

COURSE SYLLABUS

PHY1404 – On-line
Solar System Astronomy
4 CREDIT HOURS
Fall 2017

1. LOCATION OF CLASS MEETING

None – on-line class

2. CLASS MEETING TIMES

THIS IS AN ON-LINE CLASS THERE IS NOT AN ASSIGNED CLASS TIME.

3. INSTRUCTOR

The instructor for this class is Dr. Charles R. Meitzler

4. OFFICE LOCATION

313 Farrington Bldg., Physics Dept., Sam Houston State University, Huntsville, TX, 77341.

5. INSTRUCTOR CONTACT INFORMATION

The instructor may be contacted in one of several ways:

- 1) Phone 936.294.1606 – Please leave a message and I will call back. Depending on the time of the callback, the phone number will come up as a Skype phone number.
- 2) E-mail: crmeitzler@shsu.edu – I check my e-mail at roughly 6:00, 12:00 and 18:00 on weekdays. Weekends have a more restricted schedule.

The following rules apply for e-mail correspondence.

Please state which course you are taking so that I can respond in a timely manner. E-mail without a course number will be answered with a message asking for which course you are taking.

You must use your SHSU e-mail account when corresponding with me. This is so that I can identify you when you forget to include your name. (I have no way of knowing who SHSU389@obscureisp.co.uk is!)

If you are asking about a specific question on a quiz, please include the topic and text of the question. (The quizzes are generated by a random generator and any two quizzes will have different questions and numbers!)

Avoid sending email from your smartphone when you get stuck or have a question. The advent of smartphones provides a significant advantage in that you have almost instant communication with anyone on Earth. On the other hand, it is too easy to fire off a message without thinking about what you are writing, or using proper English. If you do use your smartphone, take a moment to think about what you want to say, hand write your message first to avoid using texting abbreviations and emoji's, and review your message before hitting SEND to avoid auto-correction errors.

6. COMPUTER HELP

If you have computer problems or technical problems with the Blackboard software please contact the **Delta Center Help Desk** at **936.294.2780**. They are available Monday through Saturday during the hours of 7:00 to Midnight. **DO NOT CALL THE SAM HOUSTON HELP DESK BECAUSE THEY CAN'T HELP YOU!**

Be aware that the instructor has a limited ability to solve your computer problems. If you do decide to write to me about a computer problem you are having, you need to include the following information so that I can ask the Delta Center Help desk:

- 1) Computer Manufacturer
- 2) Operating System and version
- 3) Browser and version information
- 4) A detailed description of the problem including screenshots, if possible, and a description of exactly what you were doing at the time.
- 5) Any peripheral hardware you are using.

7. OFFICE HOURS

The office hours for this course are quite open because of the fact that communication will be primarily via e-mail over the Internet. E-mail is generally checked at approximately 6:00 in the morning, noon, and 18:00 in the evening.

It is also possible to set up Skype sessions if needed. My Skype username is dr_m_shsu_physics.

8. COURSE DESCRIPTION

The scope of this syllabus is limited to the lecture portion of PHYS1404. A separate syllabus is provided for the laboratory portion.

This course is described in the Catalog as:

[PHYS 1404] The development of astronomy, the solar system, stars, galaxies, and cosmology are studied. Emphasis is placed on discovering astronomical phenomena through individual observational activities. The Sam Houston planetarium and observatory are also used in laboratory activities. No mathematics or physics prerequisites. Credit 3.

There will be a small amount of mathematical and numerical work associated with this course but nothing exceeding simple arithmetic operations on a calculator.

You will need to devote roughly 135 to 150 study hours to successfully pass this course.

9. COURSE OBJECTIVES

The student should be able to do the following to successfully complete this course:

- 1) Understand our place in the Solar System, galaxy, and cosmos.
- 2) Understand the place of astronomy in the broader field of science.
- 3) Understand the motions of the stars, planets, and constellations through the sky.
- 4) Understand the basics of Kepler's Three Laws, Newton's Law of Gravity.
- 5) Understand the basic principles of how telescopes work and are used to study celestial objects
- 6) Understand how stars and planets form from the interstellar medium
- 7) Understand the basic structure and phenomena of the inner solar system planets; obtain a general knowledge of their geology and atmospheres.
- 8) Understand the difference between the terrestrial planets and the giant gas planets of the outer solar system.
- 9) Understand where the asteroids, near-earth objects, and Kuiper belt objects are located in the solar system.
- 10) Gain an understanding of the structure and features of the Sun.

10. REQUIRED TEXTBOOKS

The required book for this class is Palen, Kay, Smith, & Blumenthal, "Understanding our Universe" 2nd ed. (W.W. Norton & Company, New York, NY, 2012. ISBN 9780393124309) There is no limitation placed on the form of the textbook you purchase: paper or ebooks are sufficient. Students are required to acquire a copy of the textbook prior to the end of the first week of the course.

11. REQUIRED SUPPLIES

The following supplies are required for this course:

- 1) Writing instrument such as a pen or pencil
- 2) Scientific calculator with the following functions: sine, cosine, square root, exponentiation, scientific notation.
- 3) Notebook or ring binder with appropriate paper.
- 4) Textbook
- 5) Access to a computer with internet access and a suitable browser such as Firefox or Internet Explorer installed. (Some of the Blackboard software doesn't work well with the Chrome browser so it is important to have one of the two listed browsers.) Also software for producing suitable pdf files.
- 6) A reliable internet connection, and either Internet Explorer or Firefox web browsers.
- 7) Flatbed scanner or digital camera to image your written assignments for grading.
- 8) Access to open-source planetarium software such as Stellarium available at <http://www.stellarium.org/>.

12. OPTIONAL TEXTS, REFERENCES, AND SUPPLIES

None Required.

There are several recommended study aids which students might want to use. First, W.W. Norton has a free, open student website that is available. This website is described in the Preface of the textbook. Second, there is some planetarium software available that is also described in the Preface. These are also recommended.

13. ATTENDANCE POLICY

Classroom attendance is not used to calculate the final course grade.

You must log on at least once in the first 12 days and take the Syllabus Quiz to avoid being reported under the SHSU Attendance Initiative. Be aware that other assignments are due during the first twelve days – missing those deadlines will result in a Late Penalty described below.

14. ASSIGNMENTS

The course will have substantial reading and homework assignments. In addition to the usual questions at the end of the chapter the student will have to complete “Outside Learning” exercises for each section. These “Outside Learning” exercises will be oriented towards having the student explore astronomy in the outdoors, on-line simulations, or news articles.

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Be aware: proper English is required for all written submissions. Do not use texting language and abbreviations.

All questions must be answered in complete sentences and paragraphs. Single word or short phrases are not acceptable responses.

If calculations are required, show all work.

All “Outside Learning” submissions must be in pdf format.

Any Outside Learning assignment submitted after its due date will be assessed an automatic 10 point penalty plus one additional point for each day the assignment is late.

15. HOMEWORK GRADES

The “Outside Learning” exercises will be calculated using simple scale of 0 – 100 points. An average homework grade (OL_{avg}) will be calculated at the end of the semester.

All “Outside Learning” submissions must be in pdf format. Blackboard cannot grade any other format so your work must be in one of these three formats. A 75 point penalty will be assessed if you submit in a form other than pdf.

Any Outside Learning assignment submitted after its due date will be assessed an automatic 10 point penalty plus one additional point for each day the assignment is late.

NO WORK WILL BE ACCEPTED AFTER 23:59:00 on 1 December 2017.

16. Lab Grades

Please see the lab syllabus for the accompanying lab section for the rules and regulations associated with the lab part of this course. A single lab average will be assigned according to the rules in that syllabus.

17. Quizzes

An on-line quiz will be taken at the end of each section. These quizzes will be available in each of the content areas or “Sections” of the course. You will be able to take the quiz only one time. Quizzes are randomly generated resulting in approximately 2.43×10^{18} different quizzes for each content section. At the end of the semester an average quiz grade (Q_{avg}) will be calculated.

YOU MUST COMPLETE QUIZZES BY THEIR DUE DATE. Due dates are available online.

Quizzes will be available for three days after the Due Date. After that time, the quiz will not be available.

Failure to use the Respondus Lockdown Browser software will result in an automatic grade of zero

ALL QUIZZES ARE CLOSED BOOK.

THE RESPONDUS LOCKDOWN BROWSER WILL BE USED TO PROVIDE PROCTORING FOR ALL DISTANCE-LEARNING EXAMS. ITS USE IS MANDATORY.

KEY PHRASE: xyzyy

18. GRADING PLAN

Final letter grades are calculated off-line on a spreadsheet on my computer. The grades in the spreadsheet are the official ones for the course.

The grades will be calculated according to the following rule:

$$Avg = 0.6 Q_{avg} + 0.2 HW_{avg} + 0.2 Lab_{avg}$$

where Q_{avg} is the un-weighted average of the quizzes, HW is the un-weighted average of the homework assignments, and is the weighted average of the Lab report and pre-lab question grades. After obtaining the overall average, letter grades will be assigned according to the following scale:

$$90 \leq A \leq 100$$

$$80 \leq B < 90$$

$$70 \leq C < 80$$

$$60 \leq D < 70$$

$$F < 60$$

“Curving” may be used only at the end of the course at the instructor’s discretion.

Extra credit is not available for this course.

Grade Calculation Example:

	Grades	Average
Quizzes	90, 70, 83, 92, 85	$Q_{\text{avg}} = (90 + 70 + 83 + 92 + 85)/5 = 84$
HW/Outside Learning	79, 83, 42, 88, 88	$HW_{\text{avg}} = (79 + 83 + 42 + 88 + 88)/5 = 76$

Lab Grades	Calculated according to Lab syllabus formula	Lab _{avg} = 55
	Average:	Avg = 0.6(84)+0.2(76) + 0.2(55) = 76.6
	Letter Grade:	C

19. University mandated parts of syllabi

Student Syllabus Guidelines: You may find on-line a more detailed description of the following policies. These guidelines will also provide you with a link to the specific university policy or procedure:

<http://www.shsu.edu/syllabus/>

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 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.