

Course Syllabus
PHYS 1404.01 and PHYS 1404.02
Introduction to Solar System Astronomy - LECTURE
4 Credit Hours
Fall 2017

Class Time: TTh 9:30 – 10:45 or TTH 11:00 – 12:15
Class Location: Farrington 105
Instructor: Dr. C. Renee James
Contact Info: Farrington 306 294-4888 phy_crj@shsu.edu
Physical Office Hours: By appointment – just let me know when you want to meet
Electronic Office Hours: Pretty much perpetual (meaning I check my e-mail often throughout each day, and will try to respond to questions quickly)
Required Materials: *Lecture Tutorials for Introductory Astronomy, 3rd Edition* by Adams, Prather & Slater (ISBN-13: 978-0-13-239226-6; ISBN-10: 0-13-239226-7)
Lab manual for PHYS 1404
At least four ‘normal’ Scantrons (50 questions each side; no essay)

Important Dates:

8/23 – 1st day of classes
9/4 – Labor Day holiday
9/8 - Last day to drop for full refund
11/11 – Drop deadline
11/22 through 11/26 – Thanksgiving break.
12/1 – Last day of classes
12/7 – Last day of final exams

You must check for HW sets, handouts, and miscellaneous information on BlackBoard.

We have a FACEBOOK group here: <https://www.facebook.com/groups/shsuastronomyclass/>

Please ask to join it, and you can often receive real-time help with homework, find out new stuff going on in the sky, see a bunch of nerdy jokes...

YOU NEED TO MAKE CERTAIN THAT YOUR SHSU E-MAIL ACCOUNT IS ACTIVE AT ALL TIMES AND THAT YOU CHECK IT OFTEN (at least once daily). I communicate heavily via mass e-mail and BlackBoard announcements. You have the option of having your SHSU email forwarded to the device you most commonly check. Please take advantage of this option.

Course Description: This course is designed to give you an overview of historical and modern solar system astronomy. There are no prerequisites, but it is expected that you have a good working knowledge of algebra. This will be particularly helpful in your lab section.

The overarching goals for this class are ...

1. Increasing your appreciation for scientific advances and the impact astronomy has had on our understanding of our Universe as well as our day-to-day lives.
2. Understanding the nature of science and how astronomers hypothesize, test, and validate astronomical concepts.
3. Developing your ability to synthesize a group of facts into a conceptual model that demonstrates a comprehension of basic astrophysical phenomena.
4. Actively engaging in your own learning through various in-class group activities.
5. Learning to work cooperatively with others in a group setting in order to communicate ideas and knowledge while working towards both group and individual goals.
6. Comprehending the relative scales of our Solar System and the vastness of space.
7. Appreciating the wonder and beauty of our Universe and our role in it.

Content Objectives: Beyond the general educational goals outlined above, upon completion of this course you should have a firm grasp of the following items...

- > The reasons behind the apparent motions in the sky
- > The process and nature of science, and how it is used to understand astronomical phenomena
- > Historical development of the laws governing the solar system
- > The laws governing the solar system (e.g, Kepler's Laws, Newton's Law of Gravity)
- > How to decode light to determine physical properties of objects
- > The structure and membership of solar system objects
- > The formation of the solar system
- > Extrasolar planets and our understanding of other solar systems

Grade Breakdown: This is what you're REALLY interested in. How much work will you have to do, and what will you get for it? Your grade in this course will be based on the following

LAB (see separate syllabus for lab requirements)	25%
Homework	8%
Group assignments	10%
Homework quizzes	10%
One minute papers	4%
In-Class Exams (3 at 10% each; partly group-based)	30%
Final Exam (yes, it IS comprehensive)	13%

THERE WILL BE NO EXCEPTIONS TO THE OFFICIALLY PUBLISHED SHSU FINAL EXAM TIME/DATE. Be certain that you do not make any travel plans that will interfere with your taking the final exam.

Final exam dates as of 23 August 2017:

1404.01 (9:30 section) – Thursday, December 7, 9:30 – 11:00 a.m.

1404.02 (11:00 section) – Thursday, December 7, noon – 2 p.m.

Labs: LABS FOR FALL 2017 BEGIN THE WEEK OF 28 August. You will receive the syllabus for your lab section during your first lab meeting. Lab and lecture are tied into a single grade, so your performance in lab is crucial. Your lab grades will be accessed on Blackboard for your particular lab section, but do not forget to consider them when figuring out your overall course grade.

Exams: The in-class exams are fairly self-explanatory. These are tests that will assess your understanding of the subject for a three-week-long block. NOTE: **I DO NOT ALLOW MAKE-UP EXAMS!** If you miss an exam (or if you simply do badly on one), you will be given a project option, which is described in another document. After everyone has finished the 'individual' portion of the exam, you will work with your other group members on a group portion. Thus your group's performance on exams will have an impact on your grade.

Also note that the exams will be curved, meaning that there is no set number corresponding to an A, B, etc. This means that a 50 on a test might turn out to be a C, depending on how your classmates fared. Anything over a 90 will always be an A, however, regardless of class average. Likewise, anything over an 80 will always be at least a B; anything over 70 will always be at least a C, anything over 60 will always be at least a D.

TENTATIVE EXAM DATES:

Exam 1 will be held on or around 9/21
Exam 2 will be held on or around 10/17
Exam 3 will be held on or around 11/16

These dates might need to be modified depending on the circumstances of the semester.

NOTE – I will not compute your grades for you until the end of the semester. You need to keep track of your own percentages so that you know what you need to do to succeed in this class. Do not ask me how you are doing. Do not look at the cumulative points reported on Blackboard. These do not accurately reflect the dropped exam score or the variable weights for quizzes and HW's or the one minute paper percentages.

Homework is... well... homework. It will be assigned periodically in class, and reminders will be sent out via Blackboard and the Facebook group. I do not accept late assignments for the simple reason that I try to post the solutions on my website immediately after the due date. If you must, fax it to the department or e-mail it to me on the due date to avoid getting a zero.

Quizzes: To make sure that you actually DO your homework, a portion of your HW grade will be based on short quizzes which will be taken online via Blackboard around the due date of the homework. I will give you a 24-hour window during which you get a single chance to open the quiz and complete it. You will be able to use your work to answer several multiple choice questions in a fifteen-minute window of time, so make sure your HW answers are well organized. These quizzes will assess your understanding of your HW AND will help prepare you for the exams.

One-minute papers: At the end of each class, I will (if I remember) ask everyone to write a one-minute paper. This will consist of a sentence or two expressing the clearest point, the fuzziest point, or the general impression of the day's class. I will read the 1-minute papers before preparing the material for the next class, and if there is an overwhelming vote to go back over some point or to move on to new information, I can gear the next class to better accommodate you. While this is a darned good way to assure quasi-regular class attendance, it is really an attempt to get a handle on your current thoughts about class. It really doesn't make sense to pretend everyone is understanding everything I say, and most people choose not to ask many questions for fear that they will look stupid. Sadly, in most cases, two-thirds of the class usually wants to ask *the exact same question*, but are afraid of looking stupid. And so the cycle goes. **NOTE: YOU CAN MISS UP TO SIX (6) 1-MINUTE PAPERS WITHOUT PENALTY.** After that, you will lose 1 point off your average for each one-minute-paper missed, with a maximum deduction of 10 points. Thus, worst case scenario: OMP's can be worth -6 (negative 6) points. **ALTHOUGH GENEROUS, THIS ATTENDANCE POLICY COSTS SOME PEOPLE THEIR GRADES AT THE END OF THE SEMESTER. PLEASE TAKE IT SERIOUSLY AND KEEP UP WITH YOUR OWN ATTENDANCE!**

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>

MY POLICY ON ACADEMIC DISHONESTY: Work you turn in is expected to be original. Do not turn in homework that is copied directly from another. I encourage you work on homework in your groups, but the final product should be in your own words. Cheating on HW will result in a zero for that HW set and its corresponding quiz. Do not cheat on exams. You will receive an automatic F for the class, and then you'll have to do a horrendous runaround with the department head and the Dean of our college that involves lots of time-consuming paperwork. So don't go there. Try not to allow anyone to cheat off your paper. Keep it covered at all times, and avoid looking around too much during exams. Do not plagiarize on optional projects. Plagiarism will result in an automatic F for the course.

Definitions of various forms of cheating are listed below.

CHEATING

Cheating is the unauthorized use of information and study guides in any academic exercise. The methods of cheating are varied and well-known. Cheating includes:

1. Copying from others during an examination.
2. Sharing answers for a take-home examination.
3. Using illegal notes during an examination.
4. Taking an examination for another student.
5. Asking or allowing another student to take an examination for you.
6. Tampering with an examination after it has been corrected, then returning it for more credit than deserved.
7. Submitting substantial portions of the same academic work for credit in more than one course, without consulting with the second instructor.
8. Preparing answers or writing notes on a scantron or test paper before an examination.
9. Allowing others to do the research and writing of an assigned paper (for example, using the services of a commercial term paper company).

PLAGIARISM

Plagiarism is academic theft. It refers to the use of another's ideas or words without proper attribution or credit. An author's work is his/her property and should be respected by documentation. Credit must be given:

1. For every direct quotation.
2. When a work is paraphrased or summarized in whole or in part in your own words.
3. For information which is not common knowledge. (It appears in several sources about the subject).

COLLUSION

Any student who knowingly or intentionally helps another student to perform any of the above acts of cheating or plagiarism is subject to discipline for academic dishonesty. There is no distinction between those who cheat and plagiarize and those who willingly allow it to occur.

CLASSROOM RULES OF CONDUCT: Simply put, respect your fellow students. But here are some specifics:

Electronic Devices - Please turn off all cell phones, Blackberries, and other electronic devices during class unless otherwise instructed. In the event that you are honestly expecting some sort of incredibly important call (i.e. your wife is 9 months pregnant and might go into labor any second), you may keep your phone on vibrate mode. Anyone using a phone or other device during class (yes, iPhones, iPods, iPads, and any other wireless distraction) will be subject to evil eyes, embarrassing comments, and ultimately a graded pop quiz on everything from the day's class. Occasionally I toss small objects across the class, but most of these miss the intended target.

Talking – There are usually plenty of chances to get with the people around you to discuss questions or problems as loudly as you like. For other times, please respect your fellow students and remain quiet. Chronic talkers will be subjected to evil eyes, embarrassing comments, pop quizzes, and ultimately requests to leave the classroom.

VISITORS: Visitors are welcome at all times, provided they do not interfere with student learning in any way.

PHYS 1404 - FREQUENTLY ASKED QUESTIONS:

Is my lecture class grade tied to my lab grade?

Yes. Lecture counts as 75% of the 1404 grade, and lab counts as 25%. There is a separate syllabus and gradebook within Blackboard for your lecture and lab portions, however, so please be sure you keep an eye on BOTH of those to gauge your overall performance in 1404.

Why don't you give the answers to the 'voting' questions in class?

Because I'm a giant sadistic meanie.

Why are you always so sarcastic?

Genetics. Now let me get back to the question about providing answers to voting questions...

Mountains of education research have shown that simply feeding you the answers does nothing to help your understanding. While it's true that you might have missed a voting question for a simple reason (you misread it, for example), the person next to you might have a deep fundamental misunderstanding. Giving out the answer in class will cause YOU to facepalm, but do absolutely nothing for the person next to you, who will dutifully memorize the answer but have no idea why it is correct. I encourage everyone to email me or visit office hours to discuss the answers to these questions, and during these discussions, I WILL give out the answers to the voting questions. The exchange usually goes like this:

Student: "What's the answer to that question in the slides?"

Me: "Can you rewrite the entire question for me along with the choices and then tell me what you THINK the answer is and why?"

Student: "The question is <whatever the question is>. The choices are <whatever the choices are>. I think the answer is 2."

Me: "Why do you think it's 2?"

Student: "Because <some explanation>"

Me: "Well, you've got the first part of your explanation right, but then it looks like you're forgetting <some other vitally important piece of information.>"

Student: "Oh, that's right! So I guess that means it's actually 3, then, right? Because <some new completely correct explanation>. Thanks!"

Me: "Yep, it's 3."

As you can see, I DO eventually give you (and only you; not the whole class) the answer, but only once we've established why you missed it in the first place. Because you have to work for it, you have a better chance of seeing where any flaws in your thinking are AND you'll have a much better chance of recognizing this type of question in the future. This means you'll do better on exams than if I had just said, "The answer is 3." But more important, you'll have a better idea where your misunderstandings lie and you'll have a greater ability to think through things once you get OUT of myclass. And that's what I'm interested in – improving your thinking.

How am I doing in your class?

Please don't ask this question, and certainly don't ask it frequently. If you do, I'll send you here:

<http://www.youtube.com/watch?v=WVvKnq5XT-g>

Instead work your grade out this way...

If you're living, breathing, and writing a one-minute paper each class, you've got an automatic 4 out of 100 for the semester.

If you do all your HW, you get 8 added to that.

If you do all the group work (including a number of in-class activities), you get 10 added to that.

If you ace all your quizzes, you get 10 added to that.
If you ace all your exams, you get 30 added to that.
If you ace all your lab work, you get 25 added to that.
And if you ace the final, you get 13 added to that.

If you don't ace everything, then you need to figure out what percentage of the various grades you're getting and then add those together.

Whatever you do, do NOT look at the total points on Blackboard. They are usually meaningless (although in lab they are often a good tally of your grade)

At this stage of your education, adding a series of percentages to get a good estimate of your grade should be doable. If not, chat with the folks in the math tutoring center

What should I do if I have to be absent?

Be absent. And don't provide notes or court documents or anything else unless you exceed six absences. You have a life, so if you're sick, be sick. If you're just tired of class, be tired of class. If you've got a sick kid, or one whose school has a bizarre holiday, stay home. HOWEVER, once you get past six absences, as recorded by one-minute papers, you will have to provide evidence that something valid has been going on if you don't want to lose your attendance points. For example, if you have bimonthly chemotherapy appointments, and those can be scheduled only on Tuesdays, this would be a valid reason to miss class. If you're part of a SHSU team or organization that has events on Thursday mornings, let me know. These are valid, excusable reasons. But again, don't let me know about this sort of thing UNTIL you hit six absences.

Regardless of the number of absences you have, you should make sure that you get any required work to me and attempt with your group to catch up on any content that you missed.

So I can miss 6 labs?

Heck, no! This is just talking about the LECTURE portion. In fact, missing a single lab will cause your grade in that part to drop. Missing 6 would be pretty much fatal to your grade.

What if I miss an exam?

You can replace an exam grade with a semester project. The information about this project will be given out after the first exam.

Do you believe in aliens?

Why this is a frequently asked question, I'll never know, but it is. So here's my stock answer: Science is an evidence-based field. Humans have no direct, verifiable evidence that aliens exist except a few stories about cows being mutilated and strange lights in the sky, which are almost always immediately explained with more boring terrestrial answers. What astronomy tells us is that 1) stars like the Sun are very common; 2) planets are very common, even around stars that aren't like the Sun; 3) planets like Earth (size, distance from star, etc) are actually being discovered as we speak; 4) the materials that make up the Sun and solar system are common throughout the universe. So based on this, it doesn't seem stupid to think that something somewhere has popped up on an alien world, but at this point we don't have any direct evidence of those things. So we just have to say that it wouldn't be surprising, but we don't know just yet.