

**Course Syllabus**  
**PHYS 1403.01 and PHYS 1403.02**  
**Stars & Galaxies**  
**4 Credit Hours**  
**Spring 2018**

**Class Time:**           **Section 02:** TTh 9:30 a.m. – 10:45 a.m.  
                              **Section 03:** TTh 11:00 a.m. – 12:15 p.m.

**Class Location:**      Farrington 105

**Instructor:**           Dr. C. Renée James

**Contact Info:**        Farrington 306a           294-4888    phy\_crj@shsu.edu

**Office Hours:**        By appointment. Electronic office hours are held  
                              almost perpetually, especially on Facebook (See below)

**Required Workbook:** *Lecture Tutorials for Introductory Astronomy, 3<sup>rd</sup> Edition*, by Prather et al.

[[http://www.amazon.com/Lecture-Tutorials-Introductory-Astronomy-Edward-Prather/dp/0321820460/ref=sr\\_1\\_1?ie=UTF8&qid=1421080085&sr=8-1&keywords=lecture+tutorials+for+introductory+astronomy+3rd+edition](http://www.amazon.com/Lecture-Tutorials-Introductory-Astronomy-Edward-Prather/dp/0321820460/ref=sr_1_1?ie=UTF8&qid=1421080085&sr=8-1&keywords=lecture+tutorials+for+introductory+astronomy+3rd+edition)]

**Suggested Textbook:** I have a large stack of introductory astronomy texts in my office for you to use as references. All I ask is that you do not leave the room with them. However, if you MUST get your own text for studying, I recommend:

*Cosmic Perspective: Stars, Galaxies, Cosmology, 7<sup>th</sup> Edition*, by Bennett et al.

[[http://www.amazon.com/The-Cosmic-Perspective-7th-Edition/dp/0321839552/ref=sr\\_1\\_1?ie=UTF8&qid=1389632494&sr=8-1&keywords=cosmic+perspective+bennett](http://www.amazon.com/The-Cosmic-Perspective-7th-Edition/dp/0321839552/ref=sr_1_1?ie=UTF8&qid=1389632494&sr=8-1&keywords=cosmic+perspective+bennett)]

**Important Dates:**    1/17 – 1<sup>st</sup> day of classes  
                              2/1 - last day to drop for full refund  
                              3/10 – 3/18 – Spring break  
                              3/30 – Good Friday holiday  
                              **4/6 – LAST DAY TO DROP CLASS**  
                              5/4 (Friday) – last class day

**FACEBOOK PAGE:** Please ask to become part of the “SHSU Astronomy Class” group on Facebook: <https://www.facebook.com/groups/shsuastronomyclass/> There are oodles of discussions going on there – homework discussions, neat news stories, nerdy jokes...

**You can check for the official HW sets, handouts, and miscellaneous information on Blackboard. Try to make certain that your SHSU email is active and that you check it often or at least get the notifications pushed to your phone. I communicate heavily via mass e-mail, Facebook, and BlackBoard announcements.**

**Course Description:** This course is designed to give you a conceptual overview of everything outside the solar system, namely stars and stellar systems. There are no prerequisites, but it is expected that you have retained a working knowledge of algebra from high school. If not, you might want to seek help in the math tutoring center.

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 Universe and the vastness of space.
7. Appreciating the wonder and beauty of our Universe and our role in it.

**Course Objectives:** Upon completion of this course, you should have a firm grasp of the following items...

- > The development of the scientific method
- > Decoding light to determine physical properties of objects
- > Apparent and absolute magnitudes
- > Determining cosmic distances
- > Historical development of the laws governing the universe
- > Formation and evolution of stars
- > Evolution of stellar systems
- > Galaxies
- > The expansion of the universe
- > The origin and fate of everything
- > Interpretive dance as a tool for understanding science

**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 (please see separate lab syllabus for details)      | <b>25%</b> |
| Homework  | <b>8%</b>  |
| In-class group assignments                              | <b>11%</b> |
| Homework quizzes (taken via Blackboard)                 | <b>10%</b> |
| One minute papers                                       | <b>4%</b>  |
| In-Class Exams (3 at 10% each; partly group-based)      | <b>30%</b> |
| Final Exam (yes, it IS comprehensive, no group portion) | <b>12%</b> |

**Final Exam Schedule:**

**The 9:30 section will have its final on Thursday, May 10 from 9:30 – 11:30 a.m.**

**The 11:00 section will have its final on Thursday, May 10 from noon – 2 p.m.**

**THERE WILL BE NO EXCEPTIONS TO THIS FINAL EXAM DATE. Be certain that you do not make any travel plans that will interfere with your taking the final exam.**

**AN IMPORTANT NOTE ABOUT GRADES** – I will not compute your grades for you until the end of the semester. You will 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 simply look at the cumulative points reported on Blackboard. These do not accurately reflect the variable weights for quizzes and HW's or the one minute paper percentages.

**Lab:**

**LABS BEGIN THE WEEK OF JANUARY 29**

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 can be accessed on Blackboard for your particular lab section, but do not forget to consider them when figuring out your overall course grade. The faculty lab supervisor is Dr. Scott Miller ([stm009@shsu.edu](mailto:stm009@shsu.edu)), but I will be able to help you with any content-related issues in lab.

**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. 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, so it is important for groups to strive to work well together.

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.

**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 the option to do a project, which is described in another document. If you know you'll be gone beforehand, let me know and you can take it early, but you may not take an exam after the rest of the class has completed it. If you miss an exam, please look into the 'project options.'

**TENTATIVE EXAM DATES:** Exam 1 will be held on or around Tuesday, Feb 13  
Exam 2 will be held on or around Thursday, March 8  
Exam 3 will be held on or around Tuesday, April 10

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

**Homework** is... well... homework. It will be assigned periodically on Blackboard. YOU WILL NEED TO TURN IN ALL HOMEWORK ASSIGNMENTS THROUGH BLACKBOARD. I will not accept paper or emailed assignments.

*ALL HW MUST BE SUBMITTED IN EITHER PDF OR MSWORD FORMAT.*

**Quizzes:** To make sure that you actually DO your homework, a portion of your grade will be based on short quizzes which will be taken online via Blackboard the day the HW set is due. 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 homework to answer several multiple choice questions in a fifteen-minute window of time, so you should try and 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. Every HW quiz question will become part of the subsequent exam.

**One-minute papers:** At the end of each class session, 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) OMPS. After that, you will lose 1 point off your average for each one-minute-paper missed, with a maximum deduction of 8 points. Thus, worst case scenario: OMP's can be worth -4 (negative 4) 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!

**Project option (a.k.a. an exam pass):** If for whatever reason, you find yourself with an exam grade that you don't particularly like (you missed one, you had a bad day, you *just didn't get it*), you may do a project to replace that grade. The project will allow you to express your understanding of an astronomical (stars and galaxies) topic in a way that you feel most comfortable – paper, video, creative writing, epic rap battle, etc... The guidelines for this project will be posted in a separate document on Blackboard.

**CLASSROOM RULES OF CONDUCT:** *Electronic Devices* - Please turn off all cell phones and other electronic devices during class unless instructed to use them to look up material. 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 for any reason other than legitimately taking notes or accessing relevant information during a group activity (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. At other times, please respect your fellow students and remain quiet. Chronic talkers will be subjected to evil eyes, embarrassing comments, pop quizzes, projectiles, and ultimately requests to leave the classroom.

**ACADEMIC DISHONESTY:** Work you turn in is expected to be original. Do not turn in homework that is copied directly from another. I don't mind if you work on homework together, but the finished product should be in your own words. DO NOT TURN IN HOMEWORK THAT IS SIMPLY A COPY OF ANOTHER STUDENT'S, even if you have worked together. Everyone in your study group will receive a zero on that assignment. Do not cheat on exams. I will give you an automatic F for the class if I catch you cheating on an exam, 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 the individual portion of the exams.

Definitions of various forms of academic dishonesty 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.

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

**PLEASE SEE THE STUDENT HANDBOOK FOR MORE INFORMATION REGARDING GENERAL SHSU CLASSROOM POLICIES.**

**Now...**

**Just....**

**Keep...**

**Scrolling...**

**For...**

**The...**

**Frequently...**

**Asked...**

**Questions...**

## PHYS 1403 - FREQUENTLY ASKED QUESTIONS:

### Is my lecture class grade tied to my lab grade?

Yes. Lecture counts as 75% of the 1403 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 1403.

### 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 my class. 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 11 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 12 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 do-able. 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 contact your group to catch up on any content that you missed.

### **So I can miss 6 labs?**

Oh, hell 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.

**Will you really give me 2 extra quiz points for emailing you a picture of a cute baby animal?**

Yep. That means you read this.

**What if I miss an exam?**

If you KNOW you will miss an exam for a university-sponsored event, you may take it early. You must arrange a time with me to do so. If life happens and causes you to 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 you read this; 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.