

PHY 134 – Stars and Galaxies

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Introduction:

Phy 134 is an introductory course in astronomy for non-science students. It is exclusively a lecture course, although it will include some demonstrations of various kinds as well as participation activities in order to clarify the material. The material from which the lectures are drawn is described later on in this syllabus. The most important rules and information about this course are given below.

Goals:

While the main objective of this course is to cover most of the areas of modern astronomy at an elementary level using only the most basic mathematics, along the way we will also address a number of other goals, such as:

1. Increasing your appreciation for scientific advances and the impact it has had on our understanding of our Universe as well as our day-to-day lives.
2. Understanding the scientific process and how astronomers use it to 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 activities.
5. Learning to work cooperatively with others in a group setting in order to communicate ideas and knowledge while working towards a group goal.
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.

As we discuss the material in this course, we will approach astronomy within the framework of the scientific method: observation, explanation and prediction. While we will cover a wide variety of topics, we will focus on answering the following questions:

1. What are some of the basic physical laws of the Universe, and how do they apply to astronomy?

2. How does the size of our solar system compare to that of our Galaxy? the Universe?
How do the sizes of various objects compare?
3. How do celestial objects form and evolve over time?
4. What limitations to observations exist and how do they produce a selection effect within our data?

Texts and Topics:

All of the information which you need to learn for this course is contained in the online lessons and covered in class. If you would like to use a text as a supplemental resource, then the text which has been recommended for this course is **Stars and Galaxies**, 5th edition, by Seeds. The contents of this text most closely match the content of the lessons, although there are some topics which may not be covered in the text.

Determination of Grade:

In-class Participation	55 points
Homework (10 – 3 dropped)	70 points total
Quizzes (4 - 1 dropped)	75 points each
Projects (2)	50 points each
Midterm Exam	150 points
Final Exam	150 points
Total	750 points

The tentative curve* for the course is as follows:

100% > A > 85%

85% > B > 75%

75% > C > 60%

60% > D > 50%

F < 50%

(*Note: the curve does not include +'s and -'s. These are included in each range and are awarded only in the case of borderline grades.)

The curve may be lowered if necessary, but will never be raised. (i.e., The curve may be changed such that a grade less than 85% is considered an A, but will never be changed such that the cutoff for an A is higher than 85%. The same applies to the other ranges.) Curves for each exam will be posted on the course webpage.

Description of Assignments:

In-class Activities: Participation credit is based on in-class questions, which are answered using Personal Response Systems (PRS), or "clickers". A student receives full credit for the day if 50% or more of the questions are answered correctly. Half-credit is received for a score of less than 50%. The in-class questions are not difficult and usually most of the class (95%) receives full credit on a given day.

Part of your grade will be determined based upon your participation in lecture. These activities will occur almost every class period at random points throughout class. You will be graded based on your attempt of the problem, not necessarily on the correctness of your answer.

Some classes you will be working on activities that, while not collected, will greatly assist you in understanding the material. **A FIRM UNDERSTANDING OF THESE ACTIVITIES WILL BE ESSENTIAL TO A GOOD GRADE IN THE COURSE.** You are encouraged to collaborate with others in class, discussing problems and sharing ideas. Ultimately, though, when you are asked to answer questions, you must do so **in your own words**. You will be responsible for your own understanding of the material. Questions on the group assignments will be incorporated into the exams.

Homework: There will be weekly online homework assignments during the semester; their dates are listed on the course syllabus. The homework will cover material that has been presented the previous week. These assignments are designed to assist you in reviewing the material after it is covered in class. You will have the weekend to complete each homework.

Seven homework assignments will be counted. Because the homework assignments are online, it is not uncommon for technical errors to occur periodically. It is your responsibility to make sure your answers have been submitted correctly and before the deadline. No extensions or make-ups will be given for any reason. If for some reason you do not receive credit for an assignment, this will be one of the homeworks that will be dropped.

Quizzes: There will be four quizzes during the semester; their dates are listed on the schedule. Each quiz will cover new material presented since the previous quiz (the topics will be announced in class). While not cumulative, sometimes material from later chapters rely on your knowledge of earlier material.

Make sure you are present for the quizzes (the dates are listed in the class schedule posted on the webpage). One quiz will be dropped. If you miss one quiz (for a legitimate reason), then it will be the dropped quiz. If you miss more than one quiz, you will automatically fail the course. Regardless, only University excused absences are allowed.

If you know that you will miss a quiz beforehand, you must notify me before the quiz. Any make-up quiz will consist solely of questions requiring written, short answers. All make-up quizzes will take place within one week of the normal quiz. It is your responsibility to schedule a make-up time with me. Failure to do so will result in a zero for that quiz.

I encourage all students to take their quizzes at the scheduled times. Students are required to notify me on or before the quiz date in the case of unexpected events, such as a serious medical or family emergency or legitimate unavoidable conflicts related to university business. Students can request make-up quizzes only if they missed the regular quizzes for the above reasons. When doing so, you must include your complete schedule (dates and times of all classes) so I can schedule your make-up quiz as soon as possible. Requests for make-up quizzes will be approved by me based on merit. If notification is given after the quiz, then it is my discretion to decide whether or not to offer a make-up quiz.

Projects: There will be two projects during the course of the semester. Each one is worth 50 points. Further information regarding the projects will be posted on Blackboard.

Midterm and Final Exams: There is also a midterm and a final exam. The midterm exam will be held in class on Friday, March 6, and the final will be held during the final exam week (see course syllabus for exact day and time). Each exam is worth 150 points and will cover half of the semester. There will be no make-up for the final exam, so make sure that you do not miss it. Missing the exam will result in an automatic failing grade for the course.

Any grade discrepancies for any assignment or test must be brought to my attention within a week after the assignment deadline or after receiving your score. Otherwise, no grade changes will be considered.

Where to Get Help:

1. *Professor Miller:* I have office hours posted on the course syllabus, please make the most of them and attend often to have any of your questions answered. You may also ask questions by email (although discussions of homework or exam problems are usually best done in person). If you do email me, or anyone else in regards to this course, please include the following information in your emails: Your name, your student number, the course name and the section for which you are registered. I will be able to more easily help you if you include all of this in your email.

2. *Services for Students Disabilities:* (<http://www.shsu.edu/~counsel/sswd.html>).

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 are expected to visit with the Office of Services for Students with Disabilities

located in the Counseling Center. 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 Counseling Center 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 Counseling Center. For a complete listing of the university policy, see:

http://www.shsu.edu/~vaf_www/aps/811006.pdf

STUDENT ABSENCES ON RELIGIOUS HOLY DAYS POLICY:

Section 51.911(b) of the Texas Education Code requires that an institution of higher education excuse a student from attending classes or other required activities, including examinations, for the observance of a religious holy day, including travel for that purpose. Section 51.911 (a) (2) defines a religious holy day as: “a holy day observed by a religion whose places of worship are exempt from property taxation under Section 11.20....” A student whose absence is excused under this subsection may not be penalized for that absence and shall be allowed to take an examination or complete an assignment from which the student is excused within a reasonable time after the absence.

University policy 861001 provides the procedures to be followed by the student and instructor. A student desiring to absent himself/herself from a scheduled class in order to observe (a) religious holy day(s) shall present to each instructor involved a written statement concerning the religious holy day(s). The instructor will complete a form notifying the student of a reasonable timeframe in which the missed assignments and/or examinations are to be completed. For a complete listing of the university policy, see:

http://www.shsu.edu/~vaf_www/aps/documents/861001.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.

ACADEMIC DISHONESTY:

All students are expected to engage in all academic pursuits in a manner that is above reproach. Students are expected to maintain honesty and integrity in the academic experiences both in and out of the classroom. Any student found guilty of dishonesty in any phase of academic work will be subject to disciplinary action. The University and its official representatives may initiate disciplinary proceedings against a student accused of any form of academic dishonesty including but not limited to, cheating on an examination or other academic work which is to be submitted, plagiarism, collusion and the abuse of resource materials. For a complete listing of the university policy, see:

<http://www.shsu.edu/administrative/faculty/sectionb.html#dishonesty>

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 (and the first instructor if the courses are concurrent at Penn State).
8. Preparing answers or writing notes in a blue book 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.