



PHYS 1403 - Stars and Galaxies (Astronomy) PHYS1403 Course Syllabus

Description

Study of stars, galaxies, and the universe outside our solar system.

Semester Offered

May or may not include a laboratory.

Credits 4

Lecture Hours 3

Lab Hours 3

Extended Hours 0

Contact Hours 96

State Approval Code 40.0201.51 03

Instructor Name Hunter Hines

Semester/Year Summer I 2025

Meeting Time and Location

Online—students are expected to spend at least 3-4 hours per week** reading, reviewing, and participating in assigned activities for successful completion of this course.

Alternate Operations During Campus Closure

In the event of an emergency or announced campus closure due to a natural disaster or pandemic, it may be necessary for Panola College to move to altered operations. During this time, Panola College may opt to continue delivery of instruction through methods that include, but are not limited to: online learning management system (CANVAS), online conferencing, email messaging, and/or an alternate schedule. It is the responsibility of the student to monitor Panola College's website (www.panola.edu) for instructions about continuing courses remotely, CANVAS for each class for course-specific communication, and Panola College email for important general information.

Student Basic Needs

Unexpected circumstances may arise, but Panola College offers various resources to support students. If you need mental health services or are facing challenges with transportation, affording class materials and supplies, or accessing food regularly—issues that may impact your class performance—please visit panola.edu/resources.

Class Attendance

Regular and punctual attendance of classes and laboratories is required of all students. When a student has been ill or absent from class for approved extracurricular activities, he or she should be allowed, as far as possible, to make up for the missed work. If a student has not actively participated by the census date, they will be dropped by the instructor for non-attendance. This policy applies to courses that are in-person, online, hybrid, and hyflex.

Attendance in online courses is determined by submission of an assignment or participation in an activity. According to federal guidelines, simply logging into a distance learning course without participating in an academic assignment does not constitute attendance. Distance learning is defined as when a majority (more than 50%) of instruction occurs when the instructor and students are in separate physical locations. Students must engage in an academic activity prior to the course census date.

When an instructor feels that a student has been absent to such a degree as to invalidate the learning experience, the instructor may recommend to the Vice President of Instruction that the student be withdrawn from the course. Instructors may seek to withdraw students for non-attendance after they have accumulated the following number of absences:

Fall or spring semesters:

3 or more class meeting times per week - 5 absences

2 class meeting times per week - 3 absences

1 class meeting per week - 2 absences

The student is responsible for seeing that he or she has been officially withdrawn from a class. A student who stops attendance in a class without officially withdrawing from that class will be given a failing grade; consequently, the student must follow official withdrawal procedures in the Admissions/Records Office.

Please note: Health Science and Cosmetology courses may require more stringent attendance policies based on their accreditation agencies. Please see the addendum and/or program handbook for further information concerning attendance.

Pregnant/Parenting Policy

Panola College welcomes pregnant and parenting students as a part of the student body. This institution is committed to providing support and adaptations for a successful educational experience for pregnant and parenting students. Students experiencing a need for accommodations related to pregnancy or parenting will find a Pregnancy and Parenting Accommodations Request form in the Student Handbook or may request the form from the course instructor.

Artificial Intelligence (AI) Course Policy

No use of Generative AI permitted.

This option assumes that all work submitted by students will be generated by the students themselves, whether they are working individually or in groups. Students should not have another person or entity do the writing of any portion of an assignment, which includes hiring a person or a company to write assignments and/or using artificial intelligence (AI) tools like ChatGPT. Use of any AI-generated content in this course qualifies as academic dishonesty and violates Panola College's standards of academic integrity.

Instructional Goals and Purposes

This course serves as an introduction to modern astronomy focusing on principles of stellar processes have evolution of galactic structures, cosmology, and methods of modern astronomical observation. This is a 4 semester-hour survey of the universe which includes a lab component.

Learning Outcomes

After studying all materials and resources presented in the course, the student will be able to:

1. Students will gather and assess astronomical information.
2. Students will analyze, evaluate, and synthesize information about the universe in which we live.
3. Students will develop, interpret, and express ideas about astronomy through written communications.
4. Students will manipulate and analyze observable astronomical information and arrive at an informed conclusion.
5. Student will integrate different viewpoints as a member of a team.
6. Students will work with others to support and accomplish a shared goal.

Course Content

A general description of lecture/discussion topics included in this course are listed in the Learning Objectives section of this syllabus.

Students in all sections of this course will learn the following content:

1. The Sun as a star.
2. Light, stars, and spectroscopy
3. Properties of stars expressed on HR diagram

4. Stellar evolution for various mass single stars
5. The Milky Way galaxy
6. Other galaxies in the universe
7. Galactic formation and evolution
8. Formation models of the universe
9. Dark matter, dark energy, and baryonic matter
10. Life, the universe, and everything
11. Science literacy and its importance

Methods of Instruction/Course Format/Delivery

This course is offered both online and in person and includes both lecture and lab components.

This class is broken up into weeks, and there is one course module per week. At the top of each module, you will find a weekly assignment message in the form of a pdf document. It is usually named something highly imaginative like "Week 01

Assignment." These assignment messages are vitally important things. Each assignment message contains activities related to both the lecture and the lab. You will receive a grade for the activities in these messages.

First let's define "the week". Each class-week starts on Monday and goes to the next following Monday. The only exceptions to this are the weeks at the beginning and end of the semester, as well as some holidays. The tentative class schedule above shows how the weeks are divided. Weekly assignments may include activities such as readings, quizzes, homework, discussion questions, lab reports, online activities, and other assignments. The weekly assignments will be made available online no later than Monday night of each class-week. For the most part, all the activities associated with the weekly assignments must be completed by the following Monday night of the next week. You are encouraged to carefully *read each weekly assignment message as early as possible so you can be aware of deadlines*. In fact, many students find it helpful to print out the assignment message each week and go through it using a highlighter to highlight each of the week's activities. Please consider doing this. You are personally responsible for your learning.

PRO-TIP: Do not wait to start your assignments. You will not have enough time to complete all the assignments if you delay starting.

Major Assignments/Assessments

The following items are assigned and assessed during the semester and used to calculate the student's final grade.

Assignments

Assignments

1. Discussion forum assignments (weekly)
2. Mastering Astronomy homework (weekly)
3. Lab activities (weekly)

Assessments

Assessments

1. **Mid-Term and Final Exams (30%):** The mid-term and final are the two major proctored exams for the semester; they are both highlighted in the schedule above. Both exams are comprehensive in nature, meaning that all material covered is fair game for each exam. The percentage each exam counts is shown in the grading scheme above and is about average for exams in undergraduate-level courses. You may complete the exams at any time during the range of dates listed above in the class schedule. Exams are proctored. Each exam is timed and delivered one question at a time. You must answer each question before proceeding to the next, and you will not be able to change answers once you proceed.

2. **Weekly Quizzes (20%)**

Part of your weekly assignments include chapter quizzes. Unless told otherwise, each quiz is due at the end of the class-week. The content of each quiz is the material covered during the week. The quizzes are not timed, and you may go into and out of them as many times as you wish to make changes before the deadline. You will usually be allowed a limited number of attempts to complete each quiz. However, once you submit a quiz, then you may not make changes to it. You may use any resources you wish to complete the quizzes; however, you should try to limit your use of resources since you may not be able to use such resources when you take the midterm and final exams. The material covered in the weekly quizzes is indicative of the material covered in the major exams. NOTE: Quizzes are not exams. Quizzes are of the same general format and cover similar, not identical, material as exams.

3. **Weekly Discussions (25%)**

Part of your weekly assignment will include postings to an online discussion each week. You will participate in weekly online discussions on science-related topics; many topics may span two-week periods. Your posts should reflect and integrate your understanding of the readings as well as your experiences. The topic of the week will be mentioned in the weekly assignment and will probably consist of one or more open-ended questions. You will need to address the topics and answer any questions by making a substantive post. A substantive post is a well-written essay of at least 100 words in length showing critical understanding. After others have posted their answers, you will then need to read the other responses and post a second substantive response to at least one or two other student's original answers. You will discover that the questions are often thought-provoking and may require some additional research on your part before you can make a meaningful substantive post. To receive full credit for discussions, you must participate each week and become involved in the discussion.

- PRO-TIP: Pay attention to the deadlines. Discussions usually last two weeks. Post sometime during both weeks. Don't think that by posting multiple times right before the deadline gets you a good grade. It doesn't. You must participate during all weeks.
- PRO-TIP: About half your discussion grade comes from the first post. If you don't make that first post by the first deadline, then the max you can earn is half credit.

4. **Laboratory Activities (25%)**

Lab activities will also be part of each week. The lab activities will be conducted online or utilize software you have downloaded. It is important that you have a computer to which you can download and install programs with a fast and reliable Internet connection to complete these assignments. Also, at times, the week's lab activities may be combined with other weekly assignment activities. If such a combined assignment occurs be conscientious because the combined assignment counts more.

- The lab activities may come from a variety of places online. Instructions for labs are written for users of PCs running Windows-based systems. Tech-savvy non-Windows (Mac or Linux) users may be able to figure out workaround solutions for labs, but Macs or Linux machines are not supported for labs in this class. Most Chromebook operating system and Windows: S-Mode systems will not run the lab software. A more detailed explanation of what this means can be read in the "Starting with Stellarium" lab template file. The bottom line is you will need to download, install, and run Stellarium from your computer. Any web-based or mobile versions of Stellarium are not sufficient for labs in this course.
- When you submit your lab reports, questions, or templates it is a requirement that you upload them using the in-course assignment submission system. Lab reports or lab templates sent via other means or sent in the incorrect format will not be accepted. This is a set-in-stone rule, so make sure you know how to do this properly and do it before the deadline each week.

Course Grade

Grading scale:

- A=90-100%
- B=80-89%
- C=70-79%
- D=60-69%
- F=< 60%

Grading:

- Mid-Term Exam 15%
- Final Exam 15%
- Weekly Quizzes 20%
- Weekly Discussions 25%
- Lab Assignments 25%

Texts Materials, and Supplies

Text

- [Astronomy](#) by Fraknoi, Morrison, Wolff, et al.
- The textbook is freely available through OpenStax at the links below. [Free Astronomy Book for Download - OpenStax](#) (online access)

Technology Requirements

- PC computer with fast Internet access, webcam, and microphone
- Ability to download, install, and run Stellarium (software is a free download)
- Ability to view and understand online videos such as YouTube
- Ability to use, enter data, manipulate graphs, and save files in MS Excel format
- Ability to access and use all functions of MS Office 365, scientific calculator, pdf reader, VLC Player, Winzip, Printer, etc. (or equivalent programs)
- **Important Notes:** Chromebooks and Linux machines will not work for labs. You must use proctoring software for proctored exams.
- Proctoring software requires the Chrome browser. Use Chrome! MS Office 365 is a free download and must be used for Excel.
- Non-Windows machines are not supported in labs. *
 - *Don't let this scare you off. Many Mac users have successfully completed this class. However, all lab instructions are written from the perspective of a Windows PC user. Mac users will need to translate the lab instructions from those for a PC into those useful on their machine. This is mostly straightforward but may require some Mac-savviness to accomplish. Again, many Mac users have successfully completed this class.
- This course is a 4-semester hour lab course that requires the use of a few different programs that must be obtained online, including the Microsoft Office suite. You can access these programs for free through your college. If there is a link to these programs inside of Canvas, then use that to install the programs. If there is no link, then either ask your IT Services department or go to your college's website and search for Microsoft Office 365. Follow the instructions to create an account and download/install the programs. You must use the fully installed version of MS Excel in this class. The online version of Excel will not work for some labs.

Required Readings

- [Astronomy](#) by Fraknoi, Morrison, Wolff, et al.
- The textbook is freely available through OpenStax at the links below. [Free Astronomy Book for Download - OpenStax](#) (online access)

Recommended Readings

NA

Other

- Courses conducted via video conferencing may be recorded and shared for instructional purposes by the instructor.
- For current texts and materials, use the following link to access bookstore listings: <https://www.panolacollegestore.com>.

- For testing services, use the following link: <https://www.panola.edu/student-services/studentsupport/academic-testing-center>.
- The Accommodations & Disability Support (A&DS) Office at Panola College provides and facilitates support services and accommodations for students with disabilities. The A&DS office works under the federal guidelines included in Section 503 of the Rehabilitation Act of 1973 and the American with Disabilities Act. Please contact the Accommodations & Disability Support (A&DS) Office located in the Charles C. Matthews Student Center or go to <https://www.panola.edu/disabilitysupport> for more information.
- Withdrawing from a course is the student's responsibility. Students who do not attend class and who do not withdraw will receive the grade earned for the course.
- Student Handbook: <https://www.panola.edu/> (located on at the bottom under student)