PHYS 1403 - Stars and Galaxies (Astronomy) 401 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 Dr. Tom Hooten
Semester/Year Spring 2025

Meeting Time and Location
Online—students are expected to spend at least 5-12 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.

Student Learning Outcomes

Critical Thinking Skills – to include creative thinking, innovation, inquiry and analysis, evaluation and syntheses of information

- CT2: Gather and assess information relevant to a question
- CT3: Analyze, evaluate, and synthesize information

Communication Skills – to include effective development, interpretation, and expression of ideas through written, oral, and visual communication

- CS1: Develop, interpret, and express ideas through written communication

Empirical and Quantitative Skills – to include the manipulation and analysis of numerical data or observable facts resulting in informed conclusions

- EQS2: Manipulate and analyze observable facts and arrive at an informed conclusion

Teamwork – to include the ability to consider different points of view and to work effectively with others to support a shared purpose or goa

- TW1: Integrate different viewpoints as a member of a team
- TW2: Work with others to support and accomplish a shared goal

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 online and includes both lecture and lab components. Weekly assignments worth 50% of the total grade are made and include discussions, quizzes, readings, and homework problems. Two proctored exams work 25% of the total grade are required (i.e., Midterm exam and Final exam). Lab assignments will be worth the remaining 25% of the grade. The final exam is comprehensive.

Major Assignments/Assessments

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

Assignments

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

Assessments

1. Proctored mid-term exam
2. Proctored final exam
3. Weekly quizzes
4. Team project

Course Grade

The grading scale for this course is as follows:

- Weekly Assignments – 50%
- Midterm Exam – 12.5%
- Final Exam – 12.5%
- Labs – 25%

Texts Materials, and Supplies

- The Essential Cosmic Perspective, 8th Ed. by Bennett, et al.
- Mastering Astronomy Student Access

Required Readings

NA

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.
- If any student in this class has special classroom or testing needs because of a physical learning or emotional condition, please contact the ADA Student Coordinator in Support Services located in the Charles C. Matthews Student Center or go to https://www.panola.edu/studentservices/student-support/disability-support-services 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)