

**PHYS 1403
Astronomy I
ITV Hybrid
Fall 2010**

Instructor: LaRue

Office: NS 120

Phone: Office 903-782-0334

Home 903-737-0808

Office Hours: MW 8 – 9 AM; M,W 9 – 9:50 AM; M 5 – 6 PM, F 8 – 9 AM; and by appointment. I am also available for consultation by email.

Email:

PJC llarue@parisjc.edu

Home lhllarue@yahoo.com

Course Format: HYBRID ITV, which means that some work will be done online; some will be done by lecture using Interactive Television broadcasts.

IMPORTANT INFORMATION: This course satisfies the science lab requirement for the Core Curriculum for an Associates' Degree at PJC. This means that it is equivalent to General Biology, General Geology, General Chemistry. Also, this course will transfer to many colleges and universities for science credit or as an elective; it is the student's responsibility to check on transferability to the particular college to which you will be transferring. Some colleges accept this course in place of Integrated Science or as Physical Science; consult the admissions office of the college to which you will transfer.

Course Description: This course is the first half of a general survey of astronomy. Topics will include: the scale of the universe, celestial sphere, history of astronomy, planets (brief overview), stars, galaxies, and cosmology.

Prerequisites: none

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Course Requirements: Students are expected to have a reliable computer, an email account, a browser (such as Internet Explorer), the capability to download the required plugs-ins and players, and basic computer skills

Welcome to the Course!

I am excited about this course, and happy that you have chosen to challenge your mind with ideas that may seem very strange. Feel free to ask questions (via email) and let me know if you encounter problems. Astronomy is the most fundamental of all sciences, for it covers everything – the entire universe, from the smallest atom to the largest galaxy. It attempts to answer questions such as “How did it all begin?” “Why do the stars shine?” “Is the universe unchanging?” “Why does life exist on Earth but not on Mars and Venus?” “What exactly is a Black Hole?” “Will the earth, the sun, and the universe have an end?”

This is one course in which science, philosophy, and religion can all be pondered and discussed.

How to begin: Please go to the PJC webpage and access the course through WebCT. You should have received an ID number to login to WebCT (Blackboard). WebCT has some features which we will use in this course; explanations and direction will be provided in class.

Be sure to look at [Announcements](#) often; important information will be given there.

Next click on [Course Content](#) and click on the [Syllabus](#) to see an online copy of the Syllabus, as necessary.

If you have trouble navigating WebCT, please click Help, located in the top menu bar.

Technical Support: Assistance is available through PJC technical support, 903-782-0489.

Grading Procedure: Grades will be determined as follows:

Chapter Questions and other Daily Work Or Homework Assignments	25%
Lab Reports	25%
Major Tests (Chapter Quizzes)	25%
Final Exam	<u>25%</u>
Total	100%

Chapter Questions and other “Homework” Assignments refer to assignments using the textbook. Lab Reports will be submitted for each experiment (usually paper and pencil experiments), and the grades will be averaged together. Major Tests are the weekly Chapter Quizzes which you will find on the home page. The Final Exam, which is comprehensive, may also serve to **replace** the lowest Major Test grade (but **not** the Chapter Questions or Lab Reports) if it is not the lowest grade. No test grade will be dropped.

A student who completes at least half of the course work may, if necessary, take an “Incomplete” (X) in the course; however, any student who must take an X must make up the work by the end of the Spring Semester following this course. Also, the maximum grade that can be attained is a “B”.

Class Attendance: Students will attend class regularly; some assignments will be completed in class, so that attendance is mandatory. A student who misses more than 5 classes may receive a grade of F unless extenuating circumstances are shown. The last days to drop is Nov. 15, but remember that there are restrictions on the number of courses that a student may drop.

Technical Support: Assistance is available through PJC technical support, 903-782-0489.

Grading Procedure: Grades will be determined as follows:

Chapter Questions (Assignments)	25%
Lab Reports	25%
Major Tests (Chapter Tests)	25%
Final Exam	<u>25%</u>
Total	100%

Chapter Questions (Assignments) refers to assignments using the textbook; these are assigned questions that appear at the end of each chapter. These are the “Assignments” at Mastering Astronomy. This also includes videos which you will see in class, and the corresponding worksheet which you will turn in. Lab

Reports will be submitted for each experiment (you will complete and submit these by email through WebCT or by turning in the Lab Sheet in class), and the grades will be averaged together. Major Tests are the weekly Chapter Tests which you will find on the home page. The Final Exam, which is comprehensive, may also serve to **replace** the lowest Major Test grade (but **not** the Chapter Questions or Lab Reports) if it is not the lowest grade. No test grade will be dropped.

Class Attendance: Students are expected to attend class every period in order to succeed.

General Policies and Procedures: Students are expected to complete all assignments by the due dates given below.

Meeting Locations and Times:

This is an online course, so that there is no regular class time; all work is done on the computer, via the internet. However, it is important to keep up with the assignments and submit them on (preferably before) the due dates to avoid penalties for late work. **PROCRASTINATION** is the biggest problem facing internet students!

Required Text: Bennett, Donahue, Schneider, Voit, The Cosmic Perspective, 5th ed., Addison-Wesley Pub. Co.

LoPresto, Astronomy Media Workbook, 5th ed., Addison-Wesley Pub. Co.

Course Goals and Objectives:

(1) The student conducts field and laboratory investigations online, using scientific methods during all laboratory investigations. The student is expected to: (A) plan and implement experimental procedures including asking questions, formulating testable hypotheses, and selecting equipment and technology; (B) make quantitative observations and measurements with precision; (C) organize, analyze, evaluate, make inferences, and predict trends from data. (D) communicate valid conclusions; (E) graph data to observe and identify relationships between variables
(2) The student uses critical thinking and scientific problem solving to make informed decisions, utilizing the scientific method. The student is expected to: (A) analyze, review, and critique scientific explanations, including hypotheses and theories, as to their strengths and weaknesses using scientific evidence and information; evaluate the impact of research on scientific thought, society, and the environment; (B) express laws symbolically and employ mathematical procedures; (C) evaluate the impact of research on scientific thought, society, and the environment; (D) describe the connection between astronomy and current events; and (E) research and describe the history of astronomy and contributions of scientists.
(3) The student knows the laws governing the universe. The student is expected to: (A) describe the formation of stars and planets; (B) list and describe the properties of the planets and the debris of the solar system; (C) describe the evolution of stars; (D) describe the Big Bang Theory and list the evidence favoring this theory;

- (E) discuss the various comological theories; and
(F) describe the laws of physics as they pertain to astronomy (for example, Newton's Laws of Motion and Gravity; Kepler's Laws of Planetary Motion; the Theory of Relativity; Hubble's Law of galactic motion).

- (4) The student knows the current status of the search for life in the universe, including:
(A) the Drake Equation;
(B) necessary conditions for the existence of life; and
(C) Projects Ozma and SETI.

- (5) The student knows forces in nature as they relate to astronomy. The student is expected to:
(A) identify the influence of mass and distance on gravitational forces;
(B) research and describe the historical development of the concepts of gravitational, electrical, magnetic, and nuclear force in connection with the life cycle of stars, the structure of the universe, and the various cosmological theories.

- (6) The student understands various astronomical phenomena, including:
(A) eclipses of sun and moon
(B) the seasons on earth
(C) precession of the earth's axis
(D) the use of various telescopes and new technologies to discover the properties of the universe

Academic Honesty: In pursuit of learning, it is expected that students will engage in honest academic endeavor to the highest degree of honor and integrity. Students who are found to engage in academic dishonesty through such activities as cheating on exams, plagiarism, or collusion with others will be referred to the Vice President of Student Services for disciplinary action such as dismissal from the college.

Student violations involving a question of academic honesty are handled by the faculty member(s) involved. Should the student object to the decision of the faculty member(s), the appeals procedures for instructional due process may be utilized. The following list describes the most common forms of academic dishonesty (cheating):

1. Taking an exam for another student.
2. Having another student tan an exam for you.
3. Altering or forging an official college document.
4. Paying someone to write a paper to submit as your own work.
5. Arranging with other students to give or receive answers by us of signals.
6. Arranging to sit next to someone who will let you copy on an exam.
7. Copying from someone's exam without the student's knowledge.
8. Writing a paper for another student.

9. Allowing another student to copy from you during an exam.
10. Copying answers from a source without doing work independently.
11. Getting questions or answers from someone who has already taken the same exam.
12. Copying a few sentences without footnoting in a paper.
13. Working on homework with other students when the instructor doesn't allow it.
14. "Padding" a few items in a bibliography.

ADA Information (Americans with Disabilities Act): Any student who has special needs is encouraged to discuss accommodations with me during the first week of class.

Students with Special Needs/Students with Disabilities:

The Student Development Center is responsible for coordinating services for students with special needs. Individual students have the right and the responsibility to decide whether and when to choose among accessible service offerings. Paris Junior College provides equal opportunities for students with disabilities and ensures access to a wide variety of resources and programs. The College will make reasonable accommodations for qualified students with a documented physical, psychological, or learning disability who have been admitted to the College and have requested accommodations.

Schedule:

A schedule of the sections covered follows; **details are often provided in class.** You should read each chapter, but you may skip the "Mathematical Insight" boxes (see page 8 for an example) since this course does not emphasize the application of mathematical formulas.

<u>Date</u>	<u>Sections covered</u>	<u>Items to cover (due dates given in Announcements and in Calendar)</u>
Week 1	Ch. 1	Video PowerPoint Lectures Assignment 1 (at Mastering Astronomy)—Chapter Questions at the end of ch. 1, p. 24 "Quick Quiz" #25-34; answer on your own paper, then input these at Mastering Astronomy as Assignment 1) (all of these assignments are posted through WebCT)
Week 2	Ch. 2	Assignment 2 (over chapter 2, p. 55 "Quick Quiz" #27-36 Videos PowerPoint Lectures

		Lab 1 (Tutorial 1 at Mastering Astronomy website; See Lo Presto book; also click on Labs at The WebCT homepage for this course)
Week 3	Ch. 3	Ch. 3 Quick Quiz Questions (Assignment 3) p. 89 #27-36 PowerPoint Lectures Videos
Week 4	Ch. 3, 4 (skim ch.4)	Ch. 4 Quick Quiz Questions (Assignment 4) p. 145 #29-38. PowerPoint Lectures Videos Lab 2 (Tutorial 2) Test I Chapter 1 – 3
Week 5	Ch. 5, 6 (skim Ch. 6)	Ch. 5 Quick Quiz (Assignment 5) p. 176 Ch. 6 Quick Quiz (Assignment 6) p. 203 Videos PowerPoint Lectures Lab 3 (Tutorial 8)
Week 6	Ch. 14	Ch. 14 Quick Quiz (Assignment 14) PowerPoint Lectures Videos Lab 4 (Tutorial 15) Test II Ch. 4-5-6
Week 7	Ch. 15	Ch. 15 Quick Quiz (Assign. 15) PowerPoint Lectures Videos Lab 5 (tutorial 17)
Week 8	Ch. 16	Ch. 16 Review Questions (Assign. 16) PowerPoint Lectures Videos
Week 9	Ch. 17	Ch. 17 Quick Quiz (Assign. 17) PowerPoint Lectures Videos Lab 6 (tutorial 17)
Week 10	Ch. 18	Ch. 18 Quick Quiz (Assign. 18) PowerPoint Lectures

		Videos
		Lab 7 (tutorial 18)
Week 11	Ch. 19	Ch. 19 Quick Quiz (Assign. 19) PowerPoint Lectures Videos Lab 8(tutorial 19)
		Test III Ch. 14 - 18
Week 12	Ch. 19, 20	Ch. 20 Quick Quiz (Assign. 20) PowerPoint Lectures Videos Lab 9 (tutorial 21)
Week 13	Ch. 20, 21	Ch. 21 Quick Quiz (Assign. 21) PowerPoint Lectures Videos
(Thanksgiving Break)		
Week 14	Ch. 22, 23	Ch. 22 Quick Quiz (Assign. 22) PowerPoint Lectures Videos Lab 10 (tutorial 22)
		Test IV Ch. 19 – 23)
Week 15	Ch. 23	Ch. 23 Quick Quiz (Assign. 23) PowerPoint Lectures Infinite Universe videos
Week 16	Final Exam (Thursday Dec. 16)	