

Physics 1403 – Introductory Astronomy I

Course Syllabus

Contact Information

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Course Information

Course: Astronomy/Physics 1403

Lecture/Lab:

Text and Lab Manual: Explorations: An Introduction to Astronomy (6th Ed.), Arny & Schneider; Astronomy – Activity and Lab Manual, Hirshfeld.

Physics Webpage: <http://www.odessa.edu/dept/physics/lestep/>

Course Prerequisites

High School Math

Course Description

Introductory Astronomy I is a study of the current knowledge and techniques of modern day astronomy. Course content focuses on the universe beyond the solar system including a look at galaxies (including the Milky Way), nebulae, stars, black holes, and dark matter. The course ends with a brief survey of stellar and galactic topics. Emphasis is placed on current knowledge of the universe and how astronomical measurements are made. Some night observing sessions are offered. Students must read the text as assigned. Class lectures will parallel the text. However, the lectures may include things the text does not – and the text may have details the lectures do not include. Therefore, the student needs to remain alert to both sources of information. Further, multimedia presentations are part of the course. The multimedia sources compose videos and demonstrations. The student is responsible for this content as well. (ICOs 1,5)

Course Objectives & Student Learning Outcomes

The objective of the study of a natural sciences component of a core curriculum is to enable students to understand, construct, and evaluate relationships in the natural sciences, and to enable the student to understand the bases for building and testing theories.

General objectives for this course include:

1. To understand and apply methods and appropriate technology to the study of natural sciences.
2. To recognize scientific and quantitative methods and the differences between these approaches and other methods of inquiry and to communicate findings, analyses, and interpretation both orally and in writing.
3. To identify and recognize the differences among competing scientific theories.
4. To demonstrate knowledge of the major issues and problems facing modern science, including issues related to ethics, values, and public policies.

5. To demonstrate knowledge of the interdependence of science and technology and their influence on, and contribution to, modern culture.

Specific objectives for this course include:

1. To obtain the intellectual ability to translate, interpret, and extrapolate the most important scientific models governing modern astrophysics, the practices and methodologies used by modern astronomers in constructing astrophysical models, and to be familiar with the astronomical objects studied by astronomers.
2. To further develop critical thinking and problem solving skills in the area of physics and the natural science.

Laboratory learning objectives include:

1. To complement the introductory physics learning experience through quantitative laboratory exercises, with focus on the specific learning objective concepts within the course.
2. To continue to observe and follow sound scientific methods as evidenced by satisfactory assessments of laboratory exercises, laboratory reports, and assignments, and acknowledging required laboratory procedures.

Course Attendance

Course attendance is the responsibility of the student. Excessive absences will not result in a student being dropped from a course. However, the student is wholly responsible for any assignments/labs/tests missed. Attendance will be taken in class.

Late Work Policy

Make-up tests will only be given if a valid excuse is provided. Further, make-up tests cannot be made up once the next test is given. Homework is due on the assigned date. Late homework will only be accepted if a valid excuse is provided. If no valid reason is provided, then 20% reduction in grade will occur for each day late. In any case, no late homework will be accepted if it is a week or more late. Any pre-lab assignments, if given, are due at the beginning of the laboratory. *Completed labs are to be turned in at the end of the lab period.* Late labs are only accepted if a valid excuse is provided.

Academic Honesty

Odessa College expects its students to maintain complete honesty and integrity in their academic pursuits. Students are responsible for understanding the code of Student Conduct found in the student handbook. Cheating will not be tolerated in any form.

Students with Disabilities

Odessa College complies with Section 504 of the Vocational Rehabilitation act of 1973 and the ADA of 1990. Students with special needs or issues pertaining to access and participation in this class must contact me immediately. Further, you may call the Office of Disability services at 432.335.6861 to request assistance and accommodations.

Course Evaluation

Course grades are a culmination of homework assignments, pop quizzes, weekly labs, and exam grades. The percent breakdown for each of these is as follows:

5%	Research
5%	Quizzes
20%	Homework
20%	Labs
50%	Exams

While the laboratory constitutes only 20% of the course grade, it is important to understand that astronomy is fundamentally a **laboratory-based science**. *Therefore, a failing grade in the lab will result in a failing grade in the course.* While you will never receive a score lower than that numerically earned, I do reserve the right to rescale grades as I see fit at any time during the semester. Final grades will be assigned as follows:

A	90 – 100
B	80 – 89
C	70 – 79
D	60 – 69
F	00 – 59

Cell Phone and Laptop Use in Class

Cell phones, while an important communication tool in modern society, are a severe interruption to classroom instruction. Thus, cell phones are strictly prohibited from being seen or heard. If you must have a cell phone available to you in case of an emergency, your phone must be put up on your person (not in a desk, but in your pocket or on a belt) and set on vibrate or silent. You may at any time excuse yourself from the classroom to attend to your personal business. **There will be no cell phone or laptop use allowed in class.** Strictly, no texting or Internet surfing. During exams, in order to maintain integrity of the testing environment, all cell phones will be required to be **off and put out of sight**. Also, electronic media players (Ipods, etc.) are **not to be used** during class or laboratories.

Sleeping in Class

Sleeping in class or laboratory can be a distraction for others around you and of no academic benefit to you as a student. Please attempt to stay alert while in class.

Video /Audio Recording

Video/audio recording of lectures or class activities is strictly prohibited unless special accommodations are warranted for students with disabilities. Violation of this policy will result in the student being removed from the class and receiving a grade of F.

Food and Drink in Class or Lab

In lecture or laboratory, while it is okay to bring something to drink into class, food of any kind is **not** allowed.

Course Outline

Week	Topics	Chapters	Labs
1, 2	Intro & History	Ch 0-1	Intro
	The Night Sky		1

3 - 7	Gravity & Light	Ch 1-3	2
			3
8 - 11	Stars	Ch 11-14	4
			Exam 1
			5
			6
			7
			8
			Exam 2
			9
9 - 15	Galaxies	Ch 15-17	10
			X
			Exam 3
			X
16	Final Exams		X

Expectations for Engagement – Face to Face Learning

To help make the learning experience fulfilling and rewarding, the following Expectations for Engagement provide the parameters for reasonable engagement between students and instructors for the learning environment. Students and instructors are welcome to exceed these requirements.

Reasonable Expectations of Engagement for Instructors

1. As an instructor, I understand the importance of clear, timely communication with my students. In order to maintain sufficient communication, I will
 - provided my contact information at the beginning of the syllabus;
 - respond to all messages in a timely manner through telephone, email, or next classroom contact; and,
 - notify students of any extended times that I will be unavailable and provide them with alternative contact information (for me or for my supervisor) in case of emergencies during the time I'm unavailable.
2. As an instructor, I understand that my students will work to the best of their abilities to fulfill the course requirements. In order to help them in this area, I will
 - provide clear information about grading policies and assignment requirements in the course syllabus, and
 - communicate any changes to assignments and/or to the course calendar to students as quickly as possible.
3. As an instructor, I understand that I need to provide regular, timely feedback to students about their performance in the course. To keep students informed about their progress, I will
 - return classroom activities and homework within one week of the due date and

- provide grades for major assignments within 2 weeks of the due date or at least 3 days before the next major assignment is due, whichever comes first.

Reasonable Expectations of Engagement for Students

1. As a student, I understand that I am responsible for keeping up with the course. To help with this, I will
 - attend the course regularly and line up alternative transportation in case my primary means of transportation is unavailable;
 - recognize that the college provides free wi-fi, computer labs, and library resources during regular campus hours to help me with completing my assignments; and,
 - understand that my instructor does not have to accept my technical issues as a legitimate reason for late or missing work if my personal computer equipment or internet service is unreliable.
2. As a student, I understand that it is my responsibility to communicate quickly with the instructor any issue or emergency that will impact my involvement with or performance in the class. This includes, but is not limited to,
 - missing class when a major test is planned or a major assignment is due;
 - having trouble submitting assignments;
 - dealing with a traumatic personal event; and,
 - having my work or childcare schedule changed so that my classroom attendance is affected.
3. As a student, I understand that it is my responsibility to understand course material and requirements and to keep up with the course calendar. While my instructor is available for help and clarification, I will
 - seek out help from my instructor and/or from tutors;
 - ask questions if I don't understand; and,
 - attend class regularly to keep up with assignments and announcements.