

## ASTRO 10: INTRODUCTION TO ASTRONOMY

### **COURSE AND INSTRUCTOR INFORMATION:**

Semester: Spring 2024 (52002)  
Title: Introduction to Astronomy  
Units: 4.00 CEUs  
Hours: 3 lecture, 2 lab hours  
Time: Lecture Asynchronous, Lab Tuesday 5:00 PM – 6:50 PM  
Location: Lecture Online, Lab in PHY 70  
Instructor: Kylee Ford  
Email: [kylee.ford@reedleycollege.edu](mailto:kylee.ford@reedleycollege.edu) (Please give me 24 – 48 hours to reply)  
Office Hours: Virtual and by appointment/email/Zoom only

### **COURSE DESCRIPTION:**

This course covers the topics of planets, solar system mechanics, stellar evolution, and basic cosmology.

### **PREREQUISITES:**

Advisories: Mathematics 103 and English 1A or 1AH.

### **COURSE OBJECTIVES:**

In the process of completing this course, students will:

- ✓ Develop sound reasoning skills as they are applied in astronomy.
- ✓ Learn to understand college-level publications written on introductory astronomy topics.
- ✓ Use introductory astronomy vocabulary.
- ✓ Conduct simple laboratory experiments and run simulation programs on computers that enhance their understanding of basic astronomical phenomenon.
- ✓ Learn to apply basic algebra skills to astronomical problems.

### **STUDENT LEARNING OUTCOMES:**

Upon successful completion of the course, students will be able to:

- ✓ Solve simple algebraic problems that apply to astronomy topics.
- ✓ Apply reasoning skills regarding the science of the universe to solve mathematical and non-mathematical problems in astronomy.
- ✓ Read college-level publications written on introductory astronomy topics.

### **REQUIRED COURSE MATERIALS:**

Textbook: OpenStax Astronomy available here: [Astronomy](https://openstax.org/details/books/astronomy)  
(<https://openstax.org/details/books/astronomy>)

### **OTHER MATERIALS:**

- iPad or Tablet: Lots of students these days are using iPads and tablets, which are great because your notes can be written digitally, expensive though.
- Traditional pencil and paper: I recommend having a notebook for notes and a pencil to take the notes!
- Scientific Calculator: A calculator is a nice tool to have and to be comfortable with. But there are other programs you can use when doing your homework such as: [Desmos](#), [Wolfram Alpha](#) and [Math is Fun](#). You can't use these other programs on the exam though, so practice using a calculator!

## **ATTENDANCE:**

It is important to watch videos uploaded, as this will be the lecture portion. I will be taking attendance through Canvas and in person during lab. **Lab attendance is mandatory.**

- Notes on Lab Attendance: You will not be allowed to make up labs without reasonable notification and credible supporting documentation of legitimate reasons (doctor's note, obituary, etc.). A missed lab can greatly affect your grade. **Three missed labs = failing the course.**

## **DISCUSSIONS/QUIZZES/PARTICIPATION:**

Each week there will be a quiz due (unless otherwise stated on the schedule). These quizzes are based on the lecture videos for the week.

## **HOMEWORK:**

The homework assignments will be posted on Canvas and may require you to watch a video (ex. Crash Course Astronomy) and answering some questions on the material. There will also be reading guides and homework questions based on the required reading for each module. This reading will typically consist of sections of the textbook, but other sources may be used. Homework should be done by the **provided due date set on Canvas**. No late homework will be accepted.

## **LABORATORY REPORTS:**

**Lab is mandatory** and will be done in class. Each lab is **due at the end of the class period**, unless otherwise stated. Complete all lab assignments neatly in pencil so that you can cleanly erase any mistakes. Show all your work, where relevant. Further instruction for each lab will be given in the modules and in class.

## **EXAMS:**

There will be two exams and one cumulative final. They will be multiple choice with some simple algebra problems that are appropriate for astronomy. They will be based on lecture, quizzes, homework, and labs. More detailed information on exams will be provided as the exams get close.

## **COURSE POLICIES:**

### Communication:

If you ever need to reach me, consider one of the following options to do so. Please give me 24 – 48 hours to respond and I will respond as soon as I am able. When messaging me, please identify yourself with your full name and the course which you are enrolled (ex. "Kylee Ford, ASTRO 10").

- Message me using the "Inbox" tab on Canvas.
- Email me directly.
- Come by during Office Hours.

### Attendance and Drop Policy:

- Module 0 (Introduction to the Course) must be done by the due date on Canvas to keep enrollment in the course. If you do not complete this module by the due date, you will be dropped from the course.
- Attendance will be taken through the participation. Remember, attendance is mandatory, so if you do not participate in class and quizzes, it is as if you did not attend class.
- You must do all lab activities assigned. Attendance in lab is mandatory. Remember, **three missed labs = failing the course.**

### Late Work Policy:

- Late work will only be accepted unless the student has a compelling reason AND has reached out to the instructor beforehand. Late work may be accepted with a documented and compelling reason.

- A 2-day late period will be accepted for Homework assignments, but at a reduced 10% per day it is late.
- **There will be no late exams.** If you contact me prior to the exam with a documented and compelling reason, we may be able to work out a time before the scheduled exam.
  - Note: If you have a documented and compelling reason the week of the exam and know you cannot make it, you must schedule a time to take the exam within a week of the exam (meaning this needs to be done within a reasonable timeframe).
- **There will be no late final exam.** Missing the final exam may result in a failing grade for the course.

#### Academic Dishonesty Policy:

- Students at Reedley College are entitled to the best education that the college can make available to them, and they, their instructors, and their fellow students share the responsibility to ensure that this education is honestly attained. Because cheating, plagiarism, and collusion in dishonest activities erode the integrity of the college, each student is expected to exert an entirely honest effort in all academic endeavors. Academic dishonesty in any form is a very serious offense and will incur serious consequences.

#### Cheating:

- Cheating is the act or attempted act of taking an examination or performing an assigned, evaluated task in a fraudulent or deceptive manner, such as having improper access to answers, in an attempt to gain an unearned academic advantage. Cheating may include, but is not limited to, copying from another's work, supplying one's work to another, giving or receiving copies of examinations without an instructor's permission, using or displaying notes or devices inappropriate to the conditions of the examination, allowing someone other than the officially enrolled student to represent the student, or failing to disclose research results completely.

#### Plagiarism:

- Plagiarism is a specific form of cheating: the use of another's words or ideas without identifying them as such or giving credit to the source. Plagiarism may include, but is not limited to, failing to provide complete citations and references for all work that draws on the ideas, words, or work of others, failing to identify the contributors to work done in collaboration, submitting duplicate work to be evaluated in different courses without the knowledge and consent of the instructors involved, or failing to observe computer security systems and software copyrights. Incidents of cheating and plagiarism may result in any of a variety of sanctions and penalties, which may range from a failing grade on the particular examination, paper, project, or assignment in question to a failing grade in the course, at the discretion of the instructor and depending on the severity and frequency of the incidents.

#### **STUDENT SUCCESS:**

- Technology Support: <https://www.reedleycollege.edu/campus-life/technology-help.html>
- Tutoring Services: <https://www.reedleycollege.edu/academics/tutoring-services/index.html>
- COVID-19 information is uploaded to the Reedley College site: <https://www.reedleycollege.edu/covid-19/index.html>
- DSPS contact information:
  - Hours: Monday – Friday 8:00 am – 5:00 pm
  - Phone: 559-638-0332
  - See more DSPS information here: <https://www.reedleycollege.edu/student-services/disabled-student-programs-and-services/index.html>

**GRADING:**Weighted Grades:

Object	Weighted Grades
Discussion/Quizzes	10%
Homework	10%
Laboratory	25%
Exams	30%
Final Exam	25%
Total	100%

Grading Scale:

Grade	Percentage
A	90.0 – 100.0%
B	80.0 – 89.99%
C	70.0 – 79.99%
D	60.0 – 69.99%
F	<60.0%

**GENERAL COURSE OUTLINE:**

Each module is one week, unless otherwise stated. In each module, there will be one to a few chapters that will be covered within the week.

Week	Date	Module Topic	Lab
Week 1	1/8 – 1/14	Module 0: Introduction to the Course Module 1: Overview, Scientific Method (Ch. 1)	Introductions
Week 2	1/15 – 1/21	Module 2: Observing the Sky - The Birth of Astronomy (Ch. 2); <b>Martin Luther King, Jr. Day (1/15) No Classes Held</b>	Lab 1 - Measurement
Week 3	1/22 – 1/28	Module 3: Orbits and Gravity (Ch. 3)	Lab 2 - Observing Basics
Week 4	1/29 – 2/4	Module 4: Earth, Moon, and Sky (Ch. 4)	Lab 3 - Scientific Notation
Week 5	2/5 – 2/11	Module 5: Radiation & Spectra (Ch. 5) and Astronomical Instruments (Ch. 6)	Lab 4 - Mystery Constellations
Week 6	2/12 – 2/18	Review for Exam 1; <b>Lincoln Day (2/16) No Classes Held</b>	Study for Exam 1
Week 7	2/19 – 2/25	Module 6: (Begin) Our Solar System - Inner Planets (Ch. 7 - 10); <b>Washington Day (2/19) No Classes Held</b>	<b>Exam 1</b> (Module 1 - 5)
Week 8	2/26 – 3/3	Module 6: Our Solar System - Inner Planets (Ch. 7 - 10)	Lab 5 - Modeling the Moon's Motions
Week 9	3/4 – 3/10	Module 7: Our Solar System - Outer, Gaseous Planets & Satellites (Ch. 11, 12.1)	Lab 6 - Scale of the Solar System
Week 10	3/11 – 3/17	Module 8: Our Solar System - Rings, Moons, and Pluto, Debris of the Solar System (Ch. 12 - 13)	Study for Exam 2
Week 11	3/18 – 3/24	Review for Exam 2	<b>Exam 2</b> (Module 6 - 8)
Week 12	3/25 – 3/31	<b>Spring Break (3/25 - 3/29) No Classes Held</b>	<b>NO CLASS</b>

Week 13	4/1 – 4/7	Module 9: The Sun (Ch. 15, 16)	Lab 7 - My Solar System
Week 14	4/8 – 4/14	Module 10: The Stars (Ch. 17, 18, 21, 22)	Lab 8 - Kepler's Laws
Week 15	4/15 – 4/21	Module 11: The Death of Stars (Ch. 23)	Lab 9 - Chemical Fingerprinting
Week 16	4/22 – 4/28	Module 12: Black Holes and Relativity (Ch. 24)	Lab 10 - Sun Observation
Week 17	4/29 – 5/5	Module 13: Milky Way and Other Galaxies (Ch. 25 - 26)	Lab 11 - H-R Diagram/Blackbody Radiation (Online)
Week 18	5/6 – 5/12	Module 14: Cosmology (Ch. 29); Review for Final Exam	Study for Final Exam
Week 19	5/13 – 5/17	Finals Week	<b>Final Exam (Cumulative)</b>

\*Note: This syllabus, including the course outline, is subject to change.