

ASTRO 10: INTRODUCTION TO ASTRONOMY

COURSE AND INSTRUCTOR INFORMATION:

Semester: Spring 2022 (50939)
Title: Introduction to Astronomy
Units: 4.00 CEUs
Hours: 3 lecture, 2 lab hours
Time: Lecture Asynchronous, Lab Wednesday 5:00 PM – 6:50 PM
Location: Lecture Hybrid and Online, Lab PHY 70
Instructor: Kylee Jo Ford
Email: 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: Math 103 and English 1A or 1AH.

STUDENT LEARNING OUTCOMES:

- ✓ 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.

CSLOs:

ASTRO-10 SLO1: Apply reasoning skills regarding the science of the universe to solve mathematical and non-mathematical problems in astronomy.

ASTRO-10 SLO2: Read college-level publications written on introductory astronomy topics.

ASTRO-10 SLO3: Solve simple algebraic problems that apply to 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 work can be written digitally and uploaded immediately instead of having to take pictures or scan your work, expensive though.

- Traditional pencil and paper: You definitely need to write out your notes and your work (I also recommend making a notebook of your homework solutions) so if you don't have access to a tablet, pencil and paper are great! I personally use blank white paper, but graph paper, engineering paper, or lined paper are just fine.
- 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:
 - [Wolfram Alpha](#)
 - [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. Lab attendance is mandatory.

PROGRESS QUIZZES/PARTICIPATION:

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

HOMEWORK:

Homework should be done by the **beginning of lab** to be turned in at the beginning of lab, unless otherwise noted. You must do the homework on paper with **pencil**.

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. No late homework will be accepted.

If any circumstances change, you will need to upload the homework on Canvas as either a PDF or WORD document. Any other format will not be accepted.

LABORATORY REPORTS:

Lab is mandatory and will be done in class. 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.

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, PHYS 4A”).

- Message me using the “Inbox” tab on Canvas.
- Email me directly.
- Office Hours are virtual (through Zoom) and will be determined through a poll.

Attendance and Drop Policy:

- Module 0 (Introduction to the course) must be done by the due date to keep enrollment in the course. If you do not complete this module by the due date, you will be dropped you 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 and turn in by the due date. Attendance in lab is mandatory, so you must do the activity to show you attended, as you would in-person.

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.
- Missing the final exam may result in a failing grade for the course.

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	10%
Homework	20%
Laboratory	20%
Midterm Exams	30% (15% each exam)
Final Exam	20%
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.

Date	Module Topic	Deliverable Due (Homework, Labs, Quizzes, Exams)
1/10 – 1/14	Module 0: Introduction to the Course Module 1: Overview, Scientific Method (Ch. 1)	Discussion 0: Introduce Self, HW 0: Set-up Canvas, Quiz 1
1/17	<i>Martin Luther King Jr. Day</i>	
1/18 – 1/21	Module 2: History of Astronomy (Ch. 2)	HW 1, Quiz 2
1/24 – 1/28	Module 3: Orbits and Gravity (Ch. 3)	HW 2, Quiz 3, Lab 1
1/31 – 2/4	Module 4: Radiation & Spectra (Ch. 5)	HW 3, Quiz 4, Lab 2
2/7 – 2/11	Module 5: Astronomical Instruments (Ch. 6), Review for Exam 1	HW 4, Quiz 5, Lab 3
2/14 – 2/17	Exam 1	HW 5, Study Guide, Exam 1
2/18	<i>Lincoln Day</i>	
2/21	<i>Washington Day</i>	
2/22 – 2/25	Module 6: Our Solar System - Earth, Moon, & Sky, Earth as a Planet (Ch. 4, 8)	Quiz 6, Lab 4
2/28 – 3/4	Module 7: Our Solar System - Inner, Rocky Planets (Ch. 9.4, 9.5 10)	HW 6, Quiz 7, Lab 5
3/7 – 3/11	Module 8: Our Solar System - Outer, Gaseous Planets & Satellites (Ch. 11, 12.1)	HW 7, Quiz 8, Lab 6
3/14 – 3/18	Review for Exam 2	HW 8, Lab 7
3/21 – 2/25	Exam 2	Study Guide, Exam 2
3/28 – 4/1	Module 9: The Sun (Ch. 15, 16)	Quiz 9, Lab 8
4/4 – 4/8	Module 10: Star Birth & Stellar Evolution (Ch. 21, 22)	HW 9, Quiz 10, Lab 9
4/11 – 4/15	<i>Spring Break</i>	
4/18 – 4/22	Module 11: Star Death (Ch. 23)	HW 10, Quiz 11, Lab 10
4/25 – 4/29	Module 12: Black Holes & Relativity (Ch. 24)	HW 11, Quiz 12, Lab 11
5/2 – 5/6	Module 13: The Milky Way & Other Galaxies (Ch. 25, 26)	HW 12, Quiz 13, Lab 12
5/9 – 5/13	Module 14: Cosmology (Ch. 29), Final Exam Review	Study Guide
5/16 – 5/20	Final Exam	Final Exam

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