

ASTRO 10: INTRODUCTION TO ASTRONOMY

COURSE AND INSTRUCTOR INFORMATION:

Semester: Summer 2023
Title: Introduction to Astronomy
Units: 4.00 CEUs
Hours: 3 lecture, 3 lab hours
Time: Lecture Asynchronous, Lab Tuesday and Thursday 2:00 – 4:50PM
Location: Lecture Hybrid and Online, Lab Life Science 17
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.

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. This is also how I will take attendance.

DISCUSSIONS:

There will be online discussions weekly. The discussions cover several topics and can be varied in type. The objectives of the discussions are to assist in creating a sense of community in the class and to help you clarify your understanding of the topics.

HOMEWORK:

Homework should be done by the end of each week and turned in on Canvas. The homework assignments will be posted 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. This is a summer course, so it will be fast paced.

LABORATORY REPORTS:

Lab is mandatory. There will be no lab makeup sessions because this is a summer course, we simply do not have time. Further instruction for each lab will be given in the modules.

EXAMS:

There will be two exams and one final. They will be multiple choice with some simple algebra problems that are appropriate for astronomy. They will be based on lecture, quizzes, discussions, 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, ASTRO 10”).

- 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 in discussion boards. These will be weekly. Remember, attendance is mandatory, so if you do not participate in these discussions, 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.
- No late homework or exams will be accepted. This is a summer course, so we do not have the time.
- Missing the final exam may result in a failing grade for the course.

GRADING:

Object	Weighted Grades
Discussion and Quizzes	10%
Homework	10%
Laboratory	20%
Exams	60% (20% each exam)
Total	100%

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 a number of chapters that will be covered within the week.

Date	Module Topic	Deliverable (Discussion, Homework, Quizzes)	Monday Lab	Wednesday Lab
Week 1 6/20 – 6/23	Module 0: Introduction Module 1: Ch 1, Ch 2, Ch 3	HW 0: Set-up Canvas, Quiz 0: Syllabus Discussion 1, HW 1, Quiz 1	Introduction / Measurements	Math Practice
Week 2 6/26 – 6/30	Module 2: Ch 4, Ch 5, Ch 6	Discussion 2, HW 2, Quiz 2	Mystery Constellations	Exam 1
Week 3 7/3 – 7/7	Module 3: Ch 7, Ch 8, Ch 10	Discussion 3, HW 3, Quiz 3	NO LAB – 4 th of July	Modelling the Moon's Motions / Kepler's Laws
Week 4 7/10 – 7/14	Module 4: Ch 11, 12.1, Ch 13, Ch 14	Discussion 4, HW 4, Quiz 4	Scale of the Solar System	Exam 2
Week 5 7/17 – 7/21	Module 5: Ch 15, 16.1- 16.3, 17.1-17.3, 18.1- 18.2, 18.4, 21.1	Discussion 5, HW 5, Quiz 5	Chemical Fingerprinting	H-R Diagram
Week 6 7/24 – 7/28	Module 6: Ch. 22.1- 22.2, 22.4-22.5, 23.1- 23.2, 23.4-23.5	Discussion 6, HW 6	Sun Observation	Exam 3

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