

PHYS 1040: Introductory Astronomy Syllabus

Instructor

Dr. Leda Sox

Email

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Office

SER 207

Office Hours

Tuesdays 10 am-12 pm
SER 207

Prerequisites

Basic high school math

Lecture

T/TR 1:30-2:45 pm
ESLC 130

UTF

Hope Marks
Hope.h.marks@gmail.com

Recitation

TBA

USU Observatory

On the roof of the SER
building, (435)-797-2942

Course Overview

In this introductory astronomy course, we will survey the universe from the atomic to the cosmic level. During the course, we will study space as viewed from Earth, our solar system, the Sun, stellar evolution, galaxies, black holes and beyond! Our goal is to help you learn the fundamentals of astronomy and experience the universe as we know it today. This will include how scientists have discovered many amazing facts and how we continue to expand our boundaries of this knowledge. Since we will not delve into the complex mathematics of astronomy, your learning experience will be greatly enhanced if you can make time to read the relevant chapter sections prior to each class. After finishing this course, you should have a greater understanding of our planet, solar system, and the cosmos.

Required Text

Essential Cosmic Perspective, 8th Edition, Bennet, Donahue, Scheider and Voit
Hard copy or electronic version from homework site (see Homework section below for ordering information).

Resources

Class website: canvas.usu.edu

Our Canvas page will house all course materials, class announcements, exams and grades

Homework website: masteringastronomy.com

You will use MasteringAstronomy to complete all homework assignments for the semester

USU Observatory: physics.usu.edu/observatory/

Located on the roof of the SER building on the Logan-Main campus.

Call (435)-797-2942 before heading up to the observatory to make sure it will be open (can close due to weather and/or cloud cover).

Components of Course

Reading: You will need to read the corresponding textbook chapters (see Course Schedule) before you come to class. By coming to class with the reading done, you will know what questions and clarifications you can ask of me in lecture. The lecture will not stand alone, so to get a full understanding of the course material it is imperative that you stay up-to-date on reading.

Lecture: Attending lecture will be essential to your success in the course. In lecture, new material will be presented as well as problem-solving strategies. Lecture will also provide a time for group discussion and problem solving.

Recitation: These sessions will be conducted by our course's Undergraduate Teaching Fellow (info on the left). We will send out an online survey to determine the best time and location for the recitation during the first week of class. In these sessions, you will help you in your understanding of the material, with questions on assignments, and how to prepare for exams. Recitations will begin Monday, September 11th.

Homework: You will have 14 weekly homework (HW) assignments, using MasteringAstronomy.

There are 4 options for gaining access to MasteringAstronomy:

- 1) Hard copy of text book+MasteringAstronomy access code from the USU Bookstore. Cost: \$190
- 2) eText+MasteringAstronomy access code from the USU Bookstore. Cost: \$110
- 3) *eText+MasteringAstronomy access code direct from publisher (Pearson). Cost: \$96
- 4) *MasteringAstronomy access code direct from publisher (Pearson). Cost: \$63

(With this option you would only have access to MasteringAstronomy and have to buy a copy of the text—print or electronic—separately from Pearson or elsewhere.)

*You can purchase option 3 or 4 by following the registration steps below

To gain access to MasteringAstronomy through Canvas: Go to MasteringAstronomy Registration pdf in the Files tab on Canvas.

MasteringAstronomy HW assignments will be due each Wednesday at 11:59 pm starting Sept 6th, 2017. Due dates for each assignment can be found on the MasteringAstronomy site. No credit will be given for late assignments, however your 2 lowest HW scores will be dropped.

Exams: There will be four exams (3 hour exams+1 final exam) throughout the semester. The final will be mostly material from the final quarter of the course, with a small amount of comprehensive material covered throughout the semester. Tests will be administered in the USU Testing Center (ais.usu.edu/testing/). More information on how to schedule a time to take a test will be given closer to the exam date.

Observation Projects: These projects are an opportunity to use telescopes at the USU Observatory and to participate in night-sky viewing sessions where you will learn about the constellations, planets and other deep-space celestial phenomena. These will be conducted from the USU Observatory on the roof of the SER building (a map will be provided in class).

You will perform THREE observation projects during the fall semester:

- 1) Observing the night-time sky, stars and constellations by eye
- 2) Observing the Sun; sunspots and flares (using special telescopes only)
- 3) Viewing deep-space objects (binary stars, nebula, globular clusters, galaxies)

The due dates for these projects are given in the syllabus. Further details on the projects will be provided in class. The Observatory opening day will be announced in class. Regular observatory times are Monday through Thursday (weather permitting) hours TBA. Student instructors will guide you in your star gazing. You can call the USU Observatory (**435-797-2942**) prior to attending to make sure it will be open that night. You are strongly advised to perform your observing projects early in the term while the weather is still good.

Participation: On the first and last day of class, I will hand out a concept inventory for each student to take. Though this may seem like a “test” you will not be graded on correctness, but rather given participation credit (2%) for doing your best. Concept Inventories are tools used by educators to gather data on student learning. While you will not be graded on this assignment, it is important for you to do your best on each concept inventory in order for the department to gather meaningful data. The final 3% of your participation grade will be determined based on your attendance and involvement in lectures and recitations.

Evaluation

Grades will approximately breakdown as follows:

Homework:	20%
Exams:	60%
Projects:	15%
<u>Participation:</u>	<u>5%</u>
Total:	100%

Grading Structure

93-100 A
90-92 A –
87-89 B +
83-86 B
80-82 B –
77-79 C+
73-76 C
70-72 C –
67-69 D+
63-66 D
60-62 D –
<60 F

Rescheduling Exams

There are only two valid reasons for rescheduling one of the first three exams. Documentation must be provided for both reasons, as described below. The instructor must be notified before the exam.

- 1) **Medical.** You may reschedule an exam if you are too sick to take the exam. If you are too sick to take the exam, then you are sick enough to visit the infirmary and obtain a note explaining the extent of your illness. You must provide the instructor with such a note in order to reschedule an exam for medical reasons.
- 2) **University business.** If you are on travel for university business, then you may reschedule an exam. Again, you must provide written documentation from the sponsoring organization of your participation in said university business.

Getting Help with the Course

The recitation sessions will be the best time to ask questions about your assignments and exam preparation. There is a good chance that your classmates have similar questions, so it saves time to have a group discussion. Should you need individual help, stop by my office hours (posted at the top of this syllabus) or email me or the UTF to make an appointment. If you have a quick question that doesn't need to be answered in person, please feel free to email me or the UTF.

Inclusion in the Learning Environment

Physics and astronomy are not diverse fields and while science should be one of the most objective topics you study as a college student, that is not always the case. With that in mind, I will do my best to include examples and language that is welcoming to all races, genders, ethnicities, sexual orientations, ages, socioeconomic groups, religious affiliations, and abilities. As the instructor, it is my duty to assure that all students in the course feel acknowledged and supported. Should you have suggestions or concerns, I encourage feedback on how I can make the course more relevant to students from diverse backgrounds. As students, it is your duty to both respect your fellow students' ideas, opinions, and backgrounds and actively participate in class so your voice is heard. Although the scholarly field of astronomy is lacking in diversity, it is important to remember that all humans have and will continue to look up at the sky and participate in astronomy. The ease with which most people have in viewing and learning about the cosmos makes astronomy one of the most accessible scientific fields! Please note that the Disability Resource Center is also at your disposal, information for the DRC is given below.

Disability Resource Center

Students with ADA-documented physical, sensory, emotional or medical impairments may be eligible for reasonable accommodations. Veterans may also be eligible for services. All accommodations are coordinated through the Disability Resource Center (DRC) in Room 101 of the University Inn, (435) 797-2444. Please contact the DRC as early in the semester as possible. Alternate format materials (Braille, large print, digital, or audio) are available with advance notice.

Additional Fee

There is a \$36 fee for this class. It covers maintenance and supplies for the Physics Department Observatory. (Note: some scholarships will not pay for this fee, even though they pay full tuition costs. Scholarship students have been dropped from this class without notice for not paying the fee.)

Honor Code

The honor code will be strictly enforced in this course. Any suspected violations of the honor code will be promptly reported to the honor system. For more information, please visit: <http://www.usu.edu/policies/PDF/Acad-Integrity.pdf>.

Course Schedule

Week of	Monday (Recitation)	Tuesday (Lecture)	Wednesday (HW due at 11:59 pm)	Thursday (Lecture)
28 Aug	--	CH 1	--	CH 2
04 Sept	NO CLASS (LABOR DAY)	CH 3, 4	HW 1	CH 4
11 Sept	Recitation	CH 4	HW 2	CH 5
18 Sept	Exam Review: CH 1-5	CH 5	HW 3	EXAM 1: CH 1-5
25 Sept	Recitation	CH 6, 7	HW 4	CH 7
02 Oct	Recitation	CH 7, 8, Project 1 Due	HW 5	CH 9
09 Oct	Recitation	CH 9, 10	HW 6	CH 10
16 Oct	Exam Review: CH 6-10	EXAM 2: CH 6-10	HW 7	NO CLASS (Friday schedule)
23 Oct	Recitation	CH 11, 12, Project 2 Due	HW 8	CH 13
30 Oct	Recitation	CH 13, 14	HW 9	CH 14
06 Nov	Exam Review: CH 11-14	CH 15	HW 10	EXAM 3: CH 11-14
13 Nov	Recitation	CH 15	HW 11	CH 16
20 Nov	Recitation	CH 16	HW 12	NO CLASS (Thanksgiving)
27 Nov	Recitation	CH 17, Project 3 Due	HW 13	CH 17
04 Dec	Recitation	CH 18	HW 14	CH 18, 19
11 Dec	FINAL EXAM: CH 15-19 + some comprehensive material (CH 1-14)			