

ASTR 250 Fundamentals of Astronomy, Fall 2020

MWF 10-10:50 AM via Zoom (for now)

Prof. Ann Zabludoff (Instructor), Ms. Ragadeepika Pucha (Teaching Assistant)

Office Hours: T/Th at 11 am (Pucha) via Zoom, TBD (Zabludoff) in-person, outside Steward Observatory

This is an introductory course in astronomy and astrophysics for freshman astronomy majors and other science majors with strong interests in astronomy, physics, and mathematics. The class covers most aspects of astronomy, including stars, galaxies, and cosmology, but with a more rigorous physical and mathematical treatment than in a General Education Natural Science class. The course focuses on the application of mathematical and physical principles to astronomical problems—so there will be lots of problem sets handed out as homework assignments. The emphasis of the course is on understanding, not on memorization.

Background

Prerequisites: MATH 129 (Calc II) and PHYS 141 or 161H.

You should be comfortable with basic algebra, trigonometry, calculus, vectors, and scientific notation. The development of basic physical concepts as they relate to the detection and workings of astronomical objects will be a basic part of the course. You should have a calculator at your disposal (one that does powers, roots, and trigonometric functions). Please seek help when you encounter a concept that you do not understand.

Evaluation

Your grade in this course will depend on your performance on the problem sets (40% in total), midterm exam (20%), the final exam (40%), and, in the case of a borderline grade, your class participation. The exams will consist of multiple-choice questions, short written essays, and/or mathematical problems. Your worst homework will be discarded.

COVID-Related Policies

This class is scheduled to be taught in the FLEX IN-PERSON modality.

We will be meeting remotely until in-person meetings may commence. For now, we will meet via Zoom for live lectures and discussions.

When the COVID-19 situation permits meeting on campus, class will meet in GITT 201.

Face coverings are required in our classroom and when meeting for in-person office hours: Per UArizona's Administrative Directive, face coverings that cover the nose, mouth, and chin are required to be worn in all learning spaces at the University of Arizona (e.g., in classrooms, laboratories and studios). Any student who violates this directive will be asked to immediately leave

the learning space, and will be allowed to return only when they are wearing a face covering. Subsequent episodes of noncompliance will result in a Student Code of Conduct complaint being filed with the Dean of Students Office, which may result in sanctions being applied. The student will not be able to return to the learning space until the matter is resolved.

Physical distancing is required in our classroom and when meeting for in-person office hours: We will respect CDC guidelines, including restricted seating to increase physical distancing and appropriately-worn face coverings.

The Disability Resource Center is available to explore face coverings and accessibility considerations if you believe that your disability or medical condition precludes you from utilizing any face covering or mask option. DRC will explore the range of potential options as well as remote course offerings. Should DRC determine an accommodation to this directive is reasonable, DRC will communicate this accommodation with your instructor.

If you feel sick, or may have been in contact with someone who is infectious, stay home. Except for seeking medical care, avoid contact with others and do not travel. Notify your instructors if you will be missing an in person or online course. Campus Health is testing for COVID-19. Please call (520) 621-9202 before you visit in person. Visit the UArizona COVID-19 page for regular updates.

If you have questions about your academic progress this semester, or your chosen degree program, please note that advisors at the Advising Resource Center can guide you toward university resources to help you succeed.

If you are experiencing unexpected barriers to your success in your courses, please note the Dean of Students Office is a central support resource for all students and may be helpful. The Dean of Students Office can be reached at 520-621-2057 or DOS-deanofstudents@email.arizona.edu.

If you are facing physical or mental health challenges this semester, please note that Campus Health provides quality medical and mental health care. For medical appointments, call (520-621-9202. For After Hours care, call (520) 570-7898. For the Counseling & Psych Services (CAPS) 24/7 hotline, call (520) 621-3334.

For this class you will need daily access to the following hardware: laptop or web-enabled device with webcam and microphone; regular access to reliable internet signal.

If pandemic conditions warrant, the University may require that we return to remote operations. If that is the case, we will notify you by D2L Announcement and email that we are moving to remote operations.

After the Thanksgiving holiday, we are scheduled to move to remote teaching.

For lecture recordings, which are used at the discretion of the instructor, students must access content in D2L only. Students may not modify content or re-use content for any purpose other than personal educational reasons. All recordings are subject to government and university regulations. Therefore, students accessing unauthorized recordings or using them in a manner inconsistent with UArizona values and educational policies are subject to suspension or civil action.

General Policies

Do your own work. Modern science is collaborative, and people learn from talking to each other. Feel free to talk to the instructor, TA, or other students about homework assignments. But the work you turn in must be your own. The instructor subscribes to the University's Code of Academic Integrity. The Code prohibits all forms of academic dishonesty, including cheating, plagiarism, and facilitating dishonesty by others. The repercussions for those found guilty of violating the Code will include loss of credit for the work and may include failure of the course or more extreme measures.

Attendance and participation in class are important—especially as the exam and homework material will be drawn from the lectures, and only supplemented from the textbook. Students who are regularly absent will be administratively dropped from the course. You are strongly encouraged to participate in class by asking questions.

Late Homework. No credit will be given for late homework. Because we want to be fair to those that turn in work on time, we will not accept late work. There is an absolute deadline for homework.

Missed Tests. No makeup tests will be administered. The exams are already scheduled and posted on the class schedule. If you know that you will miss an test, you must make arrangements (for valid reasons) for an oral exam at a time and date *prior* to the written test. Missing the midterm exam is an automatic loss of 20% of your course grade. Missing the final is a loss of 40%.

Grading. You have one week from the time an assignment or exam is returned to challenge any perceived errors. Although rare, there are occasions when grading errors occur, and you should review your returned work. The final course grades will be on a curve, but you can be assured that if you have > 90% of the total number of points available you will receive an A, 80 to 90% at least a B, 70 to 80% at least a C.

Students with Disabilities. If you anticipate barriers related to the format or requirements of this course, please meet with the instructor so that we can discuss ways to ensure your full participation in the course. If you determine that disability-related accommodations are necessary, please register with Disability Resources (621-3268; drc.arizona.edu) and notify the instructor of your eligibility for reasonable accommodations. We can then plan how best to coordinate your accommodations.

Learning Outcomes. Upon successful completion of the course, students will be able to apply basic physics concepts to some astronomy problems and to understand the physical scales, masses, lifetimes, and other properties associated with a wide variety of astrophysical phenomena.

Tutoring

The UA Astronomy Department's free [ATOMM](#): Astronomy Tutoring for Majors and Minors program will meet multiple times per week via Zoom. Also, check out the [TIMESTEP](#) program, a bi-weekly discussion group about topics of professional development for UA undergraduates in STEM fields. And, we have the world's best [Astronomy Club](#)!

Textbook

Our recommended textbook is *Foundations of Astrophysics* by Ryden and Peterson. A (somewhat cheaper) Kindle electronic version will be released on Aug 27. A hard- or soft-cover version can be obtained now through [Amazon](#).

A free, on-line reference for basic Gen Ed-level background is [Astronomy](#).

