

ASTR 250 Fundamentals of Astronomy Spring 2021

Lecture Meeting Time & Place: MWF 11:00-11:50 AM. Henry Koffler Bldg, Rm 218
At the beginning of the semester, we will start 'Live Online'. More information below and in class.

Professor David Sand

Office: Office hours will be on Zoom throughout the semester even if we start meeting in person.

<https://arizona.zoom.us/j/9173042966>

If we ever meet in person, they will also occur in N506. To be determined.

Email: dsand@email.arizona.edu

Office Hours: Tu/Th 11:00AM-12PM or by appointment.

If there is more demand, further times will be added.

TA: Michael Hammer

Office: Office hours will be on Zoom throughout the semester; to be provided later.

Email: mhammer@email.arizona.edu

Office Hours: W 2:00-3:00pm, Th 3-5pm

Final Exam The final exam will be held on May 10, 2021 at 10:30AM – 12:30PM. More information below.

Required Textbook: For this course we will use "Foundations of Astrophysics" by Barbara Ryden & Bradley Peterson. You will be assigned regular readings and assignments from the textbook which you are expected to do prior to coming to lectures. Other reading assignments/handouts may be distributed throughout the semester.

Website: We will make regular use of D2L. It is your responsibility to check D2L regularly for course notifications, updates and assignments. Live Lectures and recordings, homework, additional materials....everything will be posted there. Here is the site:

<https://d2l.arizona.edu/d2l/home/994342>

We will make use of the calendar tool for the course, and this is especially important for getting the Zoom link for the Live Online lectures.

Course Description and Topics Covered: We will study objects and phenomena relating to the solar system, extrasolar planets, stars, galaxies and cosmology. We will introduce basic concepts used in physics, chemistry, geology and biology needed to better study these objects, and related astrophysics concepts. We will make use of mathematical tools at the level of calculus to gain insight into the physics relevant to astrophysics. If you would like a larger list of topics to be covered in this course, consult the chapter headings of the "Foundations of Astrophysics" textbook and course schedule.

Course Learning Outcomes

Upon completion of this course, students will be able to:

- Understand basic physics concepts and apply them to astronomy problems.
- Understand some concepts related to observational astronomy and its history.
- To gain knowledge of the physical scales, masses, sizes, lifetimes and other properties associated with a wide variety of astronomical objects and phenomena
- Take higher level astronomy courses.

These learning outcomes will be met through attendance of lectures, homework and writing assignments, in-class activities and in-class exams.

Grading: Your course grade will be based on –

1. Homework (Problem Sets & Writing assignments; lowest score dropped): 50%
2. Midterms (lowest score dropped): 30%
3. Final exam: 20%

The class will not be curved. Grades are absolute, unless things go wildly wrong. The correspondence between final percentages and letter grades will be: **A: 85-100%; B: 70-85%; C: 50-70%; D: 30-50%; E: 0-30%.** Again, I have the right to change this if the grades are on average lower than I expect.

Homework: There will be regular homework assignments (approximately 8—10 in total). Please feel free to collaborate but in the end you must do your own work. Assignments must be turned in prior to the due date, and will likely be uploaded online, at least at the start of the semester. If we begin meeting in person, then of course you can turn in hard copies to me during class. Late assignments, or assignments submitted incorrectly, will not be accepted. If there is a true emergency, then please let me know as soon as possible. To accommodate the inevitable problems with turning in homework on time, I will drop the lowest homework score for your final grade.

Exams: There will be three in-class midterms, and one final exam. All exams will (likely) be closed notes and closed book. There will not be makeup exams in this course. To account for inevitable problems with making it to every exam, we will drop the lowest midterm score at the end of the semester. An unexcused absence from the final will result in an E for the entire course.

Course Schedule & Reading: A semi-definitive course schedule is now posted on the D2L web site. Note that the midterm dates are on February 19, March 26, and April 30. This schedule will be updated as the term goes by, depending on whether we fall behind or not. I will try not to change the midterm dates. The relevant chapters and sections that will be lectured on should be read before class. You will be responsible for the material at that time.

Deadlines: We will accept no late assignments. Much of the grading in this class allows you to drop your lowest grade for this reason (and others), so that illness, religious holidays, computer malfunctions, family emergencies, zombie attacks, etc are not a good reason to submit late work. Do not request that a deadline be adjusted unless your issue is serious enough that you have a valid Dean's excuse. Exceptions will be made for illness this term.

Make-Up Exam Policy: We do not give make-up exams. Instead, we will give 3 midterm exams and we will drop the lowest score (see above), whether it is a zero due to an unavoidable absence or a lower score due to a bad day! Please take every exam seriously though, given the nature of the pandemic, you might have to miss an exam, and this is already built into the course. Please note that the final exam is on May 10, make your plans accordingly. You are required to take the exam during the 10:30AM-12:30pm window on May 10.

In-Person:

This class is scheduled to be taught in the IN-PERSON modality. Do I know what will happen this term? No, I do not. But there is a chance that towards the end of the term we will be meeting in person as scheduled for the class. If that happens, I will do my best to accommodate everyone, even those who do not wish to meet in person. At this time I intend to record all lectures, and to have homework and other assignments turned in through the D2L web site.

- **Meeting Times:** We will be meeting remotely in LIVE ONLINE format until the University notifies us that in-person meetings may commence. We will meet via Zoom. You must access the Zoom link via the calendar tool on D2L. All exams and writing assignments will be done via D2L for now.
 - When the COVID-19 situation permits teaching on campus, we will be meeting MWF 11:00-11:50 AM. Henry Koffler Bldg, Rm 218.
- **Face coverings are required in our classroom:** 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.
 - 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.
- **Physical distancing is required in our classroom:** During our in-person class meetings, we will respect CDC guidelines, including restricted seating to increase physical distancing. Any student who does not maintain physical distance from others may be asked to immediately leave the learning space. Noncompliance may result in a Student Code of Conduct complaint being filed with the Dean of Students Office, which may result in sanctions being applied.
- **Classroom attendance:**
 - 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 or you will miss an assignment deadline.
 - Non-attendance for any reason does not guarantee an automatic extension of due date or rescheduling of examinations. Please communicate and coordinate any request directly with your instructor.
 - 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.
 - We will, by necessity, be lenient about illness and class assignments this term. DO NOT game the system in this harrowing time by claiming illness when you are not.
- **Academic advising:** 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.
- **Life challenges:** 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.

- **Physical and mental-health challenges:** 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.
- **Exams:** There are three midterm exams: Feb 19, March 26, and April 30. They will all be on D2L, and the open period will coincide with our normal class time on those days. Even if we are meeting In Person, the exams will be on D2L. I will be online on Zoom (and in person, if possible) during the exam to answer any questions that come up. The FINAL EXAM will be on May 10 10:30—12:30. Again, the final will be on D2L so that all students have a level playing field, but I will be available to answer any questions.
- **Equipment and software requirements:** For this class you will need access to the following hardware: a laptop or web enabled device with a microphone (and preferably webcam); regular access to reliable internet signal, especially during lecture and exam periods; ability to download and run the following types of software: web browser, PDF view (e.g. Adobe Acrobat), etc. There should be nothing out of the ordinary here.
- **Staying current:** Work hard! Do your reading before each class. Keep an eye on the course schedule and HW. Do them early. Staying on top of your course work will be extra important this term.
- **Remain flexible:** 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.
- **Class Recordings:** 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 UA Arizona values and educational policies are subject to suspension or civil action. What does this mean? You cannot create memes or make fun of the class or recording on social media. Just be respectful during these trying times.

Classroom Behavior Policy To foster a positive learning environment, students and instructors have a shared responsibility. We want a safe, welcoming, and inclusive environment where all of us feel comfortable with each other and where we can challenge ourselves to succeed. To that end, our focus is on the tasks at hand and not on extraneous activities (e.g., texting, chatting, reading a newspaper, making phone calls, web surfing, etc.).

Students are asked to refrain from disruptive conversations with people sitting around them during lecture or online. Students observed engaging in disruptive activity will be asked to cease this behavior. Those who continue to disrupt the class will be asked to leave lecture or discussion and may be reported to the Dean of Students.

Some learning styles are best served by using personal electronics, such as laptops and iPads. It is acceptable to use these devices for note taking only in this classroom. Students using electronic devices for purposes other than note taking will be asked to leave the lecture.

Threatening Behavior Policy The UA Threatening Behavior by Students Policy prohibits threats of physical harm to any member of the University community, including to oneself. See <http://policy.arizona.edu/education-and-student-affairs/threatening-behavior-students>.

Accessibility and Accommodations Our goal in this classroom is that learning experiences be as accessible as possible. If you anticipate or experience physical or academic barriers based on disability, please let me know immediately so that we can discuss options. You are also welcome to contact the Disability Resource Center (520-621-3268) to establish reasonable accommodations. For additional information on the Disability Resource Center and reasonable accommodations, please visit <http://drc.arizona.edu>.

If you have reasonable accommodations, please plan to meet with me by appointment or during office hours to discuss accommodations and how my course requirements and activities may impact your ability to fully participate.

Please be aware that the accessible table and chairs in this room should remain available for students who find that standard classroom seating is not usable.

Code of Academic Integrity Students are encouraged to share intellectual views and discuss freely the principles and applications of course materials. However, graded work/exercises must be the product of independent effort unless otherwise instructed. Students are expected to adhere to the UA Code of Academic Integrity as described in the UA General Catalog. See: <http://deanofstudents.arizona.edu/academic-integrity/students/academic-integrity>.

UA Nondiscrimination and Anti-harassment Policy The University is committed to creating and maintaining an environment free of discrimination; see <http://policy.arizona.edu/human-resources/nondiscrimination-and-anti-harassment-policy>

Subject to Change Statement. Information contained in the course syllabus, other than the grade and absence policy, maybe subject to change with advance notice, as deemed appropriate by the instructor.