

**ASTR 203 Stars**  
**Tier 2 Natural Sciences**

**Lecture Meeting Time & Place:** TuTh 2:00-3:15 PM. Steward Observatory N210  
This class is In Person! The only exception will be if the instructor is sick, but I have been vaccinated.

**Professor David Sand**

**Office:** Steward Observatory N506

**Email:** [dsand@as.arizona.edu](mailto:dsand@as.arizona.edu)

**Office Hours:** Tu/Th 10:00-11AM or by appointment.

At these same times, I will also be on zoom in case you feel more comfortable with that:  
<https://arizona.zoom.us/j/9173042966>

**TA:** Raga Pucha

**Office:** Office hours will be on Zoom throughout the semester

<https://arizona.zoom.us/j/98590990670>

**Email:** [rpucha@email.arizona.edu](mailto:rpucha@email.arizona.edu)

**Office Hours:** MF 4-5pm

**Covid-19** Please see the University of Arizona Covid-19 Response page ([covid19.arizona.edu](https://covid19.arizona.edu)) for mask requirement details.

**Final Exam** The final exam will be held on December 13, 2021 at 3:30PM – 5:30PM

**Required Textbook:** For this course we will use “21<sup>st</sup> Century Astronomy, 6<sup>th</sup> Edition,” by Kay, Palen & Blumenthal. We are doing ‘inclusive access’, which is described in the next paragraph.

Course materials are being delivered digitally via D2L through the Inclusive Access program. Please access the material through D2L on the first day of class to make sure that there are no issues with delivery so any problems can be addressed quickly.

You automatically have access to the course materials FREE through the add/drop deadline.

You **must** take action (even if you have not accessed the materials) to opt-out if you do not wish to pay for the materials, and choose to source the content independently. **The deadline to opt-out is the add/drop deadline.**

If you do not opt-out and choose to retain your access, the cost of the digital course materials will appear on your September Bursars account.

Please refer to the Inclusive Access FAQs at <https://shop.arizona.edu/textbooks/Inclusive.asp> for additional information.

**ABCD Response Cards:** Please bring the ABCD response cards with you to class every lecture. Copies are provided on the first day of class, and you can print a color copy from the course web site.

**Website:** We will make regular use of D2L. It is your responsibility to check D2L regularly for course notifications, updates and assignments. Everything will be posted there. Here is the site:

<https://d2l.arizona.edu/d2l/home/1059463>

We will make use of the calendar tool for the course.

**Course Description and Topics Covered:** In this course we will focus on the role of stars in the universe and in our daily lives. We will learn where stars come from, how they change with time, and how they die. Along the way we will examine the most important physical processes that govern the

behavior of these astronomical objects. We will supplement the study of stars with readings of science news articles that will be the subject of regular in class writing assignments. Topics to be covered will include:

1. Method of Scientific Inquiry
2. Order of Magnitude Reasoning
3. Scales in the Universe
4. Motions on the Sky
5. Star Formation
6. Stellar Evolution
7. Supernovae
8. Black holes
9. Special and General Relativity
10. Planet Formation
11. Exoplanets

**Grading:** Your course grade will be based on –

1. Homework and Online Quizzes (drop lowest two scores): 15%
2. In class activities/writing (drop lowest score): 25%
3. In class tests (drop lowest score): 40%
4. 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%.**

**Course Schedule & Reading:** A semi-definitive course schedule is now posted on the D2L web site. Note that the midterm dates are on September 23, October 26, and December 2. 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 covid-related 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, 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 December 13, make your plans accordingly. You are required to take the exam during the 3:30-5:30pm window on December 13.

### **Course Learning Outcomes**

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

- Understand the nature and application of physical science
- Apply ideas and processes beyond the classroom
- Recognize the complexity of many scientific issues
- Speak and write about scientific knowledge
- Appreciate the relative scale of objects, rates of change, linear and nonlinear growth

- Critically analyze and interpret data and results presented in tables, graphs and charts as well as perform appropriate mathematical calculations
- Read and understand scientific literature from popular sources such as magazines and newspapers

**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** At the University of Arizona, we strive to make learning experiences as accessible as possible. If you anticipate or experience barriers based on disability or pregnancy, please contact the Disability Resource Center (520-621-3268, <https://drc.arizona.edu>) to establish reasonable accommodations.

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, may be subject to change with advance notice, as deemed appropriate by the instructor.