



## ASTR 1308 ELEMENTARY ASTRONOMY OF STARS AND GALAXIES

Fall 2020, CRN 10945, TR 1:30 – 2:50 PM, HSSN 217

**INSTRUCTOR:** Jorge A. López

**COORDINATES:** Office PSCI 311, 747-7528, [jorgelopez@utep.edu](mailto:jorgelopez@utep.edu)

**OFFICE HOURS:** In my office (one person at a time) or via Blackboard Collaborate Ultra.

- Without appointment: TR 11:00 AM - 1:00 PM
- With appointment: MW 1:00 - 4:00

### COURSE DESCRIPTION

ASTR 1308 Elementary Astronomy of Stars and Galaxies covers the Sun, stellar properties, galaxies, and cosmology. An additional goal is the development of the students' critical thinking skills in a scientific context.

The course corresponds to Common Course Number PHYS 1312. It counts as 3 credit hours, its prerequisite is ASTR 1307, but may be taken independently of ASTR 1307 with instructor approval. May not be counted toward a major or minor in physics.

### LEARNING OUTCOMES

At the end of this course, students will be able to understand

- the composition of the Sun and its atmosphere,
- fusion, energy, conservation of energy, and transformation of energy,
- star luminosity and apparent brightness,
- distribution of stellar masses, distances, temperatures,
- interstellar matter, molecular clouds and star formation,
- star evolution, main sequence, death of stars, “planetary nebulae”, creation of chemical elements, white dwarfs,
- the key ideas of general relativity, black holes,
- the Milky Way, location of the solar system, main components of the Galaxy,
- galaxies, quasars,
- Big Bang, age of the universe, rate of expansion of the universe, dark energy.

## TEXTBOOK AND OTHER MATERIALS

- **Astronomy**, Fraknoi, Morrison and Wolff. This is an *OpenStax* book and it is available for free at <https://openstax.org/details/books/astronomy>.
- Homework service **The Expert TA**, this is a very inexpensive service (\$35.00) that accompanies the free book. Please register here <http://goeta.link/USQ45TX-E13EC9-2F9>.
- **iClicker**. Register at <https://www.iclicker.com/> and sign up for ASTR 1308. Login into your Blackboard and click on the icon to launch a special instance of iClicker, then log in or create a new iClicker account if you don't already have one. Signing into iClicker through this link will synchronize your iClicker account with your Blackboard account.  **iClicker**
- Scientific calculator.

## COURSE OVERVIEW

- Ch. 15 The Sun: A Garden-Variety Star.
- Ch. 16 The Sun: A Nuclear Powerhouse.
- Ch. 17 Analyzing Starlight.
- Ch. 18 The Stars: A Celestial Census.
- Ch. 19 Celestial Distances.
- Ch. 20 Between Stars: Gas & Dust in Space
- Ch. 21 The Birth of Stars and the Discovery of Planets outside the Solar System
- Ch. 22 Stars from Adolescence to Old Age
- Ch. 23 The Death of Stars
- Ch. 24 Black Holes and Curved Spacetime
- Ch. 25 The Milky Way Galaxy
- Ch. 26 Galaxies
- Ch. 27 Galaxies, Quasars, Black Holes
- Ch. 28 Evolution and Distribution of Galaxies
- Ch. 29 The Big Bang

## COURSE EVALUATION

- |                               |     |                                 |     |
|-------------------------------|-----|---------------------------------|-----|
| • Weekly quizzes              | 65% | • <i>The Expert TA</i> homework | 5%  |
| • In-class iClicker questions | 10% | • Final exam                    | 20% |

**QUIZZES** are of 20 min of duration, given in class every Thursday in the last 20 minutes of class.

**There will be no makeup quizzes.** Instead the lowest two test grades will be dropped. If you miss more than two quizzes and have proper justification (written evidence of medical urgencies, death in family, military duty, etc.) can arrange a re-test. Please do not request make up quizzes or send absence justifications unless you have missed more than two quizzes.

**HOMEWORK:** *The Expert TA* homework problems will be assigned weekly, and must be completed within the following week; there will be no time extensions on missed homeworks.

**IN-CLASS ICLICKER QUESTIONS.** We will use the iClicker response system.

**FINAL EXAM** is comprehensive covering chapters 15 - 29 of Astronomy, the OpenStax book. At present, arrangements are being made to have all of the students take the exam in person, expect more information about this later during the semester.

## CLASS PARTICIPATION

This is a hybrid class with up to **16 students allowed in person** in the classroom and the rest online.

- **The first class will be 100% online.**

- In-class participation
  - Please send a message to [jorgelopez@utep.edu](mailto:jorgelopez@utep.edu) to request in-class participation.
  - If more than 16 students request to participate in person, a method to rotate students will be implemented to allow the attendance of all interested students.
  - If selected to be in-class and do not to attend, please notify instructor to allow other student to take you place; you will be placed at the end of the waiting queue.
  - Students must maintain 6 feet of distance while coming and exiting the classroom, and must use face covering at all times during class.
- Online participation
  - We will use Blackboard Collaborate Ultra for online communication. See <https://help.blackboard.com/Collaborate/Ultra/Participant> for instructions.
  - Netiquette: please follow these guidelines while using online communication:
    - All communication should be polite. Mute your microphone unless you need to ask a question, and block your video unless you want to share an image.
    - Blackboard is not a public internet venue; all postings are private and confidential, and intended for classmates and professor only. Please do not paste documents on publicly accessible website, blog, or other spaces.
    - Online sessions will be recorded for you to review them later.
    - Your location will be monitored through the IP address from which you log in to Blackboard, ExpertTA and iClicker. Please notify the instructor if you are not in El Paso, and be prepared to show evidence of location. Also avoid using a VPN or justify its use.
  - Technology requirements
    - You will need a computer, laptop or mobile device with a camera and microphone, access to Internet, Microsoft Office (Word and Powerpoint) and Adobe Acrobat Reader. Microsoft Office programs can be accessed for free via UTEP's [Microsoft Office 365](#).
    - If you encounter technical difficulties please contact the UTEP [Help Desk](#).

#### WHAT DO YOU NEED TO DO TO BE SUCCESSFUL IN THE COURSE

- The lecture material to be used in class is available in Blackboard ahead of time, download it and study before class.
- Participate in class, ask questions and answer the iClicker questions.
- Do not miss the Thursday quizzes. Old quizzes are available in Blackboard.
- Complete the homework early in the week, it may help you in the Thursday quizzes.
- Keep summaries of the material covered, this is very helpful to study for the final exam. Summaries can be written as Questions/Answers in 3x5 cards.
- Form a study group with one or more peers, and study together. Practice by playing at answering questions.

**OFFICIAL STATEMENTS**

<p><b>Course Activities</b></p>	<p>Class will be composed of two 1.5-hour lectures with the instructor.</p>
<p><b>Excused absences and/or course drop policy</b></p>	<p>According to UTEP Curriculum and Classroom Policies, “When, in the judgment of the instructor, a student has been absent to such a degree as to impair his or her status relative to credit for the course, the instructor may drop the student from the class with a grade of “W” before the course drop deadline and with a grade of “F” after the course drop deadline.” See academic regulations in the UTEP Undergraduate Catalog for a list of excuse absences. Therefore, if I find that, due to non-performance in the course, you are at risk of failing, I will drop you from the course. I will provide 24 hours advance notice via email.</p>
<p><b>Incomplete grade policy</b></p>	<p>Incomplete grades may be requested only in exceptional circumstances after you have completed at least half of the course requirements. Talk to me immediately if you believe an incomplete is warranted. If granted, we will establish a contract of work to be completed with deadlines.</p>
<p><b>Accommodations policy</b></p>	<p>The University is committed to providing reasonable accommodations and auxiliary services to students, staff, faculty, job applicants, applicants for admissions, and other beneficiaries of University programs, services and activities with documented disabilities in order to provide them with equal opportunities to participate in programs, services, and activities in compliance with sections 503 and 504 of the Rehabilitation Act of 1973, as amended, and the Americans with Disabilities Act (ADA) of 1990 and the Americans with Disabilities Act Amendments Act (ADAAA) of 2008. Reasonable accommodations will be made unless it is determined that doing so would cause undue hardship on the University. Students requesting an accommodation based on a disability must register with the <a href="#">UTEP Center for Accommodations and Support Services</a> (CASS). Contact the Center for Accommodations and Support Services at 915-747-5148, or email them at <a href="mailto:cass@utep.edu">cass@utep.edu</a>, or apply for accommodations online via the <a href="#">CASS portal</a>.</p>
<p><b>Covid-19 accommodations</b></p>	<p>Students are not permitted on campus when they have a positive COVID-19 test, exposure or symptoms. If you are not permitted on campus, you should contact me as soon as possible so we can arrange necessary and appropriate accommodations.</p> <p>Students who are considered high risk according to CDC guidelines and/or those who live with individuals who are considered high risk may contact <a href="#">Center for Accommodations and Support Services</a> (CASS) to discuss temporary accommodations for on-campus courses and activities.</p>
<p><b>Covid-19 precautions</b></p>	<p>You must STAY AT HOME and REPORT if you (1) have been diagnosed with COVID-19, (2) are experiencing COVID-19 symptoms, or (3) have had recent contact with a person who has received a positive coronavirus test. Reports should be made at <a href="http://screening.utep.edu">screening.utep.edu</a>. If you know of anyone who should report any of these three criteria, you should encourage them to report. If the individual cannot report, you can report on their behalf by sending an email to <a href="mailto:COVIDaction@utep.edu">COVIDaction@utep.edu</a>.</p> <p>For each day that you attend campus—for any reason—you must complete the questions on the UTEP screening website (<a href="http://screening.utep.edu">screening.utep.edu</a>) prior to arriving on campus. The website will verify if you are permitted to come to campus. Under no circumstances should anyone come to class when feeling ill or exhibiting any of the known COVID-19 symptoms. If you are feeling unwell, please let me know as soon as possible, and alternative instruction will be provided. Students are advised to minimize the number of encounters with others to avoid infection.</p>

	<p>Wear face coverings when in common areas of campus or when others are present. You must wear a face covering over your nose and mouth at all times in this class. If you choose not to wear a face covering, you may not enter the classroom. If you remove your face covering, you will be asked to put it on or leave the classroom. Students who refuse to wear a face covering and follow preventive COVID-19 guidelines will be dismissed from the class and will be subject to disciplinary action according to Section 1.2.3 <i>Health and Safety</i> and Section 1.2.2.5 <i>Disruptions</i> in the UTEP Handbook of Operating Procedures.</p> <p>Please note that if COVID-19 conditions deteriorate in the City of El Paso, all course and lab activities may be transitioned to remote delivery</p>
<b>Attendance Policy</b>	Attendance is not taken into account for the grade, but not attending the class will result in missing quizzes and iClicker questions.
<b>Academic Integrity Policy</b>	Any student who commits an act of academic dishonesty is subject to discipline. Academic dishonesty includes, but is not limited to, cheating, plagiarism, collusion, the submission for credit of any work or materials that are attributable in whole or in part to another person, taking an examination for another person, and any act designed to give unfair advantage to a student or the attempt to commit such acts. Proven violations of the detailed regulations, as printed in the Handbook of Operating Procedures, and available on the homepage of the Dean of Students at <a href="http://www.utep.edu/dos">www.utep.edu/dos</a> , may result in sanctions ranging from disciplinary probation, to a failing grade on the work in question, to a failing grade in the course, to suspension or dismissal, among others.
<b>Civility Statement</b>	During class, please do not eat, sleep or read newspapers or any other material not related to class. Turn off cell phones, ipods, and any other devices which might disturb class. Use computers and tablets only for class purposes, and do not talk excessively (definition of "excessive" is up to the instructor)
<b>Disability Statement</b>	If you have a disability and need classroom accommodations, please contact The Center for Accommodations and Support Services (CASS) at 747-5148, or by email to <a href="mailto:cass@utep.edu">cass@utep.edu</a> , or visit their office located in UTEP Union East, Room 106. For additional information, please visit the CASS website at <a href="http://www.sa.utep.edu/cass">www.sa.utep.edu/cass</a> .
<b>Military Statement</b>	Students being called for military duties need to contact the instructor as soon as possible.
<b>Drop deadline</b>	The College of Science will not approve any drop requests after the deadline date.
<b>Class recordings</b>	The use of recordings will enable you to have access to class lectures, group discussions, and so on in the event you miss a synchronous or in-person class meeting due to illness or other extenuating circumstance. Our use of such technology is governed by the Federal Educational Rights and Privacy Act (FERPA) and UTEP's acceptable-use policy. A recording of class sessions will be kept and stored by UTEP, in accordance with FERPA and UTEP policies. Your instructor will not share the recordings of your class activities outside of course participants, which include your fellow students, teaching assistants, or graduate assistants, and any guest faculty or community-based learning partners with whom we may engage during a class session. You may not share recordings outside of this course. Doing so may result in disciplinary action.

**TENTATIVE CALENDAR**

<b>WEEK</b>	<b>CONTENT</b>	<b>OBSERVATIONS</b>	<b>QUIZ</b>
<b>8/24-28</b>	<b>Intro + Ch. 15</b>		<b>No quiz on first week</b>
<b>8/31-4</b>	<b>Ch. 15-16</b>		<b>1: Ch. 15</b>
<b>9/7-11</b>	<b>Ch. 16-17</b>	<b>Monday is a holiday</b>	<b>2: Ch. 16</b>
<b>9/14-18</b>	<b>Ch. 18-19</b>		<b>3: Ch. 17</b>
<b>9/21-25</b>	<b>Ch. 19-20</b>		<b>4: Ch. 18</b>
<b>9/28-10/2</b>	<b>Ch. 21</b>		<b>5: Ch. 19</b>
<b>10/5-9</b>	<b>Ch. 22</b>		<b>6: Ch. 20</b>
<b>10/12-16</b>	<b>Ch. 23</b>		<b>7: Ch. 21</b>
<b>10/19-23</b>	<b>Ch. 24</b>		<b>8: Ch. 22</b>
<b>10/26-30</b>	<b>Ch. 25</b>	<b>Drop deadline: 10/30</b>	<b>9: Ch. 23</b>
<b>11/2-6</b>	<b>Ch. 26</b>		<b>10: Ch. 24</b>
<b>11/9-13</b>	<b>Ch. 27</b>		<b>11: Ch. 25</b>
<b>11/16-20</b>	<b>Ch.28</b>		<b>12: Ch. 26</b>
<b>11/23-27</b>	<b>Ch. 29</b>	<b>Thanksgiving 11/26-27</b>	<b>No quiz - Holiday</b>
<b>11/30-12/4</b>	<b>Review</b>	<b>12/4 is dead day</b>	
<b>12/7-11</b>	<b>Final exams</b>	<b>Final exam: Thursday, Dec. 10, 1:00 pm – 3:45 pm</b>	