Astr 1303.01W: Stars & the Universe

COURSE SYLLABUS: Summer I 2025

Class Time & Location: This course is fully online and has no required meeting time. It doesn't mean you can slack off, though.

INSTRUCTOR INFORMATION

Instructor: Dr. Kurtis A. Williams, Professor & Department Head
Preferred Pronouns: He/him/his
Office Location: Room 106A, McFarland Science Building
Have questions? Need help? Contact me by email and we'll find a time to talk by Zoom or phone or text.
University Email Address: Kurtis.Williams@etamu.edu
Preferred Form of Communication**: email**
Office Phone: (903) 886-5488
Communication Response Time: Before the end of the following business day

COURSE INFORMATION

Materials – Textbooks, Readings, Supplementary Readings

Textbook(s) Required

- 21st Century Astronomy, 7th Edition with Smartwork5 Access by Palen & Blumenthal
  - Publisher website: https://wwnorton.com/books/9780393877021
  - ISBN (Ebook+Smartwork+Student Site): 978-1-324-04670-7

Software Required

- Subscription to Smartwork
  - ***Important****: You WILL need access to Smartwork.* New textbooks or ebooks come with Smartwork access. Used or rented books usually do NOT include access to Smartwork. As of June 2025, Smartwork is available as a stand-alone purchase of $52+tax for 360 day access.

Cheapest Textbook Option: Purchase the ebook + Smartwork for $69.95+tax through the link on D2L.

The *syllabus/schedule are subject to change.*

Optional Texts and/or Materials

- Ear buds / headphones for listening to online videos
- Smartwork homework works much better on a laptop or desktop computer than a tablet or phone!

Course Description

Hours: 3
A descriptive survey of astronomy with emphasis on modern developments in stellar and galactic astronomy and the role of physical science in the measurement and interpretation of astronomical data. Included are studies of structure and evolution of stars and galaxies and of current cosmological theories.

Astronomy is an ancient science with records dating back to the dawn of civilization. Despite this long history, it remains an exciting and vibrant area of ongoing study. In the coming years, astronomers may discover Earth-sized planets around other stars, see the first stars emerging from the cosmic dawn, and explore new physics in realms and laboratories that Earth-bound scientists can only dream of.

In this course, we will focus on studying stars and galaxies, as well as the natural laws and tools that astronomers use to study these distant objects. We'll begin by studying light, and telescopes. We'll then study the Sun as an example star and use it as a stepping stone to reach ever further into the Universe. Along the way we'll learn about the lives of stars, peer into the hearts of black holes, witness collisions of galaxies, and piece together vital clues pointing to the origins of the Universe.

One big topic we will not cover is our own Solar System, planetary systems around other stars, or extraterrestrial life. The Solar System (the 8 planets, asteroids, and comets) is covered in Astr 1304; other planetary systems and life is covered in Astr 120.

Student Learning Outcomes:

1. You will be able to describe how astronomers learn about stars and galaxies with telescopes, light, and other physics.
2. You will be able to explain the characteristics of stars and their life cycles.
3. You will be able to identify the classes of galaxies and their basic properties.
4. You will be able to state evidence supporting astronomers' explanations of the origin and fate of the Universe.

COURSE REQUIREMENTS

Minimal Technical Skills Needed

You will need to be able to access myLEO Online (D2L), our learning management system, and be able to learn how to use it. You should also be able to read PDF documents. You should be able to create either Microsoft Word documents (.docx) or plain text files. You must be familiar with Internet usage and safe browsing. You need

to be able to watch YouTube videos on a computer. You also need to be able to create and account on Smartwork and learn how to submit homework on that site (it's easy).

Instructional Methods

Overall Organization

Summer classes are *fast* and require us to squeeze a lot of stuff into a short amount of time. Summer students often tell me I don't HAVE to cover as much in the summer as I do in the fall or spring, but state law says that I DO have to cover the same amount. Unless you can get me a signed letter from the governor that I can take it easy on y'all, we have to work hard and fast.

This class is divided up into modules. Each module lasts about a week and covers set of major themes in the course. Each module has a pre-test and a post-test.

Each module is subdivided into units, each of which covers a single major topic. Each unit has reading, videos, mini-lectures, homework, tutorials, and a quasi-quiz (kind of like a summary test for the unit to make sure you've learned everything before you go on.) You can do the units within each module in any order, but it'll make more sense if you go in order.

Let's look at the parts of a module and unit in a bit more detail:

Pre-test

Each module starts with a pre-test. The goal here is to see what you know before you start the module. It's perfectly normal to not know much! These are graded on completion, not on the number you get right. Try to answer most of the questions, you pass. Don't take the pre-test or only do some questions, you fail. After the course I will compare your pre-test and post-test scores to get an idea of how well the class worked overall at teaching you.

Reading

Each unit will have reading assigned from the course textbook, and sometimes a few other short articles I may post. I'd encourage you to read these using a reading comprehension strategy such as SQ3R (link to more info on D2L). Reading and comprehending science textbooks requires thought and multiple read-throughs; methods like SQ3R are annoying at first (who likes to be constrained by a structured approach?), but they really do work!

Videos and Mini-Lectures

After you've done the reading in a unit, I have several videos and mini-lectures for you to watch. The videos are mostly YouTube videos that explain some of the important points in the reading. The mini-lectures are short videos I make myself (sorry in advance for the low production value!) that focus on some of the harder material in the unit. If you see something in your reading, in a video, and in a mini-lecture, it's probably

an important point to learn for, say, the quizzes and post-tests! If it only shows up in one place, then think of it as bonus information but probably not crucial.

PowerPoints

In each unit after the videos I will upload a PDF of some of the PowerPoint slides I would use in a face-to-face class. Most but not all slides have some annotations which you can usually read by mousing over a weird icon in the upper left of each page. Again, if a topic has been in the reading, the videos, the mini-lectures, and the PowerPoint, it is something I really want you to learn and try to understand!

Homework

Each unit will have a homework set that uses Smartwork, the online homework system that comes with the e-book. For each question, you will have multiple opportunities to get the correct answer, and you can get immediate feedback, hints, and links to pages in the textbook to help you understand not just *what* the correct answer is, but *why* it is the correct answer.

Tutorials and Discussions

Many (but not all) units will have a PDF tutorial for you to fill out that tries to reinforce important and/or difficult concepts covered in that unit. Some of these are easy, some are tough. I'll have you upload these when they are completed. Most will be graded on completion, but if you struggled I may give you some tips and help and ask you to re-do the tutorial to get full credit.

Many (but not all) units will also have discussion boards for you to answer questions that test your understanding and that allow you to ask questions. Most of these will be graded on completion, not correctness. I'll try to answer as many questions as I can while we go along. The sooner you ask questions, the more likely I can help you before the due date!

Quasi-Quizzes

Each unit will have a quasi-quiz. This is a short (10-ish question) quiz with questions based on the material in the unit. Some will be easy, some will be tougher. To pass the quasi-quiz you need to get an 80% on the quasi-quiz, but you have up to three attempts to do so! If you don't get an 80%, you will see which questions you got wrong. This will let you go review your reading, notes, videos, etc. before you try again.

Post-tests

At the end of each module there will be a post-test. You'll be given questions over all of the units in that module, mostly multiple choice or matching or true and false, and one short-answer thought question I'll have to grade by hand. This exam is timed – it is long enough that if you know the material you will have gobs of time left, but not long enough for you to try and find answers for each question in D2L or the textbook.

You only get one attempt at the post-test. Most students who've done all the work in the module do well enough on the post-tests that you'll get decent course grades, even

if you bomb one exam.

For all exams, you may use a "cheat sheet" of 8.5x11 inch paper in size (or smaller) with whatever hand-written information you'd like, your textbook, and anything posted on D2L. No other books, backpacks, calculators, computers, AI, friends, frenemies, phones, tablets, ESP, etc. will be permitted.

If you are certified as needing special accommodations for examinations, please see me privately well before the exam with you letter of accommodation from the Student Disability Services office.

Extra Credit:

No extra credit is offered in this online course. If you do all of the assignments with a reasonable amount of effort, you won't need it.

How to Earn an A or B in This Course

Students who do well in this course share most of the following common habits:

- Set aside at least five days each week with three hours per day to work on the course. The three hours don't need to be consecutive, but treat those hours like you would hours on the job or appointments with a doctor.
- Do the reading using a system like SQ3R.
- Watch all videos all the way through.
- Complete assignments early in each module so you have time to get help on topics you're struggling with.
- Asking for help and advice early in each unit (do the reading and watch the videos first, then ask questions!)
- Take responsibility for your grade – check it often.

GRADING

Grades in this course are based on the following scale:

A = 90%-100%
B = 80%-89%
C = 70%-79%
D = 60%-69%
F = 59% or Below

Grading is on an absolute scale with no competition. If you all earn an A, you all get an A. I may curve grades for specific assignments at my discretion; your percentage earned will never go down if I apply such a curve. Your current grades are available through the gradebook on D2L – look for "Total Calculated Grade." The gradebook on Smartwork is <u>*not*</u> official.

Grades are based on a weighted system. The categories and weights are:

- Pre-tests: 20%
- Homework Assignments: 20%
- Tutorials and discussion questions:20%
- Quasi-Quizzes: 20%
- Post-tests: 20%

Interaction with Instructor

Email:

I can be reached by email at Kurtis.Williams@etamu.edu. It may take me up to 24 hours to send you a response. If you don't hear back from me in that time, please send another email or give me a call.

Notice: If you are having trouble with an assignment and email me within 24 hours of the deadline, I might not be able to get back to you before the assignment is due. Late penalties will not normally be waived in these cases.

Course Announcements:

Announcements and important course updates will be posted on MyLeo Online, and I expect you will read those within a reasonable time frame. You can set up SMS or email notifications of new announcements, as well as many other course updates, through MyLeo Online. Click on your name at the top of the page and select "Notifications" from the resulting menu.

Social Media:

Please don't follow me on other social media until after you've graduated. It's not all that exciting anyway.

Assignment and Due Date Policy

Links to assignments and due dates will be posted in the main page for each unit. Submission requirements for each assignment are given on each assignment's page.

Dropping the Course

You may drop this course by logging into your myLEO account and clicking on the hyperlink labeled 'Drop a class' from among the choices found under the myLEO section of the Web page.

Incompletes

I only offer incompletes in extraordinary circumstances. Any student interested in an incomplete should contact me as soon as possible after the situation arises, and should keep in mind that I am not required to give you an incomplete and so may not offer you the opportunity.

Technical Issues

Personal computer problems do not excuse the requirement to complete all course work in a timely and satisfactory manner. Each student needs to have a backup method to deal with these inevitable problems. These methods might include the availability of a backup PC at home or work, the temporary use of a computer at a friend's home, the local library, office service companies, an Internet cafe, or a coffee shop, etc.

Administrative Withdrawal

Although I have the right to drop you for excessive absences, I won't do so. You have a right to get an F if you decide to quit working but don't withdraw.

Syllabus Change Policy

The syllabus is a guide. Circumstances and events, such as student progress, may make it necessary for the instructor to modify the syllabus during the semester. Any changes made to the syllabus will be announced in advance.

How to Get Started

myLEO Online Access Information

This course uses D2L (myLeo Online), the learning management system at East Texas A&M. All materials, assignments, and resources will be made available through this system. To access this course, go to: http://myleoonline.tamuc.edu. Log in with your myLEO account and password. Then click on the link https://myleoonline.tamuc.edu/d2l/home/189972 to get to our course.

How This Course Is Organized

This course is organized by modules and units. Each module lasts roughly one week but cover multiple units. Some units cover one chapter in the text; some cover multiple chapters. You should check the course page on MyLeo Online often to see what activities and assignments are coming due.

What Should You Do First?

After attending class and reading this syllabus, you should proceed to the course page on D2L and complete the activities and assignments under "Things to Do First." Due dates are specified on D2L.

COURSE OUTLINE / CALENDAR

1st Module: Tools of the Astronomer

- Unit 1: Thinking Like an Astronomer
- Unit 2: Light and Telescopes
- Unit 3: Measuring Stars
- Unit 4: Properties of Stars
- **Due Date: Tuesday June 10 at 11:59pm Central Daylight Time**

The *syllabus/schedule are subject to change.*

2nd Module: Stars

- Unit 5: Our Star – the Sun
- Unit 6: Star Birth, Life, and Death
- Unit 7: Supernovae, Neutron Stars, and Black Holes
- **Due Date: Tuesday, June 17 at 11:59pm**

3rd Module: Galaxies

- Unit 8: Galaxies
- Unit 9: The Milky Way
- **Due Date: Tuesday June 24 at 11:59pm**

4th Module: The History and Fate of the Universe

- Unit 10: The Big Bang
- Unit 11: Dark Energy
- Unit 12: Inflation and the Multiverse
- **Due Date: Tuesday July 1 at 11:59pm**

Important Class Dates:

- **June 2: First Day of Class**
- June 19: Campus closed due to Emancipation Day
- June 23: Last Day to Drop Class
- **July 2: Last Day of Class**

NO FINAL EXAM: HURRAY!!!

TECHNOLOGY REQUIREMENTS

LMS

All course sections offered by East Texas A&M University have a corresponding course shell in the myLeo Online Learning Management System (LMS). Below are technical requirements

LMS Requirements:
https://community.brightspace.com/s/article/Brightspace-Platform-Requirements

LMS Browser Support:
https://documentation.brightspace.com/EN/brightspace/requirements/all/browser_support.htm

Zoom Video Conferencing Tool
https://inside.tamuc.edu/campuslife/CampusServices/CITESupportCenter/Zoom_Account.aspx?source=universalmenu

ACCESS AND NAVIGATION

You will need your campus-wide ID (CWID) and password to log into the course. If you do not know your CWID or have forgotten your password, contact the Center for IT Excellence (CITE) at 903.468.6000 or helpdesk@etamu.edu**.**

Note: Personal computer and internet connection problems do not excuse the requirement to complete all course work in a timely and satisfactory manner. Each student needs to have a backup method to deal with these inevitable problems. These methods might include the availability of a backup PC at home or work, the temporary use of a computer at a friend's home, the local library, office service companies, Starbucks, an ETAMU campus open computer lab, etc.

COMMUNICATION AND SUPPORT

If you have any questions or are having difficulties with the course material, please contact your Instructor.

Technical Support

If you are having technical difficulty with any part of Brightspace, please contact Brightspace Technical Support at 1-877-325-7778. Other support options can be found here:

https://community.brightspace.com/support/s/contactsupport

COURSE AND UNIVERSITY PROCEDURES/POLICIES

Course Specific Procedures/Policies

Academic integrity

A major goal of this and most every university course is for you to learn and appreciate subject material. Academic dishonesty ("cheating") actively prevents you from achieving this goal. Academic dishonesty is taken seriously by the University and by me, and ***will not be tolerated.*** (See the ETAMU Code of Student Conduct and the TAMU-C Procedures A 13.04, 13.12, 13.31, and 13.32.)

This conduct is not only considered wrong in this course and at this University, but also in the real world. Engaging in these activities will get you fired from a job and prevent you from getting another job.

Unethical student conduct includes:

- **Unauthorized use of generative AI**. Generative AI tools should not be used for any purpose in this class unless you are explicitly told to use them. It is generally a bad idea anyway, because the training sets that are used by generative AI are

full of inaccurate scientific information. Generative AI is meant to produce text or images that simulate English speech, and they are quite good at this. They have little or no ability at fact checking.

- **Plagiarism**, or copying the words of others with the intent of making it look like your own. Whether you use someone else's phrase word for word, or whether you try and change a few words, or even if you just borrow someone else's original idea and don't give them credit, that's unethical. Use your own words whenever possible, give credit to wherever you got an idea, and put direct quotes inside quotation marks.
- **Cheating** involves trying to trick me or others into thinking you did work that you really didn't do, or into thinking you know what you really don't know. This can include stealing exams, changing your answers on a graded exam or assignment and claiming it was graded wrongly, putting your name on someone else's homework, and so on.
- **Searching the Internet for homework solutions and entering answers you find**. Searching the Internet for help on a topic is okay. For example, suppose a question asks, "Describe the life cycle of a star that has the same mass as the sun." Typing that phrase into Google and cutting and pasting the text in the answer box is considered cheating. Typing "star life cycles" into Google, reading a few web pages, and summarizing the information in your own words is not cheating.
- **Borrowing a previous student's homework, exams, or solution sets**. "Borrowing" includes looking at someone's submitted homework, screen shots, stealing returned homeworks, and so on.
- **Collusion** is working with another person to cheat. This can include copying someone else's answers to an exam or assignment, doing work for another student, buying or otherwise obtaining homework/exam solutions from any source online or off-line, or any other instance of multiple people engaging in some form of cheating or dishonesty. Working with other students on an assignment is fine as long as everyone contributes and each student does their own work.
- **Any other activity that, to a reasonable person, looks wrong.** If you have any doubt whatsoever whether a certain action is considered dishonest, please ask me *before* engaging in the activity. There is no need to be embarrassed about asking, and I won't penalize you for asking! In this class, if you follow the maxim "it's easier to beg forgiveness than to ask permission", don't expect forgiveness to be forthcoming.

If you engage in academic dishonesty during any graded activity, you will receive no credit for that activity. More than one instance of dishonesty by a student will result in automatic failure of the course and referral of the student for disciplinary action.

For further information, search the East Texas A&M website for "academic integrity policy".

The *syllabus/schedule are subject to change.*

D2L provides me with tools that check for common forms of online cheating and collusion. These include, but aren't limited to: time stamps, location stamps, and automated comparison of essay answers. I will use these tools.

Sexual Harassment and Violence

Violence and harassment based on sex and gender are Civil Rights offenses subject to the same kinds of accountability and the same kinds of support applied to offenses against other protected categories such as race, national origin, etc.

If you or someone you know is a victim of harassment, stalking, domestic violence, sexual assault, or related crimes, has been harassed or assaulted, here are some resources for you:

24/7 Resources

- National Domestic Awareness Hotline: 1-800-799-SAFE (7223)
- National Sexual Assault Hotline: 1-800-656-4673
- National Suicide Prevention Lifeline: 988

Campus Resources

- **Call 911 in emergency situations**
- If you or someone you know has been impacted and needs support, email: VictimSupport@etamu.edu (monitored Monday-Friday, 8am-5pm)
- Victim Advocacy and Support: https://www.tamuc.edu/student-advocacy-support/victim-support-services/
- How to Help and Report: https://www.tamuc.edu/student-advocacy-support/victim-support-services/
- How to Report Concerns About a Fellow Student: https://cm.maxient.com/reportingform.php?TAMUCommerce&layout_id=20
- University Title IX Compliance Office: https://www.tamuc.edu/titleix/
- University Title IX Contact: Amanda Berry, 903-886-5991, titleix@etamu.edu
- University Police Department Sexual Assault pages: https://www.tamuc.edu/university-police-department/crime-prevention/
- University Counseling Center: https://www.tamuc.edu/counseling-center/
- Campus police email: upd@etamu.edu

External resources:

Crisis center of Northeast Texas: http://www.ccnetx.org
Know your IX: http://knowyourix.org
End rape on campus: http://endrapeoncampus.org
Clery Center for Security on Campus: http://clerycenter.org
Not Alone: http://changingourcampus.org/about-us/not-alone/

University Specific Procedures

Student Conduct

All students enrolled at the University shall follow the tenets of common decency and acceptable behavior conducive to a positive learning environment. The Code of Student Conduct is described in detail in the Student Guidebook.
http://www.tamuc.edu/Admissions/oneStopShop/undergraduateAdmissions/studentGuidebook.aspx

Students should also consult the Rules of Netiquette for more information regarding how to interact with students in an online forum:
https://www.britannica.com/topic/netiquette

ETAMU Attendance

For more information about the attendance policy please visit the Attendance webpage and Procedures 13.99.99.R0.01:
http://www.tamuc.edu/admissions/registrar/generalInformation/attendance.aspx

http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/academic/13.99.99.R0.01.pdf

Academic Integrity

Students at East Texas A&M University are expected to maintain high standards of integrity and honesty in all of their scholastic work. For more details and the definition of academic dishonesty see the following procedures:

Undergraduate Academic Dishonesty 13.99.99.R0.03
Undergraduate Student Academic Dishonesty Form

http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/documents/13.99.99.R0.03UndergraduateStudentAcademicDishonestyForm.pdf

Graduate Student Academic Dishonesty Form

http://www.tamuc.edu/academics/graduateschool/faculty/GraduateStudentAcademicDishonestyFormold.pdf

http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/undergraduates/13.99.99.R0.03UndergraduateAcademicDishonesty.pdf

Students with Disabilities-- ADA Statement

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a

learning environment that provides for reasonable accommodation of their disabilities. If you have a disability requiring an accommodation, please contact:

Office of Student Disability Resources and Services
East Texas A&M University
Velma K. Waters Library Rm 162
Phone (903) 886-5150 or (903) 886-5835
Fax (903) 468-8148
Email: studentdisabilityservices@etamu.edu
Website: Office of Student Disability Resources and Services
http://www.tamuc.edu/campusLife/campusServices/studentDisabilityResourcesAndServices/

Nondiscrimination Notice

East Texas A&M University will comply in the classroom, and in online courses, with all federal and state laws prohibiting discrimination and related retaliation on the basis of race, color, religion, sex, national origin, disability, age, genetic information or veteran status. Further, an environment free from discrimination on the basis of sexual orientation, gender identity, or gender expression will be maintained.

Campus Concealed Carry Statement

Texas Senate Bill - 11 (Government Code 411.2031, et al.) authorizes the carrying of a concealed handgun in East Texas A&M University buildings only by persons who have been issued and are in possession of a Texas License to Carry a Handgun. Qualified law enforcement officers or those who are otherwise authorized to carry a concealed handgun in the State of Texas are also permitted to do so. Pursuant to Penal Code (PC) 46.035 and East Texas A&M Rule 34.06.02.R1, license holders may not carry a concealed handgun in restricted locations.

For a list of locations, please refer to the Carrying Concealed Handguns On Campus document and/or consult your event organizer.

Web url:
http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/34SafetyOfEmployeesAndStudents/34.06.02.R1.pdf

Pursuant to PC 46.035, the open carrying of handguns is prohibited on all East Texas A&M campuses. Report violations to the University Police Department at 903-886-5868 or 9-1-1.

East Texas A&M Supports Students' Mental Health

The Counseling Center at East Texas A&M, located in the Halladay Building, Room 203, offers counseling services, educational programming, and connection to

community resources for students. Students have 24/7 access to the Counseling Center's crisis assessment services by calling 903-886-5145. For more information regarding Counseling Center events and confidential services, please visit **www.tamuc.edu/counsel**

AI use policy

East Texas A&M University acknowledges that there are legitimate uses of Artificial Intelligence, ChatBots, or other software that has the capacity to generate text, or suggest replacements for text beyond individual words, as determined by the instructor of the course.

Any use of such software must be documented. Any undocumented use of such software constitutes an instance of academic dishonesty (plagiarism).

Individual instructors may disallow entirely the use of such software for individual assignments or for the entire course. Students should be aware of such requirements and follow their instructors 'guidelines. If no instructions are provided the student should assume that the use of such software is disallowed.

In any case, students are fully responsible for the content of any assignment they submit, regardless of whether they used an AI, in any way. This specifically includes cases in which the AI plagiarized another text or misrepresented sources.

13.99.99.R0.03 Undergraduate Academic Dishonesty

13.99.99.R0.10 Graduate Student Academic Dishonesty