



ASTR 1303-01W: Stars and the Universe

COURSE SYLLABUS: Fall 2023

INSTRUCTOR INFORMATION

Instructor: Dr. Matt A. Wood

Office Location: Room 340, McFarland Science Building

Office Hours: TBD for online office hours

Office Phone: (903) 886-5486

University Email Address: Matt.Wood@tamuc.edu

Preferred Form of Communication: **email**

Communication Response Time: Typically before the end of the following business day

Preferred Pronouns: He/his

COURSE INFORMATION

Materials – Textbooks, Readings, Supplementary Readings

Textbook(s) Required

21st Century Astronomy, 7th Edition with Smartwork5 Access by Kay, Palen & Blumenthal

Publisher website: <https://wwnorton.com/books/9780393877021>

Ebook + SmartWork5 access is \$75 if purchased through this link (\$65 for 180 day access).

Textbook(s) Supplemental:

The openstax.org website has an astronomy textbook that may be a useful supplement to 21st Century Astronomy (openstax.org/details/books/astronomy)

Software Required

Subscription to Smartwork5

Important: You ***WILL*** need access to Smartwork5. Used or rented books usually do ***NOT*** include access to Smartwork5. As of July 2023, Smartwork5 is available as a stand-alone purchase of \$40+tax for 360 day access (subject to change by the publisher).

The syllabus/schedule are subject to change.

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 explain the characteristics of stars and their life cycles.
2. You will identify the classes of galaxies and their basic properties.
3. You will state evidence supporting astronomers' explanations of the origin and fate of the Universe.
4. You will evaluate statements about astronomy using the scientific method.

COURSE REQUIREMENTS

Minimal Technical Skills Needed

You will need to be able to access myLEO Online, 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

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must be familiar with Internet usage and safe browsing. You need to be able to watch YouTube videos on a computer.

How To Get Started

How This Course Is Organized

This course is organized into five Units, each of which includes two-to-three chapters in the text. At the end of each unit, there will be an exam on that material. For success DO start the work early in the week – if you're consistently waiting until the last minute, you will not get it done.

During Summer Session, we have only 5 weeks to cover the same material that we normally cover in 15 weeks during a long semester, so it is figuratively like drinking from a firehose. You can do it, but I advise you to spend at least 1-2 hours every day on this class, and perhaps 3-4 if the material is at all challenging for you. Note if we just think about equivalent lecture times, it scales to about 10 hours per week during a summer session – you should plan on another 10 hours beyond that, so maybe 20 hours per week to assure a grade of "A".

To keep things simple, I make everything due on Sunday's at 11:59 p.m. This includes homework assignments, discussion assignments, and also exams. There are 5 units and 5 exams. You really should have the homework assignments completed before you take the exams, but you don't have to. Tip for Success: Make your personal homework assignment due date be either Friday at midnight or Saturday at midnight, and then you have Sunday to prepare for and take the exam. Exams will be open Saturday 12:00 AM to Sunday 11:59 PM, except for the Unit 5 work which will all be due Thursday, August 10, at 11:59 pm (last day of class). NOTE: The exams close at 11:59 p.m., so you should start an hour before this (if you start at 11:55 p.m., you will have 4 minutes before you are locked out).

What Should You Do First?

After reading this syllabus, look around in the course site in myLeo Online (D2L) and familiarize yourself with the resources and layout. Next, order the course materials (see above) if you haven't yet. Finally, begin complete the activities and assignments under Unit 1, which will be due this coming Sunday at 11:59 p.m.! Due dates are specified on myLeo Online.

Instructional Methods

This is an online course, and you can complete it without interacting with me directly at all if you choose, but I hope that's not what you choose. You will want to read the chapters' material between Monday morning and Wednesday afternoon most weeks, and view all of the Mini-Lectures.

You are responsible for completing all assignments on time, even if you have something come up in your personal life (another reason to get the work done well ahead of the Sunday 11:59 p.m. deadline) Note that I drop the lowest grade from most categories, so your reason for requesting an extension must be extraordinary (e.g., a death in your immediate family) – "I just forgot, can I have more time"

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results in that missed assignment being a zero that gets dropped. If you do that more than once, then you'll have a hard zero in the gradebook.

My advice (successful students report this really works): Put a two-hour block on your calendar every day (e.g., Monday-Saturday 1-3 p.m.). During that block you *only* work on this course: Reading the chapters, Mini-Lectures, Homework, Googling for things that the text wasn't clear enough about or that you just want to know more about, etc. During those hours every day, you don't check your social media, you don't answer texts (best to just put the phone on silent and hide it from yourself) – you are working in a quiet room without distractions. When it is the end of your session, you're done for the day! Time to work on other classes, go to the gym, go hang with your friends, play a video game, watch TV, etc.

Two books I highly recommend that will make you a better student and more successful in life:

- Teach Students How to Learn by Sandra McGuire ([amazon link](#)) (\$20)
- Getting Things Done: The Art of Stress-Free Productivity by David Allen ([amazon link](#)) (\$13)

The first book will help you the most in being successful at school. Chances are you don't really know how to study such that you're learning (I didn't either as an undergraduate). You read books and PowerPoint slides, but it doesn't really sink in. McGuire's book will help you change your approach so you will actually learn and retain the information (**the key is to study the material as if you're going to have to teach it to others!**).

The second book has sold over 1.5 million copies, and is so well known that if you read it and it really does help you improve your work flow and output, be sure to mention it during your job interview when you're moving out to the real world. If the person interviewing you knows of the book, they'll be impressed. Even if they don't, it shows that you're going the extra mile to be productive, and that's what companies want. The best single tip from that book: **If an action will take less than two minutes, just do it now – don't procrastinate.** Since I started doing this my own productivity has gone up a lot, and my stress has gone down a lot. *Try it and see if it works for you!*

Exams

Exams for this online course will be open for 48 hours over the weekend (Saturday 12:00 a.m. to Sunday 11:59 p.m.), except for the Unit 5 exam which will be open for 48 hours August 9-10. You must take the exam during this window – no exceptions. Once you start an exam, you must finish. You are allowed to use your notes and other class resources but you are not allowed to use, e.g., another human, or Chegg or Yahoo! Answers. Note that typically you'll be given about 2 minutes per question, so you really don't have time to look everything up if you come in to the exam not understanding the material.

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Homework, aka Smartwork5

Smartwork5 is an online astronomy homework and tutoring tool. Its advantages are that Smartwork5 will give you instant feedback on whether you got a question right or wrong and provide you with hints and tools to better learn the material.

Be sure to access Smartwork5 from within our course shell. If you see a request for a student ID number, you went in the wrong way.

I call Smartwork5 assignments “homework;” each unit in a course will have its own Smartwork5 assignments, one for each chapter. This means you should expect to see roughly 2-3 Smartwork5 assignments each week. If you do the homework and find you still don’t understand something, you definitely want to ask me about that topic in an email or via a Zoom session.

The grading policy for each Smartwork5 assignment is shown in each assignment. You may get multiple attempts to answer a question correctly; however, submitting an incorrect answer will cost you some credit. Late homework is penalized 20% per day up to 3 days beyond the due date. After 3 days, you will receive a zero on the assignment.

The following are considered cheating and will not be tolerated: Directly copying text from a website or other printed source, obtaining copies of solutions to homework questions (whether from past students or other sources), directly copying another student’s work, etc. See the section on “Academic Integrity” below for full details.

Student Responsibilities and Tips for Success in the Course

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

- Working on the course a little bit every day.
- Checking myLeo often for announcements and assignments
- Completing all assignments on time
- Asking for help and advice early in the semester
- Taking responsibility for their own grade.

GRADING

Final grades in this course will be based on the following scale:

90% < A
80% < B < 89.99%
70% < C < 79.99%
60% < D < 69.99%
F < 60%

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

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percentage earned will never go down if I apply such a curve. Your current grades are available through the gradebook on myLEO Online – look for “Total Calculated Grade.” The gradebook on Smartwork5 is not official.

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

Unit Exams: 50% (10% each for 5 Unit Exams, no grades dropped)

Final Exam: 20%

Discussion Posts 15% (lowest grade dropped)

Homework and Other Assignments: 15% (lowest grade dropped)

TECHNOLOGY REQUIREMENTS

LMS

All course sections offered by Texas A&M University-Commerce 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

YouSeeU Virtual Classroom Requirements:

<https://support.youseeu.com/hc/en-us/articles/115007031107-Basic-System-Requirements>

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@tamuc.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, a TAMUC campus open computer lab, etc.

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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 TAMU-C 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:

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 is considered cheating. Searching the Internet for help on a topic is okay. For example, suppose a question asks, “Describe

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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.

Generative AI Tools: *The use of generative AI tools (e.g. ChatGPT, Dall-e, etc.) is permitted in this course for the following activities:*

- Brainstorming and refining your ideas;
- Fine tuning your research questions;
- Finding information on your topic;
- Drafting an outline to organize your thoughts; and
- Checking grammar and style.

The use of generative AI tools is not permitted in this course for the following activities:

- Impersonating you in classroom contexts, such as by using the tool to compose discussion board prompts assigned to you or content that you put into a Zoom chat.
- Completing group work that your group has assigned to you, unless it is mutually agreed upon that you may utilize the tool.
- Writing a draft of a writing assignment.
- Writing entire sentences, paragraphs or papers to complete class assignments.

You are responsible for the information you submit based on an AI query (for instance, that it does not violate intellectual property laws, or contain misinformation or unethical content). Your use of AI tools must be properly documented and cited in order to stay within university policies on academic honesty. Any assignment that is found to have used generative AI tools in unauthorized ways will result in a zero for that assignment. When in doubt about permitted usage, please ask for clarification.

Borrowing a previous student’s homework, exams, or solution sets is considered cheating. “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

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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 A&M-Commerce website for "academic integrity policy".

Smartwork5 and myLEO Online provide 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.

Harassment Policy

Title IX makes it clear that 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 has been harassed or assaulted, you can find the appropriate resources here:

University Title IX Contact: Nathan Perry, 903-886-5025, <mailto:Nathan.Perry@tamuc.edu>

University resource webpages:

SAFE Team: <http://www.tamuc.edu/CampusLife/safe-team>

<http://www.tamuc.edu/facultyStaffServices/humanResources/title-ix/resources.aspx>

<http://www.tamuc.edu/campuslife/campusServices/universityPoliceDepartment/crimePrevention/sexualAssault.aspx>

University Counseling Center: 903-886-5145,
<http://www.tamuc.edu/campusLife/campusServices/counselingCenter/default.aspx>

Campus police: <mailto:upd@tamuc.edu>, call 911 in emergency situations

External resources:

Crisis center of NorthEast Texas: <http://www.ccnex.org>

Know your IX: <http://knowyourix.org>

End rape on campus: <http://endrapeoncampus.org>

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Clery Center for Security on Campus: <http://clerycenter.org>

Not Alone: <https://www.notalone.gov>

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.

Late Work

Late assignments are penalized 10% for each day late (including weekends). After 7 days, late assignments will receive a zero. Exams may only be taken late by arrangement with the instructor, otherwise missed exams will receive a zero. The instructor has final discretion on whether to give a make-up exam. All work must be finished by the end of the day on the last day of classes.

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, many restaurants, Interstate Rest Areas, etc.

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.

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).
<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>

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TAMUC Attendance

For more information about the attendance policy please visit the [Attendance](#) webpage and [Procedure 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 Texas A&M University-Commerce 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](#)

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

[Graduate Student Academic Dishonesty 13.99.99.R0.10](#)

<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/graduate/13.99.99.R0.10GraduateStudentAcademicDishonesty.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

Texas A&M University-Commerce

Gee Library- Room 162

Phone (903) 886-5150 or (903) 886-5835

Fax (903) 468-8148

Email: studentdisabilityservices@tamuc.edu

Website: [Office of Student Disability Resources and Services](#)

<http://www.tamuc.edu/campusLife/campusServices/studentDisabilityResourcesAndServices/>

Nondiscrimination Notice

Texas A&M University-Commerce 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

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Statement

Texas Senate Bill - 11 (Government Code 411.2031, et al.) authorizes the carrying of a concealed handgun in Texas A&M University-Commerce 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 A&M-Commerce 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 A&M-Commerce campuses. Report violations to the University Police Department at 903-886-5868 or 9-1-1.

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COURSE OUTLINE / CALENDAR

Unit 1: Week 1

Chapter 1: Thinking Like an Astronomer

Chapter 5: Light

Chapter 13: Taking the Measure of Stars

Unit 2: Week 2

Chapter 14: Our Star – The Sun

Chapter 15: The Interstellar Medium and Star Formation

Chapter 16: Evolution of Low-Mass Stars

Unit 3: Week 3

Chapter 17: Evolution of High-Mass Stars

Chapter 18: Relativity and Black Holes

Unit 4: Week 4

Chapter 19: Galaxies

Chapter 20: The Milky Way – A Normal Spiral Galaxy

Chapter 21: The Expanding Universe

Unit 5: Week 5

Chapter 22: Cosmology

Chapter 23: The Large Scale Structure of the Universe

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