ASTR 1303-01E: Stars and the Universe

COURSE SYLLABUS: SPRING 2024

INSTRUCTOR INFORMATION

Instructor:	Dr. Matt A. Wood
Office Location:	Science 343
Office Hours:	M-F 9:00-10:00 AM, but stop by any time.
Office Phone:	(903) 886-5486
University Email Address:	Matt.Wood@tamuc.edu
Preferred Communication:	Office Visit or Email
Response Time:	Usually <1 business day
Preferred Pronouns:	He/his

COURSE INFORMATION

Class Hours: MWF 12:00-12:50 p.m.
Class Room: STC 127

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**). Note the Trial Access is **limited** and won't get you through the course.

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). Homework is 20% of your course grade, and this is the easiest 20%. You are paying ~$2000 for this class, so don't drop 2 grades because you don't want to spend $65.**

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. We also do not discuss constellations and finding our way around the night sky. For that, please take the 1-hour Astronomy Lab course ASTR 1103.

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 D2L to access your homework assignments. 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.

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Instructional Methods

Attendance and Participation

Research into how people learn shows that the best learning comes from interaction. Simply reading material and listening to me drone on won't help you learn anything useful. To learn, you must take the material, work with it, and make it your own.

Many of the topics covered will only be covered in lecture and not in the book. *If you want to do well in this class the most valuable thing you can do is never miss a lecture.* If a student has excessive absences they may be involuntarily dropped from the class.

You are responsible for completing all assignments on time, even if you have something come up in your personal life. 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).

This course should not be terribly difficult if you put the time in. How much time is that? You'll you'd be in lecture for 3 hours a week, and you'd do well to spend another 3-6 hours a week studying and working on assignments. That's 6-9 hours a week. If you are self-disciplined and spend a minimum of 6 hours a week on this course, you can almost certainly earn a course grade of A. If you do everything at the last minute, then it will be difficult to learn the material well enough to earn a good grade. A significant fraction of students who take online classes fail them because they don't have good time management skills. Don't be that student!

My advice (and you really should implement it): Put a one-hour block on your calendar every day (e.g., Monday-Friday 1-2 p.m.). During that hour you only work on this course: Reading, Homework, googling for things that the text wasn't clear enough about or that you just want to know more about, etc. During that hour 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, or go hang with your friends.

Exams

There will be 3 midterm exams during the semester. There will also be a cumulative final exam during the scheduled final exam time slot. I will give lower weight to your lowest midterm exam score when calculating the "Exam" category. I will not simply drop the lowest exam, however.

Makeup exams may only be taken under extenuating circumstances, and I should have prior notification. I will require official documentation of the reason for the absence, and I reserve the right to reject any excuse. Do everything in your power to be present for an exam. There is no makeup exam possible for the final exam.

For the midterm exams, you may also bring a single notecard (4x6 inches) with whatever hand-written information you'd like. No other books, backpacks, calculators, computers, earbuds, headsets, cell phones, etc. will be permitted. Using any aids other than your index card will result in you being removed from the exam and earning a grade of a zero.

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 Resources and Services office.

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.

Homework may include assignments handed out and to be returned in-class.

I call Smartwork5 assignments "homework;" each unit in a course will have its own Smartwork5 assignment. This means you should expect to see roughly one 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 office hours, or by email.

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 items are penalized 20% per day up to 4 days beyond the due date. After 4 days, you will receive a zero on the uncompleted items.

Note that I will likely assign other homework beyond SmartWork5 assignments.

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.

Extra Credit: (Max 4% course total)

The *only* extra credit available in this course are the three options below. If you fully complete an option, you will earn 1% extra credit on your total calculated

grade. You may earn extra credit for each activity only once. There are no other options for extra credit. **All extra credit must be completed and turned in by 4:45 pm on Wednesday, May 1.**

Before January 19: Upload your picture to D2L (if not already there), and email me to let me know it's there (this is to help me learn your name).

Before January 19: Visit me at my office during office hours (full point) or take a selfie outside my office (1/2 point): My office is Science Building 343. Come visit me if I'm there (knock on the door) or, if I'm not there, take a selfie that includes the sign outside my door and email me that. This encourages you to know where my office is so you're more likely to stop by for office hours, and also helps me to learn your name.

Anytime during semester: Attend a planetarium show: The A&M-Commerce Planetarium exhibits several different shows every Friday night at 7pm and 8pm. Tickets are $4 for children and university students (with ID), $4.50 for senior citizens, and $5 for adults. http://www.tamuc.edu/planetarium/ has a current listing of shows. Family of any age is welcome to the planetarium shows; be sure to check on the age- appropriateness of shows (all are rated appropriate for all audiences, but typically the 7pm show is aimed at children and the 8pm show at teens and adults).

If you attend a show, tell the staff that you are a member of this class. The staff will have class rosters; you are responsible for making sure the staff mark down that you attended.

Visit the Commerce Observatory: We plan on having two Open Houses at our Observatory (about 5 miles south of Commerce). On two evenings (dates to be announced), we will have telescopes set up to look at planets and other interesting objects in the night sky. At each session, there will be an activity you must complete in order to earn extra credit. One visit is sufficient. Times and transportation options will be announced closer to the event.

Student Responsibilities or Tips for Success in the Course

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

- Arriving a couple minutes early for class and not leaving until class is dismissed.
- Not using phones, tablets, or computers during class
- Completing all assignments on time
- Asking for help and advice early in the semester
- Taking responsibility for their own grade.

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GRADING

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

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

Weights of the assessments in the calculation of the final letter grade.
Example:

Homework	20%
3 Midterm Exams	20% each (60%)
Final Exam	20%
TOTAL	100%

COURSE OUTLINE / CALENDAR

The course will cover many of the topics outlined below. The dates below may change, so pay attention to announcements for final due dates.

Week	Topic(s)
1	Ch 1: Thinking Like An Astronomer
2	Ch 5/6: Light and Astronomical Instruments
3	Ch 13: Taking the Measure of Stars
4	Ch 14: Our Star – The Sun
5	Ch 15: The Interstellar Medium and Star Formation
6	Ch 16: Evolution of Low-Mass Stars
7	Ch 16: Evolution of Low-Mass Stars
8	Ch 17: Evolution of High-Mass Stars
9	Ch 18: Relativity and Black Holes
10	Ch 19: Galaxies
11	Ch 20: The Milky Way – A Normal Spiral Galaxy
12	Ch 21: The Expanding Universe
13	Ch 22: Cosmology
14	Ch 22: Cosmology
15	Ch 23: Large Scale Structure
16	Finals Week

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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

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@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.

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

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COURSE AND UNIVERSITY PROCEDURES/POLICIES

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/student_guidebook/Student_Guidebook.pdf

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

TAMUC 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 Texas A&M University-Commerce are expected to maintain high standards of integrity and honesty in all of their scholastic work. I'm a grumpy old man and will absolutely come down on your hard if I catch you cheating. Just don't do it – the course isn't that hard if you put in a little bit of time and effort to engage with the material. 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
Texas A&M University-Commerce
Velma K. Waters Library Rm 162
Phone (903) 886-5150 or (903) 886-5835
Fax (903) 468-8148
Email: studentdisabilityservices@tamuc.edu
Website: Student Disability Services

https://www.tamuc.edu/student-disability-services/

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.

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Campus Concealed Carry 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.

A&M-Commerce Supports Students' Mental Health

The Counseling Center at A&M-Commerce, 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

Texas A&M University-Commerce 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.

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.
- Generating solutions to coding problems.

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. Did you read this far? The first student to email me "The eagle flies at dawn" will earn 1% extra credit toward their first exam score as a reward for actually reading the syllabus to the end.

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