



ASTR 1303-1HE: Stars and the Universe

COURSE SYLLABUS: Spring 2020

INSTRUCTOR INFORMATION

Instructor: Dr Matt A. Wood

Office Location: Room 340, McFarland Science Building

Office Hours: T,W,Th 1:30-2:30 p.m., or by appointment, but usually it will be fine if you stop by my office for a quick question!

Office Phone: (903) 886-5486

University Email Address: Matt.Wood@tamuc.edu

Preferred Form of Communication: **email or office visit**

Communication Response Time: Before the end of the following business day

Preferred Pronouns: He/his

COURSE INFORMATION

Materials – Textbooks, Readings, Supplementary Readings

Class Hours: TR 9:30-10:45 in STC 107

Textbook(s) Required

21st Century Astronomy, 6th Edition with Smartwork5 Access by Kay, Palen & Blumenthal

Publisher website: <https://wwnorton.com/books/9780393675498>

Software Required

Subscription to Smartwork5

Optional Texts and/or Materials

Headphones for listening to online videos

Important: You ***WILL*** need access to Smartwork5. Used or rented usually do NOT include access to Smartwork5.

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 (Should be measurable; observable; use action verbs)

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, the new 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.

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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 (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” 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.

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.

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)

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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 be the one teaching it).

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.

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 midterm exam score and higher weight to your highest exam score.

Makeup exams may only be taken under extenuating circumstances. I will require 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 (3x5 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 your 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.

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 assignment 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;

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however, submitting an incorrect answer will cost you some credit. Late homework is penalized 10% per day up to 7 days beyond the due date. After 7 days, you will receive a zero on the assignment. Any work not completed by the start of the final exam will also receive a zero.

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 3% 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 Friday, December 6.**

Visit me at my office or take a selfie outside my office: My office is Science Building 340. 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 put a face to your name!

Visit 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: You will have two opportunities for a visit to the Commerce 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.

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Student Responsibilities and 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
- 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 percentage earned will never go down if I apply such a curve.

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

Homework:	20%
3 Midterm Exams:	20% each (60% total)
Final Exam:	20%

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_supp_or_t.htm

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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>

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:

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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 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 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 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".

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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.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: <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.

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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>

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 [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>

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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.

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 13: Taking the Measure of Stars
3	Ch 14: Our Star – The Sun
4	Ch 15: The Interstellar Medium and Star Formation
5	Ch 16: Evolution of Low-Mass Stars
6	Ch 16: Evolution of Low-Mass Stars
7	Ch 17: Evolution of High-Mass Stars
8	Ch 18: Relativity and Black Holes
9	Ch 19: Galaxies
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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