Astr 120-01W Life in the Universe

COURSE SYLLABUS: FALL 2025

INSTRUCTOR INFORMATION

Instructor: Jeff Wilson, Adjunct Faculty
Office Location: None - Off campus
Office Hours: Zoom link in D2L, Wed, 7:30p-8:30p.

Join Zoom Meeting

Jeffrey Wilson is inviting you to a scheduled Zoom meeting.

Topic: Fall 2025 Life in the Universe (ASTR-120-01W)
Time: Sep 3, 2025 07:30 PM Central Time (US and Canada)
Every 7 days, until Dec 3, 2025, 14 occurrence(s)

Join Zoom Meeting
https://tamuc.zoom.us/j/94919304720

Meeting ID: 949 1930 4720

Office Phone: None. We will use features in myLeo for communication
University Email Address: Jeffrey.Wilson@etamu.edu
Preferred Form of Communication**: email**

COURSE INFORMATION

Materials – Textbooks, Readings, Supplementary Readings

Required Books:

- Life in the Universe, 5th Ed. by Bennett and Shostak, Princeton University Press, eText version, eText + Courseware (See below for purchase options)

The *syllabus/schedule are subject to change.*

(Currently, only the eText comes with the required access to Codon Learning Courseware – do not purchase a hardcopy of the textbook)

Software Required:

- A modern browser compatible with myLeo.

Optional Texts and/or Materials

Headphones for listening to online videos

Textbook Purchase Details

Purchase through Publisher (Princeton) – You can purchase the bundle directly from the publisher site using your school email address. You will receive an email with their access code for the Courseware (Codon Learning) and then will need to download the app and create a login to access the ebook copy. For questions about accessing the ebooks go https://press.princeton.edu/about-ebook-audiobook-purchases.

Alternates Purchase through Redshelf or VitalSouce – You can purchase the bundle from either Redshelf (https://redshelf.com/app/ecom/book/2264968/life-in-the-universe-5th-edition-digital-courseware-bundle-2264968-9780691258133-bennett-jeffrey-shostak-seth-schneider-nicholas-macgregor-meredith) or VitalScource (https://www.vitalsource.com/products/life-in-the-universe-5th-edition-jeffrey-bennett-seth-v9780691258140). You will receive their Codon Learning Courseware access code in a confirmation email. You will need to create an account with their school email address and will be able to access the ebooks from your accounts.

See the expanded guidance in the D2L section "Course Home" -> "Registering for and Using..."

Course Description

Hours: 3
The basic science of the search for evidence of life in the universe, including the origin and evolution of life on the Earth, terrestrial extremophiles, the history of the search for life in the Universe, the search for habitable environments in the Solar System, and the search for habitable (exo-)planets and signs of life around other stars.

Are we alone in the Universe? In the 1500s, the Catholic Church executed a monk who dared to suggest, among other heresies, the presence of other intelligent species living on other worlds, yet over the past century, popular culture has become littered with discussions of space faring civilizations being commonplace. But is life common? Is intelligent life common? What is intelligence, anyway? What is life?

Since the discovery of the first planets outside our Solar System in the mid 1990s, the science of astrobiology has grown by leaps and bounds. It is a very broad field that attempts to bridge biology, chemistry, geology, physics and astronomy under one monumental goal: the discovery of life elsewhere in the Universe.

The *syllabus/schedule are subject to change.*

In this course, we will explore the field of astrobiology. We will look at the necessary ingredients for life. We will learn about possible habitats for life in our own Solar System. We will explore how astronomers discover and study planetary systems around other stars. And we will end by discussing the probability of other civilizations in the Universe and how we might find them.

Student Learning Outcomes

1. You will discuss the chemistry and origins of life on Earth.
2. You will employ knowledge of current and past life on Earth to identify criteria for habitability and life
3. You will identify potential habitats in our Solar System
4. You will calculate individual terms of the Drake Equation to estimate the number of intelligent civilizations in our galaxy
5. You will criticize proposed solutions to the Fermi Paradox

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.

How To Get Started

myLEO Online Access Information

This course uses myLEO Online, 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 to Fall 2025 – Life in the Universe to get to our course.

How This Course Is Organized

This course is organized by units. Some units will last just one week, but some units will cover a few extra days. 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 Units and associated activities and assignments are coming due.

What Should You Do First?

Review the course page on MyLeo and familiarize yourself with the structure, times/dates, resources, and read the entire syllabus. You should immediately get registered for the eText and Codon Courseware as this is sometimes a confusing and time consuming process.Finally, Look at the Unit 1 web page and consider digging in!

The *syllabus/schedule are subject to change.*

Instructional Methods

This course is a completely online course. It will consist of a blend of video lectures, video clips, and textbook readings. Because of the specific nature of the material, the course will rely heavily on the textbook for most material, supplemented by videos.

Course pace

While I realize that some online students prefer to complete a course as fast as possible and others like to wait several weeks and then do as much work as possible, these methods won't work with this course. This course has regularly scheduled due dates and late penalties will be applied to all work not submitted by the due dates.

The course is broken up into 12 units. *The onus is on you to keep up with deadlines through myLeo*. MyLeo has a Course Checklist tool to help you keep track of what you have and have not completed. If you go to the Course Home page and click on "Course Checklist" at the bottom you can access this tool.

Participation

Because this course is an online course, participation options are limited. However, if the need arises, we may use threaded discussions or live meetings on D2L Brightspace. These will not be required but may help you to ask questions in an interactive manner. If email threads get too long, I may elect to move discussions to this forum.

Codon Learning: Reading Quizzes/Homework

Codon Learning is an online astronomy homework and tutoring tool. Its advantages are that it 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 suggest the following strategy for learning the information: Skim the chapter in the text, looking at content not covered well in the textbook. Finally, re-read the chapter, in more depth this time.

Exams

Three online exams will be given during the semester through D2L Brightspace and dates are already published in D2L. For the exams you may use whatever materials you like (text, homework solutions, internet searches, etc). However, the exams are *timed* and may only be taken once, so you will want to study the material well before taking the exam. The exams are not officially cumulative, but astronomy is a very intertwined science and topics covered on exam one will be required knowledge to answer questions on exam three.

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 take the exams during the scheduled time period or make arrangements before the exams close. There will be no makeup exam for Exam 3.

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

Homework will be assigned for each unit using Codon Learning. These are intended to be the "capstone" of the unit; i.e. they should usually be the last thing you do in a unit. 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.

Each assignment carries the same weight as all other homework assignments. The penalty for late homework is limited by the capabilities of the Codon product. Late homework is penalized 20% after the due date. This means that whether you turn it in 1 day late, or 5 days late, you cannot get higher than a 80. After 7 days, any missing homework will receive a zero.

All assigned work is scheduled well in advance and are available to do and submit for extended periods of time. You are still responsible for completing all assignments on time, even if your absence is excused.

Each assignment is weighted equally. Late homeworks are penalized 10% per day, up to a maximum of 70%. After 7 days, any missing homework will receive a zero.

All assigned work is scheduled well in advance and are available to do and submit for extended periods of time. You are still responsible for completing all assignments on time, even if your absence is excused.

Mini-Lecture Quizzes

Some units may have mini-lectures that you will be able to view. These videos are approximately 15 minutes each.

Each video will be paired with a minilecture quizzes on D2L. The quizzes contain a few thought questions that allow you to check your learning to see if you understood the material and thought processes covered in the mini-lecture. These are an opportunity for you to begin to think about and work with the concepts before they show up on homework or exams without the pressure of getting a right or wrong answer. Some questions will be easy, some hard, and some will require you to put together more than one concept in order to figure out an answer.

The minilecture quizzes are not part of your course grade but allow you to check your learning in a no-pressure environment. Correct answers and brief explanations for the answers should be visible after you complete the response questions.

There will be material covered in the reading that I will not cover in minilectures but yet will expect you to know. If a topic is not covered in a minilecture but appears on a reading quiz and/or homework, it may well appear again.

Extra Credit:

You have several options for extra credit. You may earn up to 5 points (i.e., 5%) credit that is added to your course average. Each item is weighted at 1 point, but some may earn additional credit based on effort (see specifics for each option).

> ***Visit a planetarium show:*** The East Texas A&M 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. https://www.etamu.edu/planetarium/observatory/ 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 East Texas A&M Observatory:** You will have two opportunities for a visit to the Observatory (about 5 miles south of Commerce, TX). 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.

You may earn extra credit for each option above only once. In other words, if you do both options, you get 2% added on to your total calculated grade.

You may earn extra credit for each option above only once. In other words, if you do both options, you get 2% added on to your total calculated grade.

Additionally, there is a list of extra credit viewing/experiment exercises listed on D2L Brightspace. Many will require at least minimal observations so you will need clear skies. Don't wait until the last days and expect clear skies – start early!
Each activity will be worth a minimum of 1 point up to a maximum of 5 points. The value you receive will depend upon the value of your writeup. If you do not do at least the expected effort (as specified in the instructions), you will receive a "0" as no fractional credit will be given. If you go above and beyond the expectations, you can receive more than 1 point. Be sure you ask me if you have any questions about the amount of credit for each specific activity as some are more challenging than others.

Extra Credit Terms, Conditions, and Caveats:
You may only earn extra credit once per category, though you are welcome to attend as many of the observatory and planetarium events as you like. In other words, you can only get credit for one planetarium show and one observatory visit, unless prior approval is given. All extra credit work must be turned in on or before the last day of class. Family of any age is welcome to the planetarium shows; be sure to check on the age-appropriateness of shows (all are fine for all audiences, but some are aimed at children and some at adults). You will receive 1 point of credit added to your final grade for each extra credit attempt (up to a maximum of 5 pts). Observing exercises may be worth more than 1 point depending on which one you attempt (ask beforehand if you want to know the weight for an exercise).

All extra credit must be completed and turned by the last official class day before final exam week begins.

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:

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 myLEO Online – look for "Total Calculated Grade." Any other gradebooks are *not* official.

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

- Homework Assignments: 25% (lowest 2 scores dropped)
- Exams: 75% (25% each)

Late Work

If you miss assignments or quizzes:
The following types of absences are excused if appropriate documentation is provided:

- Participation in a required/authorized university activity;
- Verified illness;
- Death in a student's immediate family;
- Obligation of a student at legal proceedings in fulfilling responsibility as a citizen

Additional absences may be valid at my discretion. All documentation for excused absences must be submitted via email. Work must still be turned in, but late penalties may be waived.

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 and will also come the same penalty as assignments. 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.

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. You should also know that you only have access to a myLEO Online course for two weeks following the final day of term.

Interaction with Instructor Statement

Email:
I can be reached by email at Jeffrey.Wilson@tamuc.edu. Please put “Life in the Universe” in your email subject header. It may take me up to 24 hours to send you a response (48 hours on the weekend or holidays). If you don’t hear back from me in that time, please send another email.

The *syllabus/schedule are subject to change.*

Office Hours: Office hours are available only in virtual formats. Office hours are times that I set aside when I promise to be available real time so that you can talk to me. You can ask questions about the course material, ask about homework, see your current grade, or ask other questions about the class or astronomy in general. During virtual office hours, you'll be free to ask questions when we get to that time.

It's important to realize that office hours are *not* just for students who are having problems in the course. If you are uncertain about anything, please visit, email, phone or drop into virtual hours before your small problems grow into big ones. If you are worried about what might be on the test, stop in. If you are curious about astronomy jobs and research opportunities, come by.

Office hours work best if you have your textbook, notes, and homework with you.

If you want to talk but cannot come during office hours, please contact me by email in order to set up an individual appointment. By setting an appointment, you both guarantee that I will be in my office (or online) and that I will have plenty of time to talk with you. You may feel free to stop by my office any time my door is open, but if you do not have an appointment and if it is not my scheduled office hours, please understand if I'm not free to talk at that instant.

Social Media:
Please don't follow me on social media until after you've graduated. You'll be disappointed anyway.

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

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

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, 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

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. https://inside.etamu.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:
https://inside.etamu.edu/aboutus/policiesproceduresstandardsstatements/rulesprocedures/13students/graduate/13.99.99.R0.10.pdf

https://inside.etamu.edu/academics/graduateSchool/faculty/GraduateStudentAcademicDishonestyForm.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: Student Disability Services

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

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 ETAMU 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.etamu.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/34SafetyOfEmployeesAndStudents/34.06.02.R1.pdf

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

East Texas A&M University Supports Students' Mental Health

The Counseling Center at ETAMU, 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.etamu.edu/counsel**

Mental Health and Well-Being

The university aims to provide students with essential knowledge and tools to understand and support mental health. As part of our commitment to your well-being, we offer access to Telus Health, a service available 24/7/365 via chat, phone, or webinar. Scan the QR code to download the app and explore the resources available to you for guidance and support whenever you need it.

http://telusproduction.com/app/5108.html

AI use policy [Draft 2, May 25, 2023]

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

COURSE OUTLINE / CALENDAR

The course will cover many of the topics outlined below. The dates below may change. D2L will be the source of truth, so check with it often and watch your email for updates.

1st Block: Introductions and Life on Earth

- Unit 1: Introductions – Aug 25 – Aug 31 (with a Sept 7 due date)
- Unit 2: Does a Universe Full of Life Make Sense? (Chapter 1-3) – Sept 1– Sep 7
- Unit 3: The Habitability of Earth (Chapter 4) – Sept 8 – Sept 14
- Unit 4: The Nature of Life on Earth (Chapter 5) – Sep 15 - Sep 21
- Unit 5: The History of Life on Earth (Chapter 6) – Sep 22 – Sep 28
- ***Exam 1: 9/29-9/30***

The *syllabus/schedule are subject to change.*

2nd Block: Life in our Solar System

- Unit 6: Searching for Life in the Solar System (Chap 7) – Sep 29 – Oct 5
- Unit 7: Mars (Chapter 8) – Oct 6 - Oct 12
- Unit 8: Europa, Titan, and Enceladus (Chapter 9) – Oct 13 – Oct 19
- ***Exam 2: 10/20-10/21***

3rd Block: Life Outside the Solar System

- Unit 9: Habitability (Chapter 10) – Oct 20 – Oct 29
- Unit 10: Detecting Exoplanets (Chapter 11) – Oct 30 – Nov 9
- Unit 11: The Search for Extraterrestrial Intelligence (Chap 12) – Nov 10 – Nov 16
- Unit 12: Interstellar Travel (Chapter 13) – Nov 17 – Dec 3
- ***Exam 3: 12/4-12/5***

All extra credit must be completed the Friday (12/5) of Exam 3 week.

Observatory Visits (Dates subject to change): See https://www.etamu.edu/planetarium/observatory/ *for dates and times.*

Visits are optional and count as extra credit. Only one visit needs to be made to earn extra credit. Additional visits do not increase earned extra credit.