

LIFE IN THE UNIVERSE
AST2037, SECTION 0854, 3 CREDIT HOURS, SPRING 2021

INSTRUCTOR: *Dr. Charles M. Telesco*

E-mail: telesco@astro.ufl.edu

Office: *Bryant Space Science Center 414; working from home during Covid*

Cell Phone: (352) 328-9264

ZOOM LECTURE TIME: *Tues, period 7 (1:55-2:55 pm) & Thurs, periods 7-8 (1:55-3:50 pm)*

OFFICE HOURS: *The hour after class or (better) by appointment*

COURSE WEB SITE: *Canvas*

REQUIRED TEXT: *Life in the Universe, 4th Edition, by Bennett & Shostak, published by Pearson/Addison-Wesley, San Francisco. Students can buy the e-book instead of the paper book.*

PRE-REQUISITES AND CO-REQUISITES: *None, although basic high school math skills (algebra & trig) are assumed.*

BRIEF COURSE DESCRIPTION: *This course offers an interdisciplinary approach to the study of the origin and evolution of life on Earth, the possibility of life beyond our planet, and the social and ethical implications of discovering extraterrestrial life. The course will focus on major scientific developments in biology, paleontology, chemistry, geology, and astronomy to help us understand the nature and possible distribution of habitable environments in the Universe. Along the way, we will learn scientific inquiry and use and practice critical thinking skills to gain new understanding of the dynamic nature of scientific discoveries.*

Following the course textbook, the course is organized into four sections:

- Introducing life in the Universe and the nature of science
- Life on Earth
- Life in our solar system
- Life beyond our solar system

DETAILED DESCRIPTION OF THE GRADED COURSE STRUCTURE

1. Examinations (75% of grade): *There will be three “in-class” exams during the semester plus one optional cumulative final exam (Test 4) during the final-exam period. Each exam accounts for 25% of your course grade. If you choose to take all four exams, then only the three best scores will be used to compute your course grade. Note, however, that each in-class exam covers a limited number of chapters, whereas the optional final is comprehensive (i.e., it covers all the course material).*

The dates of the in-class exams are **Tuesday, February 16** (covering Chapters 1-4), **Tuesday, March 16** (covering Chapters 5-8), and **Tuesday, April 20** (covering Chapters 9-13). If, for any reason, an exam must be postponed, you will be notified at least a week prior to the original date. Any changes to the in-class exam dates will be announced during class and on Canvas. *Not knowing about an announced and posted schedule change or forgetting the exam date are not valid excuses for missing an exam, and make-ups will not be granted in such cases.* Make-up exams will only be granted for documented medical or

family emergencies. The UF-designated time and date for the optional comprehensive (covering all chapters, 1-13) final exam, Test 4, are **3-5 pm, Thursday, April 29**. If you skip Test 4, your course grade will be based on Tests 1, 2, and 3. Again, if you take Test 4, your final grade will be based on the highest three test scores (lowest will be dropped). All tests will be in the regular classroom.

Exams are linked through Canvas to the online proctoring service, Honorlock

- You must use Google Chrome with the Honorlock Chrome Extension, which can be downloaded here: www.honorlock.com/extension/install
- In addition to your usual desktop/laptop computer (not phone!), webcam (both audio and video required), and stable internet connection, you are required to show your student or government-issued ID for both exams. A scientific calculator will be available on your screen through Canvas/Honorlock, though you may also use your own non-internet-capable scientific calculator. You may also have one blank scratch sheet of paper and a pencil/pen. Otherwise your table space should be empty.
- When you are ready to test, log into Canvas, go to your course, and click on your exam. Clicking “Launch Proctoring” will begin the Honorlock authentication process, where you will take a picture of yourself, show your ID, and complete a scan of your room. Honorlock will be recording your exam session by webcam as well as recording your screen. Honorlock also has an integrity algorithm that can detect search-engine use, so please do not attempt to search for answers, even if it's on a secondary device!
- Honorlock support is available 24/7/365. If you encounter any issues, you may contact them by live chat (during the exam), phone (844-243-2500), and/or email (support@honorlock.com).
- [Honorlock Student Privacy Protection](#)

2. Assignment (10% of grade): There will be one homework assignment in this course. This will be posted on Canvas and discussed in class. The assignment is worth 10% of your grade.

3. Report (15% of grade): A written report will be required for this course to support the GenEd learning objectives and outcomes. The topics, expected content, format, and deadlines of this report will be posted on Canvas and described in class.

4. Grading: A minimum grade of C is required for general education credit. See <https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx> for general UF grading policies. Your grade for the course will be based on the following:

3 Exams – (25% each)	75%
1 Report	15%
1 Assignment	10%

Grading Scale

Letter Grade	% Points	GPA	Letter Grade	% Points	GPA	Letter Grade	% Points	GPA
A	>89	4.00	B-	77 - 79	2.67	D+	64 - 66	1.33
A-	87 - 89	3.67	C+	74 - 76	2.33	D	60 - 63	1.00
B+	84 - 86	3.33	C	70 - 73	2.00	D-	57 - 59	0.67
B	80 - 83	3.00	C-	67 - 69	1.67	E	< 56	0.00

CLASS/UNIVERSITY POLICIES

- Though this is a 100% online class, my goal is to simulate the normal classroom experience as much as reasonably possible, pausing for questions when appropriate. Therefore, you should plan to regularly attend the normally scheduled class, which I hope you will find beneficial. Please follow normal classroom etiquette, stay focused, and take notes through the Zoom lecture. Due to the limitations of Zoom, I may not be aware that you want to comment or ask a question. If I do not respond or acknowledge you, please feel free to interrupt me.
- All class PowerPoint lectures will be posted as PDF files on Canvas. However, you will be expected to read the textbook. Not all material that will be covered on the tests will be discussed in class or summarized in the PowerPoint slides. To repeat: You must read the textbook.
- There is no plan to record these lectures. However, should that need arise, students who participate with their camera engaged or utilize a profile image are agreeing to have their video or image recorded. If you are unwilling to consent to have your profile or video image recorded, be sure to keep your camera off and do not use a profile image. Likewise, students who un-mute during class and participate verbally are agreeing to have their voices recorded. If you are not willing to consent to have your voice recorded during class, you will need to keep your mute button activated and communicate exclusively using the "chat" feature, which allows students to type questions and comments live. The chat will not be recorded or shared. As in all courses, unauthorized recording and unauthorized sharing of recorded materials is prohibited.
- Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the disability resource center by visiting disability.ufl.edu/students/get-started. It is important for students to share the accommodation letter with their instructor and discuss their access needs, as early as possible in the semester. Accommodations can only be provided after appropriate verification.
- Responsible citizenship among college students includes honesty and integrity in classwork, regard for the rights of others, and respect for local, state, and federal laws as well as campus standards. Students are responsible for understanding the standards of the "code of student conduct" and the Student Handbook. The Academic Honesty Guidelines and Student Conduct Code in the University of Florida Undergraduate Catalog states the following: "Academic Honesty: the University requires all members of its community to be honest in all endeavors. A fundamental principle is that the whole process of learning and pursuit of knowledge is diminished by cheating, plagiarism, and other acts of academic dishonesty. In addition, every dishonest act in the academic environment affects other students adversely, from the skewing of the grading curve to giving unfair advantage for honors or for professional or graduate school admission. Therefore, the University will take severe action against dishonest students. Similarly, measures will be taken against faculty, staff, and administrators who practice dishonest or demeaning behavior." Any student caught cheating will be referred to the Honor Code Chancellor.

- Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at <https://gatorevals.aa.ufl.edu/students/>. Students will be notified when the evaluation period opens and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals or via <https://ufl.bluera.com/ufl/>. Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/public-results/>.

GENERAL EDUCATION (GenEd) COURSE DESCRIPTION

This is a GenEd physical science (P) course.

Physical Science: The physical and biological sciences provide instruction in the basic concepts, theories, and terms of science and the scientific method. Courses focus on major scientific developments and their impacts on society and the environment. You will formulate empirically testable hypotheses derived from the study of physical processes and living things, and you will apply logical reasoning skills through scientific criticism and argument.

Student learning outcomes for a GenEd physical science course in astronomy are as follows:

I. Content

- Know the basic concepts, theories, and terminology of natural science and the scientific method in astronomy.
- Know the major scientific developments in astronomy and the impacts on society and the environment.
- Know relevant processes that govern physical systems in astronomy.

II. Critical Thinking

- Formulate empirically testable hypotheses derived from the study of physical processes in astronomy.
- Apply logical reasoning skills effectively through scientific criticism and argument in astronomy.
- Apply techniques of discovery and critical thinking effectively to solve experiments and to evaluate outcomes.

III. Communication

- Communicate scientific findings clearly and effectively using oral, written, and/or graphic forms.
- Write effectively in several forms, such as in research papers and laboratory report

TENTATIVE CLASS SCHEDULE

43 total classes covering 13 chapters and 3 exams; 3 classes/chapter average

AST 2037, Section 0854, Spring 2021: Life in the Universe Lecture Schedule & Reading

CLASS	DAY	DATE	TOPIC	READING
		January		Chapter
1	T	12	Course Overview, Universe of Life	1
2/3	R	14		
4	T	19	Science of Life	2
5/6	R	21		
7	T	26	Universal Context of Life	3
8/9	R	28		
		February		
10	T	2	Habitability of Earth	4
11/12	R	4		
13	T	9	Nature of Life on Earth	5
14/15	R	11		
16	T	16	EXAM 1 (Chapters 1-4)	
17/18	R	18	Origin & Evolution of Life on Earth	6
19	T	23		
20/21	R	25	Searching for Life in our Solar System	7
		March		
22	T	2		
23/24	R	4	Mars	8
25	T	9		
26/27	R	11	Life on Jovian Moons	9
28	T	16	EXAM 2 (Chapters 5-8)	
29/30	R	18		
31	T	23	Nature & Evolution of Habitability	10
32/33	R	25		
34	T	30	Habitability Outside the Solar System	11
		April		
35/36	R	1		
37	T	6	Search for Extraterrestrial Intelligence	12
38/39	R	8		
40	T	13	Interstellar Travel & Fermi Paradox	13
41/42	R	15		
43	T	20	EXAM 3 (Chapters 9-13)	
		NOTE:	<i>Test 1 & 2 dates may change (± 1 class)</i>	
Optional EXAM 4: (Chapters 1-13) April 29, 3:00-5:00pm				