

ASTROBIOLOGY

MCB 3703

Class Periods: Asynchronous

Location: e-Learning Canvas

Academic Term: Spring 2025

Instructor:

Jamie Foster, Ph.D.

jfoster@ufl.edu

321-525-1047

Virtual Office Hours: available by appointment: <https://ufl.zoom.us/my/jamiefoster>

I am located off-campus at the UF Space Life Sciences Lab, Kennedy Space Center

Course Description:

Astrobiology examines the origin, evolution, and future of life in our solar system. Topics will include: planet and star formation, biosphere formation, evolutionary processes biogeochemistry, microbial adaptation to extreme environments, planetary habitability, and microbiology on the International Space Station.

Course Learning Objectives:

By the end of this course students should be able to:

- 1) Describe and articulate the fundamental concepts of astrobiology
- 2) Analyze primary literature in astrobiology to improve and/or develop critical thinking skills in science
- 3) Develop essential professional communication skills target the field of astrobiology

Prerequisites: Since astrobiology is a multidisciplinary field incorporating microbiology, astronomy, chemistry, physics, and geology, students should have taken at least one introductory science class in any of the previously mentioned fields prior to taking Astrobiology.

Recommended Text:

1. Life in the Universe, Jeffrey Bennett and Seth Shostak, 5th edition

[Link to Amazon where you can rent or purchase](#)

Grades and Grade Points (1000 total):

Watching Lectures (*10% of your final grade; 100 points*) - Lectures will be available online and you will receive points for watching the lectures in their entirety through PlayPosit. An algorithm will be used to monitor how much of the lecture you watched and for some lectures that may be interactive quizzes that will help reinforce major concepts within each lecture. Grading of this part of the course will be automated and based solely on watching and interacting with the video.

Weekly quizzes (*10% of your final grade; 100 points*) – There will be a course orientation quiz that will cover aspects of how the course will work. If you watch the course introduction video and read the syllabus you should be able to ace the quiz. For each learning module there will be a quiz that needs to be completed online. The quizzes will include all material covered that week including podcasts and designed to reinforce key concepts of the weeks learning materials. The quizzes will be untimed and open book.

Group Discussions (10% of your final grade; 100 points) - There will be two group discussions over the course of the semester (50 points each) using the learning tool Perusall. The group will read a paper related to the course content. You will receive points for opening (10%), reading the entire paper (10%) and being actively engaged with other students (20%). Most of your score (60%) will be based on the quantity and quality of your posts on the document. The quality of the posts will also be considered, and emphasis will be given for analytical posts (e.g., are you evaluating strengths and weaknesses of the paper?).

Multiple Choice Exams (60% of your final grade; 600 points) - These exams will allow you to demonstrate your familiarity with the concepts, terminology, and methodologies covered in the course. Each exam will be worth 200 points and given online using Honorlock. Exams are NOT open book but you will be allowed to have two pieces of paper with anything you want written on those pieces of paper.

CHOICE OF ONE SCIENCE COMMUNICATION ACTIVITY:

A) Scientific Writing Activity – Astrobiology Literature Review (10% of grade; 100 points) – If you want to receive writing credit for this course, please compose a 4000-word review paper on an astrobiology topic that is of interest to you. A review paper is a report that synthesizes the “literature” (i.e., the important peer-reviewed source material) on a particular topic. A literature review also helps you synthesize the literature on your topic because, in the process of writing a literature review, the writer learns to (1) identify various important issues/questions raised in the literature, and (2) sort and categorize experts’ views according to the issues/questions identified in the literature. You are not writing “book reports” on specific papers - you are trying to integrate ideas from many paper to describe a key aspect of your topic. The primary **purpose** of the report is to provide your target audience with an overview of what the experts are saying about the problem under investigation. Your report will update your target audience on recent research in the field and should be written for professional scientists.

Completion of this assignment will build your skills in the following areas: critical reading, evaluation, analysis, synthesis, report organization, use and integration of sources, and reference documentation. Developing these skills will demonstrate great progress toward achieving our programmatic goals.

OR

B) STEAM - Astrobiology Communication and Art Project (10% of your final grade; 100 points) This assignment builds off the idea that there is a fundamental link between art and science: creativity and communicating ideas. Additionally, I think there is a growing public distrust of science and I think as science ambassadors we all have to continually work on improving our abilities to communicate the scientific world to the average layman. Therefore, the overall objective of this assignment is for you to work on your communication skills and also foster your creativity to think of new ways to communicate complex science to the public. **Your assignment** will be to pick a topic in Astrobiology and generate some form of presentation of that material, in which someone with a non-science background could learn and understand. This can be any format: rap video, podcast, interview with researcher, dance, animation, comic book (I have seen them all). The assignment must be interactive and engaging with the audience. **Note - if you chose this assignment then you will not receive writing credit for this course.**

For more information on current UF policies for assigning grade points see:
<https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

Attendance and Make-Up Work: For planned excused absences, such as interviews, you must contact the instructor 48 h in advance of the missed exam and provide adequate documentation.

Requirements for class attendance and make-up exams, assignments and other work are consistent with university policies that can be found at:

<https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>.

UNFORSEEN LIFE EVENTS: For ALL matters that require special consideration, please contact U Matter, We Care in the Office of the Dean of Students (<https://care.dso.ufl.edu/instructor-notifications/>). They will verify your case and contact me with advice on how to deal with your specific situation. I would like to note that a letter or e-mail from them does not guarantee special consideration and deadline extension, it is merely a suggestion on how best to deal with your case. I will make the final decision based on their recommendation after reviewing your case.

Grading Policy

The course will be evaluated on a straight scale.

Grade Points	Grade
930.0 - 1000	A
900.0 - 929.9	A-
870.0 - 899.9	B+
830.0 - 869.9	B
800.0 - 829.9	B-
770.0 - 799.9	C+
730.0 - 769.9	C
700.0 - 729.9	C-
670.0 - 699.9	D+
630.0 - 669.9	D
600.0 - 629.9	D-
< 60.0	E

For information on current UF policies for assigning grade points, see:

<https://catalog.ufl.edu/UGRD/academic-regulations/grades-grading-policies/>

Accommodations for Students with Disabilities:

Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the Disability Resource Center. See the "[Get Started With the DRC](#)" webpage on the Disability Resource Center site. It is important for students to share their accommodation letter with their instructor and discuss their access needs, as early as possible in the semester. Students requesting classroom accommodation must first register with the [Dean of Student Office](#). The Dean of Students Office will provide documentation to the student who must then provide this documentation to the instructor when requesting accommodation. It is important for students to share their accommodation letter with their instructor and discuss their access needs, as early as possible in the semester.

Course Evaluation

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. [Click here for guidance on how to give feedback in a professional and respectful manner](#). 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 ufl.bluera.com/ufl/. [Summaries of course evaluation results are available to students here](#).

University Honesty Policy

UF students are bound by The Honor Pledge which states, "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment." [The Honor Code](#) specifies a number of behaviors that are in violation of this code and the possible sanctions.

Software Use

All faculty, staff, and students of the University are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against University policies and rules, disciplinary action will be taken as appropriate. We, the members of the University of Florida community, pledge to uphold ourselves and our peers to the highest standards of honesty and integrity.

Student Privacy

There are federal laws protecting your privacy with regards to grades earned in courses and on individual assignments. For more information, please see the [Notification to Students of FERPA Rights](#).

Campus Resources:

Health and Wellness

U Matter, We Care:

If you or a friend is in distress, please contact umatter@ufl.edu or 352 392-1575 so that a team member can reach out to the student.

Counseling and Wellness Center: counseling.ufl.edu/cwc, and 392-1575; and the University Police Department: 392-1111 or 9-1-1 for emergencies.

Sexual Assault Recovery Services (SARS)

Student Health Care Center, 392-1161.

University Police Department at 392-1111 (or 9-1-1 for emergencies), or police.ufl.edu.

Academic Resources

E-learning technical support, 352-392-4357 (select option 2) or e-mail to Learning-support@ufl.edu.

Career Resource Center, Reitz Union, 392-1601. Career assistance and counseling.
Library Support, Various ways to receive assistance with respect to using the libraries or finding resources.

Teaching Center, Broward Hall, 392-2010 or 392-6420. General study skills and tutoring.

[Writing Studio](#), 302 Tigert Hall, 846-1138. Help brainstorming, formatting, and writing papers.

[Student Complaints Campus](#)

[On-Line Students Complaints](#)