Astrobiology MCB5XXX
Spring 2019 – 3 credits

Gainesville Students
Class Schedule: M 5th and 6th period 11:45 am – 1:40 pm;
Weekly Online Lecture – 50 min;

Class Location: Microbiology Cell Science Building Computer Lab Room 1011

Distance Students: All course work will be completed online and there are no live lectures only videos

Note: All learning materials and videos are available online to all students of the course

Instructor:
Dr. Jamie Foster, Associate Professor, Department of Microbiology and Cell Science

Course Website:
Login available through Canvas (http://lss.at.ufl.edu/).

Contact Information:
I am located off-campus at the UF Space Life Sciences Lab, Kennedy Space Center
My contact information is: Tel: 321-525-1047; Email: jfoster@ufl.edu;
Skype: jamief94086.

Office Hours:
Gainesville Campus: Monday 2:00 pm – 3:30 pm in the Microbiology and Cell Science Building room 1011
Virtual Office Hours: Skype Video by appointment

Course Description for Astrobiology:
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.

Learning Objectives for Astrobiology:
By the end of this course graduate students should be able to:
1) Develop an in-depth comprehension and mastery of the fundamental concepts and methodology of astrobiology;
2) Deconstruct and analyze primary literature articles in the field of astrobiology to improve critical thinking and interpretation skills;
3) Refine scientific communication skills through writing scientific critiques and abstracts of primary literature articles;
4) Understand the fundamental elements of a grant proposal such as the objectives, problems addressed, methodology, evaluation, assessments, and budget;
5) Develop the skills needed to prepare professional, competitive, compelling, and successful grant proposals.

**Required Texts and Reading Lists:**
3. All assigned primary literature articles will be provided in the File folder of Canvas for each lecture. Additional details of reading assignments can be found in the lecture schedule at the end of the syllabus. Examples of primary literature articles read in this course will include:

   - Foster and Lemus Developing the Critical Thinking Skills of Astrobiology Students through Creative and Scientific Inquiry. Astrobiology 15: 1-11
   - Waters et al., (2014) Exposure of *Bacillus subtilis* to Low Pressure (5 Kilopascals) Induces Several Global Regulons, Including Those Involved in the SigB Mediated General Stress Response AEM:80:4788-4794
   - Foster (2014) Host-Microbe Interactions in Microgravity: Assessment and Implications. Life 4:250-266
Grades and Grade Points:

1. Astrobiology-themed Grant Proposal (25% of your final grade; 250 points) - You will be required to write a five-page (single spaced) grant proposal to the NASA Earth Space Science Fellowship program (you can substitute another program, such as NSF or the Florida Space Grant Consortium Dissertation improvement award). The proposal will be evaluated in four stages to provide everyone the opportunity to improve the document. The topic needs to be approved prior to the first draft deadline and can be based on any astrobiology-related themes. It is also acceptable to base this proposal on your own research if you are currently conducting research in this field.

2. Discussion and class participation (10% of your final grade; 100 points) - There will be three asynchronous group discussions (25 points each) held online via Canvas to talk about an assigned primary literature article. So your engagement in these online chats will contribute to this portion of your grade. I will be looking for quality posts about the strengths and weaknesses of the manuscript as well as a dialog between myself the moderator and your fellow classmates. Lastly, 25 points will be awarded to your participate throughout course. It is important that you each take an active role in your own education. Just showing up (or watching the video) isn’t enough. I expect each of you to be prepared and involve yourself in the course by asking questions (either in person or online).

3. Astrobiology Primary Literature Paper Analyses (15% of your final grade; 50 points each; total of 150 points) - You will receive three peer-reviewed literature articles on one or more aspects of Astrobiology. You will be expected to write a critical summary and analysis for each research article (between 500 – 1000 words). Write your summaries in 12 font Arial, Helvetica, or Times New Roman. You must not plagiarize text from the papers given to you, nor should you cut and paste text from websites. All documents will be evaluated with Turn-it-In through the Canvas website. Plagiarizing will result in an automatic zero on the assignment. The rational behind this assignment is that as a future science professional you are often required to write abstracts (i.e., summaries) or reviews of large pieces of work into succinct accounts for colleagues, publication, or professors. Your objective is to evaluate and summarize the objectives and conclusions of the paper. The assignment will be graded based on your understanding of the scientific content, ability to analyze the author’s conclusions, and quality of writing. You will have one week to complete each assignment. I will provide you with feedback for each assignment via Canvas.

4. Weekly quizzes (10% of your final grade; 100 points) – Each week 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. There will be 11 quizzes in total and I will drop the lowest quiz (Approximately 10 points each; 100 points total).
5. **Written Exams** *(40% of your final grade; 400 points)* - Questions on the exams will take the form of short answers and essays. 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. Exams will be offered using ProctorU.

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

**Evaluation of Graduate-level Assessments**: With the exception of the weekly quizzes, which are designed to simply keep students on track with the material, the discussions, exams, and writing assignments for graduate students will be evaluated differently than the concurrently taught undergraduate course. Graduate students will be expected to demonstrate a higher level of knowledge, comprehension, analysis, and application of the subject matter. For example, student assignments will be evaluated an improved ability to relate knowledge from different lectures and synthesize these facts to make inferences and draw conclusions from the lectures and/or reading assignments.

**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](https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx).

**Grading**: Straight Scale  
For more details of the University of Florida grading policy please visit: [https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx](https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx)

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**Online Course Evaluation Process For All Students**  
Student assessment of instruction is an important part of efforts to improve teaching and learning. At the end of the semester, students are expected to provide feedback on the
quality of instruction in this course using a standard set of university and college criteria. These evaluations are conducted online at https://evaluations.ufl.edu. Evaluations are typically open for students to complete during the last two or three weeks of the semester; students will be notified of the specific times when they are open. Summary results of these assessments are available to students at https://evaluations.ufl.edu/results.

**Academic Honesty**

As a student at the University of Florida, you have committed yourself to uphold the Honor Code, which includes the following pledge: “We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity.” You are expected to exhibit behavior consistent with this commitment to the UF academic community, and on all work submitted for credit 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.”

It is assumed that you will complete all work independently in each course unless the instructor provides explicit permission for you to collaborate on course tasks (e.g. assignments, papers, quizzes, exams). Furthermore, as part of your obligation to uphold the Honor Code, you should report any condition that facilitates academic misconduct to appropriate personnel. It is your individual responsibility to know and comply with all university policies and procedures regarding academic integrity and the Student Honor Code. Violations of the Honor Code at the University of Florida will not be tolerated. Violations will be reported to the Dean of Students Office for consideration of disciplinary action. For more information regarding the Student Honor Code, please see: http://www.dso.ufl.edu/sccr/process/student-conduct-honor-code.

**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.

**Services for Students with Disabilities**

The Disability Resource Center coordinates the needed accommodations of students with disabilities. This includes registering disabilities, recommending academic accommodations within the classroom, accessing special adaptive computer equipment, providing interpretation services and mediating faculty-student disability related issues. Students requesting classroom accommodation must first register with the Dean of Students Office. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the Instructor when requesting accommodation.

0001 Reid Hall, 352-392-8565, www.dso.ufl.edu/drc/
Campus Helping Resources
Students experiencing crises or personal problems that interfere with their general well-being are encouraged to utilize the university's counseling resources. The Counseling & Wellness Center provides confidential counseling services at no cost for currently enrolled students. Resources are available on campus for students having personal problems or lacking clear career or academic goals, which interfere with their academic performance.

- **University Counseling & Wellness Center, 3190 Radio Road, 352-392-1575,**
  [www.counseling.ufl.edu](http://www.counseling.ufl.edu)
  Counseling Services  
  Groups and Workshops  
  Outreach and Consultation  
  Self-Help Library  
  Wellness Coaching

- **U Matter We Care,** [www.umatter.ufl.edu/](http://www.umatter.ufl.edu/)

- **Career Connections Center,** First Floor JWRU, 392-1601,
  [https://career.ufl.edu/](https://career.ufl.edu/).

Student Complaints:

- Online Course: [http://www.distance.ufl.edu/student-complaint-process](http://www.distance.ufl.edu/student-complaint-process)