

PHY344 Extraterrestrial Life

Fall 2012 Monday Thursday 3:05 pm – 4:20 pm, LC113

Professor

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Office hours:

Monday 4:45pm-5:30pm
Tuesday 10:35am-12:05pm
Wednesday 5:00pm-6:00pm
Thursday 4:45pm-5:30pm

Course Objectives

Students in this course will become knowledgeable in topics relating to life in the universe, including the origin of life on Earth, the possibility of life in the solar system, existence of other planetary systems, and possibilities and techniques for detection of and communication with other intelligences. The course covers a wide range of topics, drawing on astronomy, physics, chemistry, biology, geology, anthropology, and history.

After completing the course students will be able to

- Make an argument for or against the existence of intelligent life in the universe
- Critically evaluate news stories and other forms of popular media relating to extraterrestrial life
- Describe the origin of life on Earth, evaluate the possibility of life in the solar system, and be familiar with the Drake equation and the possibilities and uncertainties of each of its factors.

Textbook

The recommended textbook for this course is *Life in the Universe* by Bennett and Shostak. I do not require that you bring the book to class, I do not assign homework problems out of it, and I do not expect you to know parts of the text that I do not cover in lecture. I think it is a well-written book that is useful as a reference and for extra help with the material. A copy of the textbook will be on reserve at the library for your use.

Grading Format

Your course grade will be determined in the following way:

- 40% Quizzes (the lowest quiz score will be dropped)
- 20% Final Paper
- 20% In-class “lab” activities (the lowest *two* activity scores will be dropped)
- 10% Current article presentation
- 5% Current article questions and participation (the lowest score will be dropped)
- 5% Daily question response (the lowest *three* scores will be dropped)

Quizzes

There will be four quizzes, held on the following days: 9/24, 10/18, 11/12 and 12/10. Your lowest quiz score will be dropped. More information about the test format, including sample questions, will be made available before the first test. If you are unable to attend a test for a legitimate, excused reason you must notify me *in advance* of the test to make alternate arrangements.

Final Paper

The final paper will address the question, “Do you think that extraterrestrial life exists?” More information about what is required for the final paper will be provided at a later date. The final paper is due on the assigned final exam day, Monday 12/17, by 5pm.

In-class “Lab” Activities

During each class period we will typically do an activity in class taken from the Activities Manual for our textbook, *Life in the Universe* (unless there is a Current Article Presentation that day). These activities are meant to be performed in a separate 2-3 hour lab section, so we will do only parts of the

activities. I will provide copies of the lab activities for you. Due to time constraints I will grade a few select questions from each activity. The lowest two activity scores will be dropped.

Current Article Presentation, Questions, and Discussion

Throughout the semester each student will be required to read recent articles from sources such as newspapers, magazines, or online news outlets. I will provide the articles but am happy to take suggestions from students. For each article one student will be given the responsibility to orally present the article to the class. That student will also be required to find a second article about the same topic to get more information as well as to compare and contrast the quality of science reporting. Every student is responsible for reading both articles, and every student must come to class with one question they have about the articles to be turned in for a grade. Students will also be graded on their discussion of the article in class. The lowest question/discussion score will be dropped. I will lead a demonstration presentation and discussion early in the semester and provide further information about what is expected.

Daily Question Response

Every class period I will ask you to write a short (paragraph to half page) response to a question. In addition to giving you the opportunity to think about some of the issues that will be raised in the course, this activity will give you the opportunity to practice writing about the topics as well as give me the opportunity to provide feedback about your writing before the final paper. Therefore they will be graded mainly for effort and completeness.

Attendance

This is a small intermediate-level course and participation in class is a large part of the learning process. You are expected to attend every class. However I realize that life happens and you may have to miss an occasional class meeting. For that reason I have set up the grade scheme so that the lowest grade is dropped for each in-class grade category. This is your “free pass” to missing class. Just be sure to catch up with the course material on Blackboard and come by my office hours with any questions or to pick up the activity worksheets that you missed.

Blackboard

I will use the Blackboard course management software as part of this class. The Blackboard system is located at <https://blackboard.newpaltz.edu/> or via a link on the main New Paltz website. Course materials such as my lecture notes, links to articles, and test solutions will be posted to the class website. Your grades will be posted there as well. I will also use this system to communicate with you; make sure your email address in the Blackboard system is one that is current and checked regularly.

Academic Honesty and Collaboration

“Students are expected to maintain the highest standards of honesty in their academic work. Cheating, forgery, and plagiarism are serious offenses, and students found guilty of any form of academic dishonesty are subject to disciplinary action.” (Student Handbook page 14)

I take this seriously.

Science is a collaborative effort. Therefore, you are expected to work with your classmates, share ideas, discover together, and learn from each other. However, the work that you turn in must be your own and written in your own words.

Students With Disabilities

Students with documented disabilities who believe that they will need classroom and/or testing accommodations are encouraged to contact the Disability Resource Center in the Student Union, room 210, 257-3020 as close to the beginning of the semester as possible. The DRC will provide forms verifying the need for accommodations for you to deliver to your instructor. Reasonable accommodations will be put into place once the instructor receives the form.