

ASTRONOMY 111
Introduction to Astrobiology
Spring Quarter 2018

INSTRUCTOR: Dave Meyer
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OFFICE HOURS: MWF 12:30 - 1:30 PM

TA: Alex Gurvich
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OFFICE HOURS: TTh 3:00 – 4:00 PM

LECTURES: MWF at 2:00 – 2:50 PM in Tech LR3
TEXTBOOK: *Life in the Universe (4th edition)* (Bennett & Shostak)
MID-TERM EXAM: Wednesday, May 2, 2018 2 PM Tech LR3 (1 hour)
PAPER DUE: Wednesday, May 16, 2018 2 PM Tech LR3
FINAL EXAM: Monday, June 4, 2018 2 PM Tech LR3 (1 hour)

Grading Policy

The course grade will be based on the final (35%) and mid-term (35%) exams, the paper (20%), and two “pop” quizzes (10%). The pop quizzes will be given without warning twice in lecture during the quarter. There will be no make-up quizzes. Since only the highest quiz grade will be counted, missing one will not hurt your grade. The exams will consist of multiple choice, short answer, and essay questions.

The Paper

In this course, we will discuss exciting new developments in astrobiology. The public obtains this information through newspaper and magazine articles. As an Astro 111 student, you will be in a position to make informed judgments as to the accuracy and reliability of such articles. Your assignment is to find a recent (within the past 6 months) article reporting a new astrobiology discovery in a reputable (no tabloids!) publication and critique it. The article you choose should be longer than several paragraphs. In your paper, you will provide some background on the astrobiology covered in the article, discuss the importance of this new development, and most importantly, evaluate the accuracy and reliability of the article based on what you have learned in this course. Papers that exhibit the most original thinking and creativity in expression will be viewed most favorably. The finished product should be 4 to 6 double-spaced typewritten pages long and include a xerox copy of the article reviewed. No papers will be accepted after the deadline on May 16 at 2 PM.

Observing Sessions

There will be evening observing sessions every Wednesday night throughout the quarter utilizing the historic 18.5-inch telescope in the Dearborn Observatory. If the weather cooperates, you will have an opportunity to view the Moon, planets, nebulae, etc. If not, the TA on duty will give you an entertaining tour of Dearborn. Either way, you will be exposed to a view of the universe not easily discussed in a lecture setting. Attending at least one of these sessions during the quarter is strongly encouraged and will be of help on the final exam. Since we can accommodate only a limited number of students per session, a prior sign-up will be in effect after lecture each Wednesday for that night's observing. **DON'T WAIT UNTIL THE END OF THE QUARTER.** The instructor will inform you where and when to meet for the sessions.

Course Outline

4/3 *Introductions* (Read Chap. 1)

4/4, 6 *How Big is the Universe?* (Read Chap. 3)

4/9, 11 *Our Home Planet* (Read Chap. 4)

4/13, 16 *What is Life?* (Read Chap. 5)

4/18, 20, 23, 25 *The Origin and Evolution of Life on Earth* (Read Chap. 6)

4/27, 30, 5/4 *Life on Mars?* (Read Chap. 7, 8)

Mid-Term Exam: Wednesday, May 2, 2018 at 2 PM in Tech LR3

5/7, 9 *Life in the Outer Solar System?* (Read Chap. 9)

5/11 *The Future of Life on Earth* (Read Chap. 10)

5/14, 16, 18, 21 *The Search for Extrasolar Planets* (Read Chap. 11)

Paper Due: Wednesday, May 16, 2018 at 2 PM in Tech LR3

5/23, 25, 30 *The Search for Intelligent Extraterrestrial Life* (Read Chap. 12)

6/1 *The Fermi Paradox* (Read Chap. 13)

Final Exam: Monday, June 4, 2018 at 2 PM in Tech LR3