

ASTRONOMY 380: LIFE IN THE UNIVERSE

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Required Text: *Life in the Universe, Second Edition*
by Bennett, Shostak, and Jakosky
Website: <http://elms.umd.edu> and log in with your UID and go to class area

1 Overview

This course is a broad scientific survey of possibilities for life in the Universe beyond the Earth. We examine how life arose on the Earth, speculate on the minimum requirements for life to develop and look at likelihood that there are planets and environment in our Galaxy and the Universe that could support life. The subject matter encompasses topics in astronomy, biology, and geology. The course also looks at the possibility of communication with life from other planets, past, present and future: have we been contacted, what limits our ability of communicating with other civilization, and what can we do to search for other civilizations. This is an exciting area of scientific discovery where the answer to the most fundamental question, is there life elsewhere in the Universe, is unknown. But the answer could well be known in your lifetime.

In addition to learning about the possibilities for life in the Universe, a second goal of this class is to develop your critical thinking capability. How do we go about formulating answerable questions? How do we identify the limits of our knowledge and estimate the impact of our limited ability to know things? How can we assess the reliability of sources of information? Some equations and simple algebra will be used in the course.

2 Course Structure

ASTR 380 has two weekly lecture sessions of 1.5 hours. The lecture sessions will combine lecture, question/answer, and interactive discussion. The lectures present material and provide a forum for general questions. They are intended to parallel the text. Thus for better understanding of the lecture material, it is important for you to *read the text before lecture*. You are responsible for all material presented in class, discussion, and homework, even if it is not in the text. You are not responsible for material in the text that is not covered in class.

3 Grading

Your final grade will be based on the mid-term exam, in-class exercises, homework, and the final exam. These factors will be combined in the following percentages to determine your class grade:

- 30% weight on the mid-term exam;
- 30% on labs, homework, and class exercises; and
- 40% on the final exam.

The mid-term exam is scheduled for the date given on the accompanying class schedule. The exam will cover all material presented up to that point. The exam will occur during the regular class lecture hour in the same room.

Homework will be assigned most weeks and is to be turned in at the beginning of class on the designated day. Homework turned in after the beginning of class on the due date will be considered late. Late homework may be turned in up to 1 week after the due date, at a penalty of 20% reduction in score. No homework is accepted that is more than 1 week late. It is expected that each homework assignment will take an hour or less to complete if you are attending lecture and are up-to-date on your reading of the text. At times, written work will be given to be completed during class, which will be graded and count towards your final grade.

Lastly, the **final exam** will be a cumulative exam drawing on all material covered. The final will be given at the time, and in the room, listed in the University course schedule.

Finally, a word to the wise, the grading structure of this class makes it mathematically impossible to get an ‘A’ grade for the course without doing reasonably well on the homework and class work. In my experience, students who do not do homework seldom get better than a ‘C’ course grade; don’t count on being the exception.

4 Missed Exams and In-Class Work

The University recognizes only three excuses for missing exams: religious holidays, University-approved travel, and illness. Except for sudden illness, you should provide a valid written excuse in advance of the scheduled exam. If you have an emergency, you must provide a valid written excuse (as defined in the University Handbook) within ONE WEEK after the midterm exam.

Make-up exams will be scheduled at a mutually acceptable time and may be written or oral, at my discretion. If you do not have a valid excuse, you will NOT be allowed to make-up the exam.

If you miss the *final exam*, a valid written excuse must be provided within two days after the missed final exam. In addition, you must arrange with me a time for a make-up exam within two days after the exam date listed in the University course schedule. This is fixed because course grades are due 48 hours after the final exam has been held.

If you miss in-class work, you must present a valid excuse the next time that you are able attend class. We will make arrangements with you to make-up the work.

5 The Honor System

University academics operate on the basis of the Code of Academic Integrity. Acts of academic dishonesty include cheating, fabrication, facilitating academic dishonesty, and plagiarism. Specifically, activities such as cheating on exams or quizzes, copying homework, knowingly permitting your homework or exam to be copied, and submitting forged excuses for absences from exams or classes are violations of this code. All cases of suspected academic dishonesty will be given to the Student Honor Council to investigate and resolve. The normal sanction for academic dishonesty is a course grade of ‘XF’, denoting failure due to academic dishonesty. The Code of Academic Integrity is printed in full in the Undergraduate Catalog.

There are a couple of potential gray areas that arise in this class so let’s try to draw some dividing lines between right and wrong. For homework, you are permitted to work with other students in the class on the homework. This includes discussion of the problem and solution in a cooperative, mutually contributing fashion. However, you should write out your answer in your own words. You should NOT, under any circumstance, simply copy someones homework and call that “working together.” You should NOT seek out or use “solution sets” from previous students. You may seek help on homework problems from the TA or myself. There is no gray area for exams; if we strongly suspect that an answer has been copied from another student, the case will be referred to the Honor Council.

If you have questions regarding what is appropriate, please talk to me.