

Syllabus For Astr 202

Welcome to Astronomy 202 (on-line version)

Life in the Universe

Spring 2021, section 001, Honors

Professor: Laird Close, office: N428 Steward Observatory,
email lclose@as.arizona.edu
(when emailing please add Astr 202 in the subject line)
Office hours: Monday noon-1PM by zoom after class
Wednesday 2PM by zoom after class
(please email if you wish to attend office hours on Wednesday)

TA: Alex Bixel, office hours in rm N208 Steward Observatory
Email: abixel@email.arizona.edu
Office hours by zoom Tuesdays and Thursdays 11-noon

Introduction to the Course

This course satisfies the Gen. Ed. Natural Sciences Tier 2 requirement and is intended for mainly non-science majors.

In this course we will explore how the Universe, Sun, and Earth were formed. How the first life on Earth started. How this life evolved into complex multi-celled species. We will outline, what appear to be, the necessary conditions for life to exist and thrive. We will study where in our solar system there could be life. We will learn about other planets outside our solar system orbiting other stars. We will examine these new worlds for possible habitable zones. We will also estimate how likely it is that we could communicate with another intelligent civilization, and how such communication could be possible. We will also examine issues such as space travel, terraforming, and the evolution of civilizations. **The emphasis of the course is on understanding**, not on pure memorization.

Background Preparation

Recommended Prerequisites: either Gen. Ed. Natural Sciences (NATS) 170 level (like Astr 170A, B, or C). Students that have not taken a tier 1 Gen-Ed science course might have difficulty with this material. Students that have taken Astr 170A or 170B "The Physical Universe" will be more familiar with some of the material in this course, but it is not required to take "The Physical Universe" before this course.

Syllabus For Astr 202

The concepts of simple geophysics, basic chemistry, and astronomy are fundamental to understanding the information presented in this course. *If you have not been exposed to these concepts before, you might wish to study them immediately in a general textbook like that used at the Gen Ed. Astr 170A1 or 170B1 or 170B2 level. You should also be familiar with very basic algebra, fractions, and scientific notation.* This course will also require frequent out of class work, as well as independent research. **A strong interest in the course material is the best prerequisite!** You should have a small inexpensive calculator at your disposal (one that does powers, roots, and trigonometric functions). *Please seek help in-class (or office hours) when you encounter a concept that you do not understand.*

Textbook

The textbook for this course is the course guide for Professor Close's "[Life in Our Universe](#)" course that also has a set of 24 high-quality streaming lectures (or on a set of DVDs). In the streaming "instant video" option the textbook is offered as a PDF for downloading, in the case of the DVDs it is a real hardcopy book.

I recommend the "instant video" option since most students don't have DVD players. However, if you like DVDs you can order the DVD set for a little more money.

Both the "instant video" or DVD options are available for purchase from the Great Courses website. *Students that are enrolled in Astr 202 can purchase the textbook and lectures at a much reduced (70% off) rate – instructions on how to do this will be given first day of class.* You must order this textbook and lectures to attend this class

These high-quality professional lectures will form the core lectures of the course. Students are expected to watch the relevant lecture and complete the (straightforward) lecture homework before coming into class. The homework is due at the very start of class (**no late homework will be accepted**). In this manner class time will be used to help you really learn the material at a deeper level with personal help "coaching" from the Professor and the TA during class time (unlike what is possible in your other large classes at the University of Arizona). This allows everyone to do better in this course than just a classical lecture class could allow. Students learn more interesting material in a, hopefully, enjoyable and entertaining manner.

Syllabus For Astr 202

Evaluation

Your grade in this course will strongly depend on your participation/attendance in class and doing the homework and quizzes. The exact breakdown is:

Observing/writing project (20%),
Monday and Wednesday homework exercises (20%),
Friday quizzes (20% in total),
Midterm exam 1 (20%),
Midterm exam 2 (20%).

While on-line the exams/quizzes are now open book and will consist of multiple-choice and short written answer questions. Your grades will be available always throughout the course on the "desire-to-learn" D2L server (logon from student link).

The final course grades:

≥90% of the total number of points available you will receive an A,
≥75% B,
≥60% C,
≥50% D,
below 50% an E.

Observing Project

The observing project will be detailed later in the semester.

The grades for this project will be based on mainly on individual effort. Students that use copied text in their work without quotations and proper citations will be given a grade of zero. Grades will be strongly based on the individual efforts, observing work, and individual report.

Policies

- *Do your own work.* Modern science is collaborative, and people learn from talking to each other. Feel free to talk to the instructor, TA, or other students about homework assignments. But the work you turn in must be your own -- **don't ever copy assignments.** Copying is cheating and will be handled

Syllabus For Astr 202

according to university policies. The instructor subscribes to the University's Code of Academic Integrity. The Code prohibits all forms of academic dishonesty, including cheating, plagiarism, and facilitating dishonesty by others. The repercussions for all of those found guilty of violating the Code will include loss of credit for the work (grade=0) and may include failure of the course or more extreme measures as needed.

- *Attendance, participation, and conduct.* Attendance and participation in class is an important part of your class grade (even if we are all on-line). **Students who are absent will have difficulty passing this course -- attendance of all the classes is critical in this class since it is this work that counts for much of your grade.** You should participate in class by asking questions (use the “raise hand” function in zoom, the chat function can also be used). People talking during lectures will be asked to leave. *No cell phone use, reading newspapers, or surfing the web allowed during class. Students that break these rules will be asked to leave. Cell phones will be returned at the of the class. Please don't leave in the middle of class it is disruptive to the other students.*
- *Late Assignments.* **No credit, WITH NO EXCEPTIONS, will be given for late work.** Because we want to be fair to those that turn in work on time, we will not accept late work. The “lecture homework” is due **at the start of class** – no late work will accepted. There is an absolute deadline for homework. If you are concerned about not being able to turn in your work, feel free to turn it in early! We will accept homework at any class meeting prior to the deadline. Please do not email homework, submit it to D2L. Your lowest homework will be dropped from your final grade, **so you can miss one homework without it lowering your grade.**
- *Missed Quizzes and exams.* **No makeup quizzes or midterms, WITH NO EXCEPTIONS, will be administered.** The exams/quizzes are already scheduled and posted on the class schedule. If you know that you will miss an exam (before the exam), you must make arrangements (only for extremely rare circumstances) for an oral exam at a time and date prior to the written exam. If you can see a conflict for religious reasons please tell the professor within the first 3 weeks of class, all the quizzes, midterms are clearly scheduled below, after the first 3 weeks have passed no exceptions will be made. The lowest quiz score is dropped, **so missing one quiz does not count against you.**
- *Students requiring special accommodation* in testing or note taking must notify Prof. Close and must deliver to Prof. Close the Disability Resource Center faculty letter within the first few days of the course. If you have any questions

Syllabus For Astr 202

about accommodations please first talk to the Disability Resource Center
<http://drc.arizona.edu>.

- *Grading.* You have one week from the time an assignment or exam is returned to challenge any perceived errors. Although rare, there are occasions when grading errors occur, and you should review your returned work. Note that the lowest quiz and lowest homework grade will be dropped from your final grade.

Web Site

The course website in on D2L (desire to learn) it includes the active syllabus, schedule, special announcements, and other course materials. It is also where your grade will be posted as soon as possible. It is also where each zoom lecture starts as an “upcoming activity” on the class calendar.

Other Important Notes about this class:

Absence and Class Participation Policy

The UA’s policy concerning Class Attendance, Participation, and Administrative Drops is available at: <http://catalog.arizona.edu/2015-16/policies/classatten.htm>

The UA policy regarding absences for any sincerely held religious belief, observance or practice will be accommodated where reasonable, <http://policy.arizona.edu/human-resources/religious-accommodation-policy>.

Absences pre-approved by the UA Dean of Students (or Dean Designee) will be honored. See:

<http://uhap.web.arizona.edu/policy/appointed-personnel/7.04.02>

Participating in this course and attending lectures and other course events are vital to the learning process. As such, attendance is required at all lectures and discussion section meetings. Students who miss class due to illness or emergency are required to show documentation from their healthcare provider where possible or other relevant, professional third parties.

Threatening Behavior Policy

The UA Threatening Behavior by Students Policy prohibits threats of physical harm to any member of the University community, including to oneself.

Disruptive Behavior in an Instructional Setting:

Syllabus For Astr 202

<http://policy.arizona.edu/education-and-student-affairs/disruptive-behavior-instructional-setting>

Accessibility and Accommodations

Our goal in this classroom is that learning experiences be as accessible as possible. If you anticipate or experience physical or academic barriers based on disability, please let me know immediately so that we can discuss options. You are also welcome to contact the Disability Resource Center (520-621-3268) to establish reasonable accommodations. For additional information on the Disability Resource Center and reasonable accommodations, please visit <http://drc.arizona.edu>.

Code of Academic Integrity

Students are encouraged to share intellectual views and discuss freely the principles and applications of course materials. However, graded work/exercises must be the product of independent effort unless otherwise instructed. Students are expected to adhere to the UA Code of Academic Integrity as described in the UA General Catalog.

See: Code of Academic Integrity: <http://deanofstudents.arizona.edu/academicintegrity>

The University Libraries have some excellent tips for avoiding plagiarism, available at <http://www.library.arizona.edu/help/tutorials/plagiarism/index.html>.

Selling class notes and/or other course materials to other students or to a third party for resale is not permitted period. Violations to this and other course rules are subject to the Code of Academic Integrity and may result in course sanctions. Additionally, students who use D2L or UA e-mail to sell or buy these copyrighted materials are subject to Code of Conduct Violations for misuse of student e-mail addresses. This conduct also constitutes copyright infringement.

UA Nondiscrimination and Anti-harassment Policy

The University is committed to creating and maintaining an environment free of discrimination; see <http://policy.arizona.edu/human-resources/nondiscrimination-and-anti-harassment-policy>

Subject to Change Statement

Syllabus For Astr 202

Information contained in the course syllabus, other than the grade and absence policy, may be subject to change with advance notice, as deemed appropriate by the instructor. The most current version will always be posted on D2L.

Course Learning Outcomes

Upon completion of this course, students will be able to:

- understand the nature and application of physical science
- apply ideas and processes beyond the classroom
- recognize the complexity of many scientific issues
- speak and write about scientific knowledge
- appreciate the relative scale of objects, rates of change, linear and nonlinear growth
- critically analyze and interpret data and results presented in tables, graphs and charts as well as perform appropriate mathematical calculations