

**Syllabus: ASTR 202 Fall 2015**  
**Life in the Universe**  
**Section 002: TTh 2:00-3:15pm Steward**  
**Observatory N210**

**1. Instructor**

Name	Office Hours	Room	Phone	Email
Professor: Chris Walker	MW 2-3	SO 211	621-8783	<a href="mailto:cwalker@as.arizona.edu">cwalker@as.arizona.edu</a>
Lecturer: Brandon Swift	TBA	D317	621-2589	<a href="mailto:bjswift@gmail.com">bjswift@gmail.com</a>
TA: Stefan O'Dougherty	TBA	TBA	TBA	<a href="mailto:sodougherty@optics.arizona.edu">sodougherty@optics.arizona.edu</a>

Office hours can also be made by appointment.  
The course website can be found at <http://www.d2l.arizona.edu>.

**2. Course Goal**

The goal of this course is for the student to gain a better understanding of life in the Universe and insight into the inter-relationship between different fields of scientific exploration (e.g. astronomy, geology, biology, anthropology, and engineering). In this course you will learn about where we come from and where we are going and the chance of meeting other travelers along the way.

**3. Prerequisites**

Either NATS 101 or NATS 102 or ASTR 170A, 170B, or 170C.

**4. Course Work and Grading Policies**

Grading will be based on a percentage of final points as follows:

90-100%	A
80-89.9%	B
70-79.9%	C
60-69.9%	D

The percentage breakdown will be as follows:

2 midterms	40%
1 final exam	25%
in-class readiness	5%
1 creative project	10%
4 take-home labs	20%
extra credit	0.5% each, up to 3%

#### 4.1. Required Exams

There are **three midterms and a final**. The lowest midterm score will be dropped. The top two midterm scores are each worth 20% of your final grade. The final exam is worth 25%. There are no make-up exams, except with a written University or doctor's excuse.

Dates:

Midterm 1: Thursday, September 17, 2:00-3:15 pm

Midterm 2: Thursday, October 15, 2:00-3:15 pm

Midterm 3: Thursday, November 19, 2:00-3:15 pm

Final Exam: Thursday, December 15, 3:30 – 5:30 pm

#### 4.2. Creative Project

An important component of the class is the **creative project**. The creative projects will be chosen by the student, with prior approval by the instructor. We make two suggestions. The first suggestion is that these projects relate to your foremost area of academic interest, as well as the course theme. For instance, if you are an education major, you may want to develop a lesson plan for grade school and implement it. The best projects are usually term papers, ~10 pages in length. **Abstracts** stating the nature of your project are due in the lecture or to d2l **on or before Oct. 22<sup>nd</sup>**. The **final project** is due **Nov. 24, 2013**.

#### 4.3. Lab Exercises

There are 4 take-home **lab exercises**. Every student is expected to do each lab exercise. Each lab exercise will be worth 5% of your final grade. **If you work with one or more students in doing the labs, their names must appear under the heading 'Collaborators' at the top of your lab and each student must turn in his or her own work.** The midterms and final may have questions on them pertaining to the lab exercises,

so you should be sure to understand what you turn-in. These labs will be assigned in class and are to be turned-in on the date specified in class. Should you miss class on that day you may take a high quality scan of your work and turn it into the drop box on d21. **NO LATE WORK WILL BE ACCEPTED.**

#### **4.4. Readiness Quizzes**

A short **readiness quiz** will be given at the beginning of most classes. The quiz will contain 1 or 2 questions covering the material presented in the previous lecture. The top 20 quizzes will be counted toward 5% of your final grade.

#### **4.5. Extra Credit**

For extra credit students may attend the Steward Observatory Public Evening Lecture Series. These lectures are held at 7:30 pm on the date specified and last about an hour. They are located in your classroom, N210, in Steward Observatory. Each extra credit event comprises up to 0.5% added on to your final grade for a total of up to 3% added on to your final grade. To get credit for an extra credit event, you will be required to hand in notes from the lecture and a **one page typed summary of the lecture**. The lecture schedule can be found at:

<https://www.as.arizona.edu/public-evening-lecture-series>

The write-up and all of your notes will be due in class or to the d21 drop box within one week of the lecture. Following the talks, there are opportunities for viewing the night sky (weather permitting) with the use of the 21-inch telescope. All lectures and the use of the telescope afterward are free of charge.

As an alternative to attending an outside lecture for extra credit, students may propose to write a short (~2 page) report on a course related lecture they attended, article they have read, or site (e.g. observatory, archaeological, NASA Center, etc.) they have visited. Please check with the instructor beforehand to make sure the subject matter will be acceptable.

## **5. Course Materials**

Things you may want to have in order to make the course easier:

1. A calculator with scientific notation
2. A ruler
3. An inquiring mind

## **6. Absence Policies**

Attending class and taking notes is an essential part of this course. The student is responsible for all material covered during the lectures. Missing lecture on a regular basis is likely to result in a lower grade, because of missed material and missed Readiness Quizzes. Absences for holidays or special events observed by organized religions will be excused for those students who show affiliation with that particular religion. Absences pre-approved by the UA Dean of Students (or Dean's designee) will also be excused. If you miss a quiz for one of these two reasons we will make sure that it does not count against you. Please let us know in advance with an e-mail that you will be missing class. Should you have a conflict with any of the midterms for one of these reasons, please see us immediately.

## **7. Academic Integrity**

In science, we depend on good faith efforts to report as fully and accurately as possible observations, measurements, and experiments. Presentation of any work other than your own is considered academic dishonesty. This includes copying assignments from others and any other form of cheating or plagiarism. Note in particular that if you substitute a prediction, however derived, for an actual observation or measurement, you are guilty of scientific fraud. We expect that all of the work you present for evaluation is in fact your own and that you will not give or receive unauthorized assistance in any academic exercise. Be careful of collaborations in which each participant does not contribute the full quota of independent work. If any penalty has to be assessed for a breach of integrity, the University requires official reports to be made to protect the rights of everyone involved. Expect University policy to be followed strictly in all matters of academic integrity.

In short, as a rule of thumb, ask yourself if you would want your instructor there when you collaborate. If not, you're probably cheating. Penalties for cheating range from zero credit on the assignment to failure of the course.

## **8. Students with Disabilities**

Students with disabilities who require reasonable accommodation should provide us with the proper documentation from the Disability Resource Center. All information will remain confidential and be used only to help in accommodating the student.

## **9. Classroom Behavior**

Please do your best to arrive on time. Do not come to class just to take the Readiness Quiz and leave. The Quiz is used as an attendance record. If you turn in a quiz, it means you will be present for the whole class; otherwise it will not be counted. As a courtesy to your fellow students and the instructor, please restrain yourself from having non-course related conversations during class.

## **10. Approximate Course Outline and Calendar**

Professor Walker will be present on campus for Weeks 1 through 9, after which he will be at McMurdo Station, Antarctica. The class will continue to meet, as usual, in Rm. N210, with Lecturer Swift and TA O'Dougherty present. Prof. Walker will Skype in, when possible, and lead lectures and classroom discussions from Antarctica.

- Week 1: From Big Bang to Atoms
- Week 2: From Molecules to Stars
- Week 3: Planet Formation; Earth's Origins
- Week 4: The Primordial Soup
- Week 5: Extrasolar Planets
- Week 6: Life in the Solar System
- Week 7: Darwinian Evolution
- Week 8: Origin of Intelligence
- Week 9: Human Evolution
- Week 10: Lifetime of a Civilization
- Week 11: How many others are out there?
- Week 12: How will we communicate with them?
- Week 13: Interstellar Conquest
- Week 14: First Contact
- Week 15: Review
- Week 16: Final Exam

Lectures are subject to change depending on the pace of the class, and satellite connectivity from the bottom of the world.

