

# PTYS/ASTRO 170B2 (001)

## The Universe and Humanity: Origin and Destiny

*Space Sciences Building, Rm 308*  
*Tuesday & Thursdays 11:00-12:15*

Class website:  
<http://d2l.arizona.edu>

**Instructors:** Prof. Caitlin Griffith    Office: Space Sciences 424, 626-3806  
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Office Hours: Thurs 12:15-1:15 PM

**Teaching Assistants:**

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**Course Objectives:** This course introduces non-science majors to key scientific ideas in Physics, Chemistry, Geology, and Astronomy. Scientific topics especially current in the news will also be discussed. The course will introduce the scientific method, illustrate the application of scientific principles to both scientific and non-scientific problems, and provide the basic tools needed to make informed decisions about scientific and technological problems. Ultimately, the goal is to instill in students a deeper understanding of the processes that shape the universe, the solar system, planets, and Earth.

### **Recommended Text:**

- 1) “The Physical Universe” by K. Krauskopf & A. Beiser, 11<sup>th</sup> edition . The ISBN number is 0-07-301465-6. The book was published by McGraw-Hill in 2005. There may be other reading material handed out in class. Some of the material covered in lectures will not be in the book. Students are responsible for all material in reading assignments, the textbook (assigned sections) and the lectures.
- 2) Elements of Style, William Strunk & E. B. White (2000) [ISBN 0-205-30902-X](https://www.amazon.com/ISBN-0-205-30902-X). This book is also on the web at <http://www.crockford.com/wrrrld/style.html>, and with pictures and music (!) at <http://www.npr.org/templates/story/story.php?storyId=4985137>

**Grades** will be based on six components weighted as follows:

40% Homework and Lunar Phases Project  
30% Quizzes  
20% Paper  
5% In-Class Work  
5% Seasonal Changes of the Sun Project

+5% Study assignments (extra credit)

Final grades will be determined using a statistical method (curve) based on the overall performance of the class. However, if your final percentage falls within the following ranges, you are guaranteed at least the corresponding letter grade

A>89%; B: 80-89%; C: 70-79%; D: 60-69%; E<60%

### Quizzes

There will be three quizzes. Each will last one hour and ten minutes and be given during a regularly scheduled class period. Each is worth 10% of the grade. All quizzes will be cumulative but focused on more recent material. There is no final exam. However, the final quiz, will include all the material learned in class and will be given on the last day of class.

### Homework

The bulk of the grade rests on the weekly homework. No late homework will be accepted. The lowest homework grade will be dropped from the final grade. Note that homework that includes written assignments will be graded on the basis of content, grammar, and clarity.

### Paper

A large part of the grade rests on class papers. Each student will write about one of the following topics that are currently in the news: the greenhouse warming of Earth's atmosphere or our growing understanding of exoplanets, that is, planets outside our solar system. Detailed instructions, which will be given in a separate write up, must be followed carefully.

### In-class Assignments

In-class assignments will be given randomly throughout the semester. This work will be graded generously on a pass/fail scale (pass=full points, fail=0 points) according to effort and the clarity of the explanations of the completed sections, rather than so much the completion of the tasks. The goal is write the assignment to convince the grader that you understood the tasks completed in the available timeframe. The TAs and instructor will also help all of you with the assignments. Makeup assignments will not be given. The lowest in-class assignment grade will be dropped from the final grade. If a student misses an assignment due to a pre-approved absence, this will not be counted towards the final grade.

### Moon and Sun projects

Students will be given 2 projects in which they record their own data. The Lunar Project will be conducted over a period of 2 weeks, covered in two home works. The Sun project will be conducted and over the entire semester. These projects allow the student to be the scientist, and carry out a study following the scientific method. Students are encouraged to show the professor or teaching assistants the results of their first two entries to ensure that the student has understood the project and is meeting the expectations of exercise.

### Study Assignments

Additional supplement assignments are given periodically to help students better comprehend the material. These exercises will be conducted on the class website. Students must log into the website and answer exercise questions online. This work serves as extra credit for the course.

### Absences and Late Work:

Quizzes and assignments that are missed by students with pre-approved absences will not be counted towards the final grade. Such pre-approved absences include students who are absent either for University-approved activities that have the Dean's approval (e.g., intercollegiate athletics, pre-professional conferences, etc.) and religious holidays. In the result of an illness students will be excused from work if they can provide a doctors note that clearly indicates the need for the absence. All other situations will be evaluated by the instructor on a case-by-case basis.

### Students with disabilities:

If you anticipate barriers related to the format or requirements of this course, please meet with me so that we can discuss ways to ensure your full participation in the course. If you determine that disability-related accommodations are necessary, please register with Disability Resources (621-3268; [drc.arizona.edu](http://drc.arizona.edu)) and notify me of your eligibility for reasonable accommodations. We can then plan how best to coordinate your accommodations.

### Additional Points:

It is strongly recommended that all students read the University of Arizona's Code of Academic Integrity (<http://studpubs.web.arizona.edu/policies/cacaint.htm>). All students in this course are expected to abide by this code, which will be strictly enforced. Cheating will not be tolerated in any form. If a student is caught cheating on an exam or homework, the penalty will be at least failure in the course.

### Absence and Class Participation Policy

The UA's policy concerning Class Attendance, Participation, and Administrative Drops is available at <http://catalog.arizona.edu/policy/class-attendance-participation-and-administrative-drop> (<http://catalog.arizona.edu/policy/classattendance-participation-and-administrative-drop>)

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/religiousaccommodation-policy> (<http://policy.arizona.edu/humanresources/religious-accommodation-policy>).

Absences preapproved by the UA Dean of Students (or dean's designee) will be honored. See <http://policy.arizona.edu/employmenthuman-resources/attendance> (<http://policy.arizona.edu/employmenthumanresources/attendance>).

### Classroom Behavior Policy

To foster a positive learning environment, students and instructors have a shared responsibility. We want a safe, welcoming, and inclusive environment where all of us feel comfortable with each other and where we can challenge ourselves to succeed. To that end, our focus is on the tasks at hand and not on extraneous activities (e.g., texting, chatting, reading a newspaper, making phone calls, web surfing, etc.). Additional recommendations depending on instructor preferences: Students are asked to refrain from disruptive conversations with people sitting around them during lecture. Students observed engaging in disruptive activity will be asked to

cease this behavior. Those who continue to disrupt the class will be asked to leave lecture or discussion and may be reported to the Dean of Students. Alternate language for those who want to restrict computers and laptops to an area of the classroom: Some learning styles are best served by using personal electronics, such as laptops and iPads. These devices can be distracting to other learners. Therefore, students who prefer to use electronic devices for note-taking during lecture should use one side of the classroom. Alternate recommended language for those who do not wish to permit laptops in the classroom: The use of personal electronics such as laptops, iPads, and other such mobile devices is distracting to the other students and the instructor. Their use can degrade the learning environment. Therefore, students are not permitted to use these devices during the class period.

### 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. See <http://policy.arizona.edu/education-and-student-affairs/threatening-behaviorstudents> (<http://policy.arizona.edu/education-and-student-affairs/threatening-behavior-students>).

### Accessibility and Accommodations

At the University of Arizona we strive to make learning experiences as accessible as possible. If you anticipate or experience physical or academic barriers based on disability or pregnancy, you are welcome to let me know so that we can discuss options. You are also encouraged to contact Disability Resources (520-621-3268) to explore reasonable accommodation.

### 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 <http://deanofstudents.arizona.edu/academic-integrity/students/academic-integrity> (<http://deanofstudents.arizona.edu/academicintegrity/> students/academic-integrity).

The University Libraries have some excellent tips for avoiding plagiarism, available at <http://new.library.arizona.edu/research/citing/plagiarism> (<http://new.library.arizona.edu/research/citing/plagiarism>).

*Selling class notes and/or other course materials to other students or to a third party for resale is not permitted without the instructor's express written consent.* 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 may also constitute 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> (<http://policy.arizona.edu/humanresources/nondiscrimination-and-anti-harassment-policy>)

### Subject to Change Statement

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