Course Description

ASTRON 0088 provides a historical perspective of our place in the universe. After a brief introduction on the nature of science, we start with a description of the nighttime sky, both as viewed by the ancients, and in terms of a contemporary practical understanding. Next, we will follow the evolution of the beliefs in earth’s place in the cosmos, beginning with the ancient Greeks, up through the Renaissance and the birth of modern astronomy. The remainder of the course applies a historical context to the major discoveries of modern astronomy: the search for life on other planets, the life and death of the Sun and other stars, and the discovery that our universe began 14 billion years ago and has been expanding ever since.

Course Learning Objectives

- Describe the major historical figures and their contributions to the development of astronomy.
- Understand the scientific principles used to study the universe.
- Identify objects in the universe, understanding them in terms of their sizes, ages, and distances.
- Describe how the evolution of the universe has influenced the development of life on earth.

Classroom Requirements

1. **Cell phones and all other electronic devices must be silenced.** In addition, students are expected to refrain from excessive electronic communication during class. Laptops, tablets, and smart phones may be used for note taking or reference purposes. Watching videos, playing games, and/or browsing the Internet is not appropriate during lecture.

2. **Be courteous to your neighbors.** Carrying on a conversation, habitually coming in late or leaving early, or misusing technology (as detailed above), are all disruptive to the class. Students who fail to show common courtesy will be asked to leave.
Policies

Attendance Policy: Attendance will be recorded, but not graded.

Missed Assignments/Exams: By default, missed assignments (including exams) earn a zero grade. If you are aware of an impending conflict with the scheduled time of an exam or other assignment, you should let me know as early in the semester as possible. In these cases, accommodations will be provided as long as the circumstances are reasonable and you can provide appropriate documentation.

In cases where prior arrangements have not been made, missed exams can only be made up in cases of documented emergency, and only if you contact me within 48 hours of the missed exam.

Academic Integrity: All students are expected to adhere to the standards of academic honesty. Any student engaged in cheating, plagiarism, or other acts of academic dishonesty will be subject to disciplinary action. Any student suspected of violating this obligation for any reason during the semester will be subject to the process outlined in the University Guidelines on Academic Integrity (http://www.as.pitt.edu/fac/policies/academic-integrity).

Disability Services: If you have a disability that requires special testing accommodations or other classroom modifications, you need to notify both the instructor and Disability Resources and Services no later than the second week of the term. You may be asked to provide documentation of your disability to determine the appropriateness of accommodations. To notify Disability Resources and Services, call (412) 648-7890 (Voice or TTD) to schedule an appointment. The Disability Resources and Services office is located in 140 William Pitt Union on the Oakland campus.

Statement on Classroom Recording: To ensure the free and open discussion of ideas, students may not record classroom lectures, discussion and/or activities without the advance written permission of the instructor, and any such recording properly approved in advance can be used solely for the student’s own private use.

Grade Scale

If you achieve the following final grade percentages in the course, you will receive at least:

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Minimum Grade</th>
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<tbody>
<tr>
<td>90%</td>
<td>A-</td>
</tr>
<tr>
<td>80%</td>
<td>B-</td>
</tr>
<tr>
<td>70%</td>
<td>C-</td>
</tr>
<tr>
<td>60%</td>
<td>D-</td>
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Only the top few students will earn an A+. I do not anticipate curving grades, but if I do it would be up, never down.
Grading

<table>
<thead>
<tr>
<th></th>
<th>%</th>
<th>Points</th>
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<tbody>
<tr>
<td>14 Homework</td>
<td>13%</td>
<td>65</td>
</tr>
<tr>
<td>(lowest dropped)</td>
<td></td>
<td>(5 ea.)</td>
</tr>
<tr>
<td>14 Recitation Activities</td>
<td>13%</td>
<td>65</td>
</tr>
<tr>
<td>(lowest dropped)</td>
<td></td>
<td>(5 ea.)</td>
</tr>
<tr>
<td>1 Visit to Observatory</td>
<td>4%</td>
<td>20</td>
</tr>
<tr>
<td>2 Midterm Exams</td>
<td>40%</td>
<td>200</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(100 ea.)</td>
</tr>
<tr>
<td>1 Final Exam</td>
<td>30%</td>
<td>150</td>
</tr>
<tr>
<td><strong>Total:</strong></td>
<td><strong>100%</strong></td>
<td><strong>500</strong></td>
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In addition to the above, there will also be extra credit opportunities (described in the next section).

**Clicker Questions (ungraded)**

Several times during each class, I will show a multiple-choice question that will be answered by pressing a key on a hand-held radio transmitter or “clicker.” You are encouraged to discuss your answer with your neighbor while answering. These are not graded. That said, your participation will be used as a record of your attendance.

**Clickers:** The lecture hall is equipped with set of clickers for student use. At the beginning of each class, you are to pick up your assigned clicker from the bins at the front of the room. Likewise, you are to return your clicker to the bins at the end of class, since other students in other classes will use the same clicker. Under no circumstances are you to remove the clicker from the classroom or to take a clicker other than the one assigned to you. If your clicker is missing, then you need to let me know before you leave. Clickers will be checked after each class, and students will be held responsible if their assigned clicker has gone missing.

**Homework**

Homework assignments will be posted weekly on CourseWeb. Each of these assignments will build on the material covered in lecture by having you complete a short activity at home. Examples include photographing the moon at a certain phase or writing a one-page summary of an online video. Homework is collected at recitation.

**Recitation Activities**

Starting the second week of classes, each recitation will involve a group activity. Students will work in teams to answer questions requiring thought and understanding rather than memorization. Each group fills out and returns one copy of the activity.

**Observatory Visit**

The University of Pittsburgh’s own Allegheny Observatory has a rich history and conducts ongoing research today. As part of this course, you will visit the observatory once this semester. You will schedule your trip at recitation. Buses depart from Allen Hall in the evening and return to campus about three hours later. Detailed information about the available visit dates and bus schedules will be distributed at recitation.

**Exams**

There will be two midterm exams and a cumulative final exam. Each of the midterm exams is a mix of multiple-choice and essay questions. The final exam is all multiple choice. All exams are closed book/notes.
Exam Corrections (Optional): For each of the two midterm exams (but not the final exam), students will have the opportunity to submit new answers for missed multiple choice questions. When doing so, you must explain why your new answer is correct. Each corrected question will earn back half of the missed points.

Answers to exams will not be posted until after corrections are due. It will be up to you to figure out which questions you missed by reviewing your notes, and talking with your classmates, TA, and/or me.

Extra Credit Opportunities

Student Feedback (+5 points)

Student feedback is important to me, so I would like to meet with small groups of students for this purpose. A feedback group will consist of six students, and will meet with me for 30 minutes at one of the times posted on CourseWeb in exchange for extra credit. If you wish to apply for one of these groups, sign up on CourseWeb. Groups will be filled on a first come, first served basis, so sign up soon (these fill up very quickly!).

Practice Essays (+2 points each)

At the end of some lectures, a possible essay question for an upcoming midterm will be posted. These may be completed and turned in at your next recitation for feedback. Essays submissions that would have earned 90% or above on an exam will be awarded 2 points extra credit.

Helpful Resources

• If you encounter difficulty in this course, the best thing to do is to visit me and/or your TA at office hours as early in the semester as possible (see CourseWeb for an up-to-date list of office hours). Sadly, we won’t be able to help much if you wait until the end of the semester before seeking help.

• The department of Physics and Astronomy maintains the free Physics Resource Room in Thaw Hall 312. It is staffed with physics and astronomy graduate students. Typical hours are 9am–4pm, weekdays. No appointment is needed.