ASTRONOMY 101: Online - Fall 2009
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INTRODUCTION
This syllabus provides an overview of assignments and course structure for this Astronomy class. The details of each week's assignments are in the weekly folders found under 'Course Documents' in the 'Lessons' link. The weekly 'Agenda' message will contain all the assignments and due dates for that week.

The target level for your time commitment for this course is 10 to 15 hours per week. I will be asking for your feedback on the time you actually spend. Students who took this course previously found the course intensive, difficult at times, but overall rewarding. To do well in the course, be prepared to spend the estimated time and be prompt on all assignments, and do your own work (i.e., resist the temptation to copy the work of others).

TEXTBOOK
This is a text-based online course. The required text is "Horizons - Exploring the Universe," 10th edition, by Michael Seeds, published by Brooks/Cole. The 9th edition is also acceptable, but references to figures and page numbers are keyed to edition 10. The SFCC bookstore has the 10th edition available.
If you choose to order your book through an online bookseller, realize that it usually takes at least a week to receive your text. If you do not receive your text by the first week, don't wait to complete the assignments. You can use any introductory astronomy text available to you since the first few chapters are usually very similar. I have placed a 9th edition copy of Horizons on reserve at the SFCC library that you may check out for 2 hours at a time. I also have some astronomy texts from my on-campus course (different than your text) on reserve that you can check out. Read the lecture in week one to guide you to the chapters you need to read.
DO NOT WAIT TO BEGIN THE FIRST WEEK, EVEN IF YOU HAVE NOT YET RECEIVED YOUR TEXT.

PREREQUISITES - NONE
While some background in physics may be helpful, my assumption is that the course will include the necessary physics background material. I will do my best to keep the course weighted toward the conceptual rather than the quantitative, so that those of you who do not like math can still enjoy the course.

COURSE LEARNING OBJECTIVES
There are two general goals for this Astronomy course. First, students should understand their place in the universe - where they are along with a sense of scale for their location in the universe. Second, students will learn to understand the scientific process by which astronomers arrived at the modern understanding of the universe. Students who successfully complete the course will be able to understand articles in general astronomy and science periodicals (which are written for amateur astronomers) and news articles relating to recent findings in astronomy. Periodicals you will often use include "Astronomy" and "Sky & Telescope", both of which are available in libraries and good bookstores. If you want to do some viewing in conjunction with the course, I highly recommend purchasing issues of either Astronomy or Sky & Telescope, which have good monthly sky maps and viewing recommendations. If you purchase your text from the SFCC bookstore, you will receive a copy of the Starry Night software with your book. This software displays the night sky as seen from any location on Earth, and is an excellent resource for learning the night sky.

The following is a list of general course learning objectives. Specific objectives will accompany each

weekly session. Completing this course will enable you to:

1. Describe where you are in the universe, and the astronomical processes that enabled you to be here.
2. Relate the early history of astronomy and physics, and show how this exemplifies how science works today.
3. Understand some of the fundamental laws of nature regarding the motion of objects and the interpretation of light.
4. Describe how the currently accepted model of the Sun (and other stars) is consistent with the observed features of our Sun.
5. Describe the life cycle of stars from birth to death.
6. Describe the different types and features of galaxies - very large collections of stars - that astronomers observe in the universe.
7. Relate how the Big Bang theory explains the observed features of our universe, and describe any outstanding questions.
8. Show how the nebular condensation theory of star formation naturally predicts the overall features of our solar system, and describe notable exceptions and possible explanations.
9. Compare the observed features and probable evolution of the planets in our solar system.
10. Describe the considerations that go into trying to determine the possibility of other intelligent, technological life in our galaxy.

COURSE FORMAT
Each week will begin on a Monday--day 1, and will end at midnight the following Sunday--day 7. On the Friday before the next week begins, I will post three items in the weekly folder: an agenda, a lecture, and discussion questions. The agenda will state the weekly reading assignment, research assignment, and other assignments. The lecture will contain some general comments, fill in some perceived gaps in the text, and point toward areas of new research. The discussion questions are designed to stimulate critical thinking on the week's material.
My suggestion for what to do each week is as follows:

1. Immediately read the agenda, lecture, and discussion questions for orientation.
2. As soon as possible, read the required text material.
3. Do the weekly research assignment, which will basically consist of reading online articles and summarizing. You will post your assignment in your group's weekly discussion board for everyone to read. I would like these reviews to be well written (i.e., logically organized and with good grammar and spelling) and in your own words. **Simply copying professionally written articles is plagiarism, which violates the spirit of online learning and is unacceptable. It is also surprisingly easy for me to recognize, and will result in a zero for that assignment and possible further disciplinary action. RESIST THE TEMPTATION TO CUT AND PASTE MATERIAL FOR YOUR RESEARCH ASSIGNMENTS.**
4. Begin answering 5 of the 10 posted discussion questions.
5. In the morning of day 5, I will post my answers to the discussion questions in the weekly folder. You will then compare your responses with mine and grade your own work, then report that to the Digital Dropbox in the Tools link. You will need to provide a few words of explanation for each grade you assign yourself and a cumulative score, i.e. 20/25, at the end of the assessment. As part of this assignment, you will need to provide feedback on how much time you spent on the assignments during the week, concepts that were confusing or needed further clarification, etc.
6. Ask questions about one research assignment from another student, and answer questions asked about your own research assignment (this will be explained in the weekly agenda messages).
7. In the morning of day 5, I will post a short multiple choice quiz in the weekly folder. You will have 30 minutes to take the quiz and must take it by the end of day 7.

FINAL EXAMINATION
The final exam will be comprehensive and consist of 100 multiple choice questions. You will have from the last three days of the quarter (December 8-10) to work on the final exam, which will be open

book.

GRADING AND LATE WORK POLICY
Late discussion questions will not be accepted. They must be turned in by the due date (midnight Thursday) to be counted for credit. This is because I post the answers to the discussion questions Friday morning, so they must be turned in by then. In general, I will accept the weekly research assignments late, but all late work will be reduced by 10% for each day it is late. However, realize that you will likely lose more points if your research is late because other students will not have a chance to ask you questions. If a special situation develops in which you will be unable to participate for a week or less, please contact me as soon as possible to work out an arrangement. If you fall behind a week, catching up will be very difficult. Two weeks would be impossible to make up. The following describes how I will compute final grades.

Weekly discussion questions: 36%
Weekly research: 36%
Weekly quizzes: 14%
Final Exam: 14%

Numerical Grade Letter Grade
93%-100%= 4.0 A
90%-92% = 3.7 A-
86%-89% = 3.3 B+
82%-85% = 3.0 B
78%-81% = 2.7 B-
74%-77% = 2.3 C+
70%-73% = 2.0 C
66%-69% = 1.7 C-
62%-65% = 1.3 D+
58%-61% = 1.0 D
55%-57% = 0.7 D-
Less than 55% = 0.0 F

READING SCHEDULE
Week 1: Chapters 1, 2: Cosmos Overview; The Sky
Week 2: Chapters 3, 4: Cycles of the Sky; History of Modern Astronomy
Week 3: Chapters 5, 6: Astronomical Tools; Starlight and Atoms
Week 4: Chapters 7, 8: The Sun; Properties of Stars
Week 5: Chapter 9: Formation and Structure of Stars
Week 6: Chapters 10, 11: Death of Stars; Neutron Stars & Black Holes
Week 7: Chapters 12, 13: Milky Way Galaxy; Galaxies
Week 8: Chapters 15: Cosmology
Week 9: Chapter 16, 17: Origin of our Solar System; The Inner Planets
Week 10: **Thanksgiving break: no classes**
Week 11: Chapters 18, 19: Outer Planets; Meteroites, Asteroids, and Comets
Week 12: Chapter 20: Life on Other Worlds; Final Exam

DAILY NUMBERING SCHEME
Day 1 = Monday
Day 2 = Tuesday
Day 3 = Wednesday
Day 4 = Thursday
Day 5 = Friday
Day 6 = Saturday
Day 7 = Sunday

ETIQUETTE

Tolerance and respect for differing styles and opinions, as well as polite behavior, are important in any online class. If any of you feel intimidated by someone's behavior, please report it to me along with any evidence you can muster and I will deal with it. Learn to express disagreement in respectful language. In any online course, the occasional issue may arise that can result in strong feelings and hurtful responses.

Your text occasionally refers to areas of pseudo-science such as astrology. This is a science course, and what the text (and I) will present is a scientific consensus on the nature of the evolution of the universe and its various objects. Within that consensus are numerous technical issues and outstanding questions, but explanations for observed phenomena in this astronomy course will only rely on laws of nature that survive extensive testing and logical validation. If you hold religious beliefs that run contrary to this scientific consensus, please keep them to yourself and answer questions from a purely scientific (using known laws of nature) perspective.