

Astronomy 001 Online Summer 2014 Syllabus (Section 8034)

Instructor: Elizabeth Bell

Email (best way to contact me): bellea@wlac.edu

Classroom: online

Office Hours: online by appointment (I will also announce chat room visitations during the course)

Prerequisite: None

REQUIRED: Astronomy: A Beginner's Guide to the Universe; ISBN: **0321814916**.

Note: While you may be able to find a used text, or a text of a different edition for less, **the Mastering Astronomy code portion is required for all homework, exams, and quizzes.** You may buy this separately @ (<http://www.masteringastronomy.com>) for about \$60 so take that into account when purchasing your text. The code comes bundled free with all new books (including those purchased online as long as they say they include Mastering Astronomy). They DO NOT come with used or rental books. Therefore, buy a used copy or rent at your own risk.

Since this is a short-term class, if you cannot afford to get your book near the end of the first week, you will likely be too far behind to catch up. Order your NEW book or used with code from mastering astronomy (instantaneous access) with RUSH delivery. If you are unsure, email me first.

ASTRON 001 Elementary Astronomy (Online)

Units: 3.00 - UC:CSU, May Be Taken Once for Credit

A conceptual survey of the basic principles and science of astronomy. Topics include the history of astronomy, the solar system, the Sun, galaxies, cosmology, and life in the universe. This introductory course is designed for the non-technical student.

Student Learning Outcomes

INSTITUTIONAL OUTCOMES (SLOs):

- A. CRITICAL THINKING: Analyze problems by differentiating fact from opinions, using evidence, and using sound reasoning to specify multiple solutions and their consequences.
- G. CULTURAL DIVERSITY: Respectfully engage with other cultures in an effort to understand them.
- F. TECHNICAL COMPETENCE: Utilize the appropriate technology effectively for informational, academic, personal, and professional needs.

ASTRONOMY DIVISION PROGRAM OUTCOMES (SLOs):

1. Develop an understanding of how science works and specifically how it is used to discover knowledge of the physical universe. (meets institutional outcome A)
2. Recognize and explain basic concepts and principles of physics which underlie and are used to conduct astronomy. (meets institutional outcomes A and F)
3. Differentiate between the scientific method and pseudo-science as a means to explain the way the universe works. (meets institutional outcomes A and F)
4. Appreciate the historical and philosophical foundations of astronomy. (meets institutional outcome G)
5. Investigate and absorb information available outside the textbook to appreciate how our

- knowledge of astronomy changes. (meets institutional outcomes A and F)
6. Differentiate among possible models of the universe. (meets institutional outcomes A and F)
 7. Write brief, focused, logically coherent responses to conceptual (and quantitative – honors) questions covering the major topics of astronomy. (meets institutional outcomes A and F)
 8. Come away with a broader perspective of our place in the universe. (meets institutional outcomes A and G)

TOPICS (tentative) TO BE COVERED IN THE CLASS

Scale of the Cosmos	The 'Sky'	Cycles of the 'Sky'	The Origin of Modern Astronomy	Newton, Einstein, and Gravity
The Tools of Astronomy	Atoms & Starlight	The Sun	9. Stellar Properties	Stellar Formation
The Lives of Stars	Neutron Stars and Black Holes	The Milky Way	Galaxies	Peculiar Galaxies
The Big Bang	The Fate of the Universe	The Origin of the Solar System	Planet Earth	The Moon and Mercury
Venus and Mars	Jupiter and Saturn	Uranus, Neptune, and Pluto	Meteorites, Asteroids, and Comets	Life on Other Worlds

There are only 6 weeks, and 16 chapters to cover. You will need to read and do all assignments for approximately 2-3 chapter sections per week. Plan on spending about 10-12 hours per WEEK on this class as you will also have to read your own lectures in lieu of attending class. I will have multiple chapter assignments open at a time so you can work ahead or out of order. The exams will open every Friday and be available for three days only. All other assignments will be open for approximately one week for full points, and 10% off each day late thereafter.

In addition to your mastering astronomy assignments, you will be required to contribute to a discussion board on current events in astronomy, or astronomy in the news. It is important to be exposed to applications of what you are learning in theory throughout the course. So may sure you participate in the forums as participation will go toward your point calculation totals for your final grades. Participation in the astronomy in the news forums will be 5 points every week (approximately 25 points) which can contribute just help or just hurt your grade depending on how close you are to next or previous grade level.

Note: As this class has no prerequisite, we will not focus on the mathematical sections in your book. Those are for your information only. We will strictly focus on the conceptual.

Grading Scale: A (90 – 100)%, B (80-89)%, C (70-79)%, D (60-69)%, F(0-59)%

Grading is based on a point system. All assignments, and exams will have points associated with them. You can calculate your grade in the class at any time by dividing the total number of points you have earned by the total number of points that have been assigned, then multiplying that result by 100. This will give you your course percent.

Welcome to Astronomy 001!
Professor Bell

Tentative Chapter Content and Schedule

Week of ..	Chapter HW / Tests	Sections Covered	Due Date
15/June Week 1	Introduction to Mastering Astronomy 00 1 2	1-5 1-4 1-3, 5, 7-8	June 22 by 11:55 pm
22/June Week 2	3, Test 1 4	3.1-3.2, 3.5 Test1 (Ch's 00-3) 1-4	June 29 by 11:55 pm
29/June Week 3	5 6, Test 2 7	1-8 1-8 Test2 (Ch's 4-6) 7.1-7.6	July 6 by 11:55 pm
6/July Week 4	8 9 10, Test 3	8.5 1-4 1-5 Test3 (Ch's 7-9)	July 13 by 11:55 pm
13/July Week 5	12 13, Test 4 14	1-7 1-2, 4-6 Test4 (Ch's 10, 12-13) 14.1-14.4, 14.7	July 20 by 11:55 pm
20/July Week 6	17 18,	17.1-17.2, 17.4-17.5, 17.7- 17.8 18.1-18.4 Final (Ch. 14, 17-18)	July 25 by 11:55 pm Final Exam due July 27

Recommended Steps:

1. Read the Lecture outline (download from ETUDES in content section)
2. Try the homework assignment on Mastering Astronomy (use the book if necessary for more information)
3. Take notes on the lecture outline and homework (answer the goals questions and write down vocabulary definitions)
4. Use the discussion boards or chat (on Blackboard) if there are any questions or concepts that were unclear.
5. Once the material is mastered, use your notes and take the exam.
6. Plan on trying homework and exams day to a few hours early in case of computer or web page problems. This way if your personal computer goes down, you have time to use free computers available at the college or make other arrangements.
7. **Do not** wait until the last minute to start assignments. **Complete assignments on time. You may have about one week to complete each assignment. I will not extend a due date if you wait until the last day to begin the assignments, or if in case of emergencies, you are not at least half way through the assignment.**