

INSTRUCTOR: Dr. Bruce J. Hrivnak**CLASS TIMES:** MWF 12:55-1:45 NSC 234**OFFICE:** NSC 140**PHONE:** 464-5379**EMAIL:** bruce.hrivnak@valpo.edu**OFFICE HRS:** W - 10-11 am, 2-3 pm, F - 10-11am & by apt.**REVIEW:** T 4:30-5:30 pm NSC 119**TUTORIAL:** R 7:00-8:00 pm NSC 119**WEB SITE:** <http://www.physics.valpo.edu/courses/a101/>**OBSER. INFO:** 464-5202 after 5 pm**TEXTBOOK:** The Essential Cosmic Perspective (5th ed., 2009) by Bennett, Donahue, Schneider, & Voit**ADDITIONAL REQUIRED MATERIAL:** *MasteringAstronomy* access kit for online homework

**"The heavens declare the glory of God;
the skies proclaim the work of his hands" - Ps 19:1**

We live in a scientific age, and it is important for educated people to understand the methods and the limitations of science. Even beyond that, it is good for each of us to have a sense of our place in the universe. Astronomy is an exciting subject in which to achieve this. New discoveries are constantly being made. This course should provide an opportunity for students to share in the excitement of discovering more about the physical universe and hopefully will form the basis for a lifelong interest in astronomy.

GOALS:

- To better understand the physical universe and the variety of celestial objects found in it. (content)
- To learn how scientists make observations of celestial phenomena and how they use basic principles of physics to (try to) deduce the physical processes involved. (scientific method)
- To encourage inquiry about why things are the way they are. (critical thinking)
- To foster appreciation for the place of astronomy and science in our lives. (relevance)
- To think about how this relates to society and also the bigger picture of God as creator of the universe. (integration)

READINGS: I expect you to read through the assigned **reading prior to class**. This will enhance your learning and make our class time more profitable.

QUIZZES: There will be a **short quiz** approx. every other class. The quiz will cover the reading assigned for that class period. You will be quizzed on general familiarity with the reading, not mastery of it. I will drop your 3 lowest scores. If you miss a quiz, you get zero unless I have excused you.

ASSIGNMENTS: There will be a graded assignment due about every week and a half, part of which is to be completed online. These must be completed on time to receive credit; otherwise it will be given a zero (unless approval is gained from me because of special circumstances - see me about this ASAP). I want you to try to do the assignment questions on your own; however, if you are having difficulty, see me (office hours, review sessions, or by appointment) or the tutor. You may work together with other students on some of the questions, but see that you understand the answer and write it in your own words.

SHORT PROJECTS: There will be **4 short projects** during the course of the semester. The first three will be short reports on three of the Special Astronomy Lectures – all are required to attend the Special Lecture on Wednesday, Sep 9, 7:30-8:30 pm and the other two can be on dates of your choice from the list below. These reports will be due the Monday following the lecture. I will give you an assignment sheet with more details. The fourth short project will deal with the topic of religion and astronomy. It is due at the end of the semester and a handout with details will be given out the week prior.

HONOR CODE: You are to carry out your learning with integrity. It is assumed that you subscribe to the VU Honor Code, which should be written out in full and signed on all work that you turn in for a grade. I will explain specifically what constitutes authorized aid on each piece of work turned in for a grade.

SPECIAL ASTRONOMY LECTURES – INTERNATIONAL YEAR OF ASTRONOMY 2009:

This year marks 400 years since Galileo first turned the telescope to view the heavens, an event that changed our understanding of the cosmos. To commemorate this, we are hosting a special series of astronomy lectures on Friday nights approximately every other week in NSC 224. The dates and titles are listed below. You are to attend and report on two of these.

Aug. 28: *Ancient Astronomy*Oct. 02: *Understanding the Night Sky*Oct. 09: *Astronomy with the Hubble Space Telescope*

Oct. 23: *New Discoveries in Astronomy*
 Nov. 06: *A Decade of Dark Energy*
 Dec. 04: *The Christmas Star*
 and Sep. 10: (Thurs) *The Divine Handiwork: Evolution and the Wonder of Life* in CCLIR (library)

EXTRA WORK: Occasionally students inquire about extra work to improve their grades. There will not be “extra credit” available. However, you may attend and turn in a report on additional Special Astronomy Lectures on Friday evenings, and these can then substitute for a low quiz grade.

HELP/REVIEW & TUTORIAL SESSIONS: I will hold review sessions prior to exams & weekly help session. There will also be a weekly tutorial session.

SUPPLEMENTAL LEARNING RESOURCES: The *MasteringAstronomy* website contains several tools for supplemental student learning.

ATTENDANCE: Attendance and class participation are expected. You are responsible to learn material covered during an absence. You will receive a zero for a quiz missed. Note that the three lowest quiz scores will be dropped and there are opportunities for extra work.

MATHEMATICS LEVEL: This course will involve only basic quantitative problem solving, at the level of Math 110. Note that Math 110 or a higher placement above is a prerequisite for the course.

TESTS AND FINAL: There will be 3 tests and a final exam. These will consist of short-answer and multiple-choice questions. The final examination will be cumulative, while emphasizing material covered since the third test. A test will be rescheduled only if you have a university-sponsored activity that you are required to attend. The final exam will be rescheduled only if you have three normally scheduled finals on the same day. These exceptions must be documented in writing before they will be approved by me. In the event of rescheduling, you must take the make-up test/exam as soon as possible after the regularly schedule time.

COURSE GRADE:	Quizzes	11 %	A:	90-100%
	Assignments	21	B:	80-90%
	Short Projects	7	C:	70-80%
	Three tests (3x13)	39	D:	60-70%
	Final	<u>22</u>	F:	<60%
	Total =	100 %		