Marist College

Physics 108 – Introduction to Cosmology

Spring 2012 Myers

General Course Information

This course provides an introduction to our modern understanding of a dynamic, expanding universe. Topics to be covered include planets, stars, and galaxies, pulsars, black holes, and the history and methods of astronomy. We will also discuss the beginning of the Universe, how it might end, and current research topics in astronomy and astrophysics.

Another goal of the course is to think not just about what we know, but how we have come to know it, and how well we know it. This will include some discussion of the nature and history of science and the scientific method.

After taking this course you should be able to follow reports in the media about news in astronomy, astrophysics and cosmology, and be able to understand the issues and the importance of various developments. And it is my hope that you will want to.

There is no lab for this course. I may suggest targets for viewing and announce star parties and lectures held by the Mid-Hudson Astronomical Association, but these are optional.

Textbook: "*Astronomy: Journey to the Cosmic Frontier,*" by John D. Fix (McGraw Hill, New York). Any recent edition is acceptable. The bookstore has probably ordered the 6th Edition.

Reading: Reading is an important component of any college-level course. Class time each week is limited, and so we cannot cover all of the material there. Class time is best used for giving you the big picture and explaining the tricky details, as well as answering questions and discussing ideas. The reading for the next class period will generally be announced in class and/or on-line, but even if it isn't, it is assumed that you will keep up with the course by reading what comes next. We will usually cover at least a chapter per class meeting, maybe more.

In a course like this you should expect to read the textbook at least three times:

1. *Skim* the reading before class so that you will better understand the lecture and discussion and can ask questions in class.
2. Re-read the chapter again after class; you should find that you understand it better after the explanations given in class.
3. You may then want to re-read selected parts of the book yet again as you work the homework problems.

Homework: Homework in this course is important. It keeps you engaged with the material and gives you an opportunity to learn some details at a deeper level. Homework helps you learn the material to the point that you can apply the ideas and methods learned in class, not just follow the discussion and reading. Homework problems serve as both practice and as worked examples that compliment the examples given in class and in the the textbook. Homework problems are also good practice for the exams.

Unless otherwise stated, homework problems are due one week after they are assigned. If you have any questions or want some hints, please ask either via iLearn, e-mail, or in class.

The homework you turn in is expected to be your own work, expressed in your own words. It is okay to work with other students or to get help, and it is okay to consult references. But you need to do the actual thinking and analysis yourself, and any reliance on outside sources needs to be properly cited.

Sometimes we learn best from getting the wrong answer first. To allow you to make mistakes on the homework without any penalty I will give you 137 extra homework points at the beginning of the semester. If your deductions are less than that at the end of the semester then you will still get 100% credit for your homework grade.

Calculators: Some mathematical reasoning is required in this course, and both homework and exams will involve some calculations where calculators will be helpful. You are welcome to use the calculator on your phone in class and for homework, but mobile phones will not be allowed during the exams. You will not need an expensive programmable calculator.

Office Hours: I won't have formal office hours, but I can arrange to meet with you the day of class, usually before class but also after class on Wednesday. I am sorry that I cannot meet after class on Friday due to daycare constraints.

Grading: Your grade in the course will be determined based on the total number of course points you receive from exams, homework, and participation, as follows:

Mid-term exams	100 points each $\times 3$
Homework	100 points
Participation	50 points
Final Exam	150 points

Letter grades are only given for mid-term and final grades, but after each exam I will provide a way for you to compare your performance with the rest of the class.

Weather Cancellation Procedure: If the college is closed then there will be no class. In the event that the college is open but class has to be canceled due to weather or for any other reason then this will be announced via iLearn.