

ASTRONOMY 101

Section 004

Introductory Astronomy

Scheduled Course Meeting: Monday and Wednesday evening, 6:00 - 7:15 PM,
New Mexico Museum of Natural History & Science - Domed Theater
1801 Mountain Road – South Entrance

Professor:

Dr. John T. McGraw
Physics & Astronomy 36
(NE corner Yale and Lomas)
277-2705 (office)
Email: jmcgraw@as.unm.edu

TA:

Matt Koppa
Physics & Astronomy
mkoppa@unm.edu

Domed Theater:

Simone Seagle
NM Museum of Nat. Hist. & Sci.
1801 Mountain Road NW
841-5955 (Information Hotline)
Web: www.nmnaturalhistory.org

Office Hours:

By appointment - please phone, email or see me or our TA. Wednesday evening after class I shall remain at the Domed Theater for class interactions, to answer questions and speak to students.

COURSE DESCRIPTION

Astronomy is a discipline based upon observation of the sky. It is an exciting exploration that supports the notion that “the universe is not only stranger than we know; it is stranger than we *can* know.” Because of its importance in founding society, astronomy represents an exploration undertaken by virtually every culture on the planet over the last 10 millennia. Now we’ll take our turn at learning about the sky.

In this course, using observations obtained with instruments ranging from our eyes to the most sophisticated ground- and space-based telescopes, we’ll learn about the objects we observe in the sky. Further, we’ll investigate the universe of these objects as a dynamic, evolving place. We’ll consider the evolution of stars and their planets, galaxies, and the universe itself. More usefully, perhaps, we’ll learn how scientists approach and solve problems, because many of these techniques usefully translate into problem-solving techniques useful in virtually any aspect of life.

All you need to bring is a healthy curiosity about the universe, a willingness to learn, and the open mind, responsibility and dedication of a true university student.

Together we’ll have fun exploring, thinking, observing and learning about astronomy. I hope to share with you some of my love for and excitement about this most universal (literally!) of sciences.

ASTR-101
Course Description
Page 2

Class Format:

The class format is principally based on lectures, discussions and question/answer session held in the Domed Theater of the *NM Museum of Natural History and Science*. We may hold class in other areas of NMMNHS, or even in other locations if the opportunity for unique learning presents itself.

Textbook:

The required textbook is *Astronomy: A Beginner's Guide to the Universe* (7th Ed), by Eric Chaisson. It is available at the UNM Bookstore and elsewhere.

The lectures will generally follow the text, though I'll also introduce additional material that might give new or different perspectives or the latest breaking news in astronomy. Please, **read your book regularly** – stay ahead of the lectures, and your learning experience and test preparation will benefit.

My goal will be to help you understand the form and function of our universe. Note the word “help”: understanding is always yours to discover. My job is to help optimize your discovery process.

We will not cover all of the material in the text, nor will we always explore in great depth all of the material we do cover – there simply isn't enough time in the semester for this. This book is very inclusive of the latest developments in astronomy, and covers topics in sufficient depth that individuals can explore further on their own. This book provides a depth of understanding typical of someone interested in perhaps entering astronomy or other of the natural sciences as a career. If we collectively do our jobs during this semester, many of you will end up reading this book from cover to cover and using the other resources we provide long after the class is completed.

Homework:

There will be no scheduled homework, though I reserve the right to assign homework problems if a situation arises where homework would be instructive, necessary or fun. Homework will be critiqued, and/or graded. Any homework assigned will have relevance to the tests upon which grades will be based, so students who do well on homework will have an advantage during the tests.

Web Site:

Look at <http://panda.unm.edu/Courses/McGraw/Astro101Fa13/> to find this syllabus, the Introductory Questions presented at the start of each class, and other information about our class.

Tests:

There will be a total of four tests, upon which will be based the majority of your grade. There will be three tests given during the semester, with the two highest scores counting towards your grade. The *tentative* schedule for these hour-long tests is 18 September, 16 October, and 20 November. Note that the exact dates of these tests can and will change. It is your responsibility to attend class to ensure that you know when the tests will actually be given!

ASTR-101
Course Description
Page 3

The **final test** is scheduled for Monday, 9 December at 7:45 PM – 9:45 PM. Everyone *must* take the final test. Recall that I will drop the lowest grade of the three prior tests. The time and place for the final test will be determined during class.

Grading:

Grades will be given. They will be based upon the tests and other assignments. The professor or TA will grade all tests. Unannounced quizzes will be given and counted for credit towards the grade.

Grades for the course will be assigned on the basis of the percentage of correctly answered questions on the tests. I reserve the right to “curve” grades to ensure that testing is conducted at a level appropriate to learning. “Curving” cannot lower your grade, it can only improve it, and the curve is applied *only* at the end of the semester. Continuous, significant improvement throughout the semester will also warrant a higher grade.

Missed Tests:

We know that emergencies can and do occur. If you must miss a test, please let me know as soon as possible, but before the date of the test (if possible). There are no makeup tests for the first three hour tests. The test you miss will be the lowest, thus the one that is discarded for grading purposes.

Communication:

Communication about the class, special events, scheduling and announcements will be made *via* email. Please ensure that I have your “best” email address so you get all notices and information.

Comments:

This course will be successful for me if *you* are successful. My purpose is to do the best job I can at enabling your understanding of the content, physical laws and evolution that created the universe we can observe. I also want to expose you to the techniques used by scientists, because critical thinking, skepticism and the ability to reason logically and quantitatively are extremely useful traits applicable in virtually any career.

We have responsibilities relative to each other. Perhaps the most important is communication. If you are having problems with the course, its content, or the professor, you need to speak to me about it immediately. The vast majority of problems are easily solved if addressed honestly and directly. I shall treat you as a class and as individuals in the same honest and respectful manner that I expect to be treated, and if this occurs I’m confident we shall have a very productive semester.

Finally, I believe that learning is fun. Research is fun. Discovery is fun. Astronomy is fun. I encourage you to discover the fun in what we do during this course. And believe me, I am always interested in talking about the positive aspects of this course and the universally engaging science we are addressing.