

Welcome to the study of astrophysics. You'll learn about many surprising phenomena because everything is the product of "zero" and "infinity" so you never know what you'll get.

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Office Hours: *Need to find a good time*

WEB PAGE: <https://phys.cst.temple.edu/~napolj/PHYS4000Astro/>

LECTURES: Mon, Wed, Fri SERC 456 11:00-11:50

TEXTBOOK: D. Maoz, *Astrophysics in a Nutshell*, Princeton (2016)

MATERIALS

Lectures will follow the textbook, and you are welcome to use the book during exams, so I recommend that you get your own copy. See <http://press.princeton.edu/titles/10772.html> to order a copy, and for additional useful information. You can also buy a copy from Amazon.

Some classes will make use of my own notes. I will refer you to sources for these, and possibly have my own handouts for you posted on the web page.

Following are some other textbooks which you might like to review:

An Introduction to Modern Astrophysics, Second Edition
Bradley W. Carroll and Dale A. Ostlie, Pearson (2007)

Introductory Astronomy & Astrophysics, Fourth Edition
Michael Zeilik and Stephen A. Gregory, Saunders (1998)

Astronomy: A Physical Perspective, Second Edition
Mark L Kutner, Cambridge (2003)

The Physics of Stars, Second Edition
A. C. Phillips, Wiley (1999)

An Introduction to Modern Astrophysics, Second Edition
Bradley W. Carroll and Dale A. Ostlie, Pearson (2007)

Galaxies in the Univers: An Introduction, Second Edition
L. S. Sparke and J. S. Gallagher, III, Cambridge (2007)

Fundamental Astronomy, Fifth Edition
H. Karttunen, et al., (Editors), Springer (2007)

The New Cosmos, Fifth Edition
A. Unsöld and B. Baschek, Springer (2002)

The Physical Universe: An Introduction to Astronomy
Frank H. Shu, University Science Books (1982)

Astrophysical Concepts, Fourth Edition
Martin Harwit, Springer (2006)

GENERAL COURSE INFORMATION

We use PHYS4000 to designate a “Special Topics” course. For us that topic is Astrophysics.

Astronomy is a subject that goes back thousands of years, but astrophysics is only about a hundred years old. I will do my best to get you familiar with some of the old terminology (for example, the concepts of *stellar classifications* and *magnitudes*) but for the most part, we will be discussing stars, galaxies, and the Universe in terms of familiar physical concepts. This is in fact the approach taken by the textbook.

I will assume that you are familiar with mathematics through differential equations, and have had a good introductory physics course sequence, including some “modern” physics, classical mechanics, and thermodynamics and statistical mechanics. If you are worried about prerequisites, please speak with me. The book by Carroll and Ostlie is especially good at reviewing all of the basic physics before applying it to understanding stars and the cosmos.

It is very important that you ask questions, either in or out of class, of me or anyone else. This is not easy stuff, but it is fascinating and well worth the effort. Please get in touch with me any time if you’d like to get help or a further understanding.

Homework is due *at the start of class on Friday* as indicated on the class schedule. The actual homework assignments are posted on the course web page. Many, but not all, of the homework problems will come from the textbook.

The midterm and final exam are all open book/open notes. You are welcome to bring and consult whatever resources you like to an exam, except another human. **Please don’t make the mistake of thinking this means that you do not need to prepare for the test!**

GRADING POLICY

Grades will be determined from the homework assignments (50% altogether), the midterm exam (25%), and the final exam (25%). The cutoffs for course grades *A*, *B*, *C*, and *D* are 90%, 80%, 70%, and 60% respectively. I expect to make some use of “grade modifiers”, that is \pm after the grade. I may make other adjustments to the overall grading scheme if there are special circumstances.

ACADEMIC INTEGRITY STATEMENT

I want you all to collaborate with each other on homework as much as possible, and to come for help during office hours, help sessions, or at any mutually convenient time. However, it is very important for me to trust that you are handing in your own work. (Just the same, it is important that you trust me to organize and teach a quality course for you.) There are formal guidelines on all this, but to put it simply,...

Don’t copy someone else’s homework, and don’t cheat on exams. If I suspect you of either, I will ask for an explanation. If your explanation is unsatisfactory, you will be given a grade of zero and reported to the appropriate office. If this happens more than once, you will be given an *F* for the course.