

PHYS 131, Spring 2005

Survey of the Universe

Instructor

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Teaching Assistant

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Lectures

T, Th 12:30-1:50 pm.

Room: Matheson 307

Textbook

Astronomy Today, 5th ed., Chaisson and McMillan, Prentice Hall. Copies of this book have been ordered and should be available at the bookstore.

Course Webpage

I will make certain materials available, including images, links, and copies of documents handed out in class available on the course webpage:

<http://www.physics.drexel.edu/courses/Physics-131/>

Course Overview

Welcome to the Universe!

This course will serve as a general introduction to astronomy for non-physics majors. While we will try to keep the hardcore math to a minimum (no calculus), it is expected that you have a working knowledge of algebra and geometry. We will discuss the tools of astronomy, the birth, life and death of stars (including black holes and supernovæ), galaxies and, ultimately, the universe itself (and what may eventually happen to it).

Grading Policy

- 30% – Homeworks
Homework will be assigned every Thursday, and will be collected *in class* the next Thursday. They will consist of numerical problems, diagrams, and essays. You are expected and encouraged to discuss problems with your classmates, but the work you turn in must be your own.
It will be my policy to drop your lowest homework grade.
Late homeworks will be penalized 10% per day, and will not be accepted at all if they are more than 5 days late.
Note: While it may be that some homework assignments can be handed in electronically (e.g. emailed), I will *not* accept any assignment submitted in MS Word or Excel format.
- 10% – Class Participation
This class functions much better, and is, moreover, much more fun if you participate and ask questions. While attendance is required, merely attending every lecture will not get you full marks for class participation.
- 25% – Midterm
The midterm will be held in-class at approximately week 6. It will be closed-book, and you will get a review sheet in advance. You will have the entire period to complete it, but hopefully, it won't take you longer than an hour. It can potentially include anything you've seen up to that point. I will include a formula sheet which will contain any formulas (and then some!) that you will need for the exam.
- 35% – Final Exam
The exam will be held during the scheduled exam period (TBA), and is comprehensive. It will be of similar format to the homeworks and midterm.

List of Topics

We will try to cover all of these topics this term. If there is interest, we may, in fact, cover some not on this list. However, we will generally try to keep to these topics.

- The History of Astronomy and the Copernican Revolution
- The Motions of the Planets
- Angles, Sizes and Distances
- The Nature of Light
- Stars, Stellar Evolution, and the Hertzsprung-Russell Diagram
- The Deaths of Stars
- Relativity
- Black Holes
- The Milky Way Galaxy
- Galaxies and Hubble's Law
- Cosmology
- The Big Bang
- Inflation and the Growth of Structure