

**Physics 155Q: Introduction to Astronomy Lab**  
**Spring Semester 2008**  
**Richard (Ricky) Crudo**

**Office Hours:** My office is room 217 in the Physics wing of the Gant Science Complex. Office hours will be determined on the first day of class but if you find them inconvenient, you may schedule an alternate time by contacting me at 860-486-4921 or [rcrudo@gmail.com](mailto:rcrudo@gmail.com). You may use my office hours for any questions regarding lab, lecture, research within the department, questions about graduate studies, etc.

There is no stigma attached to those who seek help. With so many resources available, there is no excuse to not get help if you really need it. The only way people learn is through asking questions, so don't be afraid to do so.

**WebPage:** Copies of this syllabus and lab outlines can be found at <http://www.phys.uconn.edu/crudo/teaching.htm>

**Recommended Prerequisites:** Math 101: Basic Algebra with Applications

**Required Texts:**

- Exercises in Astronomy lab manual by Edgar Everhart and Cynthia Peterson
- Edmund Scientific Star and Planet Locator

**Course Description/Objectives:** In this course, we will:

- Explore the concepts of astronomy in a "hands-on" manner. This includes the principles of celestial coordinate systems and telescope design, applications of fundamental physical laws, evolution of stars, galaxies and the universe, and modern cosmology
- Improve your problem solving and teamwork skills
- Develop a working knowledge of the night sky

**Course Calendar/Schedule:**

Week	Date	Lab
Week 1	(01/28)	The Celestial Sphere
Week 2	(02/04):	Finding the Stars and Constellations
Week 3	(02/11):	The Planetarium
Week 4	(02/18):	The Sun or Finding the Planets
Week 5	(02/25):	Lenses and Mirrors
Week 6	(03/03):	The Telescope
Week 7	(03/10):	Spring Break (No Lab)
Week 8	(03/17):	Finding the Planets or The Sun
Week 9	(03/24):	The Spectrum
Week 10	(03/31):	Measurement of Astronomical Distance
Week 11	(04/07):	Double Stars
Week 12	(04/14):	The Crab Nebula
Week 13	(04/21):	Make-up/Review
Week 14	(04/28):	Lab Final

**Attendance:** Laboratory sections are imperative to your understanding of lecture. There are two reasons why this is so. First, it is a chance for you to see the physical principles you have learned in the classroom come to life. You will see that physics is indeed an experimental science and not just a bunch of numbers and symbols. While it is possible to understand the material without laboratory experience, it is much more satisfying and exciting to appreciate physics in your everyday life, and not just on the whiteboard.

Secondly, experimental science involves the use of many skills that are essential for success in the real world. These skills include (but are not limited to) creativity, hand-eye coordination, patience, cooperation, knowledge of equipment, etc; this is your time to practice these skills.

If you miss two or more labs, you will receive an "Incomplete" for the course and you will then be required to take the lab portion of the course over again. If you cannot make a lab session for a legitimate reason, please notify me at least one day prior to lab.

**Grading:**

- 11 Lab Exercises = 36.67 pts (12.23 %)
- Lab Final = 30 pts (10 %)
- 3 Lab Quizzes = 18.33 pts (6.11 %)

**Other:** You are probably taking this course grudgingly as part of your general education requirement. However, physics and astronomy are invaluable to you as a human being and these are some of the reasons why why:

- Our whole concept of time is based off of astronomical events (1 day = 1 rotation about the Earth's axis, 1 year = 1 Earth revolution about the sun, etc)
- Physics is the foundation of all engineering and technology. No engineer could design any kind of practical device without first understanding the basic principles involved. This includes designing, DVD players, flat-screen TVs, spacecraft, buildings, mousetraps, etc.
- Physics is the process by which we draw sophisticated conclusions from empirical evidence. It is not simply just a field of study. It is a thought process. When you study physics, you are studying logic and logic is essential in any occupation.
- Physics permeates your everyday life. We are fortunate to live in a world that is very predictable and comprehensible (which is remarkable in of itself). All natural phenomenon (gravitation, diffraction, electricity, magnetism, rainbows, etc) stem from physical principles and if you take the time to understand these principles, you will have a better understanding and appreciation of life.
- If nothing else, you will begin to develop an appreciation for the scope and beauty of science. It truly is a towering achievement of the human intellect. Einstein acknowledged this in my favorite quote: "The most incomprehensible thing about the universe is that it is comprehensible."