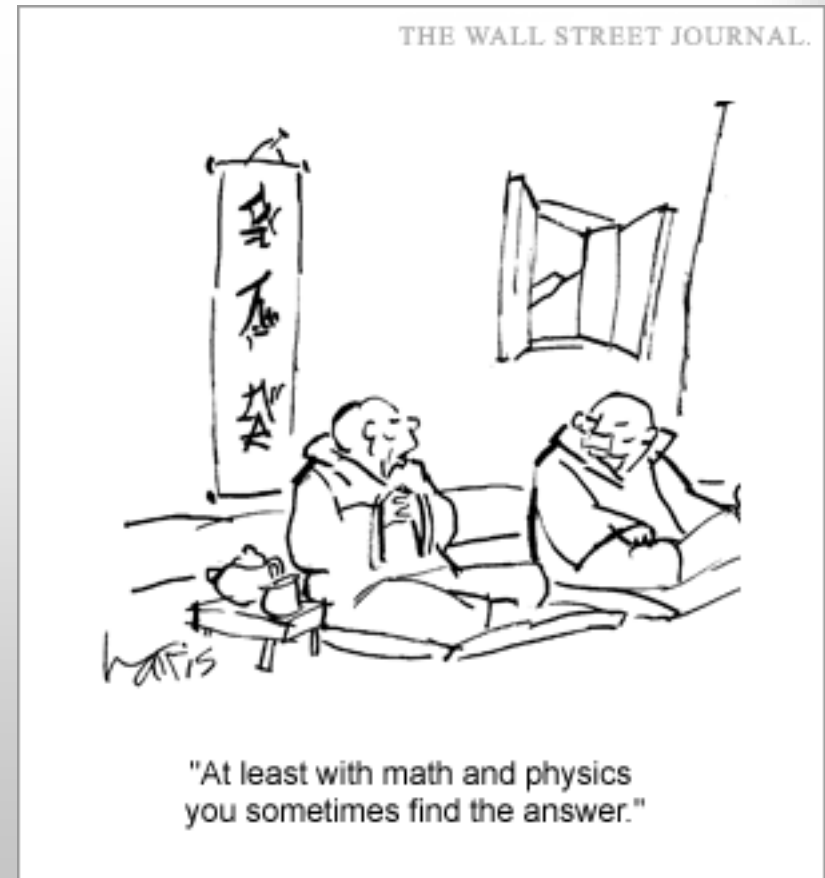


# PHY 317K

## Orientation / Lecture # 1

- Course Overview
- First Day Handout
- Website
- Chapter 1



# PHY 317K/L

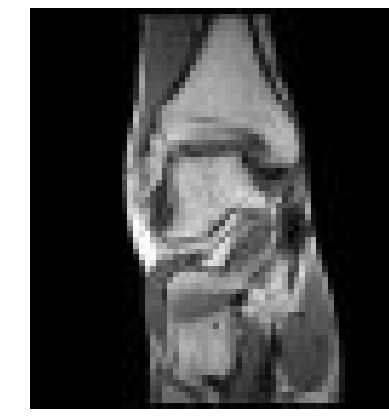
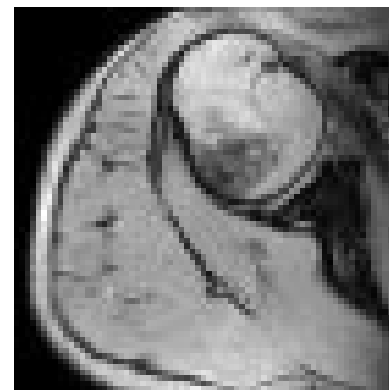
- This is a physics course primarily intended for pre-meds and chemistry/biochemistry majors.
  - It is a self-contained introduction to the whole subject.
  - An appropriate math background is assumed.
- This course is **team taught**. There are two professors (Lang and Ritchie). You will see each about half the time.
- This course follows a **plan**. We will follow the schedule for lectures, homework, exams, etc. Grades are assigned according to simple, transparent, and fixed policies.

# Why are you here?

- Physics attempts to discover the physical laws that govern the natural world. These laws apply equally to living and nonliving systems.
- Gaining a knowledge of basic physics is part of a complete education.
- Modern technology, including medical technology, has been made possible by advances in physics, and this will continue to be true for future innovations.
- In future courses you will encounter material that depends on understanding basic physics.
- There are physics problems on the MCAT.

# Images obtained with magnetic resonance imaging.

From <http://www.gemedicalsystems.com/rad/mri>



# Overview of Physics and PHY 317K/L

## PHY 317K

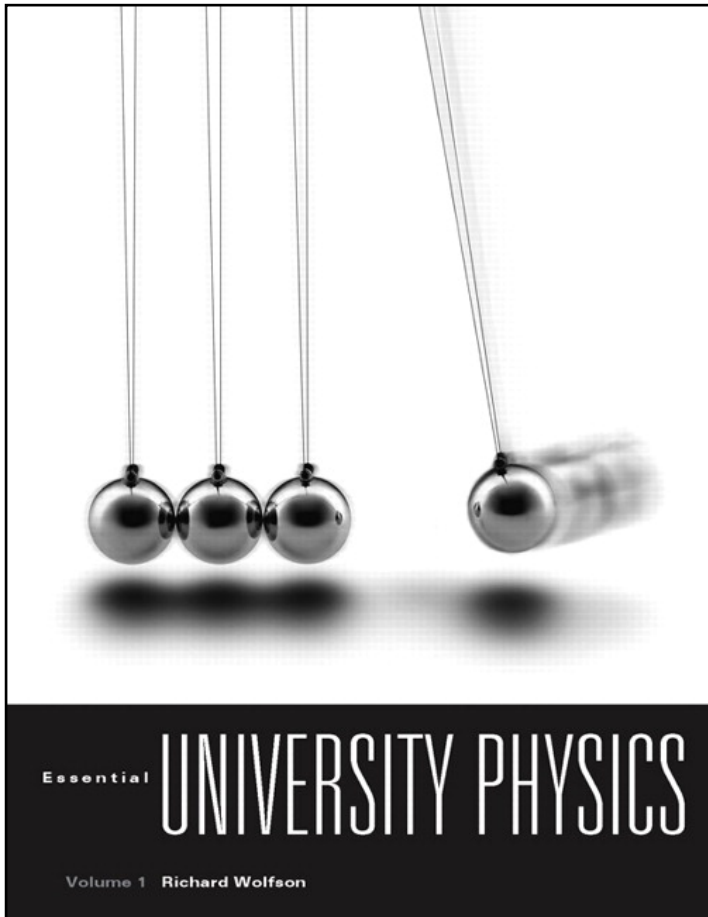
- **Classical Mechanics**
  - Introduction to basic concepts (force, energy, momentum, ...)
  - Motion of macroscopic objects, gravity, fluids, waves (including sound)
- **Thermodynamics**
  - Heat, temperature, ...
  - Statistical treatment of gases

## PHY 317L

- **Optics**
  - Properties of light, optical instruments, ...
- **Electromagnetism**
  - Charge, electric and magnetic fields, relativity
- **Quantum Physics**
  - Principles of quantum mechanics, atomic physics, materials (condensed matter), nuclei, subatomic particles

# Textbook

Essential University Physics, Volume 1,  
by Richard Wolfson; Pearson (publisher)



This course follows the text. You should read it and study it along with lectures and homework.

# First Day Handout

- The **First Day Handout** provides most organizational information, including grading policy. **Be sure to read it carefully.**
- The course schedule/syllabus gives dates for lectures by topic, homework, and exams.

# Course Grade Policy

Course grades will be based on three exams (two in-class and a comprehensive final) and the homework average.

$$S = 0.10 \cdot H_{\text{ave}} + 0.30 \cdot E_{\text{high}} + 0.30 \cdot E_{\text{mid}} + 0.30 \max(E_{\text{low}}, E_{\text{snt}})$$

$E_{\text{snt}}$  is a “safety net” to protect against a really bad day; it should not encourage you to skip an exam.

The weighted sum  $S$  will be rounded to an integer. Letter grades will be based on the rounded value:

A = 90-100	A <sup>-</sup> = 85-89	B <sup>+</sup> = 82-84	B = 78-81	B <sup>-</sup> = 75-77
C <sup>+</sup> = 72-74	C = 68-71	C <sup>-</sup> = 65-67	D <sup>+</sup> = 62-64	D = 58-61
D <sup>-</sup> = 55-57	F = below 55			

Grades will not be curved. The grade policy will be applied uniformly and transparently, so that everyone knows exactly what to expect.

# Grade Policy (continued)

$E_{\text{high}}$  = highest exam score,  $E_{\text{mid}}$  = middle exam score

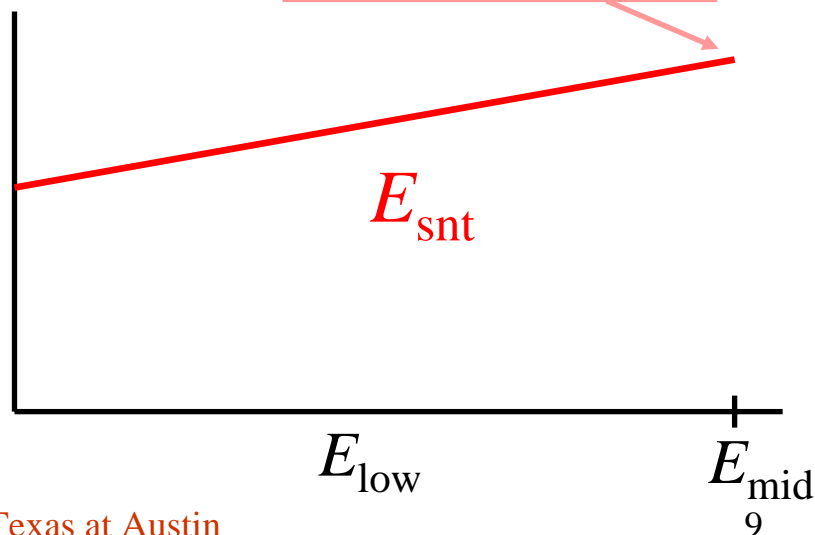
$E_{\text{low}}$  = lowest exam score,  $H_{\text{ave}} = \frac{1}{6} \sum_{i=1,6} h_i$  (the homework average)

$$S = 0.10 \cdot H_{\text{ave}} + 0.30 \cdot E_{\text{high}} + 0.30 \cdot E_{\text{mid}} + 0.30 \max(E_{\text{low}}, E_{\text{snt}})$$

where  $E_{\text{snt}} = \left( \frac{E_{\text{high}} + E_{\text{mid}}}{2} \right) \left[ 0.5 + 0.25 \left( \frac{E_{\text{low}}}{E_{\text{mid}}} \right) \right]$

$$0.75 \left( \frac{E_{\text{high}} + E_{\text{mid}}}{2} \right)$$

$$0.50 \left( \frac{E_{\text{high}} + E_{\text{mid}}}{2} \right)$$



An online applet is provided that will calculate course grades for you.

# Course Website

- <http://www.ph.utexas.edu/~phy317n/PHY317K>
- Important course materials (schedules, homework assignments, policies, etc.) are accessible on the web. Also:
  - Frequently Asked Questions
  - Problem Solving Tips
  - Problem Session info, TA contact info, etc.

# Password Protection

To access homework assignments and solutions for homework and exams from the PHY 317K/L website, you will need to enter a user name and password.

- User Name: **phy317**
- Password: **student**

# How to do well in this course?

- It is essential to keep up. We cover a lot of material, and if you get behind, you will probably not catch up.
- Read each textbook chapter before it is discussed in class.
- Do the homework, yourself.
- Problem sessions are for your benefit, and you should attend one or two per week.
- Expect to spend several hours ( $\geq 10$ ) per week on this course if you want a good grade. (This is in addition to time in class and the time you spend on the 117M lab.)
- Warning: If this is an unusually full semester for you, it may not be the best time to take PHY 317K/L.

# The role of **HOMework** in this course

- To learn physics, you must work physics problems.
- Homework forms the core of this course.
- Do the homework yourself. If you work with others, make sure you can work the problems yourself. If you solicit TA help, afterwards make sure you can work the problems yourself.
- Copying answers only robs you of the value of working the problems for yourself, and this will hurt your exam grades.
- The best way to prepare for exams in this course is to be sure you can work the homework problems yourself.

# Announcements

- Homework #1 is due on Sept 8.
  - Pick up answer sheets (“scantrons”) outside the classroom at the white box. Please do not hoard.
  - Hand in homework by putting the scantron in the slot in the white box outside the classroom. The box is labeled “PHY 317K Homework.”
- Exam #1 will be on Sept 24.
- Problem sessions will begin Monday August 31.
- 117M labs will begin next week (week of Aug 31).
  - There will be no other info on the labs in this class.
- You must satisfy all pre-/co-requisites or obtain special approval before Sept 11. You should be receiving e-mail if you have a problem. If you do, see Pat Morgan (RLM 5.216).