

Welcome to Physics 142

This is an introduction to electromagnetism for honors students. It is design for students intending to be physics/astrophysics majors. Other students with a strong background in basic mechanics and who feel comfortable with basic calculus are welcome.

- electrostatics
- electric potential
- magnetostatics
- electric and magnetic fields in matter
- current
- capacitors
- energy in electric and magnetic fields
- AC and DC circuits
- induction
- Maxwell's equations
- electromagnetic waves
- Relativity
- Geometric optics

Surgeon General's warning: No matter what you're smoking, this is not your high school course.

Professor Steven Manly

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http://www.pas.rochester.edu/~manly/class/P142_2008/

Name

University (@mail ...) email address

Did NOT get email from me in last 24 hrs (and have checked this morning)

Year: Fr/So/Jr/Sr?

Projected major

What do you want to be doing for a career ten years from now?

What do you think is the most beautiful and influential creation of the human mind to date?

Maxwell's equations in integral form

$$\oint_s \vec{E} \cdot d\vec{a} = \frac{Q_{encl}}{\epsilon_0}$$

$$\int_s \vec{B} \cdot d\vec{a} = 0$$

$$\int_c \vec{E} \cdot d\vec{l} = -\frac{d \int_s B \cdot d\vec{a}}{dt}$$

$$\int_c \vec{B} \cdot d\vec{l} = \mu_0 I_{encl} + \mu_0 \epsilon_0 \frac{d \int_s \vec{E} \cdot d\vec{a}}{dt}$$

Components of the course:

Lecture



Concepts, depth, association with the rest of life, other disciplines, systematic technique, gotchas, class issues, hints, some problem solving

Components of the course:

Lecture



Lab

Run independently. Part of your P142 grade. Must do all 5 labs to get a grade in P142.

Components of the course:

Lecture



Text



*More depth and associations,
different approach, problems,
not a substitute for lecture or
doing problem sets*



Lab

Components of the course:

Lecture



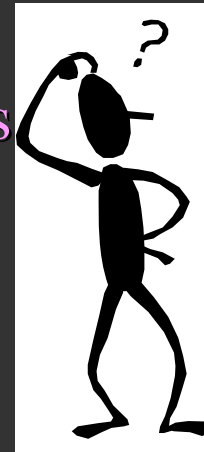
Text



Lab



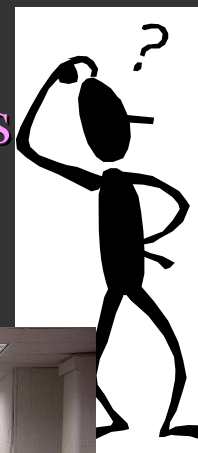
Problem sets



Absolutely critical that you struggle with them and follow thru on particular personal questions/issues, taken up and partially graded (for effort), solutions (perhaps cryptic) released, you must follow thru

Components of the course:

Problem sets



Lecture



Text



Workshop

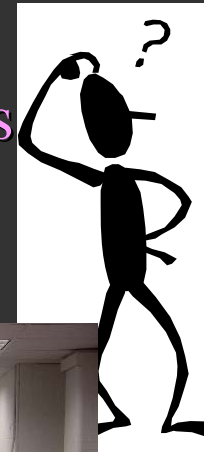
Lab



My way to help you help yourself!

Components of the course:

Problem sets



Lecture



Text

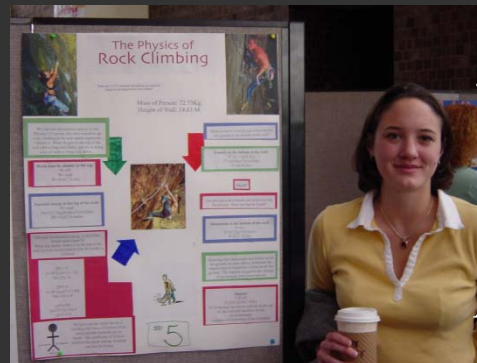


Workshop



Lab

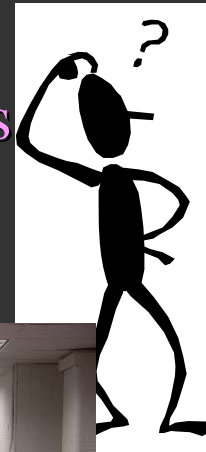
Presentation



A chance to teach it yourself and explore some things not in the text, you will evaluate the presentations

Components of the course:

Problem sets



Lecture



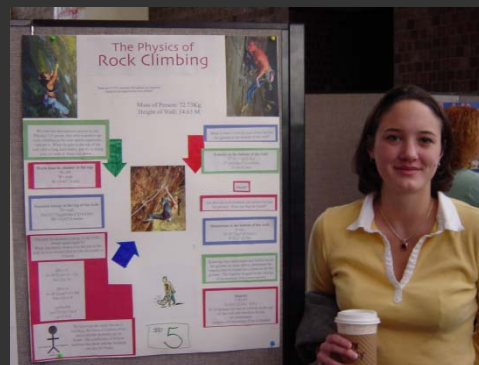
Text



Workshop

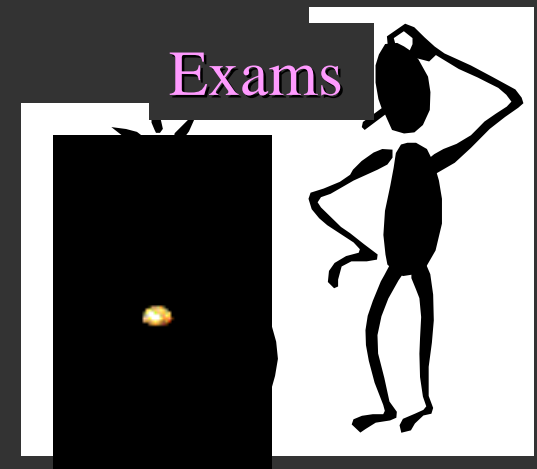


Lab



Presentation

Exams



Components of the course:

Online applets



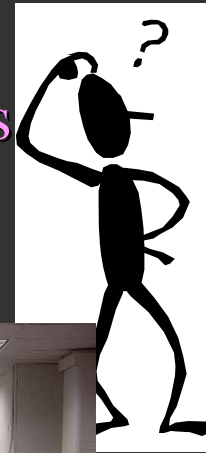
Lecture



Text



Problem sets



Workshop



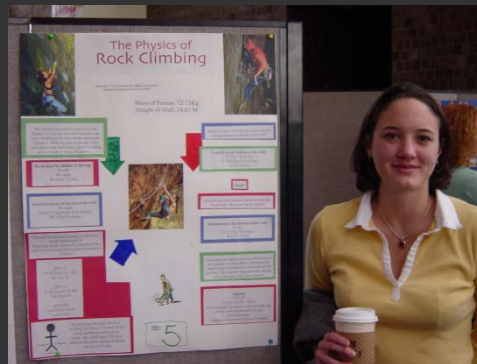
Lab



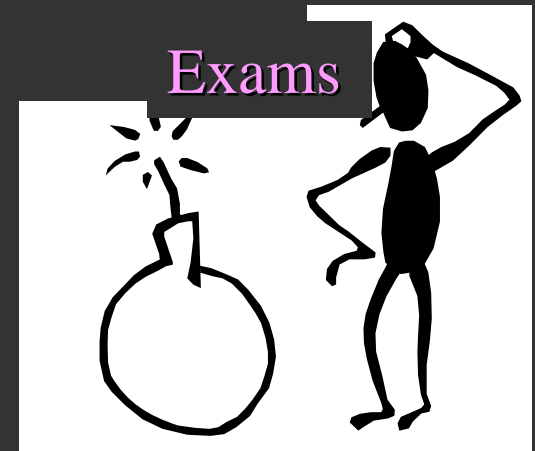
PRS



Presentation



Exams



Evaluation:

Presentation



Scheme	Exam 1	Exam 2	Final exam	Lab	Prob sets	Project
1	20%	20%	21%	15%	9%	15%
2	0%	30%	31%	15%	9%	15%
3	30%	0%	31%	15%	9%	15%

Each scheme calculated, best average sets
your place on the numerical curve

I place grade boundaries on numerical curve

More stuff:

Will use BlackBoard for class email distribution and other things ... grades, more?

Workshops begin next week. Schedule set tentatively. Have to check that my TA's can make the times.

Office hours: B&L 203E, Wed. =10:30-22:30 and Thursday 1:00-3:00, TA office hours not yet set

Problem sets and solutions: PS #1 will be on web soon and is due Sept. 11!

Lab schedule already set ...

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