

Welcome to Physics 113

This class is a physics survey course designed for science majors who are not majoring in physics or engineering.

- Vectors
- Linear and multi-dimensional motion
- Work
- Energy
- Gravitation
- Simple harmonic motion
- Conservation of momentum and energy
- Constant acceleration motion
- Rotational motion
- Thermodynamics
- Waves

Some knowledge of calculus is assumed
... should have seen integrals
(techniques will be reviewed as needed).

No previous physics
instruction is assumed.

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

You should have received email
with the syllabus attached. That
contains contact info/office
hours/location/etc.

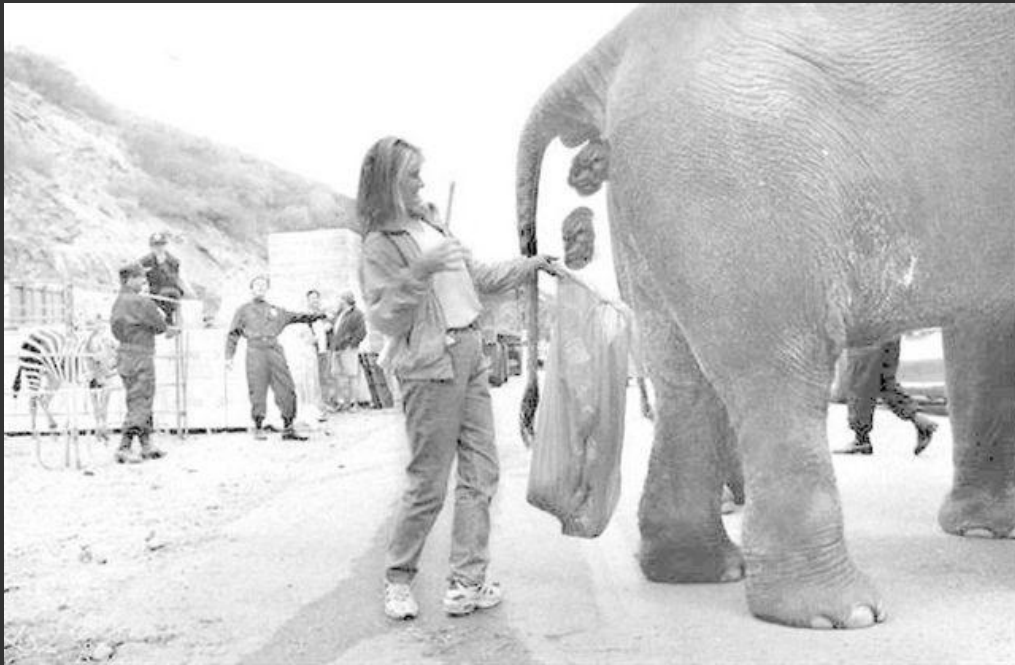
Professor Steven Manly
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We will use BlackBoard and

http://www.pas.rochester.edu/~manly/class/P113_2013/

Why are you here?

Smile! Your lot in life could be worse.



Why *is* this a requirement for your major?

fluid flow, arteries, water fountains, commodes

mechanics of breathing, walking, running, flying, standing

Golf

all sports: curve balls, spin in tennis, drag in swimming, etc.

Motors, gears, wheels, ambulances, bikes

buildings, doors, bridges, skeletons

Chemical bond modeling, energy concepts, heat flow

planes, boats

gravity

**The foundation for
physics 114 material**

Why do *I* think you are here?

Awareness and respect for physics in the real (your) world

To learn to solve some basic physics problems.

To learn to solve problems.

Not on the list: To learn to be physicists.

“It is not so very important for a person to learn facts. For that he does not really need a college. He can learn them from books. The value of an education in a liberal arts college is not the learning of many facts but the training of the mind to think something that cannot be learned from textbooks.”



- Albert Einstein, 1921, commenting on Thomas Edison's opinion that a college education is useless.

Evaluation:

Scheme	Exam 1	Exam 2	Exam 3	Final exam	Lab	Prob sets
1	---	20%	20%	35%	16%	9%
2	20%	---	20%	35%	16%	9%
3	20%	20%	---	35%	16%	9%
4	18%	18%	18%	21%	16%	9%

Exams normalized to even out possible differences in difficulty

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

I place grade boundaries on numerical curve

Does workshop work?

1999 P114 split class experiment:

41 students assigned to workshops, 110 assigned to recitations

Random assignments (all but 2 students in class wanted wkshops)

Ignored drops

B- or better →

>5 workshops = 93%

recitation+(<6 workshops) = 63%

Not split classes but ...

	P113 2002	P121 2003	P114 2004
n	169	186	133
attend >7 wkshps	69%	54%	67%
B- or better >6 wkshp	77%	80%	88%
B- or better <=6 wkshp	40%	47%	40%

The 10 Commandments of P113:

- ❖ Thou shall come to class.
- ❖ Thou shall read the text.
- ❖ Thou shall do the problem sets (the right way!).
- ❖ Thou shall ask questions.
- ❖ Thou shall attend workshop.
- ❖ Thou shall participate in workshop.
- ❖ Thou shall strive to understand what is behind the problems and what thou dost wrong on them.
- ❖ Thou shall keep up with the class.
- ❖ Thou shall not CRAM for exams.
- ❖ Thou shall talk to ME the moment you sense impending doom.

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OR ELSE THOU SHALL GET SCREWED!

For those of you who like to pick and choose the commandments you follow

The really, really important ones ...

And the keys to *POST-PHYSICS NIRVANA* are

Problem sets (the right way)

Workshop

Don't cram

More stuff:

Make sure you are squared away on BlackBoard

Synchronization issues

Workshops begin week of Sept. 16

PS 1 due THIS Friday (Sept 6)

Issues about the returning of papers

Office hours (Manly: Mon 3-4 pm Tues 2:15-3:30 pm ,
TA's: office hours TBA)

Labs start week of Sept. 9

physlabs@pas.rochester.edu