

* Course web site: **** Not .net !!!!!!!**
<http://classroom.sdmesa.edu/mcrivello>

There you can find: Syllabus (contains all class info)
Homework format examples
Answers to even # problems
Graph Paper
Homework format examples

* Please remember to bring the correct lab manual with you to lab each week.

* I was out of town for part of the break, so I apologize for not getting back to you if you e-mailed me over the holidays.

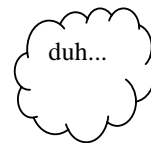
* We will use a portion of the Monday or Wednesday lecture session as a problem solving session for homework and/or lab questions.

* Read Tipler Chapter 1-2

- Ch 1: Take a close look at section 1-5,
Significant Figures

* Chapter 1 contains no physics - it's just a discussion of units. Please turn in the chapter 1 homework on Wednesday, February 2. Please remember that you must follow the homework format as outlined and detailed for you in the syllabus.

* Whatever lab you are in, that's the lab you are in.



* Please give me your folder and signed contract ASAP!!

* Please begin to read chapter 2 and work on the homework problems in 2.

* Remember to follow the homework format!

*** Please go online and find a quadratic equation program for your calculator!!**

$$ax^2 + bx + c = 0$$

I know all of this sounds like a lot of rules and regulations, and each of your instructors may have their own rules, but I believe that following all of these requirements will lead to success in both your academic and professional careers.

Physics 195: Mechanics

Just as Dr. Phil





and



Dr. Laura talk about **relationships** and **commitment**,

PHYSICS is the study of the **relationships** between *matter* and *energy*

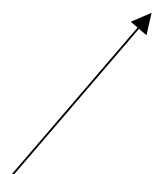
in the universe ( → ), and this course will require a huge time **commitment** from you.

That's why it's called a college 'degree'.
You are studying your particular field of
science to achieve a certain 'degree' of
knowledge in that field.



Physics can be frustrating!

Before
Physics
195:



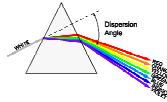
You and your lab partners this week.



During Physics 195.

Some good news ...

Biology terms	Physics terms
enzymes	length
eukaryote	mass
ectoplasm	time
transcription	speed
translation	velocity
archaea	acceleration
biomass	projectile
endospores	force
eukarya	energy
evolution	momentum
gene expression	friction
genetic engineering	rolling
genus	rotation
Koch's postulates	frequency
metabolism	
mutation	
nucleoid	
prokaryote	

- Mechanics: 195 $\sum \vec{F} = m \vec{a}$
 - Electricity & Magnetism: 196 $\vec{\nabla} \circ \vec{B} = 0$
 - Optics and Modern Physics: 197 $E = mc^2$ 
-

So where do *we* start?

Measurement: Every physical property can be expressed in terms of one or more of *only 4* fundamental properties:



Length



Mass (?)



Time



Electric Charge (next semester)

Units

If your boss offer\$ you 85/hour, would
you take it?

Measurements of any physical property must be expressed in terms of a *number* and a *unit*.



Le **S**ystème international d'unités is denoted as **SI** in all languages.

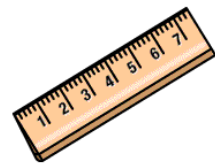
The **SI** system uses the metric system - a base 10 system.

The Metric System

Prefix:	Symbol:	Magnitude:	Meaning (multiply by):	Ex.
Yotta-	Y	10^{24}	1 000 000 000 000 000 000 000 000	
Zetta-	Z	10^{21}	1 000 000 000 000 000 000 000 000	
Exa-	E	10^{18}	1 000 000 000 000 000 000 000	
Peta-	P	10^{15}	1 000 000 000 000 000	
Tera-	T	10^{12}	1 000 000 000 000	
Giga-	G	10^9	1 000 000 000	
Mega-	M	10^6	1 000 000	
myria-	my	10^4	10 000	
kilo-	k	10^3	1000	1km = 1000m
hecto-	h	10^2	100	
deka-	da	10	10	
deci-	d	10^{-1}	0.1	
centi-	c	10^{-2}	0.01	100cm = 1m 1cm = 10^{-2} m = 0.01m
milli-	m	10^{-3}	0.001	1000mm = 1m 1mm = 10^{-3} m = 0.001m
micro-	μ (mu)	10^{-6}	0.000 001	1000000 μ m = 1m 1 μ m = 10^{-6} m = 0.000001m
nano-	n	10^{-9}	0.000 000 001	
pico-	p	10^{-12}	0.000 000 000 001	
femto-	f	10^{-15}	0.000 000 000 000 001	
atto-	a	10^{-18}	0.000 000 000 000 000 001	
zepto-	z	10^{-21}	0.000 000 000 000 000 000 001	
yocto-	y	10^{-24}	0.000 000 000 000 000 000 000 001	

Included in the SI system is the **mks** system.

m: all *lengths* are measured in meters



k: all *masses* are measured in kilograms



s: all *time* is measured in seconds



Mass: A measure of a body's quantity
of _____.

Sometimes we have to convert from
our 'regular units' to the metric
system.