

# Surviving Physics 12x

## Helpful Hints

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# Welcome to Elite University!



❖ HS Ranking	Percent of UW
top 10%	86%
top 25%	97%
top 50%	100%

❖ **Top 10% of Physics 121: 10%**

❖ GPA	HS	Phys 121
➤ GPA > 3.75	54%	15%
➤ GPA > 3.50	85%	26%
➤ GPA > 3.00	99%	45%

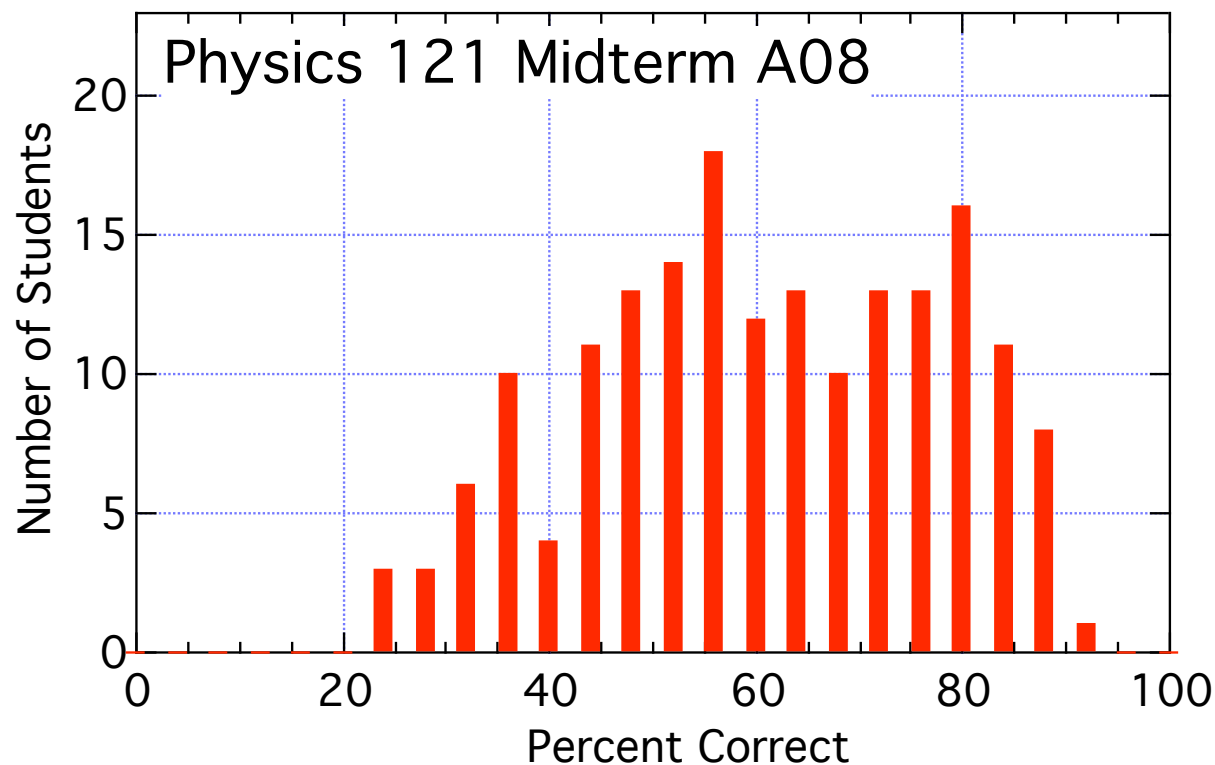
(UW data from SAT web site)

# Your First Physics Midterm

❖ Average grade: usually 60-70%

➤ WHY?

- 80% of the points on 80% of the questions



# What does it feel like?

## ❖ Gut “I don’t fit” Reaction:

- You are conditioned to believe that 60% is failing.
- The person next to you got a 95% -- ARGH
- No one you see or talk to has your cultural background
- You wander off and don’t come back

## ❖ Better “I belong here” Reaction:

- A 60% on a physics midterm is a “solid citizen” result
- The probability that the person sitting next to you will win the Nobel Prize is finite.
- The Prof. will likely remember you
- You persevere, work on your study habits, learn from your mistakes, get some extra help and you thrive.

# Confidence in your Education

## ❖ Life without Confidence

- You doubt yourself
- You get stopped by small tasks
- You get walked on
- You are miserable
- You quit

## ❖ Life with Confidence

- You believe in yourself
- You overcome barriers and accomplish tasks
- You are respected
- You are happy
- You persevere and succeed

# Physics 12x Structure

- ❖ No physics makes sense until you have seen it 3 times
- ❖ Each of you learns in a different way

## ❖ Opportunities

### ➤ PART OF YOUR GRADE

- Tutorial
- Laboratory Pre-lab
- Laboratory Reports
- Tutorial Homework
- Lecture Homework
- Tutorial Pretests
- Tests
- Clicker Questions
- Supplemental Homework

### ➤ HIGHLY RECOMMENDED

- Lecture
- Textbook
- Study Center
- Professor's Office Hours
- Chat Room
- Study with Peers

**Use what works for you!!**

# 12x Grading

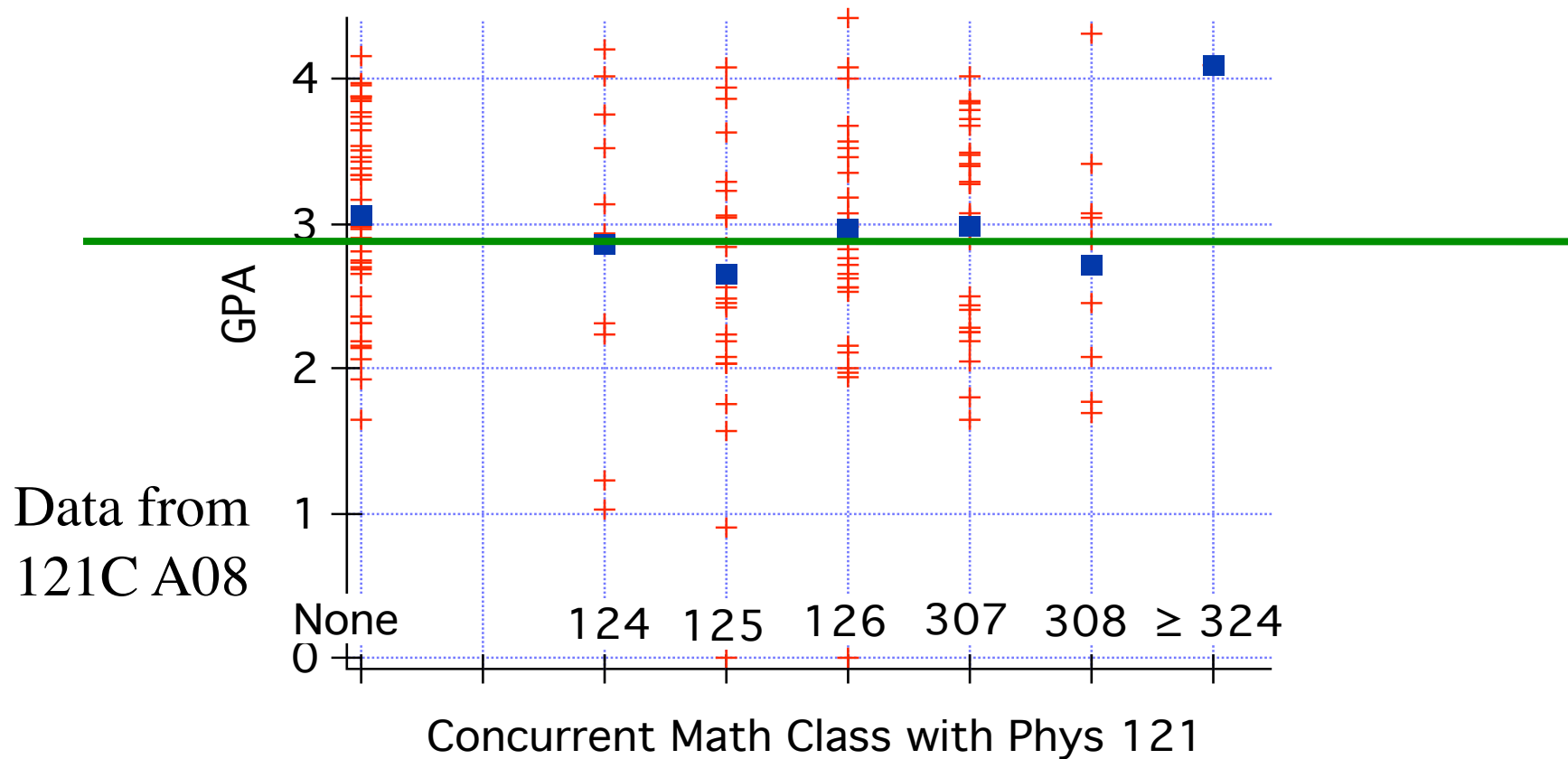
❖ Midterms (best 2 of 3):	35%
❖ Final Exam (Cumulative):	25%
❖ Lab (reports):	15%
❖ Tutorial (HW, Pretest, Attend)	10%
❖ Lecture HW	10%
❖ Clickers, Supp. HW, etc.	5%

For more detail, see

[http://www.phys.washington.edu/1xx/12X\\_updates/12X\\_Grading\\_Allocation\\_09-10.htm](http://www.phys.washington.edu/1xx/12X_updates/12X_Grading_Allocation_09-10.htm)

# What about Math Prep?

- ❖ It's up to you!  
Math and Physics reinforce each other
- ❖ No clear trends.



# What about HS Physics?

## ❖ First 6-7 weeks of 121 covered well in HS

➤ Last 3 weeks are not!

## ❖ If you did have good HS Physics:

➤ Leave time in your schedule for later in the quarter when new material is introduced

➤ Use the time to explore in greater depth

## ❖ If you DIDN'T have good HS Physics:

➤ Don't panic. You will catch up soon.

➤ Develop good study habits early.

121C A08

w/ HS phys: 2.96 (72%)

w/o HS phys: 2.81 (28%)

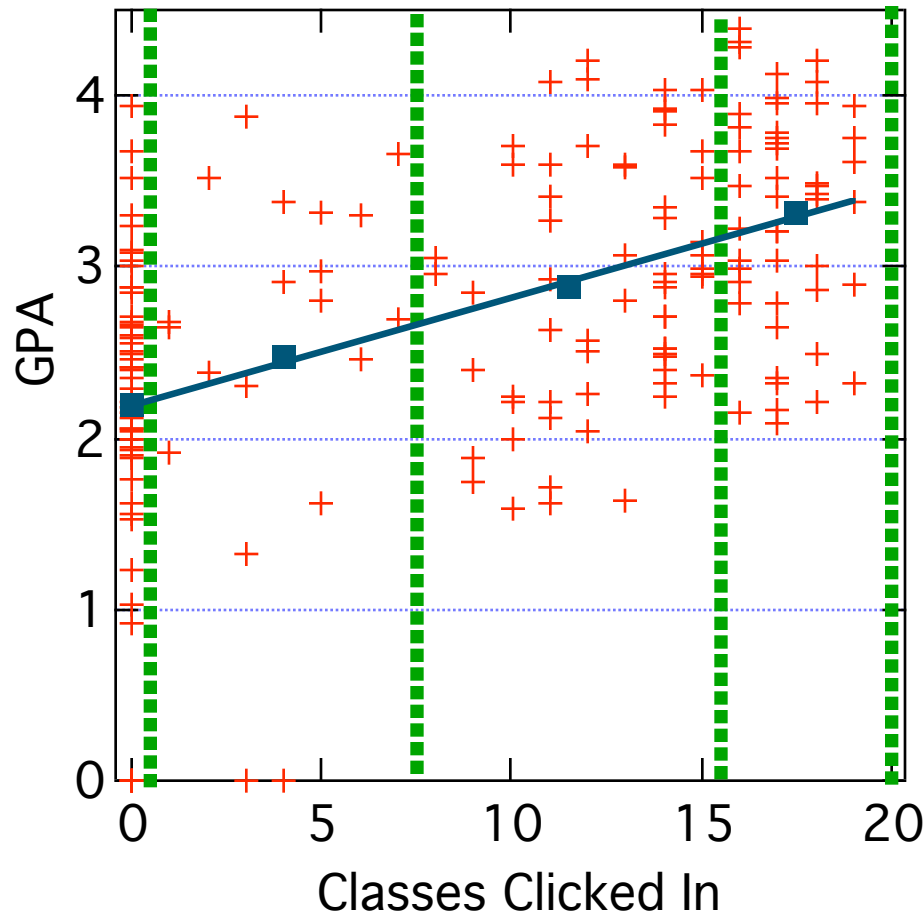
## ❖ By 123 it doesn't matter:

➤ With HS physics: (78%): GPA =  $3.09 \pm 0.45$

➤ Without HS physics (22%): GPA =  $3.01 \pm 0.67$   
(and all the 4.0 grades!)

# Come to Class!!

Data from  
121C A08



## AVERAGES:

- 0 classes 2.21
- 1 to 7: 2.48
- 8 to 15: 2.88
- 16 to 19: 3.32

## Different year:

- < 1/3 classes: 2.5
- 1/3 to 3/4 classes: 3.1
- >3/4 classes: 3.5

$$\langle \text{GPA} \rangle = 2.2 + 0.06 * \text{Classes Attended}$$

(note: these data are from a quarter when the bookstore ran out of clickers till week 3)

# Why do people leave SME?

## ❖ Female top 6:

- Non-SME major offers better education
- Turned off of science
- Rejection of SME career and lifestyle
- Poor teaching by SME faculty
- Inadequate advising
- Curriculum overload / fast pace

## ❖ Male Top 6:

- Turned off of science
- Curriculum overload / fast pace
- Poor teaching by SME faculty
- SME Career rewards not worth the effort
- Non-SME major offers better education
- Discouraged/lost confidence due to low grades in early years