

# Welcome to Physics 105a!

Ken Intriligator  
Fall 2017

<http://keni.ucsd.edu/f17/>

# The Team

Fearless  
Leader  
Intriligator



Head TA,  
Commander  
Caleb Choban!



Zack  
Rehfuss!



David  
Moore!



Chuncheong  
Lam!

# A bit about me

- I was an undergrad at UCSD, and then spent 10 years on the East Coast.
- I have been a professor here for 20 years. (I'm over the name “professor”. Call me Ken, Coach, Captain, Boss, or Dude.)
- I am a theorist. My research is on quantum fields (and string theory).
- My enjoyment of our time together depends on yours. I hope it'll be fun.

# Advice for you

- You are going to learn a lot of science this year, in many classes. It can be challenging. It is a great opportunity. Have fun.
- Don't skip classes. It is a recipe for disaster.
- Don't be shy. Get to know your classmates and professors. College flies by too fast.
- Explore UCSD's many opportunities.

# Junior year



This is a key year. It is when many US college students catch up to, and often jump ahead of their contemporaries in other countries. You will re-learn all the physics you have already learned, but using more math. Math is the needed language for physics, and you can use it to deepen your intuition. Intuition is the most important thing. This is where humans are still better than computers.

# Scary technology?



Much of this class will be devoted to learning to use a powerful toy / tool, which has transformed how science can be done. It can save you time. It can waste your time. Think.

# Thanks Dan Dubin

- He is a professor here. He created this class. He wrote the book. He shared his notes and course material with me.
- He is giving you the .nb chapters of his book for this course; available on TED site.
- Take his 105b course next quarter. I have heard it is an awesome class!

# Homework

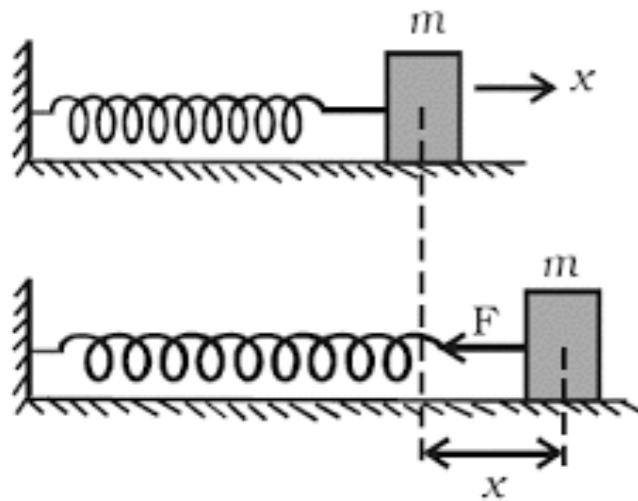
- Get started early! The mathematica coding can be very time consuming. The lab time is for last minute help, not for just starting.
- Due Sunday night at 8pm. Late penalties.
- Mathematica notebooks should be formatted nicely. Info will be provided soon.
- Do not copy other's work or coding.



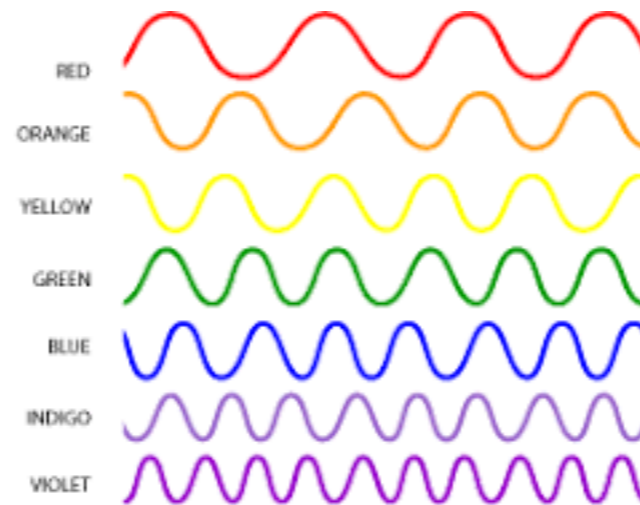
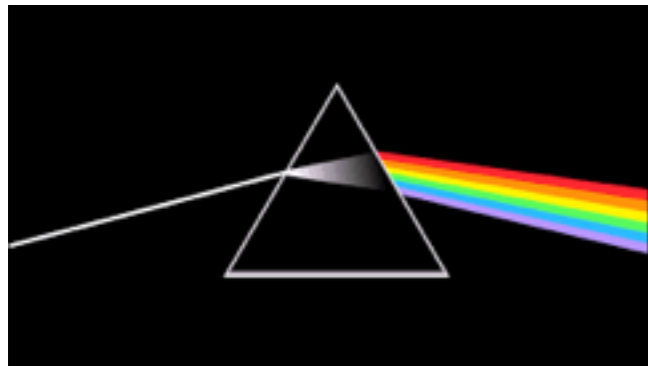
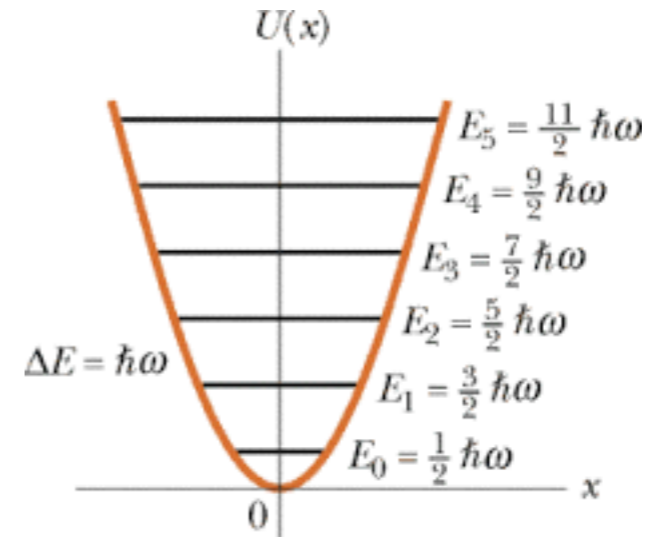
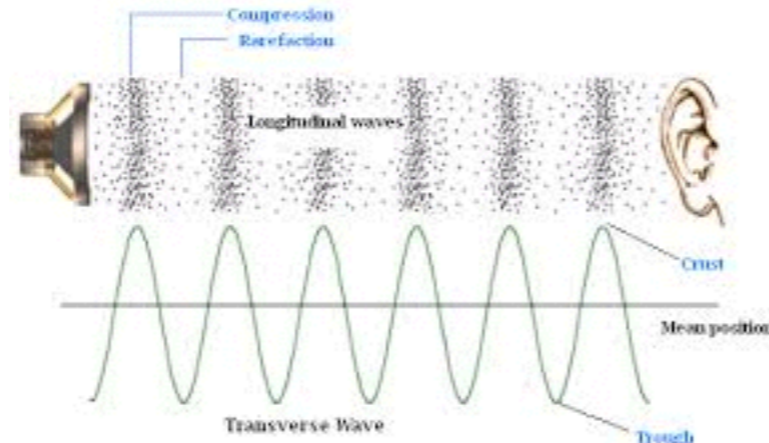
# About the labs

They are limited in space by the number of computer workstations. Please only go to your assigned lab. While there, you can get hands-on help from your TA. If you have your own computer, you can get a free copy of mathematica so you can also do homework outside of lab time. You will probably also want to use mathematica for your other classes. Part of the junior-year transformation is thanks to the interconnections between the various courses.

# See + hear a lot of this!



Linear harmonic oscillator



**OK, let's get to work.**