Student Teaching in the Department of Physics: An Introduction

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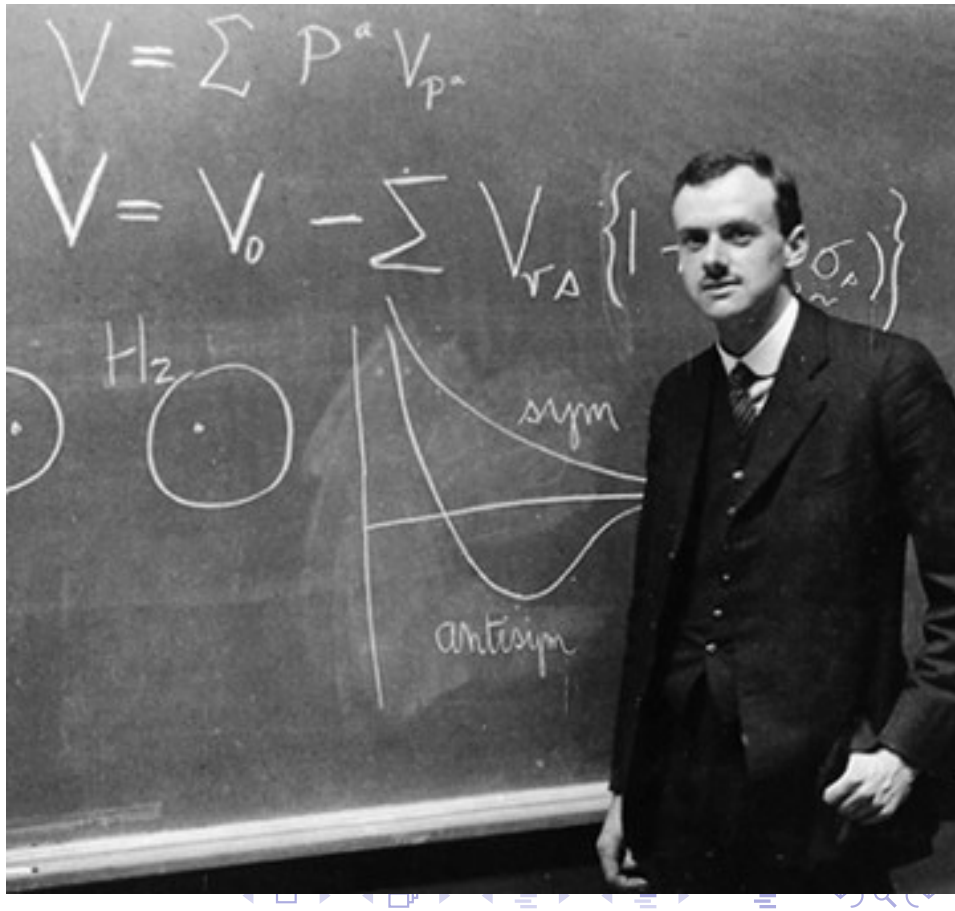
PIE Associates
2007-2008

August 25, 2008

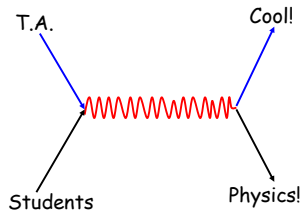
Training Overview

- INTRODUCTION
  1. Get to know your fellow TAs
  2. What is a lab?
  3. Your role as TA
- RUNNING YOUR CLASS
  1. Preparation
  2. Beginning class
  3. During lab
  4. Ending class
  5. Grading
- RESOURCES

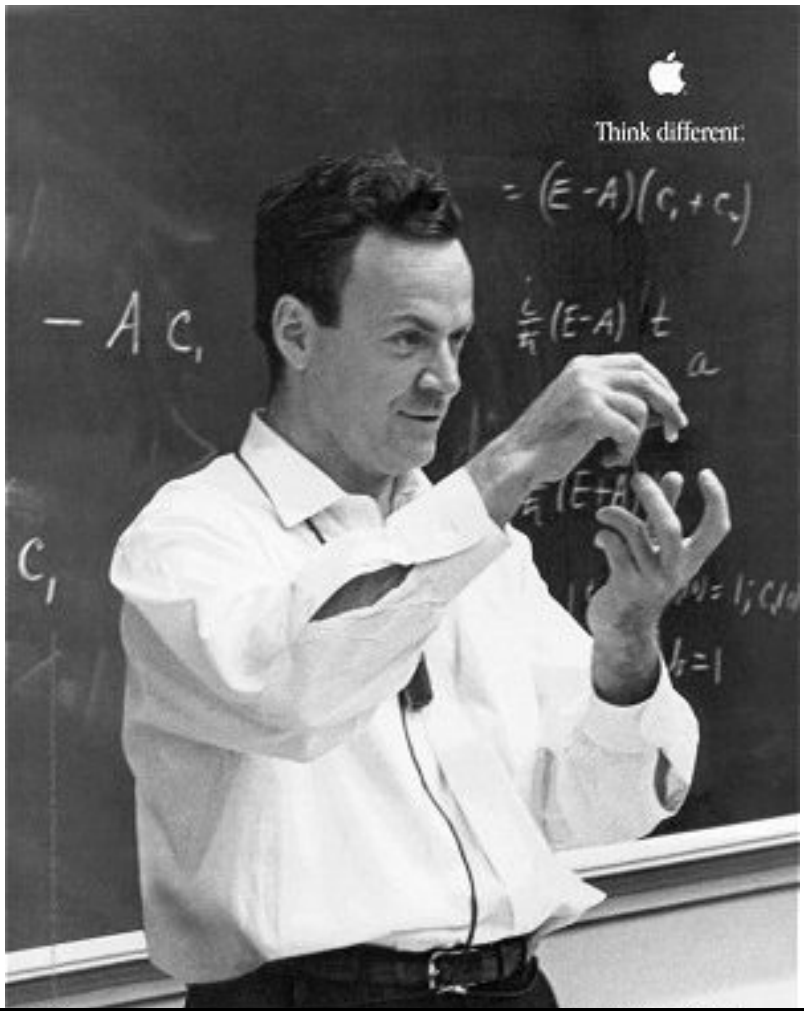


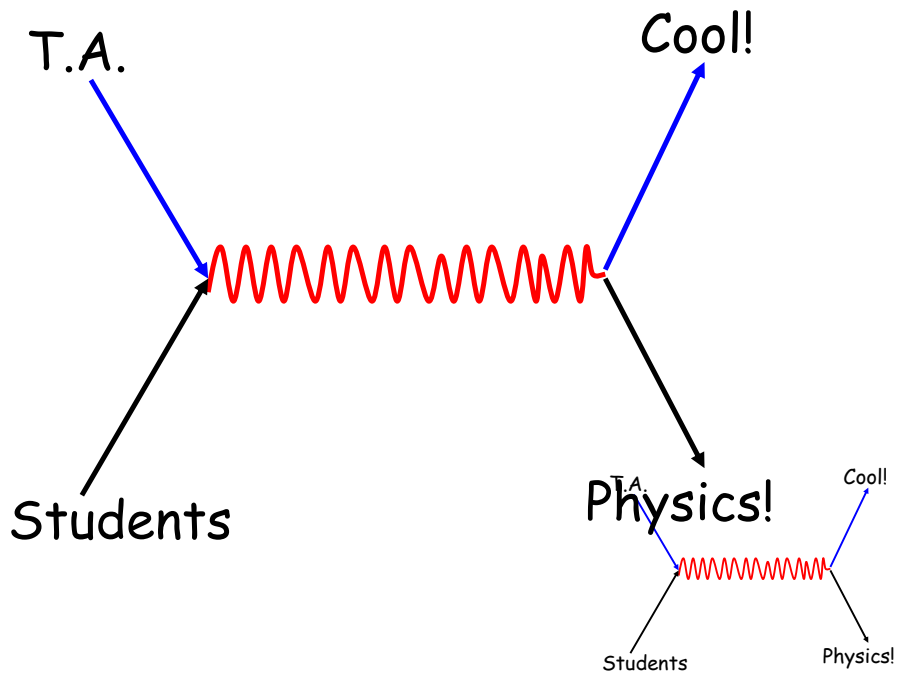
What is my course about? What are these students like?

- Introductory Astronomy (AST 1002)
- Introductory Physics (PHY 1020)
- General Physics A/B (PHY 2053/2054)
- College Physics A/B (PHY 2048/2049)
- Intermediate/Advanced Lab (PHY 3802/4822)

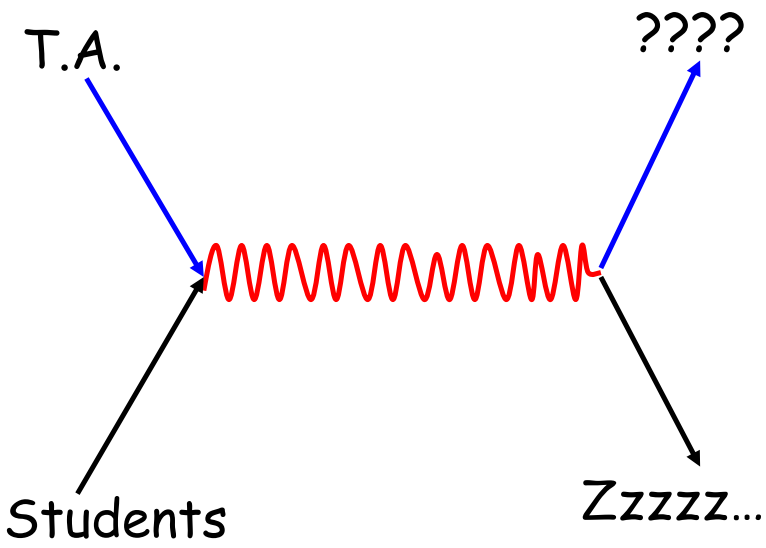


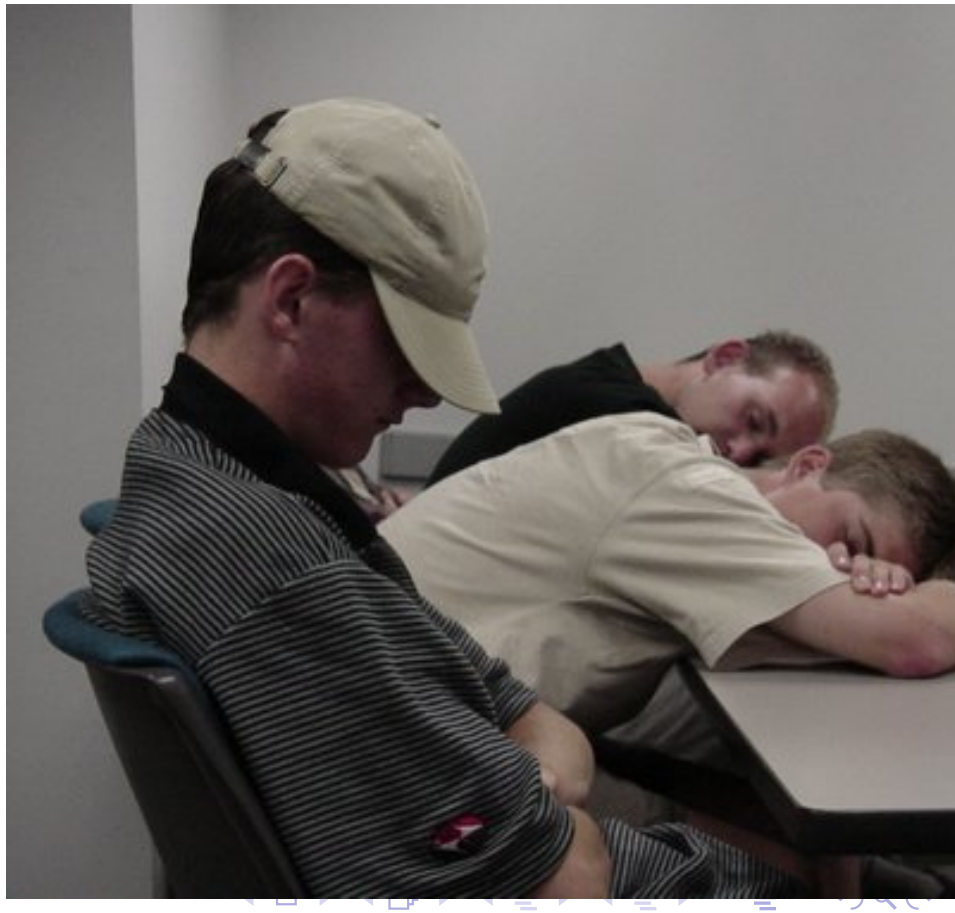
The Feynman Diagram of Teaching





What to Avoid in Teaching



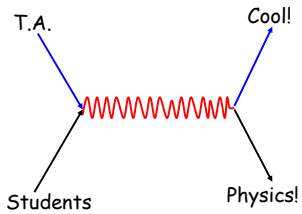


Labs $\longrightarrow$ What's my role?

- Understand lab
- Know the topic
- Introduce lab
- Guide
- Ensure safety
- Stimulate interest
- Fix
- Clarify
- Encourage
- Grade reports

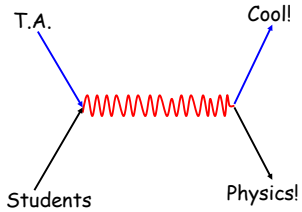
EXERCISE I

- Talk to the person(s) seated at your table.
- Find out something interesting about them.
- Introduce them to the group.



Where does your lab fit in?

- Lecture (Twice a week)
- Recitation (Twice a week)
- Practice Session
- CAPA
- Lab (Twice a week)
- Grading

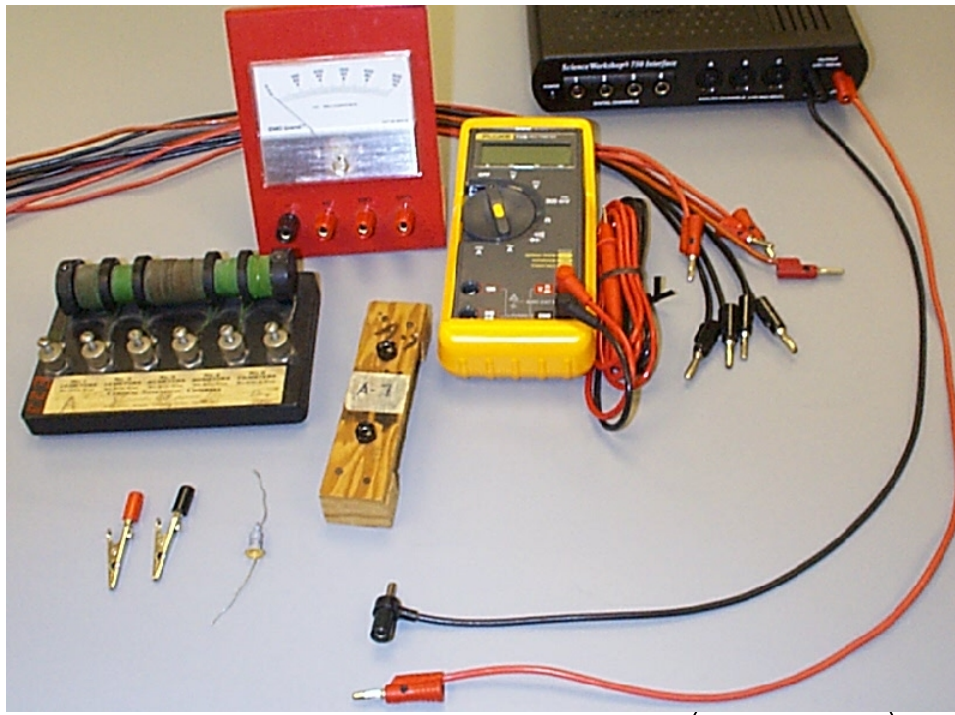


PREPARATION

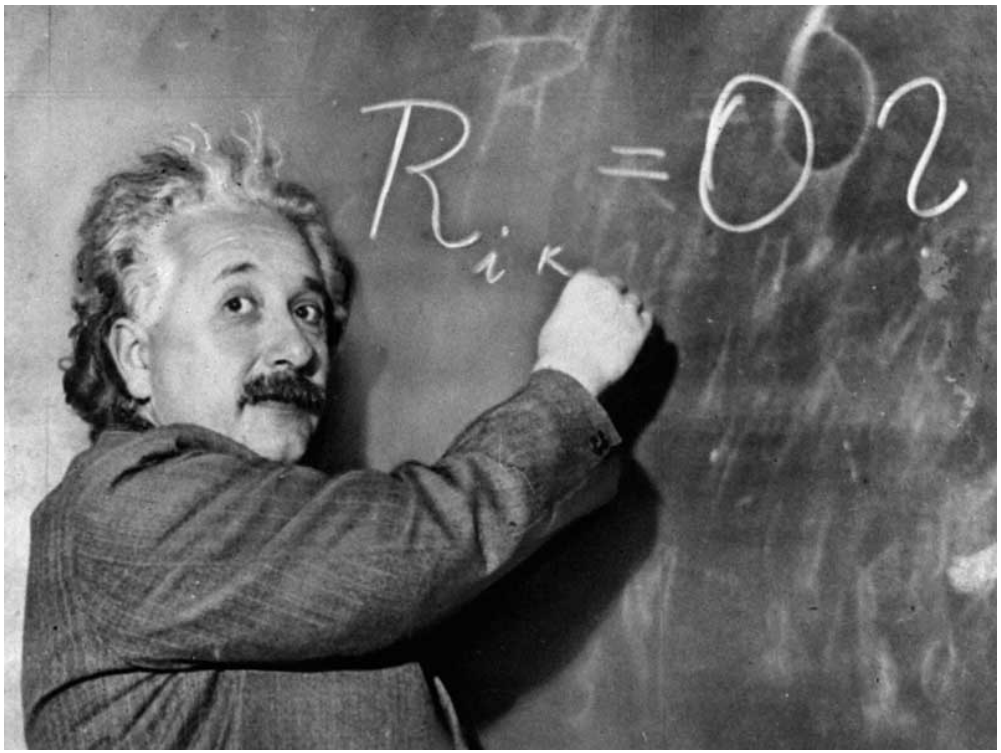
1. ATTEND WEEKLY SESSIONS.
2. DO FULL EXPERIMENT.
3. WRITE FULL REPORT.
4. Know where all materials are found.
5. Make notes and practice mini-lecture.

Beginning the class

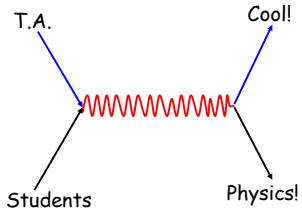
- Show up early
- Start on time
- Minimal lecture
- Demonstrate
- Let them ask general questions
- Get them started



EXERCISE II

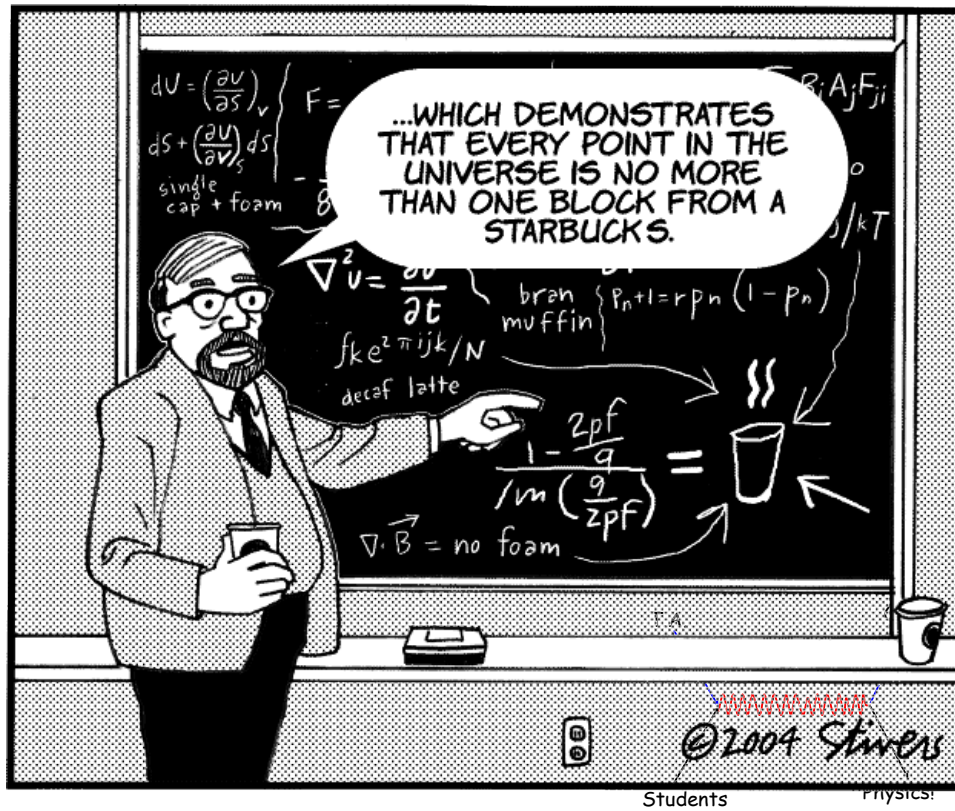


- Name, how you like to be called
- Experience/interest in teaching the lab
- Something interesting about yourself
- How and when to contact you

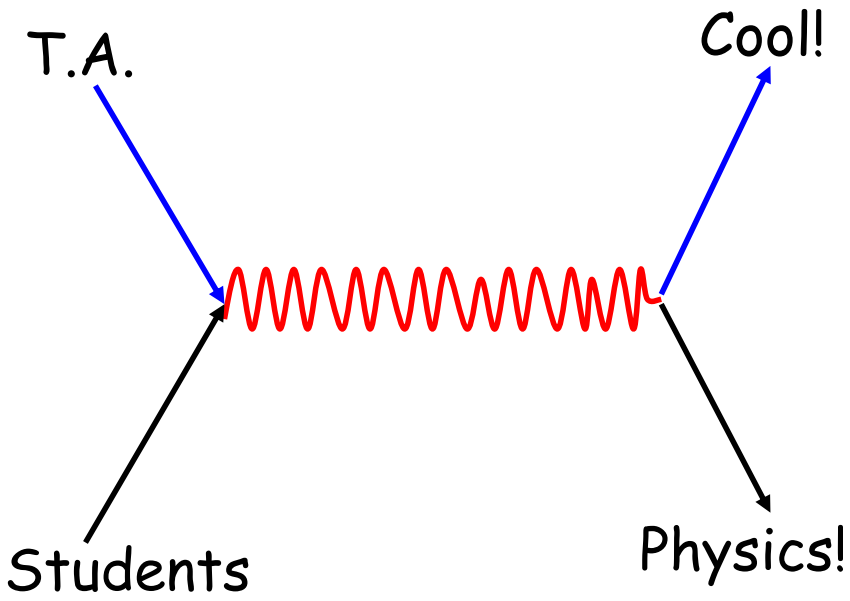


Lecture Delivery Skills

- Components of a lecture
  1. Content
  2. Delivery
- Teaching Axiom
  1. Tell them what you're going to tell them.
  2. Establish what is coming.
  3. Summarize what was taught last time.

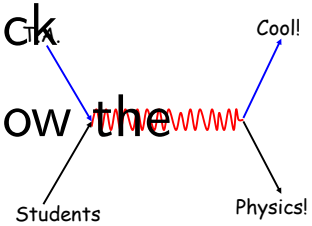


During the session



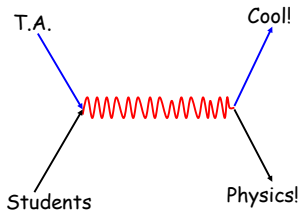
Teaching Tips

- Distribute your attention evenly
- Take advantage of other instructors present
- Watch for opportunities to stimulate thought
- Allow for exploration
- Give positive feedback
- Don't pretend to know the answer



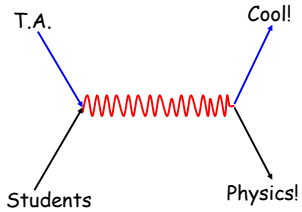
Open-ended questions

- Open-ended questions leave the door open for better answers.
- Begin with the words why or how, or phrases such as what do you think about.
- Lead students to think analytically and critically.
- Stir discussion and debate by sparking student enthusiasm and energy.



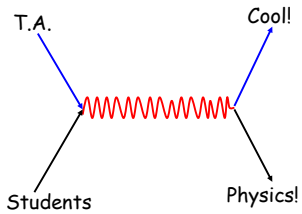
Conclusion and Follow-up

- Remind students that class is ending.
- Develop the relationship between investigation and the concept.
- Allow for a summary and examination.
- Leave room as you found it.
- Evaluate effectiveness of session.



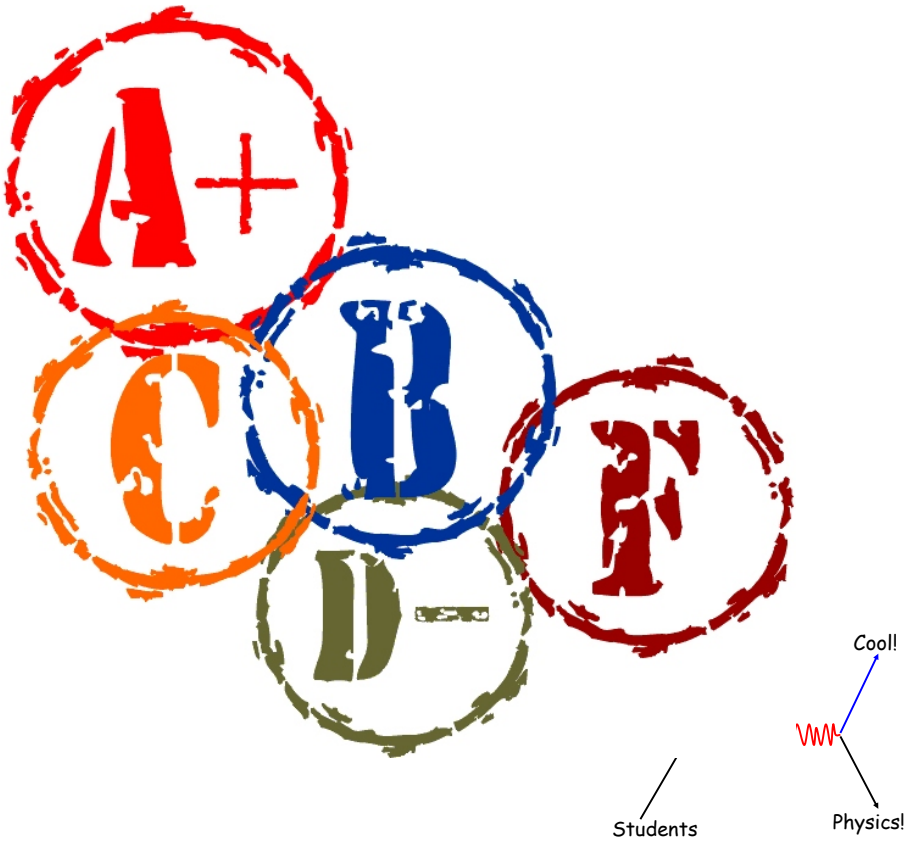
Grading

- Make the assignments and deadlines clear.
- Provide a model or sample.
- Determine your grading rubric in advance.
- If there are multiple sections, try to be consistent in requirements and scale.
- Ask advice if you run into difficulty.
- Give constructive feedback.
- Be nice.



Grading

- Analytic
  1. Break into parts
  2. Grade parts separately
  3. Add scores
- Holistic
  1. Use 3 reports as standard
  2. Compare others to that standard
- Perhaps use both



Syllabi Basics

PHY 2054L
Instructor: Kenny Purcell
E-Mail: kmp02g@fsu.edu
Office: 221 Keen
Office Phone: 644-7934
Office Hours: Monday 10:00-12:00 and Wednesday 10:00-3:00

ATTENDANCE POLICY

Students are expected to arrive on time for every lab meeting. You are responsible for making up missed labs during another lab session and must notify me before doing so. If you miss an experiment and do not make it up, you will receive a zero for that lab.

GUIDELINES FOR LAB WORK AND REPORTS

1. Some experiments may be difficult to finish in the 3 hours allotted. For this reason, it is imperative that you read the appropriate laboratory experiment and be fully prepared to perform the experiment before the lab meeting.

2. Due to the size of classes and the availability of equipment, you will be required to work in groups. Although you will be working together, you must make sure that you understand all that is being done. The lab reports should be your own work and **must be turned in at the end of each lab session**.

3. The format for the lab report is as follows:

   (a.) TITLE PAGE: Include the title of the experiment, your name, the name of your partner(s), your lab section, and the date performed.

   (b.) INTRODUCTION: In your own words, describe what was accomplished in the experiment and the physics principles used to perform the lab. You should also include a clear and concise description of the procedure of the experiment **(NOT A LIST!!)**

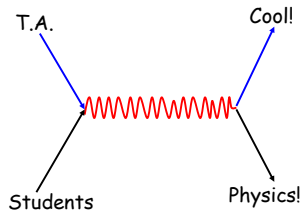
   (c.) DATA: Any data that is taken should be given in both tabular and graphical form, when practical. These should be clearly and properly labeled. A sample of each calculation should also be included. This calculation should include the equation, the values used in the equation, and the final answer boxed. Remember to use correct units in all sections of the report!

   (d.) RESULTS AND CONCLUSIONS: You should restate objectives and explain how they were achieved. Also, discuss your results for each part of the lab and compare your results with the accepted or theoretical results. You should show insight. State if you think if your results are reasonable and why you believe so. And last, discuss anything that could have caused error in the experiment. Be creative (but serious) when discussing reasons for error and note that "human error" is never an acceptable answer.

   (e.) QUESTIONS: Completely answer all assigned questions.

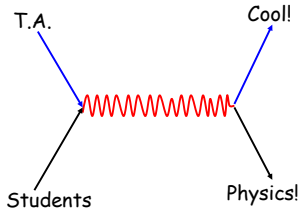
Lab reports are graded on the basis of 10 points and will be based on how well you follow this format and class participation.

- Course Description
- Contact Information
- Student Responsibilities
- Report Outline
- Grading Method
- Resources



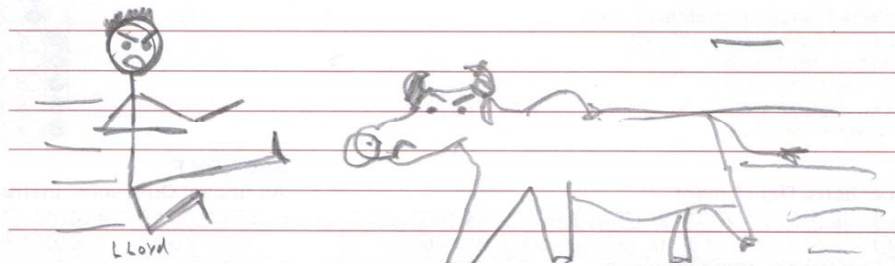
TA and Student Resources

- Internet
- Further reading
- Blackboard
- Texts
- Library dept. specialist



Evaluation

3. Additional comments and suggestions.



1. What did you like most about this course? What could be improved? Give examples.

I liked the instructor the least, he was always willing to help any student, and he treated everyone with respect, and treated everyone equally.

1. What did you like most about this course? What could be improved? Give examples.

Lloyd 8

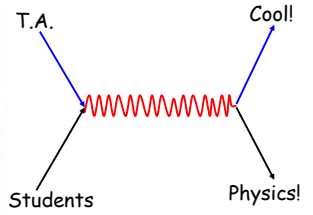
The jokes on the back of the lab assignments.

1. What did you like most about this course? What could be improved? Give examples.

Lloyd is a God amongst Gods he knows more than Dr. [redacted]
He is an Athlete
a Scholar
a Leader
a gentleman
and a Champion at the game of life

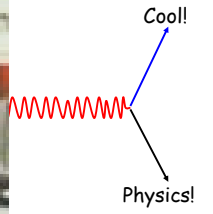
2. What did you like most about this instructor? What could be improved? Give examples.

We love Lloyd
#1 T.A.

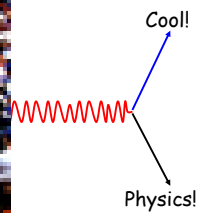


FREE movies @ Student Life Cinema

FREE workout @ Leach Center



FREE tickets for Seminole Football



Have fun teaching!