

Spring 2014

PHYS-2010

Lecture 1

PHYSICS 2010

Algebra-Based Introductory Physics

Classroom: Duane G1B30

2:00-2:50 pm

Monday/Wednesday/Friday



<http://www.youtube.com/watch?v=3wAjpMP5eyo>



Physics of the Ultimate Slip-n-Slide

Newton's Laws, Kinematics, Fluids, Friction, Luck?

Goals: Every good course needs specific goals

- To learn how everyday phenomena of motion work in terms of a few basic, understandable scientific laws.
- All equations should not be seen as separate, but rather as following in a straightforward way from these laws.

Also, to develop an appreciation of the *scientific method* and the approach taken by physics, such that one can read the New York Times science section, not be intimidated, and understand how the advance of science influences society.

Today's Focus:

How this course works!

Prof. Dmitri Uzdensky

Lecturer

If you have questions about the lectures, exams, etc., please contact me.



1/13/2014

Prof. Steven Pollock

Lab/Homework
Coordinator

If you have questions about homework, labs, missing labs, etc., please contact me.



PHYS-2010

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Class Etiquette



Conversations in class should be about physics.

Raising your hand and shouting out a question is always encouraged.

Font Check !

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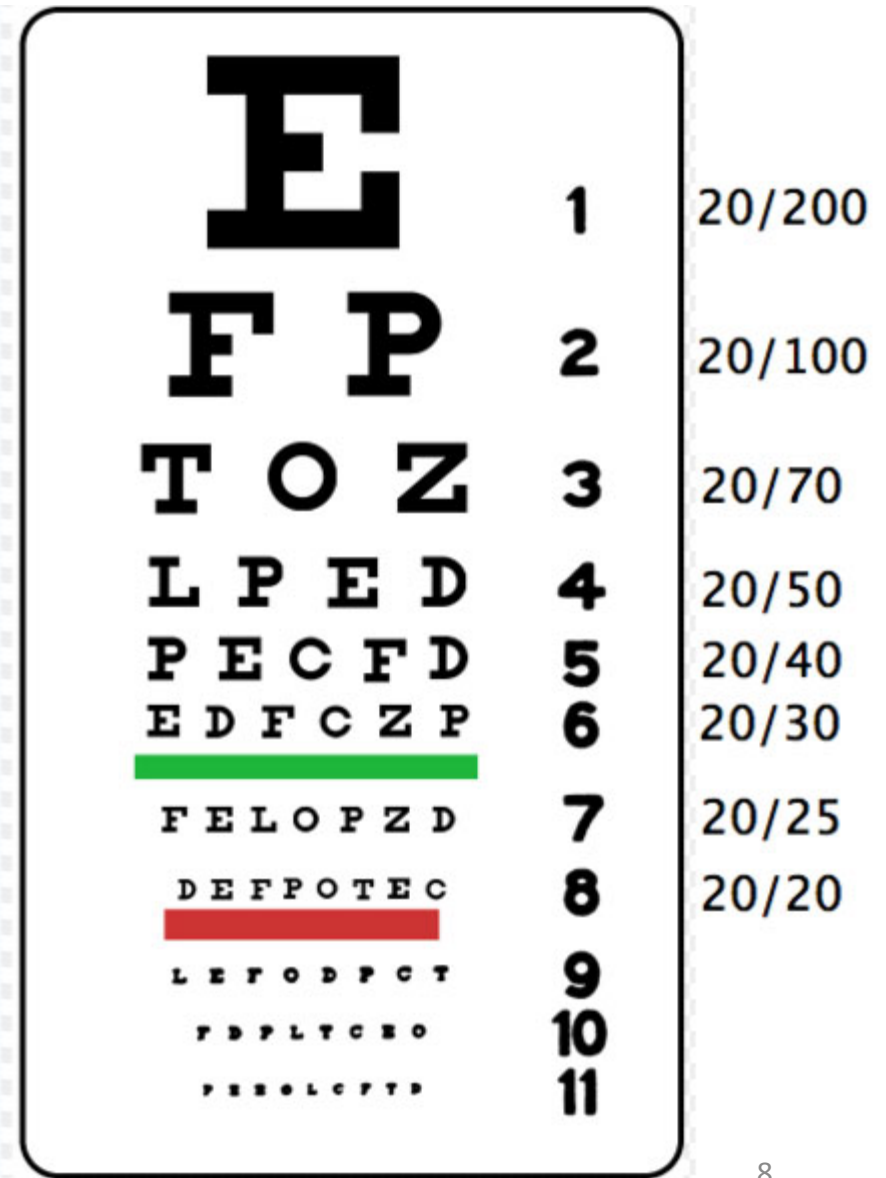
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How this course works:

- Website
- Labs and Recitations
- Clickers
- Homework: CAPA and Written Homework
- Exams

MAIN COURSE WEBSITE:

<http://www.colorado.edu/physics/phys2010>



Department of Physics
UNIVERSITY OF COLORADO BOULDER

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Physics 2010 Spring 2014

Prof. Dmitri Uzdensky (Lecturer)

email: Uzdensky (at) colorado.edu
(subject line: Phys 2010)

Prof. Steven Pollock (Recitation/Lab/Course Coordinator)

email: steven.pollock (at) colorado.edu
Please address your questions about course logistics,
homeworks, exams, labs, etc to me, I'm happy to help!

**MWF 2-2:50 AM (Lecture 100) in Duane
G1B30**




Questions? We are all ears!
Email us, or visit our discussion forum on [D2L](#)

Announcements:

- Welcome to Phys 2010! Please [register your iclicker](#).

Syllabus has everything you need to know about the course

| | | | | | |
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Course Information

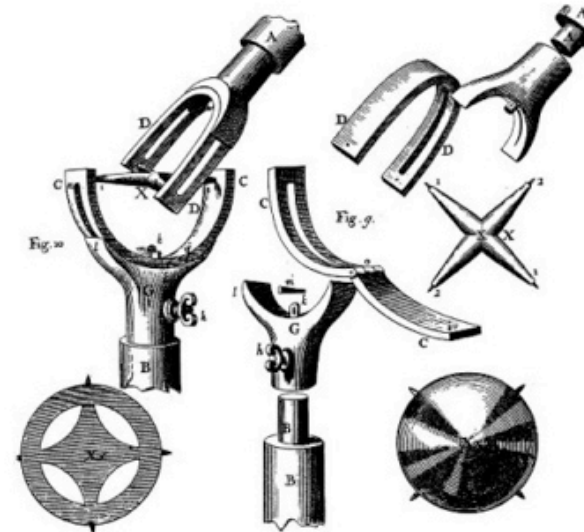
[Syllabus](#)

[Staff Gallery](#) (our names/pics/contact info)

[Schedule](#) (readings, homeworks, recent material covered in class, etc)

[Physics Help Room](#)


[Exam Info](#)



Hooke's Universal Joint

Go to the [Physics Department's](#) home page.
Go to the [University of Colorado at Boulder](#) home page.

Course Schedule gives weekly topics & reading assignments.

| | | | | | |
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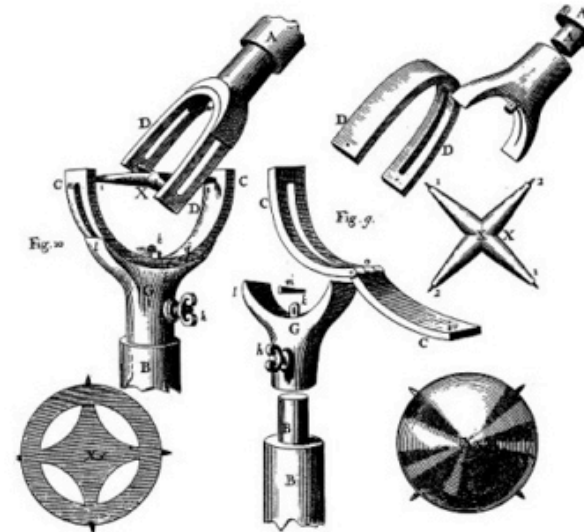
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Lecture Info link will provide PDF versions of the PowerPoint lecture notes *following* each lecture and additional resources.

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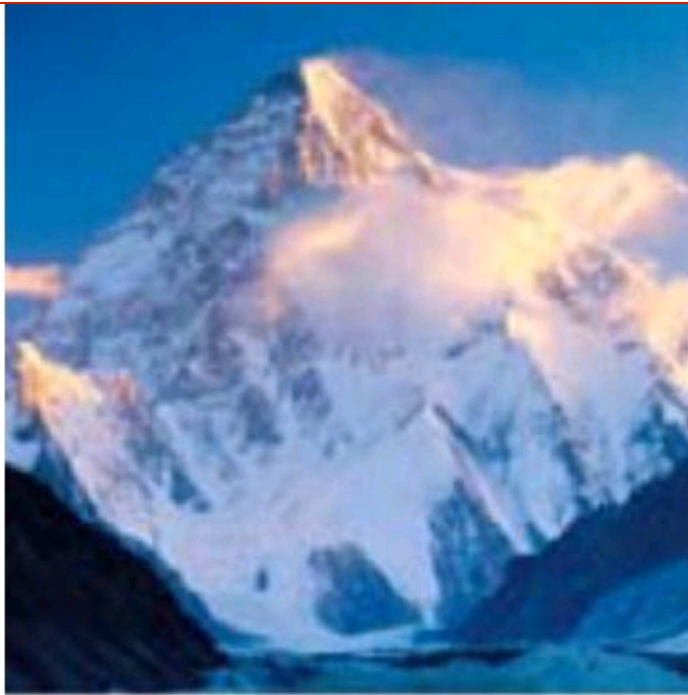
Questions? We are all ears!
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-

Required Text:

“Physics: Principles with Applications” 6th or 7th
Edition by Douglas C. **Giancoli**.



“Custom” Edition and
5th Edition are also fine.

Additional optional resource:

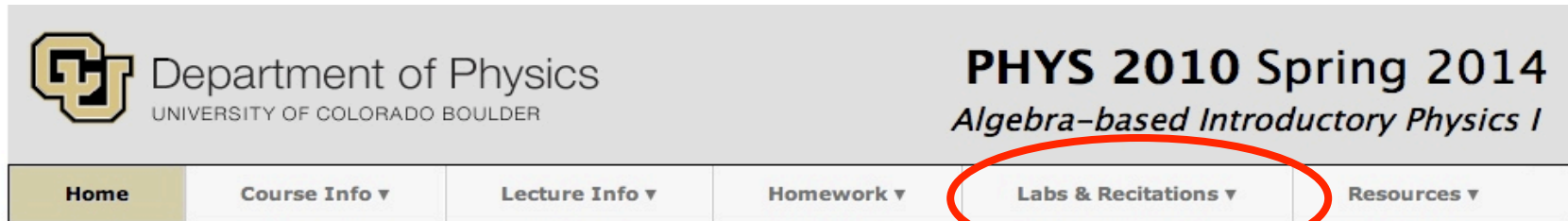
Thinkwell Physics

video-based/multimedia text:
about 120 short (< 10 min)
mini-lectures (by Prof. Pollock),
with notes and animations.

<http://www.thinkwell.com/>

Labs/Recitations:

The course includes weekly labs and recitations. Schedules, recitations and lab guides are on course website.



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Labs/Recitations:

- You **must** attend your scheduled lab section.
- If you have a problem with the section, contact Prof. Pollock.
- First **recitation** is this week -- make sure to attend!
- First **lab** is in week 4.
- You must read recitation and lab manuals in advance.
- Some labs will require **prelabs** (more on this later).

1/13/2014

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[Labs & Recitations](#) » Lab/Recitation Calendar

Lab/Recitation Calendar

Schedule subject to change. There are no recitation/lab sections on Mondays or Fridays.

Some weeks are recitations, other weeks are labs. Attendance is expected **every** week!
Because this course satisfies a CU A&S Lab requirement, missing more than one "lab week" (shown in color below) means automatic failure of the entire course!

January

| Mon | Tues | Wed | Thurs | Fri |
|----------------|------------------|------------------|------------------|-----|
| 13 | 14 Recitation #1 | 15 Recitation #1 | 16 Recitation #1 | 17 |
| 20 (MLK day!!) | 21 Recitation #2 | 22 Recitation #2 | 23 Recitation #2 | 24 |
| 27 | 28 Recitation #3 | 29 Recitation #3 | 30 Recitation #3 | 31 |

February

| Mon | Tues | Wed | Thurs | Fri |
|-----|------------------|------------------|---------------------------------|-----|
| 3 | 4 Lab #1 | 5 Lab #1 | 6 Lab #1 Evening exam tonite | 7 |
| 10 | 11 Lab #2 | 12 Lab #2 | 13 Lab #2 | 14 |
| 17 | 18 Lab #3 | 19 Lab #3 | 20 Lab #3 | 21 |
| 24 | 25 Recitation #4 | 26 Recitation #4 | 27 Recitation #4 | 28 |

March

| Mon | Tues | Wed | Thurs | Fri |
|-----------------------|------------------|------------------|---------------------------------|-----|
| 3 | 4 Lab #4 | 5 Lab #4 | 6 Lab #4 Evening exam tonite | 7 |
| 10 | 11 Recitation #5 | 12 Recitation #5 | 13 Recitation #5 | 14 |
| 17 | 15 Lab #5 | 16 Lab #5 | 17 Lab #5 | 18 |
| 24 Spring break week! | 22 Relax | 23 Enjoy | 24 Break! | 25 |

April

| Mon | Tues | Wed | Thurs | Fri |
|----------|----------|----------|----------|-----|
| (Mar 31) | 1 Lab #6 | 2 Lab #6 | 3 Lab #6 | 4 |

Labs/Recitations:

Every single week there is a lab or recitation.

Recitations/labs are in the back area on the Duane 2B level (behind Physics Help Room).

Attendance of recitations and labs is required.

Labs are a great way to introduce hands-on learning.

Labs/Recitation Assignments are worth 15% of the total course grade.

Each Teaching Assistant's scores will be normalized to the same average to remove any grade scale bias.

You must complete at least 7 of 8 labs to pass course!!

Clickers:



- iClickers are required for this course
- Group discussion of Clicker questions is encouraged!
- Make sure to register your iClicker this week with CU OIT:
<http://www.colorado.edu/oit/tutorial/cuclickers-iclicker-remote-registration>
- Clicker scoring:
 - 3 points for correct answer
 - 2 points for incorrect answer
 - 0 points for no answer
- Scores start counting 2nd week of class (on Jan. 22, 2014).
- Lowest 3 classes are dropped. If you forget your iClicker or the battery is dead, etc., that is one of the three.

Clicker Question

Note the Room Frequency: BA

Do you have a clicker with you?

A) Yes, I have a clicker with me.

B) No, I don't have a clicker so I can't vote.



This result gives me the low-water benchmark.


Clicker Question

Room Frequency: BA

How did you get to class today?

- A) I didn't
- B) Walked
- C) Bicycle/skateboard/roller blades/etc
- D) Bus (or other mass transport)
- E) Car (or other internal combustion private transport)

Weekly Homework I: CAPA

| | | | | | |
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Announcements:

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Weekly Homework I: CAPA

- We use a computerized homework system (CAPA).
- There is a homework due every Tuesday at 11 pm.
(You get one and only one automatic extension until 8 am Wednesday)
- The first (short) assignment is due next Tuesday, January 21, 2014, at 11:00 pm!
- If you have any problems, please let us know ASAP so that you have this working for the full semester.
- Late homework is not accepted by the online system.
- CAPA homework counts 15 % of the course grade.
- We will drop one lowest CAPA score.

Weekly Homework I: CAPA

Every Wednesday, the next week's assignment is printed out for you on real paper. You have ~ 1 week to complete it.

The paper copies are put in boxes labeled by last name and this class just downstairs (Duane 2B level).

The paper copy has a *PIN number* needed to enter CAPA. You can also get your PIN number online via *CAPA pin getter*.



CAPA: An Online Interactive Homework System

University of Colorado at Boulder Physics Department

CAPA stands for:

Computer-Assisted Physics Assignments ... or...

Computer-Assisted Personalized Approach.

[CAPA logon page](#)

[CAPA late enrollment](#)

[CAPA instructions](#)

[Common problems](#)

[CAPA Units](#)

[Two CAPA death traps](#)

[CAPA, Internet reliability,
and student responsibilities](#)

Didn't get your CAPA? If you were enrolled or waitlisted on the Friday before the first day of class, then you were automatically enrolled in capa. Otherwise, you must [enroll in CAPA online](#).

Other questions about CAPA? Send email to michael.dubson@colorado.edu.

Web Version

capa-new.colorado.edu

Class:

Student Number: CAPA ID:

Click to work on CAPA.

Click to clear Student Number and CAPA ID.

Forgot your PIN?
Try using the [CAPA PIN getter](#)

[Check your previous submissions.](#)

To end this Web session:
Choose File (from the browser menu), then
Exit/Quit

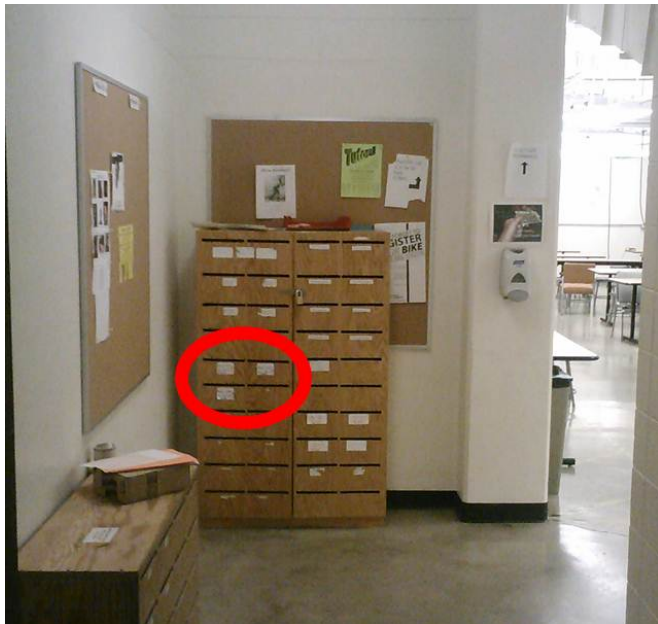
**WARNING:
Select your
class
carefully!**

Computer
Assisted
Personalized
Approach

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Weekly Homework II: Written Homework

- Print out and complete each assignment by due date (**Friday 4 pm**).
- First written homework will be due next week's Friday, Jan. 24.
- All work must be shown to be awarded full credit.
- Upon completion, return your homework to your TA's Mailbox (brown homework cabinet) in the Physics Help Room (G2B90).



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[Homework](#) » [Written Homework](#)

Written Homework Assignments

Written HW is always due by **4 pm on Friday**, in the wooden Homework cabinet at the entrance of the Physics Help Room (Duane G2B90). Please be sure to put homework in **YOUR** TA's slot.



(But the red circle isn't right! Find the CORRECT SLOT with YOUR TA's name!!)

Links to assignments will be in the table below when they become live. Solutions will be posted on [D2L](#).

| Week | Dates | Assignment |
|------|-----------|-----------------------------------|
| 1 | Jan 13-17 | No assignment |
| 2 | Jan 20-24 | Coming soon: HW #1 due Fri Jan 24 |
| 3 | Jan 27-31 | Coming up: HW #2 due Jan 31 |
| 4 | Feb 3-7 | Exam week, no assignment |
| 5 | | |

Exams:

Three midterm exams on Thursday evenings (7:30 pm)!

February 6, March 6, April 10.

The comprehensive *final exam* is

Mon. May 5, 2014 (1:30 pm – 4:00 pm).

It is your responsibility to make sure you have no conflicts with these dates and times.

If you have special needs, let us know within the first two weeks of the semester.

See policies at the course information link.

Exams:

Exam details will be given a week ahead of each examination and available on the course web page.

You may bring your own handwritten notes --- see course syllabus/website for details.

No memorization needed → just knowledge.

Exams cover the material presented in lecture, labs, textbook reading, and homework assignments.

Straightforward assessment of your learning of the material presented.

Grading:

15% for CAPA Homework

10% for Written Homework

36% for the Midterm Exams (12% each)

24% for the Final Exam

15% for Labs and Recitation Assignments

100%

(plus 5% max extra credit for Clickers)

We are here to do everything we can to help you learn some important and interesting physics !

**If you work hard during the term,
we will work hard with you.**

Quick Reminders

- (1) Make sure to attend recitation this week.
- (2) Read Chapters 1, 2 of Giancoli (this week).
- (3) First CAPA homework due next Tuesday at 11:00 pm.
- (4) Get your iClicker and Register it!
- (5) Come and see us for help getting set up at the very beginning or if you have any problems or just questions.
- (6) **Enjoy learning Physics!**