

Welcome to 8.01L at MIT

For today, please take any seat.
Please pick up the 2 handouts.

What is 8.01L?

- Simpler to say what it is not:
 - Not less material than 8.01
 - Not easier treatment than 8.01
 - Not easier homework and/or exam problems than 8.01
 - Not less work than 8.01
 - Not recorded differently on your transcript
- So, what is the difference
 - Stretches into IAP (L means "Longer")
 - Modestly different format (includes tutoring and recitations)

Why is 8.01L?

- Students come to MIT with very different math and physics backgrounds in high school
 - You're all smart but with wildly differing experience and exposure to this material and the necessary math skills
- Advantages of 8.01L
 - Material covered over a longer period of time
 - One less final exam in December
 - Traditionally "hardest" material taught in IAP
 - Recitations and tutoring for additional support

What's up with this funny room?

- TEAL (Technology Enhanced Active Learning)
 - MIT's version of a concept developed over a number of years both here and in many other places
 - Goal is to give you more educational resources than in a traditional lecture/recitation format...
 - Active response system (PRS, to be discussed later)
 - Hands-on experiments
 - Group work
 - Enhanced emphasis on problem-solving
 - While retaining many familiar components...

TEAL takes 8.01 learning beyond just physics

- Develop communication skills in Core Sciences
- Develop collaborative learning
- An environment conducive to learning and teaching

PRS

- Active feedback and involvement in learning
- Opportunity for discussion, re-evaluation, re-voting

General Information (see handout)

- Textbook: Young & Freedman, University Physics, 11th Edition, volume 1
 - Includes Mastering Physics. With a used textbook, you will need to buy your own Mastering Physics access.
- Schedule: Tue 10-12, Thu 10-11 + recitation
Fri 10-11
Tutoring meeting
- Fill out schedule sheet and return Friday in class for tutoring meeting assignment

Graded Course Components - I

- Dominated by work you do individually:
- 3 Exams (10%+2×15%) + Final Exam (25%)
 - First exam slightly less weight to aid in "transition"
 - Trade-off is that later work tends to be harder...
- Written homework (10%)
- Mastering Physics (10%)
 - Computer-based interactive problem-solving

Graded Course Components - II

- Also includes group exercises:
- In-class experiments (5%)
- In-class problem-solving (4%)
- And credit for attendance:
 - Tutor meetings (3%)
 - Lecture attendance, measured with PRS (3%)

Important Grading Policies

- Homework:** You are strongly encouraged to work with other students to discuss the assignments. You can also ask any questions of your recitation instructor or tutor. However, we insist that you write up your solutions by yourself.
- Mastering Physics:** You must complete the computer assignments on your own, without any direct assistance. You are allowed to ask for hints or suggestions off-line if you get stuck on a particular problem but you are not allowed to have anyone else working with you at the computer.
- Exams:** No outside notes, books, or assistance of any kind is allowed during exams.

Mastering Physics

- Registration instructions on class web page.
- Access with textbook or buy on-line.
- Be sure to write down and save your chosen access name and password.
- Be sure to do the introductory assignment.

Desktop Experiments

- Use to present core material, give hands-on experience, solidify basic concepts
- Introduced via reading, concept questions, and (occasionally) related In-class problems, and pre-experiment question on written problem set
- Groups of three students take data in class using LabView software.
- Hand in Work-sheet summary of main concepts of experiment (one per group)
- In some cases, analyze data as part of written problem set

A typical 8.01L week

- Sunday - Finish text reading, start Mastering Physics assignment
- Monday - Read experiment write-up (not every week), finish Mastering Physics assignment
- Tuesday - Lecture and (sometimes) experiment, start written problem set
- Wednesday - Finish most of written problem set
- Thursday - Lecture and recitation (ask questions on Pset)
- Mostly Wed or Thu - Tutoring meeting
- Friday - Pset due, in-class problem solving
- Saturday - Review any material you had trouble with in the previous week
- Repeat...

Important Dates

- Exams on Fridays @ 10 am
 - Sep 30, Nov 4, Dec 9
- Start of IAP classes
 - Monday, Jan 9, 2006
- Final Exam
 - Monday, Jan 30, 2006 from 9am until noon
 - Spring classes start Tuesday, Feb 7

A learning experience for us all

- 8.01L has existed for many years...
- Regular 8.01 has been taught in the TEAL format for several years
 - This is first year that all of 8.01 is TEAL
- But, this is the first year for 8.01L as TEAL
- I will be asking for volunteers in a few weeks for a student advisory board

Source of all knowledge:

Any Questions?

You'll need to be loud, the acoustics in this room are almost as bad as my hearing.

And now...

A brief tour through mechanics

We will use lots of demonstrations as well as experiments to illustrate concepts