

Welcome To
Physics 8.02T
<http://web.mit.edu/8.02t/www>
For now, please sit anywhere, 9 to a table

8.02 Course Notes Revised
Introduction to Electricity and Magnetism
Dourmashkin, Belcher, and Liao
Online at
<http://web.mit.edu/8.02t/www/coursedocs/current/guide.htm>

W01D2: Outline
Introductions
Course Overview
Vector and Scalar Fields
Charge
Electric Force
Electric Field

Course Details

We will not go over all the course details in class,
you can click the link

8.02 Introduction

on

<http://web.mit.edu/8.02t/www/>

Or go directly to

http://web.mit.edu/8.02t/www/materials/Presentations/8.02_Introduction.pdf

Online Registration

If you are in a M/W/F class for 8.02, you will need
to register for the course "8.02r-MW Electricity and
Magnetism (Monday and Wednesday)".

If you are in a Tuesday/Thursday/Friday class for
8.02, register for "8.02r-TTh: Electricity and
Magnetism (Tuesday and Thursday)".

The following link will get you to either course and
the web site will require certificates:

<https://lms.mitx.mit.edu/>

Reading Questions

Answer Reading Questions online in the
appropriate course for your section.

Reading Questions due at 8:30 am the day of
class.

The following link will get you to either course and
the web site will require certificates:

<https://lms.mitx.mit.edu/>

Problem Sets

For each week's problem set:

- 1) you will submit your answers to two problems online in the appropriate course for your section.
- 2) You will hand in your answers to six written problems in your section slot in the boxes outside the door of 32-082 or 26-152 depending on which is your classroom. Make sure you clearly write your name and section on your problem set.
- 3) Both online and handwritten are due Tues 9 pm

Announcements

Math Review Week Two Tuesday from 9-11 pm in 26-152

PS 1 due Week Two Tuesday at 9 pm. Submit two problems online and hand in six problems in the appropriate section boxes outside 32-082 or 26-152

Bring Clickers to Monday/Tuesday Class

8.02: Electricity and Magnetism

Also new way of thinking...

How do objects interact at a distance?

Fields We will learn about electric & magnetic fields: how they are created & what they affect

Maxwell's Equations

$$\oint_V \mathbf{E} \cdot d\mathbf{A} = \frac{Q_{en}}{\epsilon_0} \quad \oint_V \mathbf{E} \cdot d\mathbf{T} = -\frac{d}{dt} \iint_V \mathbf{B} \cdot d\mathbf{A}$$

$$\oint_V \mathbf{B} \cdot d\mathbf{A} = 0 \quad \oint_V \mathbf{B} \cdot d\mathbf{T} = \mu_0 I_{en} + \mu_0 \epsilon_0 \frac{d}{dt} \iint_V \mathbf{E} \cdot d\mathbf{A}$$

Lorentz Force Law $\mathbf{F} = q(\mathbf{E} + \mathbf{v} \times \mathbf{B})$
