OpenCourseWare High School Portal
What is OpenCourseWare?
What we want to do for you
What you’re going to do to help us
OpenCourseWare (OCW) – What is it?

- A Web-based publication of virtually all of MIT course content
- Open and available to the world
- Course Content is:
  - Lecture notes
  - Syllabi
  - Assignments
  - Labs
  - Problem sets and solutions
  - Some classes with full video or audio lectures
OpenCourseWare (OCW) — Impact

According to users, MIT OpenCourseWare is:

“... the Eighth Wonder of the World.”

“... the Big Bang of the Knowledge Universe.”

“... the greatest thing any institution of higher learning has ever done.”

“... one of the best things ever in history.”

“... like falling in love.”

“... the coolest thing on the Internet.”

“... worthy of the next Nobel Peace Prize.”
What we want to do - An OCW for high school students

- OCW is useful for college kids, but most high school students get lost in the material

- Still, 10,000 HS students a month use OCW

- So, we’d like to make it easier for High School Students to use OCW by providing them a “guided tour” to the regular OCW materials. Students would be able to look up a topic they are interested in learning more about, and be able to choose from multiple resources on OCW
What we want you to do

- But first, we’d like to make sure this can actually work. For that, the MIT courses have to contain information that is understandable by, and useful to, high school students.

- To find out whether they do or not, we need your help.

- What are we interested in finding out from you?
  - Whether or not you understand the material.
  - Whether or not you find the material helpful to you, as a student taking an AP class.
What you’ll evaluate

- We want you to go through either chemistry, biology, physics or calculus introductory classes at MIT. These classes are similar in the topics they cover to the AP classes you’re taking.

- You’ll be going through only the following types of resources:
  - Video Lectures
  - Audio Lectures
  - Lecture Notes

  Ignore syllabi, reading lists, etc.
Finding materials on OCW

Go to the OCW home page – http://ocw.mit.edu

On the left hand side of the page, you’ll see a listing of subjects. Choose the subject of the class you’re working on. Here, we’ll choose Physics.
Finding materials on OCW

From the Physics Home page, you’ll find a list of physics courses taught at MIT.

We’ll choose 8.02, Spring 2002, the introductory Electricity and Magnetism course.
Finding materials on OCW

On the left hand side of the page, you’ll find the resources available for this class.

We will select “Video Lectures”

On the video lectures page, select lecture #16.

The lecture should begin playing in RealPlayer
## The Spreadsheet

<table>
<thead>
<tr>
<th>Resource</th>
<th>Starting Point</th>
<th>Section Topic</th>
<th>Description</th>
<th>AP</th>
<th>Topic</th>
<th>Readability</th>
<th>Proficiency</th>
<th>Postscript</th>
<th>Rater</th>
<th>Overall A (clear introduction)</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.02 Video Lecture 1b</td>
<td>0.00</td>
<td>Course administration</td>
<td></td>
<td>T</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>8.02</td>
<td>Electromagnetic induction</td>
<td>Electromagnetic induction: current can be created from a changing magnetic field</td>
<td>E1</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>Yes, &quot;the AP topic exactly&quot;</td>
<td>Good overview of topic: would need follow-up examples</td>
</tr>
<tr>
<td>10.29</td>
<td>Demonstration of electromagnetic induction</td>
<td>Demonstration with bar magnet and conducting loop</td>
<td>E1</td>
<td>Yes, very clear</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>Yes, &quot;the AP topic exactly&quot;</td>
<td>Very much still great demonstration of the Dempster</td>
</tr>
<tr>
<td>13.31</td>
<td>Faraday's law</td>
<td>Deviation of Faraday's law. Summary of the rest of Maxwell's Eq's.</td>
<td>E1, E2</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>Yes, &quot;the AP topic exactly&quot;</td>
<td>Yes, nice derivation: May need some minor derivation details for test</td>
</tr>
<tr>
<td>22.85</td>
<td>Using Faraday's law</td>
<td>Example using open surface attached to current loop, contrasting effects of different directions for the loops. Problem-solving steps for solving Faraday's law problems</td>
<td>E1</td>
<td>Not all details worked through</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>Yes, &quot;the AP topic exactly&quot;</td>
<td>As long as the student understands integrals, very good; otherwise, doesn't provide a thorough walk-through example</td>
</tr>
<tr>
<td>27.18</td>
<td>Demonstration of Faraday's law</td>
<td>Mix loop around solenoid (Shape of loop doesn't matter. These loops... to see action by Faraday's law)</td>
<td>E1</td>
<td>A little hard to see the three loops sometimes, but otherwise well-presented</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>Yes, &quot;the AP topic exactly&quot;</td>
<td>Yes, nice demonstration</td>
</tr>
<tr>
<td>10.62</td>
<td>Nonconservative fields</td>
<td>Changing magnetic flux &gt; nonconservative fields. No residual Gauss-Kirchhoff laws don't apply. Worked out example of surprising phenomenon. Refers to online lecture notes with step-by-step derivation. Law demonstration</td>
<td>E1</td>
<td>Advanced topic; quite extraordinarily presented. Leave it to the shower!</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

This is the spreadsheet you’ll be using to evaluating course materials.
The 6 questions

- Is the material clearly presented? Why or why not? (e.g. Very logical explanation, or not enough written on board / too hard to see, or too many steps skipped.)

- To what extent does the section stand alone with respect to dependence on previous section(s) in the same lecture? (The more independent the better.) Which sections or topics?

- To what extent does the section stand alone with respect to dependence on other previous section(s) in different lecture(s)? (The more independent the better.) Which topics?

- Is the material presented at your level? Higher? Lower? Why or why not? Does the resource pre-suppose any knowledge that you haven't learned yet? (e.g. lecture utilizes partial differential equations)?

- Does this section topic title and description provided describe the content accurately? Please suggest any improvements or changes.

- Would the material be useful to a high school student studying for the AP test? Why or why not?
Google Spreadsheets

- The spreadsheet we’ll be having work on is located on Google spreadsheets. We’ll give you the exact link after this presentation.

- By filling out your spreadsheet online, you won’t risk losing your work, and we can give you immediate feedback on the work you’ve completed.
Keeping your Time Sheet

- Each of you should record the number of hours you are working. At each check in point, please let us know how many hours you’ve worked.

- We’ll collect your time sheets at the debrief session at the end of the project.
## Key Dates

<table>
<thead>
<tr>
<th>Date</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Friday morning, March 9</td>
<td>Orientation</td>
</tr>
<tr>
<td>Monday morning, March 12</td>
<td>Check-in #1: Update your spreadsheet with at least the first two lectures completed. We'll e-mail you feedback by the end of the day</td>
</tr>
<tr>
<td>Thursday morning, March 16</td>
<td>Check-in #2: The sequel</td>
</tr>
<tr>
<td>Monday morning, March 20</td>
<td>Check-in #3</td>
</tr>
<tr>
<td>Thursday morning, March 23</td>
<td>Project completion date</td>
</tr>
</tbody>
</table>
Feedback Mechanisms

- The spreadsheet that you’re filling out on Google Spreadsheets allows us to view the spreadsheet you’re working on.

- We’ll also be able to send you comments and suggestions on the work you’ve already completed.

- We’ll also ask you to check in by email twice weekly. We’d like to know how much you’ve completed, how much time it’s taking you, and any issues you may have had while working.
Debriefing

- At the end of the project, we will set up another meeting to debrief you. What we want to know:
  - Tell us about your experience: what worked, what didn’t.
  - Tell us what you thought of the OCW materials.
  - Do you think this material would be useful to HS Students? Would you use it?
  - If the material is useful, how might we organize it to make it easiest for HS students to use?
  - Are there other things you’d like to see included in OCW SE

- When are you available to set up a debriefing meeting?
Getting in touch with us

You can reach us at:

ocw-se-ap@mit.edu

Emails sent here will reach both Rana and Kayla. We’ll get back to you within 24 hours, probably less.

Please feel free to write if you have any questions or problems, or even just because.