Physics of Energy and the Environment  
Physics 161  
Syllabus Winter 2013  

Professor:  Dr. Josh Peterson  
Email:  jpeters4@uoregon.edu  
Office:  Willamette Hall, Room 45  
Phone:  541-346-4161  
Office Hours:  Monday, Wednesday 2 –4, Thursday 10 – 2 (or any time you find me in my office)  

Class Room:  McKenzie Hall, Room 240A  
Class Hours:  M, W, F, 1-1:15 PM  

TA:  Ben Allen. Willamette Hall, Room 231  
Email:  ballen4@uoregon.edu  
Office hours:  Monday, Wednesday 11am-12pm, or by appointment.  
You may also get help from any Physics GTF at the Physics Drop-in Center, located in 147 WIL. Check schedule posted on the door for hours.  

Textbook:  *Energy, Environment, and Climate 2nd ed.* by Wolfson  
Supplemental texts:  *Without the Hot Air.* by MacKay  
available free on-line,  [www.withouthotair.com](http://www.withouthotair.com)  

Course Objectives:  
- Understanding energy  
  - definition  
  - familiarity with the language  
  - fundamental physics concepts  
- Investigate our present rate of energy consumption and its sustainability  
- The consequences of our energy consumption on the environment and climate  
- Investigate the physics behind energy use and generation, bringing real numbers into the discussion.  
  - Good intentions alone can’t guide important decisions and can often do real harm.  
  - Practice thinking critically and quantitatively about scientific issues.  

Attendance  
- Attendance to class is not mandatory  
- Pop quizzes and I-clicker questions will be your participation score for grading option 1  
- Lectures will cover materials which are mostly in the textbook, but will often address different approaches to solving problems, expand on examples in the text and solve problems not necessarily from your book.  
- Additionally, test material may be taken from the lecture material  

The daily routine  
- To be a successful student you will:  
  - Read appropriate sections before class (see the course timeline)  
    - Focus on big picture concepts  
  - Attend class  
  - Reread appropriate sections of text  
    - Focus on details and example problems  
  - Come to me (or TA or your classmates) with your difficulties  
  - Repeat for the next class  

- I encourage you to keep a running total of the equations we use during the semester  
  - Think of it as a cliff notes for the course  
  - This will help you organize the subject matter and study more effectively.
Grading:

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<th>Grade</th>
<th>Range</th>
<th>Grading option 1:</th>
<th>Grading option 2:</th>
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I-Clickers
- I-Clicker submissions will not be graded
  - But will be used to give you an attendance grade.
- Hopefully we will use clickers every day

Pop Quizzes
- Based on material from book, lectures, and homework
  - If you do the readings and homework you should do fine on the quizzes.

Homework
- Assigned on Blackboard. (blackboard.uoregon.edu)
- Roughly weekly assignments
  - due dates for homework will be posted on Blackboard
- Lowest homework grade will be dropped
- Working in groups is permitted (and encouraged)
  - You turn in your own assignment work
- The competition in the job market is very clean, neat, and well organized
  - Messy homework will receive a penalty
  - Late homework will not be accepted
    - Solutions will be posted at due date

Exams
- Cheating is bad, Cooperative work on tests is prohibited
  - WARNING!!! Although working together on homework is encouraged, make sure you understand the material for the tests
- If you know you are going to miss a test, contact me beforehand to arrange for a makeup exam.
  - The further in advance you contact me the happier I will be.
  - Makeup tests will only be allowed with an excused absence.
- Students with disabilities that need special accommodations,
  - contact Disability Services 164 Oregon Hall, 346-1155
  - All information about disabilities is considered private; if I receive notification from Disability Services that you are eligible to receive accommodations, I will provide it in as discrete a manner as possible