Objectives of Course

1. To provide a broad background for the non-science student with energy.
2. To present an overview of the interplay between energy and the nation's environment and economy.
3. To develop an awareness of energy usage by the student on a personal basis.
4. To investigate conservation measures both for each individual and for the nation.
5. To discuss present research in energy.

Grades: Your term grade will be based on your performance on four tests (one/week), laboratory, and either a term paper, short oral presentation, or a laboratory project. The relative proportion of your grade of each is as follows:

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Tests</td>
<td>60%</td>
</tr>
<tr>
<td>Laboratory and Class Attendance/Participation</td>
<td>25%</td>
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<tr>
<td>Short oral presentation, term paper, or laboratory project</td>
<td>15%</td>
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The Grading Scale is established by the following standards:

- Above 90%: A
- 87-89%: A-
- 84-86%: B+
- 80-83%: B
- 77-79%: B-
- 74-76%: C+
- 70-73%: C
- 67-69%: C-
- 64-66%: D+
- 60-63%: D
- Below 60%: F


Tests: Tests will be held normally on Fridays and will last about 50 minutes. Everyone should have only a basic calculator available that can perform elementary calculations with no storage and/or internet capability. I can provide the calculator for you. All tests will be closed book.

Laboratory: The tentative schedule includes five laboratories in the course and at least two Field Trips: Basic Measurements “Pi” (use of Excel), Heat of Fusion, Power (using Excel), Personal Energy Usage, Energy Audit of a Building or Home, and Specific Heat Capacity.

Short Oral Presentation, Term Project, or Laboratory Project

You have an option for choosing any one of these for your remaining 15% credit for the course. However, please make a choice as to which of the three you prefer by Friday January 17.

The short oral presentation will be given before the class on an energy topic of special interest to you. The time of the presentation should not exceed 12 minutes with a short interlude of questions (and answers???) to follow. The presentations will be given most likely on Wednesday, January 29.

The term paper should be an energy topic of special interest to you. The length should be from 5 to 7 pages but should mainly be determined by how long it takes you to develop your topic. Include sources at end of paper and connect as best you can to our class and our text book. Be sure to include direct references to your sources throughout your paper. There will also be a "tough topic" component in grading. Use "legitimate" webpage sources. Term papers will be due no later than Wednesday, January 29, and students should email your reference list to the instructor for verification also by this date.

A laboratory project can also be performed. You may work on this project at home and/or in the physics laboratory during the afternoons. I shall be happy to try to answer your questions and to provide encouragement along the way, but you will propose the project and you will do the work. Due date is also Wednesday, January 29.

The proposal for the lab project and the topics for the short oral presentations and term papers should be approved (please!) by J. Artz no later than Friday January 24.

Office Hours and comments: I shall try to be available immediately before class for questions; and after class. Let’s also set up official office hours M through Thursday from ~3 PM (whenever lab is finished) to 4 PM. IF YOU EVER HAVE CONCERNS, PROBLEMS, GRIPESES, ETC. SEE ME, SEE ME, SEE ME! PLEASE DON’T EVEN THINK OF MISSING A SINGLE CLASS! THIS COURSE IS PACKED AND INTENSE with a wealth of material for life-long learning. Office: RS 126, Office Phone #651-523-2256. (NOTE: Tutoring and student help will be made available if requested.)

GOOD LUCK, WORK HARD, AND HAVE FUN! Jerry Artz