

Physics 207 – Energy & the Environment Spring 2017

Instructor Information

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Office Hours: M W Th F from 10 – 11:30 AM

You are welcome to visit my office whenever I am in. It's best to call to make sure I'm in or send me an e-mail to set a time to come in. Or, you can just take your chances.

Topics to Cover

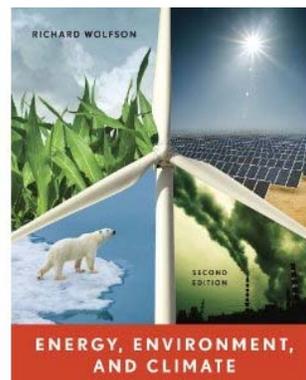
Climate History of the Earth · Worldwide and Domestic Energy Use and Needs · Economics of Energy · Physics of Work and Energy · Thermal Physics · Energy Sectors · Petroleum · Solar Power · Wind Power · Nuclear Power · Pollution · Energy Policy · Climate Change

Required for the Course

(1) Textbook... **Energy, Environment, and Climate, 2nd Edition** (2012) by Richard Wolfson (shown to the right)

(2) Basic, scientific calculator.

(3) Sufficient internet access to view all course content, including streaming videos and pdf documents is necessary. You should have the latest browser versions of Google Chrome or Firefox for best performance.



ReggieNet

We'll be using ReggieNet extensively throughout the course. It is imperative that you have a habit of checking the course site and your ilstu e-mail on a daily basis throughout the course to keep up with all assigned activities. Please bookmark the website and set a time each day to check the site.

The general rule of thumb for university courses is that students are expected to spend about 2 hours per week for each credit hour working outside of class on course work. For this course, that means about 6-7 hours per week of work outside of class. You will have reading and journaling assignments as well as practice problems and other activities from time to time.

The Importance of Attendance

Lecture time will not just be a simple presentation of material by Dr. Marx. Attendance is critical to your success in the course. If you cannot attend, please find someone that takes good notes and get a copy. A significant portion of your grade is in-class participation. Up to two absences are allowed without penalty, not including exams, during the course.

If you are considering withdrawing from the course, please discuss it with Dr. Marx first.

For lecture, you'll be assigned to a group for discussions on energy-related issues and other group work in class. Your group is better with you there, so please make the effort to participate in the discussions.

To ensure everyone's full attention to the course, cell phones, iPods, and any other electronic devices should be turned off during lecture periods. No laptops/iPads/tablets (etc.) may be used during lecture. I know some people like to use computers to take notes; however, studies have shown student learning is improved through written notes over using computers. Secondly, laptops and tablets can be distracting to other students.

You will be able to use all of your hand-written or typed notes for the final exam, so please keep them well organized and complete throughout the course.

Instructions for Journaling for Physics 207

You will be assigned reflective journal writings throughout the course. You will be submitting individual entries after each journaling assignment given under the Assignments link in ReggieNet. I will read each journal submission and give you direct feedback on it.

Purpose

A Journal is a place where you record your thoughts in writing. Journals are normally a place that is private and where your thoughts can run free. For the purposes of this class, your Journal will be used specifically to record your thoughts about class discussions and assigned readings for class from your *personal perspective*. It will, overall, be a place where you can work with ideas from all of the above to ready yourself for upcoming exams and to gauge your learning.

Journal Entries

The type of entry you make will depend on the type of activity you'll be journaling about (such as a reading or a video). The journal will be as valuable as you make it. Remember this is a tool to aid you in your learning in this course.

Textbook Readings

The textbook for this class will be our guide through the material and form part of the basis for a lot of class discussion. Therefore, it is imperative that you read the assigned portion of the text before the due date. This reading should not be a simple skimming, but a careful, reflective reading. Therefore, as you are reading the book, compare what you knew before the reading with what you are learning through the reading. You should write in your journal about the main ideas and some facts that you think are important. Then, write down your thoughts and impressions. You should try and relate the material to your own knowledge and experiences.

Don't be afraid to challenge what the author has written. If you don't think it's right, write down what it is and why you don't believe it.

In your study, you should expand your knowledge on a topic by doing some online research. If you do this, write down or print out your findings and indicate the website or other source where you found the information.

You may also include questions that you have from the reading. If I can, I will answer the questions in my comments back to you.

Citations

If you use any material other than the textbook, you must provide a citation for it using the methods given on this website...

http://writing.wisc.edu/Handbook/DocCSE_NameYear.html

This will be used for all written work submitted in the course, including the Learn More exercises.

Grading and Rubric

Specific entries will be assigned and graded on a 0 to 10 point scale. Missing entries will receive a zero, but may be added before final grading on the journals at the end of the course, if possible. The evaluation criteria (rubric) are given below. Please study the rubric as a guide to achieving the most from journaling (including getting a better grade).

Plagiarism will not be tolerated. Any item that includes plagiarized content will receive a zero grade. All work must be your own writing and not copied from any source without proper citation. If you are not certain with plagiarism is, see this online guide: <https://owl.english.purdue.edu/owl/resource/589/01/>

Rubric for Journaling Assignments

9-10 Points (Excellent)

- Entry includes a short summary along with substantial reflection and additional thoughts.
- You have done additional research on the subjects included in the content and discussed the source and analyzed that content with regard to your learning.
- You always apply the content and include deeper thinking in your writing.
- There is substantial evidence of a comparison of the content with previous knowledge/beliefs.
- There are rarely grammar and/or spelling errors.

7-8 Points (Above Average)

- Entry includes a short summary along with substantial reflection and additional thoughts.
- You have done additional research on the subjects included in the content and included your findings.
- You almost always apply the content and include deeper thinking in your writing.
- There is significant evidence of a comparison of the content with previous knowledge/beliefs.
- There may be very few grammar and/or spelling errors.

5-6 Points (Average)

- Entry includes a short summary along with significant reflection and additional thoughts.
- You mostly apply the content and include deeper thinking in your writing.
- There is evidence of a comparison of the content with previous knowledge/beliefs.
- There may be some grammar and/or spelling errors.

3-4 Points (Below Average)

- Entry is a short summary with little reflection and additional thoughts.
- You sometimes attempt application of the content and deeper thinking in your writing.
- There is evidence of a comparison of the content with previous knowledge/beliefs.
- There may be several grammar and/or spelling errors.

1-2 Point (Poor Quality)

- Entry is only a comment or short summary of the content.
- There is no evidence of applying the material or of making a comparison to personal knowledge.
- Care has not been taken in the writing. There may be many grammar and/or spelling errors.

Homework

For the following physics topics: Work & Energy, Thermal Physics, Electricity & Magnetism, and Nuclear Physics, we will have written homework assignments. These assignments may involve algebra.

Here is the correct way to do problems:

1. Read the problem carefully and understand the physics situation.
2. It is helpful to draw a picture of the situation and label the variables on it.
3. Write down the variables and their values that are known. Then write down what the unknown variable is.
4. Select the appropriate equation(s) for the situation and write them down. Use subscripts as needed to indicate initial and final values. For example, an initial speed can be written v_0 and the final speed can be written as v or v_f .
5. Do all algebraic manipulations to solve for the desired variable *without substituting any numbers*. **Complete all algebra** before putting in numbers and units. If a unit needs to be converted, include it when you make the substitution.
6. Check that your answer makes sense and do not forget to include appropriate units.

To submit your homework, you will upload a Word file, a pdf file, or images of your work (this is the easiest, if you do your homework on paper) in ReggieNet.

Tests

There will be approximately three to four tests covering all lectures and reading materials between tests. Everything we do in lecture, the textbooks chapters, and homework is meant to increase your learning. That is what I truly care about. I cannot ask you about everything on a 50-minute test. That doesn't mean that anything not asked isn't important. It's all important and relevant.

You will be notified in advance of the test what topics will appear on the test.

A simple scientific calculator will be needed when the test content will involve calculations.

Tests will be closed-book, but equations and constants will be provided for your use on the test.

If you know you will be absent on a test day, please make arrangements in advance to take the test. The lowest grade among the tests will be dropped.

Anyone found cheating on a test will receive a zero for that test, which cannot be dropped.

Final Exam

The final exam will cover all of the major topics covered in the course. The test will be open notes, so you can bring in whatever hand-written or typed notes created by you into the test. You may not use any printouts from ReggieNet.

The day and time of the test will be announced by the Registrar's office sometime after the semester begins.

Grading



Yes, we have grades. Grades are calculated on percentages in this course, rather than points. Your focus in this course should be on learning, not your grade. If you learn and follow directions, your grade will follow.

Journaling	20 %
Homework	20 %
Class Participation	10 %
Tests	35 %
Final Exam	15 %

Grade	Initial Range (Subject to change)
A	89.5 - 100
B	79.5 - 89.4
C	68.5 - 79.4
D	57.5 - 68.4
F	< 57.5