

Course syllabus
Physics of Contemporary Issues
Honors 1500
Fall 2008

COURSE DESCRIPTION:

Physics is all around us, or at least we're told as much. This course will put this premise to the test by investigating how physics interacts with and impacts everyday society and its citizenry. In order to do this, we will use a campus subscription to the New York Times so that we can investigate current events at its most current. From there we will tackle contemporary issues, investigating the physics involved as a class and as individuals. Global warming? Nuclear proliferation? Rising oil prices? Yes – all of these and the many events that are yet to transpire.

COURSE OBJECTIVES:

As a result of engaging in this course, a student should be able to:

1. Understand what physics is and how it relates to everyday issues at a variety of scales and locales.
2. Analyze how much physics he or she does not understand and, in order to fully understand current issues, know where and how to look for more in depth understandings of physics and science in general.
3. Critically analyze the news coverage of topics in which scientific literacy is necessary for a citizen to fully comprehend and make educated decisions regarding an issue.
4. Understand specific physics topics relevant to the current events of this semester. (“Understand” means that you should be able to explain the physics so that my sister or your congressperson can follow it and recognize its importance to modern society.)

DETAILS:

Instructor: Adam Johnston

Office: SL 207

Phone: 626-7711 (Ext. 7711 on campus)

E-mail: ajohnston@weber.edu

Office Hours: MWF, 10 – 11 AM; TTh, 9-10 AM

Note that “office hours” are not the only times that I’ll be in my office. If you would like to stop by and I’m around, I’m almost always happy to talk to you. You are also welcome to schedule alternate appointments as necessary.

Meeting time: MWF, 9:00 - 9:50 AM

Final exam period: Tuesday, Dec. 9; 9:30 - 11:30a

Meeting place: LL 221

Course Web Page: <http://physics.weber.edu/johnston/contemporary>

From this web page, links to other resources, information, and class research will be given. In addition, course announcements and assignments will be posted here.

TEXTS AND MATERIALS:

- *New York Times*. Each student will be required to subscribe (or otherwise obtain) the daily version of the New York Times. Fortunately, the Times is available free on campus, Monday through Friday. This is required reading. You will also be given access to online access of archives and additional materials from the paper.
- Supplemental reading. As necessary, additional readings will be given so that students can get background on important physics concepts. These will be included as handouts, electronic reserve, or web-based references.

THE WORK:

There exist three major components to your involvement in this course. Depending on the specific issues we face during the semester, your grade will be determined by your work and contributions in all of these categories:

- **Reading, discussion, quick quizzes, minute papers, and response papers:** In order to understand the physics of contemporary issues, you must keep up-to-date on the contemporary issues themselves. Course discussions

and weekly papers will be based on these. At a minimum, you will need to have read the “News Summary” in each day’s paper in order to discuss them in class; and, to keep you honest, a regular quick quiz will be given to you at the beginning of class. You should also read each week the Science section each Tuesday in the Times. Further assignments will be given, as determined by current events and our own news analyses.

- **Laboratory investigations and other inquiries:** As a class, we will probe these contemporary issues by conducting our own research whenever possible. In many cases this will involve hands-on investigations; at other times we’ll scour the stacks and periodicals at the library to try to understand the necessary physics.
- **Final project:** Each student will investigate, on his or her own, a contemporary issue involving physics in an in-depth manner. Students will present their work during the final exam period and document their work in a formally written report.

NOTES:

- Unlike other courses I teach, I don’t have a calendar drafted for this course. Again, this is due to the contemporary nature of the content, and the fact that we don’t know what our “text” is going to say until we get to campus each morning. Throughout the entire semester, I envision myself as a resource and guide, rather than the director of every aspect of the course. I do have some semblance of a plan, however:
 - The first two weeks will be spent looking at general tendencies for the coverage of physics and physics related topics in the media. We will begin to consider what “science” really is, and what its fundamental utility is to us.
 - During the bulk of the semester, we’ll be analyzing specific issues in more depth. I expect that the first two weeks will give us a good idea of what news, events, and physics topics to pursue during the middle of the semester.
 - The end of the semester will be aimed at students’ own focusings upon specific issues that relate to their final projects.
 - Whenever it’s reasonable, Mondays will be devoted to some fundamental background in physics, as dictated by current events. Wednesdays and Fridays will be devoted to keeping track of the current events themselves and relating them to what we know and what we have yet to figure out.
- You are a vital part of this course and its success, and for this reason you need to show up regularly. In fact, the very nature of this class requires that you remain caught up with readings and assignments, otherwise there isn’t anything very “contemporary” about the topics in the course.
- Late work will be accepted for half credit if it is turned in within one day of its original due date. (Quizzes, however, are only given credit if you’re in class. One quiz score will be “dropped” from your grade, anyway, so you have some cushion if you’re late on one day.) This is a stricter policy than I have in many other courses, but it seems pivotal to this course and its content. Individual “dog-ate-it” and “had-to-get-married” stories will be considered on a case-by-case basis. In order to get more consideration, notify the instructor in advance of any problems you might have.
- Academic dishonesty on any work will not be tolerated. Extreme violations will result in automatic failure of the course. In this course, it is difficult to imagine what academic dishonesty would look like, but this is the one case where I’d encourage you not to be creative. Do be aware, as you will have access to online content and a free newspaper, of how to recognize and cite direct quotations in your work.
- Any student requiring accommodations or services due to a disability must contact Services for Students with Disabilities (SSD) in room 181 of the Student Service Center. SSD can also arrange to provide course materials (including this syllabus) in alternative formats if necessary. You are also welcome to discuss any special needs with the instructor, though you are not required to do so.
- Please do not hesitate to visit the instructor if you have any questions, concerns or comments about the course, or to discuss favorite cross-country ski routes, photography, music, poetry, physics, pottery, yeast, backpacking trails, etc. Often an instructor sits in an office, lonely and sad, during hours that should be filled with student interactions; so please feel free to drop in, even if it isn’t during a posted office hour. (The worst that could happen is you would be told to come back at another time.) Also, email tends to be an incredibly useful mechanism for getting in contact with instructors and getting your questions or comments responded to.