

PHYS 8950: Current Topics in Physics (Journal Club)

Course Syllabus and Schedule for Fall 2009

****This syllabus is a general plan for the course;
deviations announced to the class by the instructor may be necessary.****

Instructor: Dr. Chad Fertig

Office: Physics 211

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Time: Monday (1:15 AM -3:20 PM)

Location: Physics Bldg., Room 204B

Mission of the Course

This course is intended to provide a forum to critically discuss current topics in physics. Through your earnest and active participation in the course, you will build skills in the critical analysis of journal articles, essential for successful authoring and refereeing of grant proposals and manuscripts. You will gain practice making succinct oral presentations, essential for job interviews. Finally, you will stay in contact with the wide world of physics beyond the narrow niche of your own research.

Requirements of the Course

In preparation for each class meeting, all students must read two journal articles that I will select and distribute from a recent issue of Science, Nature, or Physical Review Letters. You will be assigned a critical question for each article. You must prepare ~5 minutes of presentation on your question (using NO slides, whiteboard, or chalkboard). The questions will be taken from the following list:

- A. What is the main *physics question* tackled by the work?
- B. What is the primary *achievement* of the work?
- D. What is *novel* about this work?
- E. What is the likely *impact* of this work?
- F. What are *major limitations* of the work?
- G. What limits the work's *sensitivity*?
- H. What limits the work's *accuracy*?
- I. How could the *manuscript* be improved?
- J. If you had to shorten the manuscript by 20%, what would you leave out? By 50%?
- K. Connect the physics of the work to $F=ma$, as if you were using this as an example in teaching PHYS1211, introductory mechanics.
- L. Pretending you are the author of the article, write a 1 sentence sound bite and a 1 minute sound bite appropriate for an interview with an Atlanta Journal-Constitution newspaper science reporter. Repeat for an academic job interview.

Please recognize that I am expecting critical comments to each question, not a mini-lecture. I want to hear your **judgements**, not a book-report. Your presentation is intended to spark discussion among the group, not be copied down in a notebook. Be prepared to defend what you say!

It is important to recognize that I expect every student to be prepared (through carefully reading **and understanding** the assigned articles) to engage in a discussion of EVERY question on the above list, NOT ONLY THE ONES YOU ARE ASSIGNED!

In addition to our discussion of the two journal articles, we will also briefly discuss a current news topic, such as might be found in the “News Focus” or “Perspectives” sections of the Science or Nature, or the “Issues and Events” section of Physics Today. The short news story will be chosen by a different student each week, that student being responsible for emailing the article to the rest of the class by the Wednesday before the next meeting.

Attendance

Attendance is mandatory and will be recorded at each meeting. You will be permitted up to 2 “allowed” absences: 1 unexcused (unarranged) and 1 excused (i.e., pre-arranged), without negative impact, if (in each case) you promptly (i.e., before the next meeting) e-mail to me a written version of the presentation you would have made if you had come to class.

Your first un-allowed absence will result in a full letter grade reduction of your final course grade. Your second un-allowed absence will result in an additional full letter grade reduction of your final course grade. Three or more un-allowed absences will result in a grade of F for the course.

If you finish the semester without using one or both of your allowed absences, you will receive extra credit.

Grades

You will be assigned a letter grade based on a combined assessment of the quality of your assigned presentations and of your overall preparedness for, and participation in, class discussion. The letter assignment points thresholds are shown below. Standard rounding practices will be used.

94.00 = A 90.00 = A- 87.00 = B+ 84.00 = B 80.00 = B-
74.00 = C 70.00 = C- 64.00 = D

Academic Honesty

All academic work must meet the standards contained in "A Culture of Honesty." Students are responsible for informing themselves about those standards before performing any academic work. More detailed information about academic honesty can be found at the website given above. As a UGA student, you are responsible for knowing and understanding this policy. If you have any questions about the propriety of actions relating to this course, you are obligated to ask me for clarification. See also the UGA website: <http://www.uga.edu/honesty>

Schedule

Class will be convened every Monday of the semester, excepting official UGA holidays.