COURSE OUTLINE: INQUIRY IN PHYSICS
PHYSICS 4AA1

Fall 2009

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An inquiry course focused on recent research, teaching, and other issues in physics and astrophysics. This course is designed to provide students with exposure to recent research in a variety of areas of physics. Other aspects of physics (physics education, physics in the media, careers in physics) will also be included based on student interest. The direction of the course and the actual topics covered in the course will be largely set by the presentation and research paper topics chosen by the students.

Course web site:
http://www.physics.mcmaster.ca/phys4a03

Course objectives:

1) To become familiar with the literature in a focused area of research
2) To write a review paper of the research in a specific area
3) To learn the basic process of doing library-based scientific research
4) To improve critical analysis skills through skeptical and critical reading of research or popular literature
5) To practice and improve written and oral presentation skills

Textbook:
There is no textbook or course pack for this course. Students will use library resources (including web-based journals, search tools, etc) to access current papers and issues in physics.

Marking Scheme:

In-class presentation and handout (one, in teams)	75%
Abstract for a published paper	20%
Participation	5%

The instructor and university reserve the right to modify elements of the course during the term. The university may change the dates and deadlines for any or all courses in extreme circumstances. If either type of modification becomes necessary, reasonable notice and communication with the students will be given with explanation and the opportunity to comment on changes. It is the responsibility of the student to check their McMaster email and course websites weekly during the term and to note any changes.

Approximate Course Schedule:

In-class presentations: September 29 – December 1, 2009

Abstract for published paper: due November 10, 2009

Exact due dates may be changed from time to time with plenty of advanced notice.

Examples of possible presentation topics:

- research of recent Nobel prize winners (1975-present)
- physics departmental colloquia in 2009-2010
- review or other article from: Physics Today, Nature, Science, etc. (2002-present)
- research or techniques in physics education at the high school, college, or university level
- non-academic physics jobs

Each presentation team will select one of the papers they use in developing the presentation and give the title and location of the paper to the class the week before their presentation. Class members will read the paper and come to class prepared to ask questions about it. In designing their presentation, the team will identify items from the paper(s) and other background material that can form the basis of an in-class discussion and will lead the discussion. The team will also hand in a 4-6 page written summary of their presentation to the instructor one week after their presentation.

Statement on Academic Integrity:

McMaster Senate requires the following statement to be included in every course outline.

Academic dishonesty consists of misrepresentation by deception or by other fraudulent means and can result in serious consequences, e.g. the grade of zero on an assignment, loss of credit with a notation on the transcript (notation reads: "Grade of F assigned for academic dishonesty"), and/or suspension or expulsion from the university.

It is your responsibility to understand what constitutes academic dishonesty. For information on the various kinds of academic dishonesty please refer to the Academic Integrity Policy, specifically Appendix 3, located at
http://www.mcmaster.ca/senate/academic/ac_integrity.htm

The following illustrates only four forms of academic dishonesty:

1) Plagiarism, e.g. the submission of work that is not one's own, or work for which other credit has been obtained through another course.
2) Improper collaboration in group work.
3) Copying or using unauthorized aids in tests and examinations.
4) Failing to give appropriate credit or acknowledgement to other people's work in project presentations or on written assignments and submissions.