Science 206 – The Physics of How Things Work
Course Outline - Fall 2011
Department of Physics and Astronomy, University of Waterloo
Instructor: Professor Stefan Idziak (idziak@uwaterloo.ca)
Office: Physics 250; email Prof. Idziak to make an appointment or drop by my office.
Website on UW Ace

Objectives:

To gain an understanding of how different devices work and to develop an appreciation for the physics behind the applications.

Textbook:

Two copies of the 4th edition are available in reserve at the library (UWD 1554)
Six copies of the first edition are available in reserve at the library (UWD1520)

Prerequisites:

None

Material to be covered (by lecture number):

All classes meet Thursdays from 7:00-10:00 pm in Physics room 145.

1. Motion (Sept. 15)
2. Resonance (Sept. 22)
3. Balloons and Bubbles, Pressure (Sept. 29)
4. Electricity (Oct. 6)
5. Radio and Television (Oct. 13)
6. Midterm (Oct. 20)
7. Microwaves and CDs (Oct. 27)
8. Air Cleaners and Xerox (Nov. 3)
9. Alternate Energy (Nov. 10)
10. Rockets and the Nuclear Bomb (Nov. 17)
11. Medical Imaging (Nov. 24)
12. TBA (Dec. 1)

Marking Scheme (Best of):

Scheme One

Multiple Choice Mid Term Test (October 20, 2011, in class) 40%

Multiple Choice Final Exam (Date to be announced) 60%
Scheme Two

Multiple Choice Mid Term Test (October 20, 2011, in class) 0%

Multiple Choice Final Exam (Date to be announced) 100%

Class Rule:

All cell phones must be turned off during class. Laptops may only be used for course related matters (i.e. note taking).

Academic Integrity: In order to maintain a culture of academic integrity, members of the University of Waterloo community are expected to promote honesty, trust, fairness, respect and responsibility. [Check http://www.uwaterloo.ca/academicintegrity/ for more information.]

Grievance: A student who believes that a decision affecting some aspect of his/her university life has been unfair or unreasonable may have grounds for initiating a grievance. Read Policy 70, Student Petitions and Grievances, Section 4, http://www.adm.uwaterloo.ca/infosec/Policies/policy70.htm. When in doubt please be certain to contact the department’s administrative assistant who will provide further assistance.

Discipline: A student is expected to know what constitutes academic integrity [check http://www.uwaterloo.ca/academicintegrity/] to avoid committing an academic offence, and to take responsibility for his/her actions. A student who is unsure whether an action constitutes an offence, or who needs help in learning how to avoid offences (e.g., plagiarism, cheating) or about “rules” for group work/collaboration should seek guidance from the course instructor, academic advisor, or the undergraduate Associate Dean. For information on categories of offences and types of penalties, students should refer to Policy 71, Student Discipline, http://www.adm.uwaterloo.ca/infosec/Policies/policy71.htm. For typical penalties check Guidelines for the Assessment of Penalties, http://www.adm.uwaterloo.ca/infosec/guidelines/penaltyguidelines.htm.

Appeals: A decision made or penalty imposed under Policy 70 (Student Petitions and Grievances) (other than a petition) or Policy 71 (Student Discipline) may be appealed if there is a ground. A student who believes he/she has a ground for an appeal should refer to Policy 72 (Student Appeals) http://www.adm.uwaterloo.ca/infosec/Policies/policy72.htm.

Note for Students with Disabilities: The Office for Persons with Disabilities (OPD), located in Needles Hall, Room 1132, collaborates with all academic departments to arrange appropriate accommodations for students with disabilities without compromising the academic integrity of the curriculum. If you require academic accommodations to lessen the impact of your disability, please register with the OPD at the beginning of each academic term.