UNIVERSITY OF CALGARY

Physics 371 COURSE OUTLINE

1. COURSE: Physics **371, Introduction to Energy**

Lec	Name	Office	Phone	email
L01	Dr. Jason Donev	SB 149B	403-210-6343	jason.donev@ucalgary.ca

Blackboard course ID: PHYS 371 L01 (Winter 2012)
Physics and Astronomy Program Office: SB605, 403-220-5385, phas@ucalgary.ca

Office hours: Monday 14:00-15:00 Tuesday 13:30-14:30 and Wednesday 14:00-15:00.

2. PREREQUISITES: Science 10 is strongly recommended for this course. **Students who do not meet these requirements will be deleted from the course**.
Please see: http://www.ucalgary.ca/pubs/calendar/current/science.html#6259

3. GRADING: The University policy on grading and related matters is described in sections F.1 and F.2 of the online University Calendar. In determining the overall grade in the course the following weights will be used:

Course Component	Weight	Grading Scale	
		A+	*
		A	>90
Clickers	2%	A-	88-90
Homework	23%	B+	86-88
Exams	40%	B	78-86
Final	35%	B-	76-78
		C+	74-76
		C	66-74
		C-	64-66
		D+	61-64
		D	50-61
		F	<50

* A grade of A+ is reserved for exceptional cases of outstanding performance
** There will be two midterm exams. There will be a final exam scheduled by the registrar.
*** Each piece of work submitted by the student will be given a percentage score. The student's average percentage score for the various components listed above will be combined with the indicated weights to produce an overall percentage for the course, which will be used to determine the course letter grade. The conversion between course percentage and letter grade is given above.

4. MISSED COMPONENTS OF TERM WORK: The regulations of the Faculty of Science pertaining to this matter are found in section 3.6 of the Faculty of Science section of the online calendar: http://www.ucalgary.ca/pubs/calendar/current/sc-3-6.html. It is the student's responsibility to familiarize himself/herself with these regulations. See also http://www.ucalgary.ca/pubs/calendar/current/e-3.html. Any student who is absent from a laboratory or fails to complete any assignment for legitimate reasons (illness, religious conviction or domestic affliction) must discuss an alternative course of action with the instructor. **Please note that the instructor needs to be informed of any missed components within 48 hours.**

6. TEXTBOOK: The required text for this course is *Energy Environment and Climate* 2nd edition by Richard Wolfson, available online, or for purchase in the bookstore. Students will be responsible for handouts given in class as well as material posted on-line.

7. COURSE REQUIREMENTS: Communicating, both orally and in written form, is the cornerstone of this course and constructive critical analysis of peer work is an essential component. In this course, the quality of the student's writing will factor into the evaluation of all assignments. See also: http://www.ucalgary.ca/pubs/calendar/current/e-2.html. Attendance and active participation in all classes and tutorials is key to your success in this class. You are encouraged to meet with instructors periodically during the semester to discuss your progress. Students are

required to have a University of Calgary email address in order to communicate with instructors and to access Blackboard. Many assignments will be submitted electronically. Further details about these requirements will be provided online and during class.

8. ETHICS STATEMENT: If you agree, your papers may be used for research purposes. Your responses will remain anonymous and confidential. Grouped data (no individual responses) may be used in academic presentations and publications. Participation in such research is voluntary and will not influence grades in this course. Students' signed consent forms will be withheld from instructors until after final grades are submitted. More information will be provided at the time student participation is requested.

9. OTHER IMPORTANT INFORMATION FOR STUDENTS:

   a. ACADEMIC MISCONDUCT including cheating, plagiarism or any other form is a very serious offence that will be dealt with rigorously in all cases. A single offence may lead to disciplinary probation, suspension or expulsion. The Faculty of Science follows a zero tolerance policy regarding dishonesty. Please read the sections of the University Calendar under K. Student Misconduct (http://www.ucalgary.ca/pubs/calendar/current/k.html) to inform yourself of definitions, processes and penalties.

   b. ASSEMBLY POINTS: In case of emergency during class time. Be sure to familiarize yourself with the information at http://www.ucalgary.ca/emergencyplan/assemblypoints.

   c. ACADEMIC ACCOMMODATION POLICY: Students with documentable disabilities are referred to the following links: Calendar entry on students with disabilities: http://www.ucalgary.ca/pubs/calendar/current/b-1.html. Disability Resource Centre: http://www.ucalgary.ca/drc/.

   d. SAFEWALK: Campus Security will escort individuals day or night (http://www.ucalgary.ca/security/safewalk/). Call 220-5333 for assistance. Use any campus phone, emergency phone or the yellow phones located at most parking lot pay booths.

   e. FREEDOM OF INFORMATION AND PRIVACY: This course is conducted in accordance with the Freedom of Information and Protection of Privacy Act (FOIPP). Students should identify themselves ONLY by name as student papers will be distributed to other class members as part of the peer review process. **Do NOT include your student ID number on any submission for this class.**

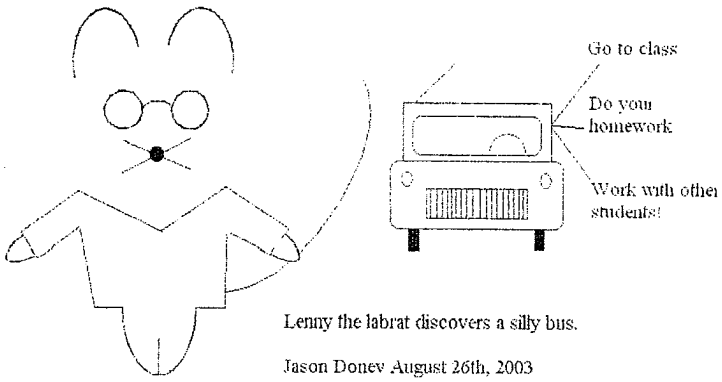
   f. STUDENT UNION INFORMATION: VP academic: Phone 403-220-3911, Email suvpaca@ucalgary.ca. SU Faculty Rep.: Phone 403-220-3913, Email sciencerep@su.ucalgary.ca. Website http://www.su.ucalgary.ca/home/contact.html. Student Ombudsman: http://www.su.ucalgary.ca/services/student-services/student-rights.html.

   g. INTERNET AND ELECTRONIC COMMUNICATION DEVICE INFORMATION: You can assume that in all classes that you attend, **your cell phone should be turned off**. Also communication with other individuals via laptop computers, Blackberries or other devices connectable to the Internet is not allowed in class time unless specifically permitted by the instructor. If you violate this policy, you may be asked to leave the classroom.

Physics And Astronomy Approval: _____ Date: Jan 2/12

Associate Dean's Approval
For alternate final exam arrangements: _____ Date: _____

Introduction to Energy Syllabus
Physics 371 Winter 2012



Lenny the labrat discovers a silly bus.

Jason Donev August 26th, 2003

Professor's Name:	Jason Donev
Office:	Science B 149B, 403-210-6343
Email:	jason.donev@ucalgary.ca.

Course Description

Energy is key for our quality of life, but misconceptions about energy abound. This course is an exciting overview of energy issues relevant in the modern world. This course will discuss why we use fossil fuels, what the consequences are and what options are available, and the issues associated with those options. These will include nuclear, solar and wind power.

Course Outcomes

At the end of this course students should be able to discuss:

- What is energy?
- What is electricity?
- How is electricity produced?
- How is electricity distributed?
- What are the sources of energy that our society uses, and how are they used?

At the end of the course, students should be able to:

- Analyze how our quality of life depends on energy consumption.
- Appraise the fundamental limitations and drawbacks of relying on sources of energy used in our society.
- Effectively analyze, evaluate and discuss energy choices.

Attendance and Classroom Behavior

If you want to do well in this course, show up. This is a large lecture course, courteous behaviour is expected. If you fall behind or have trouble, I expect you to come to me and then we can figure out what can be done about it. The earlier in the course you approach me the more help I can be. Bring a calculator to class.

The course is only loosely based on the texts. The required material will be presented in class, and you will be responsible for all information presented in class. You will also be responsible for reading the textbook and other materials handed out in class and online. Additionally, you will occasionally have to go outside of the classroom materials to find more information.

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Student Response Systems – I will be using the Top Hat Monocle clicker system to ask questions about what you've read and the material that we cover in the lecture. Half of your points will be determined by if you answer and half will be based on if you get the answer correct.

Homework – I've done my best to create problems that I believe you'll be able to solve, in a relatively timely fashion. If I am wrong, and experience has shown that I will be from time to time, it's easier for me to issue retractions a couple of days before it's due rather than the day of. The homework will be administered and turned in electronically using a program called Sapling Learning: http://www.saplinglearning.ca/. Homework will be done on a weekly basis and due on Wednesdays at midnight, unless stated otherwise.

Exams – There will be two mid term exams during the semester and one comprehensive, final exam scheduled by the registrar. Material will come from class lectures, readings, homework and student projects. The exams will be taken in the evenings Wednesday February 8th and Wednesday March 22nd. These exams will ask you to discuss energy issues and choices that the course has talked about. The midterm exams will start at 6:00 PM and go until 7:30PM.

Topic outline

The following is a general guideline of what topics we'll be covering. The order and specific topics can be modified depending on interest of the students:

1-9	A Changing Planet (Chapter 1: 1.3, 1.5-1.6)
1-16	High-Energy Society (Chapter 2)
1-23	Energy: A Closer Look (Chapter 3)
1-30	Energy and Heat (Chapter 4: 4.1-4.3, 4.7-from 'Heat Engines' on)
2-6	Midterm 1, and Fossil Fuel Energy (Chapter 5: 5.1-5.3, 5.5-5.6)
2 -13	Fossil Fuel Energy (Chapter 5: 5.1-5.3, 5.5-5.6)
2-27	Environmental Impacts of Fossil Fuels (Chapter 6: 6.1-6.3)
3-6	Nuclear Energy (Chapter 7)
3-13	Nuclear Energy (continued)
3-20	Midterm 2 and Direct From the Sun: Solar Energy (Chapter 9: 9.1-9.3, 9.5, 9.7)
3-27	Direct From the Sun: Solar Energy (Chapter 9: 9.1-9.3, 9.5, 9.7)
4-2	Indirect From the Sun: Water, Wind, Biomass (Chapter 10: 10.1-10.2)
4-9	Keeping Warm: The Science of Climate (Chapter 12: 12.1, 12.3 – up to 'Infrared Up and Down', 12.5), Forcing the Climate (Chapter 13: 13.1, 13.3), Is Earth Warming (Chapter 14: 14.1, 14.2)

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