



COURSE OUTLINE

1. **Course:** PHYS 371, Introduction to Energy - Fall 2021

Lecture 01: MWF 11:00 - 11:50 in EDC 179

Instructor	Email	Phone	Office	Hours
Dr. Laura Mazzino	laura.mazzino@ucalgary.ca	403 220-8648	SB 533	Monday 14:00-15:00, Tuesday 10:30-11:30, Thursday 13:30-15:00

In Person Delivery Details:

This course is being offered in person. You are required to be present in the classroom during lectures unless otherwise directed by the university and/or by official provincial health guidelines.

All attendees are required to comply with the University's measures to avoid the spread of Covid-19 in the University community.

In the eventuality that there must be a move to online learning directed by the university, you will be contacted by your instructor immediately to receive further instructions.

Please, make a note to visit daily the University of Calgary's [Emergency Management](#) site to read the frequent updates

Re-Entry Protocol for Labs and Classrooms:

To limit the spread of COVID-19 on campus, the University of Calgary has implemented safety measures to ensure the campus is a safe and welcoming space for students, faculty and staff. The most current safety information for campus can be found [here](#).

Course Site:

D2L: PHYS 371 L01-(Fall 2021)-Introduction to Energy

Note: Students must use their U of C account for all course correspondence.

2. **Requisites:**

See section [3.5.C](#) in the Faculty of Science section of the online Calendar.

3. **Grading:**

The University policy on grading and related matters is described in [F.1](#) and [F.2](#) of the online University Calendar.

In determining the overall grade in the course the following weights will be used:

Component(s)	Weighting %	Date
Course Etiquette (Respect, Grace & Courtesy)	5	Ongoing
Class Participation (Attendance/TopHat/Discussions)	10	Ongoing
Reflective Writing (ePortfolio)	10	Ongoing
Assignments (8 assignments, weekly)	20	Weekly
Midterm 1	15	Fri Oct 8, 2021
Midterm 2	15	Fri Nov 5, 2021
Final Examination	25	(scheduled by the Registrar)

Each piece of work (reports, assignments, quizzes, midterm exam(s) or final examination) submitted by the student will be assigned a grade. The student's grade for each component 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 a percentage grade and letter grade is as follows.

	A+	A	A-	B+	B	B-	C+	C	C-	D+	D
Minimum % Required	95 %	90 %	85 %	80%	75%	70 %	65 %	60%	55%	50 %	45 %

This course will have a final exam that will be scheduled by the Registrar. [The Final Examination Schedule](#) will be published by the Registrar's Office approximately one month after the start of the term. The final exam for this course will be designed to be completed within 3 hours.

Course Etiquette: Students will conduct with respectful behavior during the classes and during office hours. Rude behavior to the other classmates, to the Teaching Assistants, and/or to the instructor will result in a loss of 5% on the first offense.

TopHat: In-class participation will include short discussions with students seating next to each other and answering in-class questions. For more information and detailed instruction regarding how to sign up to the TopHat course site, please visit D2L: "Resources for Students - TopHat"

Reflective writing: Students will write a paragraph each week, through the ePortfolio in D2L. Length and rubric/grading details will be explained in the second class and is described in D2L "Resources for Students - Reflective writing"

Assignments: The assignments will be completed through D2L. Assignments will be released on Friday morning (shortly before class) and they are due the following Friday at midnight. For more information, consult D2L, under the section "Resources for Students - Homework".

The University of Calgary offers a [flexible grade option](#), Credit Granted (CG) to support student's breadth of learning and student wellness. Faculty units may have additional requirements or restrictions for the use of the CG grade at the faculty, degree or program level. To see the full list of Faculty of Science courses where CG is not eligible, please visit the following website: <https://science.ucalgary.ca/current-students/undergraduate/program-advising/flexible-grading-option-cg-grade>

4. **Missed Components Of Term Work:**

The university has suspended the requirement for students to provide evidence for absences. Please do not attend medical clinics for medical notes or Commissioners for Oaths for statutory declarations.

In the event that a student legitimately fails to submit any online assessment on time (e.g. due to illness etc...), please contact the course coordinator, or the course instructor if this course does not have a coordinator to arrange for a re-adjustment of a submission date. Absences not reported within 48 hours will not be accommodated. If an excused absence is approved, one possible arrangement is that the percentage weight of the legitimately missed assignment could also be pro-rated among the components of the course. This option is at the discretion of the coordinator and may not be a viable option based on the design of this course.

5. **Scheduled Out-of-Class Activities:**

There are no scheduled out of class activities for this course.

6. **Course Materials:**

Recommended Textbook(s):

Nick Jelly, *Renewable Energy: A Very Short Introduction*: Oxford University Press.
Nick Jenkins, *Energy Systems: A Very Short Introduction*: Oxford University Press.

Students are required to bring a phone, computer, a tablet, or a similar electronic device to complete in-class tophat questions.

In order to successfully engage in their learning experiences at the University of Calgary, students taking online, remote and blended courses are required to have reliable access to the following technology:

- A computer with a supported operating system, as well as the latest security, and malware updates;
- A current and updated web browser;
- Webcam/Camera (built-in or external);
- Microphone and speaker (built-in or external), or headset with microphone;
- Current antivirus and/or firewall software enabled;
- Stable internet connection.

For more information please refer to the UofC [ELearning](#) online website.

7. Examination Policy:

Non-programmable calculators will be allowed on all exams. Midterm exams will be done synchronously during the Wednesday afternoon tutorial session.

Students should also read the Calendar, [Section G](#), on Examinations.

8. Approved Mandatory And Optional Course Supplemental Fees:

There are no mandatory or optional course supplemental fees for this course.

9. Writing Across The Curriculum Statement:

For all components of the course, in any written work, the quality of the student's writing (language, spelling, grammar, presentation etc.) can be a factor in the evaluation of the work. See also Section [E.2](#) of the University Calendar.

10. Human Studies Statement:

Students will not participate as subjects or researchers in human studies.

See also [Section E.5](#) of the University Calendar.

11. Reappraisal Of Grades:

A student wishing a reappraisal, should first attempt to review the graded work with the Course coordinator/instructor or department offering the course. Students with sufficient academic grounds may request a reappraisal. Non-academic grounds are not relevant for grade reappraisals. Students should be aware that the grade being reappraised may be raised, lowered or remain the same. See [Section I.3](#) of the University Calendar.

- a. **Term Work:** The student should present their rationale as effectively and as fully as possible to the Course coordinator/instructor within **ten business days** of either being notified about the mark, or of the item's return to the class. If the student is not satisfied with the outcome, the student shall submit the Reappraisal of Graded Term work form to the department in which the course is offered within 2 business days of receiving the decision from the instructor. The Department will arrange for a reappraisal of the work within the next ten business days. The reappraisal will only be considered if the student provides a detailed rationale that outlines where and for what reason an error is suspected. See sections [I.1](#) and [I.2](#) of the University Calendar
- b. **Final Exam:** The student shall submit the request to Enrolment Services. See [Section I.3](#) of the University Calendar.

12. Other Important Information For Students:

- a. **Mental Health** The University of Calgary recognizes the pivotal role that student mental health plays in physical health, social connectedness and academic success, and aspires to create a caring and supportive campus community where individuals can freely talk about mental health and receive supports when needed. We encourage you to explore the mental health resources available throughout the university community, such as counselling, self-help resources, peer support or skills-building available through the SU Wellness Centre (Room 370, MacEwan Student Centre, [Mental Health Services Website](#)) and the Campus Mental Health Strategy website ([Mental Health](#)).
- b. **SU Wellness Services:** For more information, see www.ucalgary.ca/wellnesscentre or call [403-210-9355](tel:403-210-9355).
- c. **Sexual Violence:** The Sexual Violence Support Advocate, Carla Bertsch, can provide confidential support and information regarding sexual violence to all members of the university community. Carla can be reached by email (syva@ucalgary.ca) or phone at [403-220-2208](tel:403-220-2208). The complete University of Calgary policy on sexual violence can be viewed at (<https://www.ucalgary.ca/legal-services/sites/default/files/teams/1/Policies-Sexual-and-Gender-Based-Violence-Policy.pdf>)
- d. **Misconduct:** Academic integrity is the foundation of the development and acquisition of knowledge and is based on values of honesty, trust, responsibility, and respect. We expect members of our community to act with integrity. Research integrity, ethics, and principles of conduct are key to academic integrity. Members of our campus community are required to abide by our institutional [Code of Conduct](#) and promote academic integrity in upholding the University of Calgary's reputation of excellence. Some examples of academic misconduct include but are not limited to: posting course material to online platforms or file sharing without the course instructor's consent; submitting or presenting work as if it were the student's own work; submitting or presenting work in one course which has also been submitted in another course without the instructor's permission; borrowing experimental values from others without the instructor's approval;

falsification/fabrication of experimental values in a report. Please read the following to inform yourself more on academic integrity:

[Student Handbook on Academic Integrity](#)
Student Academic Misconduct [Policy](#) and [Procedure](#)
[Research Integrity Policy](#)

Additional information is available on the [Student Success Centre Academic Integrity page](#)

e. Academic Accommodation Policy:

It is the student's responsibility to request academic accommodations according to the University policies and procedures listed below. The student accommodation policy can be found at: <https://www.ucalgary.ca/legal-services/sites/default/files/teams/1/Policies-Student-Accommodation-Policy.pdf>

Students needing an accommodation because of a disability or medical condition should communicate this need to Student Accessibility Services in accordance with the Procedure for Accommodations for Students with Disabilities: <https://www.ucalgary.ca/legal-services/sites/default/files/teams/1/Policies-Accommodation-for-Students-with-Disabilities-Procedure.pdf>.

Students needing an accommodation in relation to their coursework or to fulfil requirements for a graduate degree, based on a Protected Ground other than Disability, should communicate this need, by filling out the [Request for Academic Accommodation Form](#) and sending it to Dr. David Feder by email phas.ahugrd@ucalgary.ca preferably 10 business days before the due date of an assessment or scheduled absence.

f. 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 on all written work by placing their name on the front page and their ID number on each subsequent page. For more information, see [Legal Services](#) website.

g. Student Union Information: [VP Academic](#), Phone: [403-220-3911](tel:403-220-3911) Email: suvpaca@ucalgary.ca. SU Faculty Rep., Phone: [403-220-3913](tel:403-220-3913) Email: sciencerep@su.ucalgary.ca. [Student Ombudsman](#), Email: ombuds@ucalgary.ca.

h. Surveys: At the University of Calgary, feedback through the Universal Student Ratings of Instruction ([USRI](#)) survey and the Faculty of Science Teaching Feedback form provides valuable information to help with evaluating instruction, enhancing learning and teaching, and selecting courses. Your responses make a difference - please participate in these surveys.

i. Copyright of Course Materials: All course materials (including those posted on the course D2L site, a course website, or used in any teaching activity such as (but not limited to) examinations, quizzes, assignments, laboratory manuals, lecture slides or lecture materials and other course notes) are protected by law. These materials are for the sole use of students registered in this course and must not be redistributed. Sharing these materials with anyone else would be a breach of the terms and conditions governing student access to D2L, as well as a violation of the copyright in these materials, and may be pursued as a case of student academic or [non-academic misconduct](#), in addition to any other remedies available at law.

Course Syllabus

1. Week 1: Brief Chronology of Human use of Energy Examples of Energy usage pre-Industrial Revolution.
2. Week 2: Examples of Energy usage pos-Industrial Revolution. Primary energy, end-use, energy for society.
3. Week 3: Modeling energy and matter. Energy and Power.
4. Week 4: Electricity. Electromagnetism.
5. Week 5: Heat Engines.
6. Week 6: Heat Engines (cont.)
7. Week 7: Wind, Solar.
8. Week 8: Wave, Tidal, Hydro.
9. Week 9: Nuclear Power.
10. Week 10: Term Break.
11. Week 11: Geothermal, Fossil fuels.
12. Week 12: Generation, Storage, and Distribution of electricity.
13. Week 13: Energy and Climate.
14. Week 14: Environmental consequences and climate change.

Course Learning Incomes

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

- Convert numerical quantities from one set of units to another with given unit conversions (eg. 100 cm = 1 m, convert 324 cm into meters)
- Solve linear algebraic equations (e.g. If $3y+6=12$, what is the value of y ?)
- Use a calculator to find the sin, cos, and tan of an angle (e.g. Find $\cos 40^\circ$ with a calculator).
- Read line, bar, and pie charts.
- Discuss, in a mature and respectful manner, controversial topics such as climate change, fracking, and poverty.

Course Outcomes:

- What energy is and how it is used
- The advantages and disadvantages of various sources of primary energy
- What electricity is and how it is produced & distributed
- How our energy use ties to our changing climate.
- Analyze how our quality of life depends on energy consumption
- Analyze, evaluate and discuss the consequences of energy choices

Electronically Approved - Sep 08 2021 07:28

Department Approval

Electronically Approved - Sep 08 2021 19:53

Associate Dean's Approval