

**Physics 100**  
**Energy in Today's World**  
**Fall 2020**

This online course is managed via [Canvas](#)

**Instructor:** Dr. Chris Verzani

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**Office:** SCI B103

**Office Hours:** Send me an email, and we can arrange a Zoom meeting (or phone call).

**Text:** [Energy: Its Use and the Environment](#), Hinrichs and Kleinbach,  
5<sup>th</sup> edition

**Other required materials:** Scientific calculator (graphing capability is **not** necessary)

**Course Objectives:** *Energy in Today's world* is a course offering a survey of the physics of energy and its impact on society. Upon completion of this course you should be able to:

- Explain the fundamental concepts of the physics of energy
- Use algebra to explain measurements and make predictions
- Understand the issues surrounding energy production, storage, and use
- Explore ways you can personally change your energy footprint

**Course Content**

This course will focus on the physics of energy and how these ideas relate to energy production, energy consumption, and energy policy. A basic understanding of physics is an important component to making informed energy decisions both as a voter and as a consumer. Although this is primarily a course in physics, we will also consider the various economic, political, and social issues associated with energy. To varying degrees, we will cover the following topics: mechanical energy, thermal energy, electrical energy, production and consumption of energy.

**General Education:** This course satisfies the learning outcomes for the Quantitative Literacy component of the general education program. Upon completing this course you should be able to:

- Select, analyze, and interpret appropriate numerical data used in everyday life in numerical and graphical format.
- Identify and apply appropriate strategies of quantitative problem solving in theoretical and practical applications.
- Construct a conclusion using quantitative justification.

This course also satisfies the learning outcomes for the Environmental Responsibility component of the general education program. Upon completing this course you should be able to:

- Recognize areas of interaction between human society and the natural environment.
- Identify the individual, social, cultural, and ecological factors that influence environmental sustainability.
- Evaluate competing scientific claims that inform environmental debates.

**Attendance:** No face-to-face classroom meetings will be held. You will need to stay self-motivated to keep up with the pace of the course. Usually, deadlines for course work will be at the end each week. Deadlines will be posted on Canvas and/or sent to you via email.

**Canvas:** Basically everything that will be happening in this class will be posted on Canvas including documents related to; homework assignments, labs, exams. Canvas will be used as a two-way information exchange. Documents will be posted on Canvas by the instructor, and the student will submit documents to be evaluated for grading. A portion of the first week of classes will be devoted to getting familiar with Canvas and document submissions. (In some instances, it may be necessary to submit documents through email.)

**Email:** Announcements (such as when something is due to turn in) and miscellaneous information will be emailed to you in addition to being posted on Canvas. Please do not hesitate to contact me through email for any assistance with class work! We can schedule time for individual help (via Zoom meetings).

**Grading policy:** The grade you earn in this class will be based upon the three assignment types listed below.

#### **Grade Breakdown**

<u>Assignment</u>	<u>Weight</u>
Exams	50%
Homework	25%
Labs	25%

Final grades will be determined from your overall percentage as follows:

A	A-	B+	B	B-	C+	C	C-	D+	D	F
93.%- 100%	90.%- 92.99%	85.%- 89.99%	80.%- 84.99%	75.%- 79.99%	70.%- 74.99%	65.%- 69.99%	60.%- 64.99%	55.%- 59.99%	50.%- 56.99%	Below 50%

**Homework:** Chapter homework assignments will be posted on Canvas. You will submit your homework assignments as pdf files. We will go over how to submit these files in the first week of classes. I will use a point system for homework. All homework points that you earn, tallied together at the end of the semester, divided by the total number of homework points available, multiplied by 100, is how your homework percentage grade will be determined.

**Laboratory:** The lab activities will be mainly conducted using the Canvas system. Labs will normally require you to upload files to Canvas. The labs are designed to illustrate and expand upon the topics we cover in the lecture portion of the course. Make sure you complete the entire lab and that you understand the concepts underlying the lab activity. I will use a point system for labs. All lab points that you earn, tallied together at the end of the semester, divided by the total number of lab points available, multiplied by 100, is how your lab percentage grade will be determined.

**Examinations:** Midterms and the final will also be posted on Canvas by the instructor, and documents will be submitted by the students to the Canvas platform. Exams will normally be short in length but occur frequently throughout the semester. This offers the advantage that they

should not be overwhelming, or extremely time-consuming, but this will require you to keep up with the pace of the course. Getting behind will be problematic.

I will use a point system for exams. All exam points that you earn, tallied together at the end of the semester, divided by the total number of exam points available, multiplied by 100, is how your exam percentage grade will be determined.

### **Deadlines:**

Deadlines for homework, labs and exams will be posted with the assignments. Normally, homework assignments and laboratories will be posted at the beginning of each week and will be due at the end of each week. Exams, will also be posted with deadlines, and typically have shorter deadlines, and will occur approximately every other week.

I expect you to turn in assignments by these deadlines but will allow special arrangements if there is good reason, such as a physical or mental health issue, or difficulties with the online format for the class. Even extensions for late work have a deadline, and all issues should be resolved within one week past the deadline.

### **Course Schedule:**

<u>Week</u>	<u>Chps.</u>	<u>Description</u>
1-2	2-4	Unit I: Mechanical and Thermal Energy
3-4	10,11,13,14	Unit II: Electrical and Nuclear Energy
5-6	6-9, 12	Unit III: Fossil Fuels and Solar Energy
7-8	16-18	Unit IV: Future Energy Sources

### **Community Rights & Responsibilities:**

Students with special needs should contact the Disability and Assistive Technology Center during the first two weeks of the semester in order to request accommodation. An Exam Accommodation Request Form is available online. Religious beliefs will be accommodated according to UWS 22.03 as long as the student notifies the instructor about the conflict within the first three weeks of class. Students are expected to maintain the highest standards of academic integrity for their work in this course. The University of Wisconsin-Stevens Point dedicated to a safe, supportive and non-discriminatory learning environment. It is the responsibility of all students to familiarize themselves with University policies regarding special accommodations, misconduct, religious beliefs accommodation, discrimination and absence for university sponsored events. (For details please refer to the Academic Concerns page, the Student Conduct Process page, and the Academic Integrity document.)