



Syllabus

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What You Should Already Know

Physical science is pretty broad, including both chemistry and physics. Among the topics you will learn about in this course will be motion, forces, energy, matter, chemical reactions, electricity, and waves. As we go into greater detail to understand physical science, take the time to observe the world around where you live. You will be expected to be able to perform basic algebra throughout the course.

Course Learning Outcomes

Upon successful completion of this course, you will be able to do the following:

1. Describe the motion of an object in terms of position, velocity, acceleration, and time.
2. Describe forces acting on objects and how they affect the motion of objects.
3. Explain the transformation of energy among various forms.
4. Describe properties of matter and the structure of atoms.
5. Balance basic chemical equations.
6. Explain how electricity is produced.
7. Describe properties of different kinds of waves.

Course Materials

Physical Science 41 is a self-contained course, which means that there is no separate textbook for this course. However, the Internet contains a variety of Web sites that you can visit if you are interested in learning more

about a specific topic. You will need a scientific calculator for this course. It does not need to be anything fancy, but it does need to be able to do things like sine and cosine. This type of calculator can usually be purchased for around ten dollars at a local store. (Note: Graphing calculators may be used if you own one, but we will not be using advanced calculator functions in this course. A regular nongraphing scientific calculator is sufficient.) You will be allowed to use your calculator on the final exam.

Besides this course manual, there is a periodic table of elements and a formula guide included in this course (found in appendix A and B, respectively). You may use the periodic table and the formula guide on the Speedback assignments and the final exam.

If you find yourself having difficulties with the self-checks, you will find access to additional problems, solutions, and explanations in the sample problems sections linked to each of the self-checks and found in the Appendices.

Course Organization

Assignments

Physical Science 41 contains eight lessons. Each lesson contains four or five learning objectives that will teach you about different aspects of physical science. Before you begin each lesson, you should watch the lesson introduction video. These lesson introductions will help you understand real-world applications of the concepts you are about to learn.

As you read through the lesson material, you will find some Self Check questions at the end of each lesson objective. Be sure you can answer all of these questions correctly, as you will see more of the same in the computer-graded assignments and final exam.

If, after working on the Self Check questions, you are still struggling with a particular concept, use the example problems/video examples for more help. The appendices have folders with practice problems for each lesson. Each problem also has a video of me solving the problem step by step. Try to solve the problems on your own. If you need help with a particular problem, then click on the video button to watch the video.

You will also find a Real-World Activity in each lesson of the course. These activities are not optional, though there is nothing you need to submit. They provide you with some interesting experiences and opportunities to

apply what you are learning.

There are eight Speedback assignments (one for each lesson). Most of the Speedback assignments consist of about twenty to twenty-five multiple-choice questions each. These assignments must be completed online. The Speedback assignments are open book and open notes, but the final is closed book and notes, although you may use the periodic table and formula guide found in the appendices.

Working consistently once you begin the course will help you keep the material fresh in your mind and help you succeed. Also, working carefully through the lessons, lesson examples, activities, and so forth, will help you have a positive (and successful) experience with this course.

Grading

Grading System

Physical Science 41 contains eight lessons and two cumulative reviews (one for the first half of the course and one for the second), which will not count toward your final grade. You may resubmit the cumulative reviews as many times as you like for free. Each of the lessons is weighted the same for grading purposes. Each lesson assignment is worth 7% toward the course grade.

Your final course grade will be calculated in the following manner: The eight lessons will count for a total of 56 percent of your final grade. The other 44 percent of your final grade comes from the final exam. If you work diligently and follow the above guidelines, you will not have a problem passing the final exam and the course.

The grading scale is listed below.

| Grading Scale | |
|----------------------|--------|
| A | 93-100 |
| A- | 90-92 |
| B+ | 87-89 |
| B | 83-86 |
| B- | 80-82 |
| C+ | 77-79 |

| Grading Scale | |
|----------------------|-------|
| C | 73-76 |
| C- | 70-72 |
| D+ | 67-69 |
| D | 63-66 |
| D- | 60-62 |
| E (fail) | 0-59 |