Phys 101: Earth, Air, Fire & Water  
MWF 9:20-10:20 am, LA 304

Instructor: Steven Wiles  
Office: Sci 131  
Office Hours: MWF 1-2pm, R 2:30-3:30pm  
Also, whenever my door is open or by appointment.

Campus Phone: 657-1648  
Email: swiles@msubillings.edu

Course Description:

This course is designed to give the student an understanding of the basic laws that underlie and explain the diverse phenomena of the physical world. We will study motion including Newton’s Laws, rotational motion, force, energy, and momentum. We will also study wave motion, thermodynamics, electricity and magnetism, the nature of light, elements of quantum mechanics, and an introduction to nuclear physics. If time permits, Einstein’s theory of special relativity will be discussed.

This course emphasizes a conceptual, rather than mathematical, understanding of physics. However, physics is a problem-solving science, and its concepts are most completely expressed in the language of mathematics. Some mathematical skills, arithmetic and basic algebra, is necessary to fully appreciate the subject. It is expected that students have these basic math skills.

Grading:

<table>
<thead>
<tr>
<th>Component</th>
<th>Points</th>
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<tbody>
<tr>
<td>4 Exams</td>
<td>100 pts x 4</td>
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<tr>
<td>Quizzes</td>
<td>100 pts</td>
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<tr>
<td>Final Exam</td>
<td>200 pts</td>
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<tr>
<td>Total</td>
<td>700 pts</td>
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Letter grades in the course will initially be based on the standard 10% scale (90%-100% = A, 80%-89% = B, etc.). At the end of the semester, when final grades are in, this scale may need to be adjusted to ensure a fair distribution of grades to the class. If such adjustment occurs, it will never lower a student’s grade.

Curriculum:

Exam 1: Chapter 1: What is Science and Chapter 2: Motion  
Exam 2: Chapter 2: Motion (cont.) and Chapter 3: Energy  
Exam 3: Chapter 4: Heat and Temperature and Chapter 5: Wave Motion  
Exam 4: Chapter 6: Electricity and Chapter 7: Light  
Final Exam: Chapters 1-7, Chapter 8: Atoms, and Chapter 13: Nuclear Reactions
Exams: Exams will be held during regular lecture hours, upon completion of the Chapters to be covered on the test. You will only be allowed a calculator and a pencil during the exam. Scratch paper will be provided if necessary, but all work should be shown on the test itself for partial or full credit. Your books and bags will be stored at the front of the room during the exam.

Make-up Exams: Any student who does not show up for a regularly scheduled exam will receive a zero, unless the student has a valid excuse for the absence. In that case, the student may be allowed to take a make-up exam. I am the final arbiter of what constitutes a valid excuse. If the absence is due to a foreseeable situation, the student must inform me beforehand and attempt to take the test early. In any case, I will require that the student bring a signed note (from a doctor, coach, police officer, family member, etc.) before I will consider allowing them to take a make-up.

Final Exam: The final exam for this course will be administered on May 4 at 12:00pm-1:50pm in LA 304. The final exam is comprehensive, covering all the material during the semester.

Quizzes: Quizzes will be given during lecture hours, and average about 10 minutes in length. They will be given on average once a week. They are closed book, and will simulate the type of problems you will be given on tests. The lowest two quiz grades will be dropped. Quizzes will not be announced ahead of time. There are no make-up quizzes.

Homework: Each lecture, a set of homework problems will be assigned. These homework problems will not be collected and are not graded. Solution sets for these problems will be on reserve in the library. It is to be considered part of your coursework to go to the library and check your solutions against my solutions.

Your grade does not directly depend on the homework. However, if you do not keep up with the assigned problems, you will be utterly unprepared for the quizzes and the tests. Not doing homework will indirectly affect your grade in a most unpleasant fashion.

Attendance: I will not be basing any portion of your grade on attendance directly. However, as there will be an occasional unscheduled quiz, it is wise to always try to be in class. I will be asking questions of all students in class during the course of the semester, and I will note absences. If your grade is borderline at the end of the semester, such matters influence my decision to assign a higher or lower letter grade.

Extra Credit: Each exam will have an extra credit question. Otherwise, no extra credit will be given in this course for any reason, so please don’t ask.
Suggestions for studying and learning chemistry:

1. Keep up with your study day to day. If you fall behind, it is very difficult, if not impossible, to catch up. Perseverance is the key to success!

2. Take good lecture notes. Using lecture notes in conjunction with the text will be the best way to determine which material to study. It is often useful to compare your notes with the notes of other students, to fill in things you may have missed during lecture or to see if their understanding of the material is different than yours.

3. It is strongly recommended that you form study groups for working on homework and studying.

4. Skim topics before they are covered in lecture, so that you aren’t seeing material for the first time in lecture.

5. After lecture, carefully read the topics covered in class to fix them in your mind. Considering how much you paid for your textbook, it is foolish not to read it.

6. How can you tell if you understand a topic? As a self-test, try explaining a concept from class to someone (for example, someone in your study group). If you can’t verbally describe a concept, you simply don’t know it.

7. Attempt all assigned homework problems. You will not fully learn by only watching me work a problem in class. As with learning to ride a horse, you have to get in the saddle and maybe even fall off a few times. Trying can’t hurt you; not trying will hurt you.

8. Go to the library at least once a week to review the solution sets that I write for homework, quizzes, and exams. I put a great deal of work into them to explain not just answers but the thinking that leads to the answers. Be sure to regularly pick up your returned assignments in the box outside my office to check against the solutions. Most of the problems are not graded, so how would you know you got them wrong otherwise?

9. Spending more than 15-20 minutes on a single homework problem is rarely effective unless the problem is particularly challenging. What to do? Come to my office hours, or contact me by phone or e-mail. I am your best resource in this course; your ability to interact with me personally is the advantage of campus courses over online or correspondence courses. Tutors are also available at the Academic Support Center.
**POLICY ON ACADEMIC HONESTY:** It is your responsibility to familiarize yourself with the Student Handbook. In particular, you should understand Part IX: Code of Conduct, paying special attention to subsection B.1, page 78 (Academic Misconduct). All students are expected to adhere to the highest standards of academic honesty and refrain from any action that is dishonorable or unethical. In all examinations, quizzes, and lab reports, students are expected to submit their own work entirely. Cheating or alleged cheating on an exam or quiz in this class will result in a grade of zero (failure) for the exam or quiz involved.

**POLICY ON STUDENT CONDUCT:** Disruptive behavior such as talking amongst yourselves, ringing cell phones, talking on cell phones, and reading non-course material during lecture will not be tolerated. Any students indulging in such behavior will be asked to leave the class. Cell phones must be turned off prior to lecture. Occasionally, a student will have a disagreement with the professor or with the teaching assistants over an issue of grading. Such discussions, whether in class or in office, are to be kept civil. Verbal abuse in any form will NOT be tolerated. Any student indulging in such behavior will be reported to the Dean of Arts and Sciences and The Office of Student Affairs.