

PS 110 General Physical Science
Spring 2015

Instructor: Dr. Jon M. Saken
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Office Hours: M: 3:00 pm - 4:00 pm; w: 1:00 pm - 4:00 pm; R: 3:30 pm - 4:30 pm
Texts: *Conceptual Physical Science, 5th ed.* with *MasteringPhysics*;
Hewitt, Suchocki & Hewitt
PS 110L Lab Manual; Bady
Other Requirements: Internet access
Scientific calculator

Course Description: This course is an introduction to the concepts of chemistry and earth science for the non-science major. Topics include: Atomic theory and structure; the Periodic Table; simple molecules; chemical reactions; organic chemistry; the atmosphere and oceans; rocks and minerals; the structure of the earth; plate tectonics and geology. Chapters 12 - 25 in the textbook will be covered. Additional materials are found in the lab book or will be supplied by the instructor.

Evaluation & Grading:

Classroom Assignments	10%	A	90-100
Homework	14%	B	80-89
Exams (4)	56%	C	70-79
Cumulative Final Exam	20%	D	60-69
...		F	0-59

Classroom Assignments: These are assignments that will be completed in the classroom in pairs or small groups. They are designed to help with your conceptual understanding of the material.

Homework: You must register at www.masteringphysics.com using course code: PS110SPRING2015

Note that the course code is NOT the same as the access code required for use of MasteringPhysics.

Weekly homework is posted on the *Mastering Physics* website, along with a list of additional practice problems. These practice problems will remain available throughout the semester. Please take it seriously. Success on the homework is strongly correlated with success on the exams. Homework consists of two parts: (a) homework problems for the chapter we are currently covering will be due on Sundays, (b) reading questions for the next chapter will be on Tuesdays, except for the two Tuesdays where there are tests scheduled. Those due dates will be the following Thursday. Please note that connectivity issues are YOUR responsibility. Do NOT wait until the last minute to submit work as connectivity problems are not a valid excuse for a failure to submit your homework. Be especially aware of computer maintenance windows.

Course Policies:

- This class will adhere to the standard University course policies, which can be reviewed here:
<http://www.marshall.edu/academic-affairs/policies/>
- Makeup exams will **NOT** be allowed except for *documented* emergencies. The instructor reserves the right to allow exceptions to this policy at his sole discretion without incurring any obligation to allow exceptions in any particular case.
- If you must miss a class **contact me immediately**. Even in the case of an excused absence, if you wait too long to contact me about a make-up, it may be disallowed. Also, be sure to let me know at least a week ahead of time if a university activity will require an absence from class.
- A scientific calculator is required for class, not an app on a smart phone or tablet.
- Cell phone use is not permitted in the classroom. Please turn cellphones to OFF or vibrate while in class.
- Except for calculators, *no other electronic devices are allowed during class*. This includes, but is not limited to, laptops, tablets, iPads, smart watches. Violators may be asked to leave the class.
- Any act of academic dishonesty of any kind will result in a final grade of F for the class.

Tips:

- *Don't fall behind* - This is an introductory course for non-science majors, but it is still a science course. Many of the topics may be unfamiliar. If you have to catch up while trying to cover new topics you will probably end up missing something.
- *Do all the work* - and maybe more. If you find your science background is a bit lacking you will need to spend more time on this class than on other courses. You may also need to do extra practice problems to understand the material.
- *Come prepared to ask questions* - We will spend a great deal of time in class discussing the material and answering questions from the text, homework, activities, etc. If you are unprepared to engage in the discussion then you will probably not get what you need out of the scheduled class time and your performance will likely suffer. Write down questions as they occur to you so you are prepared. I really mean it, there are NO “dumb questions.”
- *Engage in active learning* - You will probably not do well if you passively read a science text. Study the diagrams and illustrations, make sure you understand their purpose and all the details. Look for their relation to the material. Try the example problems. Then read everything again and look for things you might have missed. If there is anything you don't understand, write it down and ask in class.

Note: Although every effort will be made to adhere to this schedule, test dates are subject to change. We will cover approx. one chapter per week, starting with Chapter 12.

<i>Tentative Class Schedule</i>		
Chapters	Dates	Test Date
12 - 14	Jan 12 - Jan 29	Tuesday, Feb 3
15 - 17	Feb 5 - Feb 26	Tuesday, Mar 3
18 - 20	Mar 5 - Mar 24	Thursday, Mar 26
21 - 24	Mar 31 - Apr 21	Thursday, Apr 23
25	Apr 28 - Apr 30	Final Exam
MLK Day: No class		Jan 19
Final Exam:		May 5 - 12:45 pm

Learning Outcomes - <i>Students will:</i>	Practice	Assessment
Explain the structure of matter and distinguish between solids, liquids, gases, and solutions.	Classroom assignments; Practice Problems	Homework; Exams
Describe the types of radioactive decays, what products they produce and employ the radioactive half-life to determine the age of various substances.		
Describe some of the chemical and physical properties, and trends in those properties, of elements based on their position in the periodic table.		
Interpret and solve basic chemical equations.		
Explain acid-base chemistry and redox reactions.		
Describe the factors that control the rates of chemical reactions.		
Explain the theory of plate tectonics and recognize features associated with different styles of plate boundaries.		
Describe Earth's physical history: its formation, the history of continental motions, and changing surface environments.		
Describe the history of life on Earth, including its origin, the variety of organisms that have inhabited the planet, and major events that have affected life.		
Describe the Earth's atmosphere and climate, and discuss the physical and chemical factors that control those features of our planet.		