

SYLLABUS
Natural Science 261-Physical Science
Spring 2016

Instructor: Chuck Schick

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Office Hours: Wed 4:00pm or by appointment

Class Time: Mon.-Wed. 4:30 to 6:30pm

SCHEDULE

WEEK	Week of	TOPICS	Purpose or learning objective
1	Jan 18	Class Introduction Measurement systems and objects, TAKE HOME REVIEW SHEET	To get you accustomed to using units and understanding how units, scalar and vector quantities describe physical properties.
2	Jan 25	Motion, laws and patterns. LAB #1 Graphing Periodic Table Quiz #1 (last class of week)	Become familiar with Newton's Laws and how they explain motion, gravity and forces observed in our everyday lives. understanding acceleration
3	Feb 1	Motion, laws and Patterns Lab #2 Gravity Laboratory	Force, The relationship between mass and gravity
4	Feb 8	Motion, laws and Patterns Periodic Table Quiz #2 (last class of week)	Attraction between large bodies
5	Feb 15	Motion, laws and Patterns Periodic Table Quiz #3 (last class of week) WORK and POWER Lab #3 HORSEPOWER LABORATORY	Understanding centrifugal force and acceleration in a circle. Calculate your own horsepower.
6	Feb 22	TEST #1. (first class of the week) Present assignment #1- Article presentation Energy and Work.	Understanding potential and kinetic energy. Presentation is to improve your communication of complex ideas in a classroom setting.
7	Feb 29	Heat and Temperature RESEARCH PAPER TOPIC OUTLINE DUE (1 page outline with 4 references. Due last class of week)	Understanding heat capacity, conduction, convection and insulating properties of matter.
8	Mar 7	Sound, Light and Electricity Lab #4 Projectile Motion Laboratory Second class of the week	Measuring angle vs Distance and optimization Understanding basic wave motion and relationship between frequency and amplitude. Understand basic electricity and measurements
9	Mar 14	Spring Break	
10	Mar 21	Heat and Temperature LAB # 5 Phase Change Lab Periodic Table Quiz #4 (last class of week)	Understanding states of matter and the energy required to change phases.
11	Mar 28	TEST #2 (first class of the week) Present Assignment #2 SOUND LAB	Understanding the basic formation of minerals as an introduction to chemistry Lab is a chance for you to explore how to incorporate common materials into a teaching environment
12	Apr 4	Periodic Table Quiz #5 (last class of week) Periodic Table and and ionization states of elements	Provide a working knowledge of how atoms bond to form molecules. Understanding of how complex anions form and are charged.
13	Apr 11	Elements and Basic Chemistry LAB #6 Mineral Lab	Creating balanced equations. Limiting reagents, etc.
14	Apr 18	Acid-Base Reactions Balancing Equations Research Paper's are due (First class of week)	Understanding, molecular weight, Avogadro's number, moles, limiting reagents. How to know how much ingredients are needed to make a precise product.
15	Apr 25	TEST #3 (first class of the week)	Presentations will allow you to present complex ideas and information to your classmates not covered in class.
16	May 2	Presentations of papers or power points Final Exam Review	Presentations: present complex ideas and information to your class mates class.

Course Textbook: Tillery, B. W. PHYSICAL SCIENCE, 12th Ed. Pub. McGraw Hill (or whatever the bookstore is selling). Any edition is OK if you can't afford the most current one. **Just get one!!**

Please obtain and bring to lab class a pair of **SAFETY GLASSES or GOGGLES**. Also **GET A CALCULATOR**... **Not your phone**. A simple one that can do scientific notation!!

Assignments: There are two (2) assignments in the schedule. Each is designed to permit the student to explore other sources of information (that means not just the class textbook) and prepare either a presentation or visual aid to be used in the classroom to enforce the material being presented. Each assignment is explained below:

#1 ARTICLE/NEWS ITEM- Find, READ and UNDERSTAND an article from a local paper, national newspaper, magazine or periodical that is related to physical science (astronomy, energy, physics, chemistry, geology, electricity, light, heat, etc.) but not biology or the environment. Prepare a 1 to 2 page summary of the article. Get more information if necessary by consulting other sources. Learn the pronunciation of key words. You will then present your article and summary to the entire class. You will be graded on both the summary and your presentation. Please include a citation for your article.

#2 SOUND LAB- Use simple materials to prepare a lab for your future students involving sound and the laws covering sound. Wave motion should or can be incorporated into your laboratory. Look for ideas in textbooks (mid and elementary school) and the web. This will allow you to show your creative side. The lab should have a materials list, objectives, directions and evaluation of students work (assessment). You need references (at least one) and YOUR TEXT IS NOT ONE OF THE REFERENCES. You will present the lab, preferably with the materials to OUR ENTIRE CLASS.

RESEARCH PAPER (and Presentation)

During this class we will be covering several topics but not all. The purpose of the paper is to permit you to explore a subject that interests you in greater detail. You will write a paper (10 to 12 pages double-spaced) or create a Power Point (16 to 18 slides with both text and visual content). You will turn in a 1-page summary or your topic (with an outline) and **WITH REFERNCES** for your paper on the date specified in the syllabus. Turn the final product in ON TIME. Late penalties will occur. The summary is designed to get you to think ahead, get references and plan and prepare your paper/presentation.

WIKAPEDIA, ENCARTA or any online encyclopedia) is not considered a REFERNCE.

Make-up Tests:

No Make-up Exams. See Grading Policy below.

Grading Policy: Approximate

There are Three (3) Tests and a FINAL Examination for a grand total of four (4). These tests count for 60% of your grade. You may drop the lowest test score (Best 3 out of 4 Exams). The research paper will be 15% of your grade. The two (2) Assignments will count for 10%. Quizzes will be worth 10%. Labs are also part of your grade. Poor attendance could RESULT IN YOU BEING DROPPED from the class.

Special Needs:

If you have a disability, please inform me of your special needs ASAP so we can ensure your needs are met in a timely manner.