

Physics Syllabus and Expectations

Mrs. Wege

Course Description:

Physics is the study of the nature of matter and energy and their relationships. Emphasis will be on the following subjects: mechanical dynamics, universal gravitation, wave properties, sound, light, electricity/magnetism, and modern physics. Students will develop problem solving skills while investigating these topics through a variety of methods. This course relies heavily on the application of algebraic methods, written/oral communication, and laboratory skills.

Supplies:

Students are expected to bring all supplies to class each day. Supplies include:

- Textbook with book cover
- Pencils
- Grading pen
- Scientific Calculator
- Notebook or binder with paper

A cell phone may NEVER be used as a calculator!!

Textbook: Glencoe Physics

Grades: Grades to be given will consist of Homework, Labs, Early Work, Quizzes, Tests, Activities, and Projects. All grades will be entered in the grade book on a point basis.

Homework: At least one homework assignment will be given each chapter. Typically, an assignment will be given at the beginning of the chapter and will be due the day before the test. To get full credit on any assignment, ALL work must be shown.

Labs: We will attempt to do at least one lab each chapter. For the most part, you will be given at least one night to complete the lab assignment but will occasionally be asked to do a full lab write up in which you will be given several days. See lab safety.

Early Work: A problem or several problems will be displayed each day when you enter the room. You are to copy and complete each problem in a notebook or section of a binder. During the test, this notebook will be collected and graded based on the number of entries.

Quizzes and Tests: All tests and most quizzes will be announced well in advance. Occasionally there will be unannounced quizzes for fewer points.

Assignment Heading: The heading in the top right hand corner must contain your name, date, subject, and assignment (or it will not be graded).

Late Work: Late work will not be accepted for credit unless it is accompanied with a late work pass (see next section). Though not for credit, late work must still be turned in to receive test retake privileges.

Multi-Pass: The student will be given three multi-passes per semester. The passes may be used to turn in late daily assignments or as a hall pass (along with the student's agenda) to leave the room. Once the three passes are used, the student will not be allowed to leave the room unless requested by the office, counselor, or another teacher. If the passes are not used, they may be turned in the last day of the semester for 5 extra credit points each.

Tardy Policy: You will be marked tardy if you are not **in your seat** when the bell rings. You will also receive a tardy if you have to go back to your locker to get any materials needed for class that day (so come prepared!). Please note the school tardy policy.

Lab Safety: Because this is a science class, we must take into consideration the equipment that will be used during labs and activities. Anything other than proper use of the materials will result in disuse of them and an alternative assignment will be given. Also, never touch lab materials unless directed to by the teacher (that goes for ones already set up and ones that are in storage).

Class Procedures & Expectations Summary

- Be on time! You must be in your seat and working on the early work when the bell rings.
- Be prepared! Bring daily-required materials to class every day.
- Be respectful! Show respect to everyone and everything.
- The teacher dismisses the class, not the bell.
- Food and drink, other than water in a clear container with a lid, are not permitted.
- This class follows all rules and procedures set in the school handbook and discipline policy.

Website: I will do my best to post homework assignments and other important information on the school website: www.rockcreekschools.org.

This sheet is the first grade for your son or daughter. Your signature below indicates they have discussed the class with you. This paper must be returned to me by August 21, 2006. If you have any questions or comments about anything mentions on this form, please don't hesitate to call or e-mail me. My e-mail address is wegea@rockcreekschools.org and the school phone number is 494-8591 or 457-3688. Let's work together to have a great year!

Please fill out the bottom, cut off, and return to teacher.

Student Name: _____

Class: _____

Parent Signature: _____

Phone Number: (Home) _____ (Work) _____

Parents E-Mail Address(s): _____

Highland Community College Credit: If you choose to take this course for college credit through Highland Community College, your first semester, second semester, and both semester final grades will be averaged as your total grade. Each semester is worth 45% and each final worth 5%.

Concepts of Physics Syllabus

I. Course Number and Title

- A. Course Number and Title: PS 102 Concepts of Physics
- B. Prerequisite: MAT100 (Beginning Algebra) or Assessment
- C. Credit Hours: 4 (3 credit hours of lecture, 1 credit hour of lab)

II. Department: Math and Science

III. Course Description

Provides a qualitative introduction to the science of physics. Principles from Classic, Relativity and Quantum Theories are considered. The topics include: motion, forces, energy, thermodynamics, waves, electromagnetism, atomic physics, Special and General Relativity. This course is intended as a broad-based introduction to physics for students who are not majoring in science. Three hours of lecture and one and a half hours of lab per week.

IV. Course Competencies

Successful completion of the course will enable students to:

1. Know the definitions, units and general nature of important physical quantities which describe natural phenomena.
2. Apply Newton's Laws of Motion, the Law of Conservation of Energy, the Laws of Conservation of Linear and Angular Momentum and the Laws of Thermodynamics to solve conceptual problems.
3. Demonstrate an understanding of linear, rotational, projectile, and satellite motion.
4. Describe the processes of heat transfer and the effect of temperature on atomic and molecular motion and changes of phase.
5. Understand the relationships between electricity and magnetism and electromagnetic waves.
6. Become familiar with the types of nuclear radiation and how it affects their lives.
7. Demonstrate an understanding of how Special and General Relativity
8. Explain the differences between Classical, Quantum and Relativity Theories.
9. Acquire, analyze and interpret the results from experiments.
10. Use a computer to analyze data and write the results of experiments.

V. Assessment Items

Exams which cover the definitions and laws listed in competencies 1, 2 and 3. The exams must include conceptual situations where those physical laws must be applied. For competencies 4 and 5, written lab reports.

VI. Course Content

1. The Scientific Method
2. Motion
3. Newton's Laws
4. Work and Energy
5. Heat and Thermodynamics
6. Oscillations and Waves
7. Electricity and Magnetism
8. Electromagnetic Waves
9. Atomic and Nuclear Physics
10. Relativity