

Physical Science 101 Syllabus

Course Name: Physical Science

Course Number Proposed: 101

Lecture hours: 3

Lab hours: 0

Credit hours: 3

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Textbook: Conceptual Physical Science

Hewit, Suchocki, Hewitt

Addison Wesley, Pearson

3rd Edition

ISBN 0-321-05182

Textbook web-site: <http://www.aw.com/physics>

Course Description: Gives students a greater appreciation for the wonders of the physical universe in which they live through a study of kinematics, Newton's laws of motion, rotational motion, fluids, thermodynamics, waves, the solar system and other key topics is astronomy. Not intended for science majors.

Prerequisites: Math 101 or 110

Corequisite: Physical Science 101 L strongly recommended

Course Objectives (from BRCC Master Syllabus)

Upon completion of Physical Science 101, the student will be able to achieve the following with a 70% or better success rate:

- demonstrate a fundamental knowledge of the basic laws and principles governing the nature of matter, motion, work and energy forms, fluids, waves, and special topics in astronomy on individual and group assignments and exams;
- use a basic scientific vocabulary that relates to course content on assignments and exams;
- recognize and explain many physical phenomena observed in the physical environment on assignments and exams;
- use the scientific method in concert with the basic laws of physics to model, analyze, and interpret physical scenarios in the textbook to everyday life on assignments and exams;

- use simple mathematical skills to solve problems which pertain to the physical environment on assignments and exams;
- relate physical science principles to everyday life on assignments and exams.

Expanded Course Outline:

- I. Scientific Method and Measurement
 - A. Nature of curiosity, observation and order
 - B. Data analysis
- II. Kinematics
 - A. Graphical analysis of motion
 - B. Newton's Laws
 - C. Application of Newton's Law
 - D. Problems solving in force and motion
- III. Conservation and Momentum
 - A. Momentum
 - B. Universal Law of Gravitation
- IV. Energy Work and Power
- V. States of Matter
- VI. Heat and temperature
 - A. Thermal energy
 - B. Heat transfer and Thermodynamics
- VII. Planetary Motion

Grading System

The grade that a student will receive will be a integrated assessment of the overall performance, participation and subject matter understanding of the student. This assessment will be based on the following guideline:

Weekly and Daily Quizzes, Homework.....	5 %
Exam I	20 %
Exam II.....	20 %
Final Exam	25 %
Semester Project.....	15 %
Class Participation.....	5 %

The dates of the exams will be announced at least a week ahead of time.

Participation

It is very important that you will come everyday to class. Physics is a challenging subject and your full involvement and participation in this class is required. After 9 cumulative absences your instructor has the right to drop you from the class. Absences in general will influence negatively the Class Participation section of your grade. Active and relevant involvement in the class through questions, answers and discussions will have a positive effect on your Participation grade.

Homework

It is of fundamental importance that you do all the homework assigned. Physics is learnt through solving a lot of problems. You should read the numerous examples in the book and try to reproduce the solutions by yourself with the book closed. This should be part of your daily homework. Some of the homework problems will be solved in the student solution manual and other problems will be very similar to the solved ones. It is highly recommended that you get a copy of this solution manual. Also try to use in an active way all the other study aids offered, even on-line, by the authors of our textbook.

Quizzes and Exams: You should study everyday the material that is presented in class and be always up-to-date. There will be unannounced Quizzes on a regularly basis to test your level of preparedness. Quizzes will be focus on the material just presented in the previous lesson. Exams will be announced at least one week ahead of time and they will be comprehensive of all the material covered up to that point by the class.

Semester Project

You will be required to work on 4-5 pages long report during the class semester. You can choose among a list of subject topics listed in the Semester Projects link on the course website.

You can also come up with a subject that relates to your area of study or personal interest. In this case you have to get the approval of your instructor before you start to work on this subject.

More information on the Semester Project is given at the web-site.