West Linn–Wilsonville School District

Science Department – Course Statement

Course Title: Physics

Length of Course: Year
Number of Credits: 2
Grade Level: 10, 11, 12
Prerequisites: 1 year of science; completed or currently enrolled in Advanced Algebra
CIM Work Samples Offered in Course: Writing or math problem-solving work sample completed each semester

Date of Description/Revision: 2002

Course Overview

This course has two areas of emphasis: How motion, momentum and energy affect the interaction of physical bodies, and how the concept of optics, electricity, and magnetism have led us from classical physics into modern philosophy and the bizarre world of modern physics. Activities will include lab experiments, demonstrations, lectures, and problem sessions to illustrate the main concepts of physics. Upon completion of this course, students will have the skills to apply problem-solving techniques to and be able to study physical phenomenon and arrive at conclusions making application of basic physics concepts. Evaluation is based on exams, lab and book reports, and homework problems.

Essential Questions

Concepts providing focus for student learning

- How do things work?
- What are the basic laws of nature and how do they affect us?
- How can these laws be used to make predictions?
- How do we become better thinkers?

Proficiency Statements

Upon completion of course, students will be able to:

- Measure and compute using the metric system.
- Use scientific apparatus to make quantitative measurements.
- Gather, organize, interpret, evaluate and communicate data.
- Solve kinematic equations and understand kinematic relationships.
- Solve dynamic equations and understand dynamic relationships.
- Describe and understand the basic laws of electricity and magnetism.
- Understand the relationships between the different types of mechanical energy. Be able to explain the conservation of energy.
- Understand the properties of waves, sound, and light.
- Develop analytical thinking skills.

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General Course Topics/Units & Timeframes	
Semester 1 A. Mechanics Semester 2 B. Electricity and Magnetism C. Waves D. Sound E. Light and Optics F. Other topics (Modern Physics, etc.)	
Resources	
• Text: *Physics: Principle and Problems,* Glencoe, 2002 • Other: Laboratory equipment, films	