

West Linn–Wilsonville School District
Science Department – Course Statement

<u>Course Title: Conceptual Physics</u>	
Length of Course:	Year
Number of Credits:	2
Grade Level:	10, 11, 12
Prerequisites:	Algebra
CIM Work Samples	
Offered in Course:	At least one writing or math problem-solving work sample
Date of Description/Revision: 2002	

Course Overview	
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Conceptual Physics is designed for students with limited experience in math beyond Geometry. This course will have three areas of emphasis. The first area will be the concepts of physics, which include motion, force, work, power, energy, inertia, gravity, temperature, etc. Second area of emphasis will be the using of equations to interpret and make predictions relating to physics concepts. The third area of emphasis will be to demonstrate how physics affects our everyday lives. Activities will include lectures, discussion, demonstrations, lab experiments, and outside readings. Upon completion of this course, the students will have basic understanding of physics concepts, the ability to interpret natural phenomena, predict outcomes of physical processes, and an understanding of how physics affects us every day. The student will be evaluated on tests, labs, and homework.

Essential Questions	Concepts providing focus for student learning
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- 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	
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- Upon completion of course, students will be able to:
- Demonstrate a basic understanding of the following physics concepts: motion, force, gravity, Newton’s laws, momentum, energy, work, power, waves, sound, light, electricity and magnetism, and general physical science topics.
 - Utilize mathematical equations as a tool to interpret physical phenomena and to predict experimental outcomes related to the above physics concepts.
 - Give examples of how the major physics concepts affect our “everyday” world.
 - Understand methods of problem solving in looking at real life problems. They will see how scientists solve problems and this may lead some to a career path in the sciences.
 - Utilize data gathering and graphing to develop skills allowing them to be more functional in data interpretation. This will be useful to students who choose careers in science and business.

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General Course Topics/Units & Timeframes	
<p><u>Semester 1</u></p> <p>A. Mechanics</p> <p><u>Semester 2</u></p> <p>B. Electricity and Magnetism</p> <p>C. Waves</p> <p>D. Sound</p> <p>E. Light and Optics</p> <p>F. Other topics (Modern Physics, etc.)</p>	
Resources	
<ul style="list-style-type: none">• Text: <i>Conceptual Physics, 4th Ed.</i>, Prentice Hall/Addison Wesley, 2002• Other: laboratory equipment; films	