

Concurrent Enrollment: Physics 101 (Conceptual)

Instructor: Mr. J. H. Lindsay

Room: S 10 & S 12

Introduction: I would like to welcome your child to a new school year. We are looking forward to a challenging and interesting year. Because you as parents are an essential part of our educational process, it will be important for us to maintain open communication. If you have questions or concerns at any time, please feel free to call me at the school. (Note: This is a concurrent enrollment class from SLCC. Students must earn at least a 3.0 average in the class to qualify.)

Course Description: (Note: The state core-curriculum requires that a student take an end-of-level test before leaving the class. Their grade must be heavily weighed on this. ) Algebra is required to pass this exam, so the teacher will review equations and formulas as necessary. Besides, Conceptual Physics is not physics without math, but rather emphasizes concepts before computation.

Semester #1: I will begin with a treatment of matter that includes a discussion of the three states of matter, density, fluids, and pressure with Pascal's principle. I will then introduce a treatment of heat that includes material on temperature, specific heat, thermal expansion, change of state, and gas laws. Next, I will begin with the subjects of wave motion and sound. This deals with basic wave characteristics, the nature and speed of sound, the Doppler effect, and resonance. Then onto light, I will briefly discuss the wave and particle nature of light, but dealing primarily with illumination. Reflection and refraction that develop the images formed by mirrors and lenses will also be discussed. Finally, I will then end the year with a brief discussion of static electricity followed by an introduction of DC circuits, including sources & Ohm's law. I will then introduce the subjects of magnetism, generators, and motors in a descriptive nature that allows for a more in-depth study if desired. A discussion on atomic and nuclear physics may follow may follow if time allows.

Semester #2: I will begin with introducing the students to scientific thinking, skepticism, pattern recognition, and perception. Next, measurement techniques, indirect & direct, are introduced through experiments. A significant development of the metric system will be emphasized. The need for vectors is then developed in the subject on motion, where graphically addition of vectors is used. Following, 1 & 2-dimensional dynamics is discussed along with a more thorough treatment of dynamics and other standard topics on mechanics (e.g. energy, work, momentum, gravity, circular motion, static equilibrium, etc.).

Textbook: Conceptual Physics, 1988 & 2002 (P.G. Hewitt)

Course Requirements: (\$40 College Registration fee & \$10 Science class fee)

1. Participate in class discussions and be prepared for class, (with physics notebook, pencil, book & calculator).
2. Do homework problems, in-class activities and projects (a small money fee may be needed here).
3. Take quizzes and the state end-of-level test. An organized 3-ring binder for notes and old assignments.
4. Safely participate in lab-activities and projects that require report-writing and construction skills.
5. No electronic communication-devices are allowed during classtime.

Academic-Grading Procedures:

1. The grades will be determined by the student's performance in 5 areas.

i) Test and Quizzes ---40%

ii) Homework ---30%

iii) In-class Activities, notes and worksheets ---20%

iv) Project Reports ---10%

2. Grades will be determined using the following scale:

Percentage Grade Percentage Grade Percentage Grade

93-100-----A ... 72-77-----B- ... 40-46-----D+

89-92-----A- ... 64-71-----C+ ... 34-39-----D

84-88-----B+ ... 55-63-----C ... 29-33-----D-

78-83-----B ... 47-54-----C-

3. Students with no truancies or tardies during a given quarter may have their lowest quiz score dropped when grades are calculated.